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Agribusiness for Africa's Prosperity

Country Case Studies

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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Chapter 1 | Context of Agro-industry in Africa

Karl Wohlmuth and Patrick M. Kormawa

Issues

Several studies show that conditions for dynamic agro-industrial development and the promotion of agribusiness in Africa are yet to be achieved, but that some progress has been made towards this end (UNIDO 2011; FAO 2008; OECD/DC 2008; Larsen *et al.* 2009).[1] Even in cases where willingness to implement reform programmes is strong, most of the preconditions and implementation conditions have not been met in full. The present study focuses on eight African countries: Cameroon, Ethiopia, Kenya, Mali, Nigeria, Senegal, South Africa and Zambia, and aims to reveal the success factors behind agro-industrial and agribusiness development processes. Africa's potential for agribusiness development is increasingly the subject of discussion at national and regional policy levels, as well in academic circles (see FAO/UNIDO/IFAD 2008, UNIDO 2009a, AU 2010, AU 2008a and 2008b, Mkandawire 2008, and FARA 2006), and this sample of countries provides a fitting basis for comparative analysis.

Evidence on Agribusinesses in Cluster Analyses: Clusters, a structure of some large and many micro and small enterprises, are considered as a means of tackling Africa's "missing middle" problem in industry. Clusters may compensate for the disadvantages these enterprises have by allowing for collective learning, joint action, and access to shared infrastructure, as well as benefiting from certain economies of scale. Case studies of agro-industrial clusters are now available and show the agribusiness dynamics. Dynamic agro-industrial development in clusters is related to knowledge flows and to innovative activity. Clusters with such a focus have a great presence in some African countries; textile and wood clusters in Kenya, furniture manufacture in Egypt and Tanzania, and fish processing in Kenya and Uganda demonstrate that spontaneous rather than created clusters, and clusters in towns rather than in rural areas, generate greater knowledge flows and more innovative activity (Oyelaran-Oyeyinka & McCormick, eds. 2007). Access of agribusiness clusters to knowledge institutions is a key factor, as cases from Nigeria to South Africa reveal (Uzor 2009, Zheng, ed. 2008).

Evidence on Agribusinesses in Value Chain Analyses: Further sources of case studies to be used for comparative assessment are value chain analyses. Value chain analyses for citrus (from South Africa), clothing (from Mauritius and South Africa), cocoa (from Ghana), coffee (from Kenya, Ethiopia, Tanzania, and Uganda), cotton (from Tanzania and Zimbabwe) and fresh vegetables (from Kenya and Tanzania) add to the knowledge base by highlighting countries and products through the whole value chain (see Gibbon & Ponte 2005 and UNIDO 2011). Comparisons of agro-industry "success stories" in Latin America and Asia provide useful contrasts with African experience for deriving appropriate lessons and policy conclusions (see Kjöllerström & Dallto 2007; UNIDO 2011).

Heterogeneity of Agribusiness: Agribusiness is a heterogeneous activity, thus case studies need to explore a variety of subsectors. Agro-industries[2] comprise food sectors (processing of staple

[1] The Gambia, Ghana, Kenya, Mali, Mozambique, Senegal, Tanzania, Uganda, and Zambia.

[2] According to the International Standard Industrial Classification (ISIC), agro-industries consist of six subsectors, namely: food and beverages; tobacco products; paper and wood products; textiles, footwear and apparel; leather products, and rubber products. Agro-industry, by definition, includes all the post-harvest activities that are involved in the

products, export crops), non-food sectors (leather and shoes, textile and garment, furniture and other wood products), input industries and services. A balanced development of processing companies, with linkages to input industries and to services supplying firms, is therefore favourable. Case studies have been chosen to address the heterogeneity and diversity of the sector, which poses great problems for researchers during surveys and for policymakers deciding on support measures.

Agro-processing is also heterogeneous in terms of technology levels and levels of industrial sophistication: post-harvest activities range from artisanal production, minimally processed and packaged agricultural raw materials, to industrial and technology-intensive processing (Wilkinson & Rocha 2009).

The agri-food system is itself heterogeneous, including subsistence products and local product markets (such as root crops), staples for urban domestic markets (such as cereals), traditional export commodities (coffee, cocoa, tea, nuts, cotton), components of animal protein diet (dairy products, oils, and animal feed), different meat chains (red meat, pigs, and poultry), fresh or non-traditional products (fruits, horticulture, flowers, seafood/aquiculture), and differentiated traditional exports, like fair trade, organic, and origin products, being oriented to local, regional and global markets (see Wilkinson & Rocha 2009). As each has different needs in terms of inputs of capital, labour, skills, technology, infrastructure and marketing, case studies can only select certain activities, forms of production and subsectors through which to portray the dynamics of agribusiness.

The agribusiness sector, consisting of processing and services components, is becoming increasingly complex and sophisticated: agribusiness enterprises are engaged in all categories of food and non-food industrial activities, along the entire value chain. Agribusiness enterprises can also be categorized according to their stage of the value chain, size, and legal status (formal or informal). Most enterprises in Africa are micro or small in size, and operate informally. Adding to the complex landscape is the distinction between foreign and domestic firms, with some of the large foreign and the large domestic firms leading buyer-driven value chains. Supermarket chains, whether foreign or domestic, are leading a noticeable trend on the continent of dominating supply chains to meet demands in urban markets. Large agribusiness companies with a multinational outlook are also of increasing importance in the SANE countries (South Africa, Algeria, Nigeria, and Egypt) (OECD/DC 2008, WEF/AfDB/WB 2007, 2009).

Factors shaping Agribusiness Development: The various factors and conditions shaping agro-industry and agribusiness in Africa include geography; natural resource and factor endowments; climate; the scope and coherence of policies; origins, impacts and outcomes of industrialization strategies; and the types of integration with regional and global markets and the resultant degree to which the development potentials can be exploited. A comparative study must look at agro-industrial products that may be tradable at local, subregional, regional and/or at international levels, and how production is shaped by business-environmental factors. Therefore, the case studies examine the following range of agribusiness subsectors: food and beverages, including livestock and fish products; leather and leather products; textile and garment products; wood and wood products; construction industry products based on wood and agricultural materials; horticulture, vegetables, spices, and ornamental plants; agro-industrial inputs for increasing agricultural productivity, such as high-quality seeds, fertilizers, pesticides, and insecticides, as well as inputs for irrigation systems and related equipment; industrial capital goods for the processing of agricultural commodities, such as machinery, equipment, and tools, storage and cooling technology, and spare parts; packaging materials for better marketing and storage, and production of bio-fuels. In all these areas of industrial activity, for all producers, technologies change the context, conditions, and structure of agro-industry and agribusiness (see Dennis *et al*. 2009).

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transformation, preservation and preparation of agricultural production for intermediary or final consumption (FAO/UNIDO/IFAD 2008).

The food production and marketing system is transforming in response to new technologies, which themselves are responding to various factors: changing food demand, changes in the movement of food, and changes along the whole value chain from production to marketing. Given the increasing emphasis on sustainability and inclusiveness, the new technologies being developed reflect the importance of environment protection and climate change management, and equity and poverty reduction imperatives. Small and micro producers and enterprises can benefit from these new technologies when they are involved – by way of new business models – in value chains at production and distribution level (Da Silva *et al.* eds. 2009, see especially chapter six). New preservation, transformation and packaging technologies are of increasing importance (Dennis *et al.* 2009). Countries in Africa are responding differently to these changes, and these country case studies highlight how public policy and the private sector may interact in a more pro-active way. Strong public policy support is needed to enable entrepreneurs to absorb these new technologies more fully (Dennis *et al*. 2009).

Political Consensus for Agribusiness Development: Building a political consensus on an appropriate path for agro-industrialization is relevant for countries, subregions, regions and for the whole African continent; some progress had been achieved in this respect, especially at the level of the New Partnership for Africa's Development (NEPAD), the African Union (AU), the United Nations Economic Commission for Africa (UNECA) and the African Development Bank (AfDB), but also at the level of subregional entities such as the Southern Africa Development Community (SADC), the Economic Community of West African States (ECOWAS), and the Economic Community of Central African States (ECCAS). However, it is extremely important to build a political consensus around agribusiness development. The basis for such a consensus lies in its potential for broad-based growth and positive impact on employment. At the national level, a balance needs to be struck between the opportunities and threats posed by a new strategy; land use is a critical issue, as the domestic use of agricultural materials for processing may affect groups of exporters and importers, and a dominance of large agribusiness firms may conflict with equity, income distribution and employment creation as well as with environmental protection objectives. Such new strategies involve shifting balances of power, and therefore exclusion and inclusion with regards to agricultural producers and agribusiness firms is of considerable importance (see Henson & Cranfield 2009). The complexity of these issues demands that a political consensus be based on coherent policies and frameworks to support agro-industries and to promote agribusiness according to a long-term vision. Policy responses should focus on gradual processes of change, rather than pushing for "great leap" approaches with potentially disruptive consequences.

Designing an appropriate and balanced mix of policies for a particular country in order to create an enabling environment for agro-industry and agribusiness is a highly complex task, for which political consensus is a prerequisite. This has primarily to do with the weight of sectors and subsectors in the economy. Evidence from less developed countries (with mainly agriculture-based economies) shows that these countries have an agriculture share of 0.39 (in GDP) and an agribusiness share of 0.22 (in GDP), which gives a ratio of 0.57 for the weight of agribusiness to the weight of agriculture in economy and society (Wilkinson & Rocha 2009). The share of agro-processing in GDP is small in such economies (0.050). The share of food processing and beverages production in total manufacturing is quite high (0.468) while the share of total agro-processing in total manufacturing is at 0.664. This means that agribusiness and non-food processing activities have a rather low position in agriculture-based countries, mainly situated in Africa (Wilkinson & Rocha 2009). The risk of a cementation of political alliances against the interests of these activities is great. Agro-industrial development in such countries is based therefore on a revolutionary process, which demands public and private action to install a new strategic reform alliance by building a broad political consensus.

Policies and Institutions for Agribusiness Development: Policies and institutions matter, but so too do visions, action plans, and operational and implementation procedures. First of all, the case

for agro-industrial development has to be made quite clear to all those shaping the environment for agribusinesses. This is the task of this volume. So far, only few case studies have highlighted the agro-industry potential and the prospects of agribusiness activity in Africa (FAO 2008, OECD/DC 2008, and for the World Bank Larsen *et al.* eds. 2009). These studies are very informative, but they do not consider the issues central to the present study.

Contextualizing the Case Studies

The present study offers a systematic overview of five crucial aspects of agribusiness development:

- the rationale for agro-industry and agribusiness promotion;
- the structure and the dynamics of agribusiness development;
- the scope and coherence of policies for agribusiness development;
- the role of key policy factors for agribusiness development; and
- the importance of national visions, action plans and operational plans in moving agribusiness forward.

The rationale for agro-industry and agribusiness promotion: All the country case studies reveal the rationale for agro-industrial development in the country. It is important to know how politicians and government, the private sector, donors, and NGOs assess the potentials of agro-industrial development and at the functions of such a development process for the wider economy. Many reasons can be cited for agro-industrial development: reduction of commodity dependence on a few export products, diversification of production to broaden the base of the economy, transforming the agriculture sector towards agro-industrial development by creating linkages, stimulating employment generation and poverty reduction etc. The focus of the study is therefore to make transparent the rationale for agro-industry and agribusiness development in the selected case study countries.

The structure and the dynamics of agribusiness development: The focus of the comparative study is on structural change in agro-industry and agribusiness and, more concretely, on processes of adding value to agricultural, livestock, forestry and fishing products by industrial processing and local to global marketing of the products. Changes in production and trade structure are important, and selected indicators are presented. Long-term trends (over a twenty year period) are of interest, as well as more recent changes (over a five to ten year period). Employment generation and poverty reduction impacts are similarly important and so the social inclusion of producers and small firms is investigated. The task is to analyze for the country in question the structure of the agribusiness sector and of the major subsectors, the dynamics of agribusiness enterprises, the exchange and trade relations in the production chain from agriculture to agro-industry, and the role of institutions important for moving agro-industry towards modernization. Available quantitative evidence on the sectors and subsectors is documented, and one of the central questions explored is, how great is the potential in agro-industry subsectors for value addition through industrial processing, and what are the expected social inclusion effects of higher stages of industrial processing (in terms of employment generation, income generation and poverty reduction, and in terms of improvements to the nutrition and health situation)?

The scope and coherence of policies for agribusiness development: All the policy areas that have a bearing on agro-industrial development in the case study countries are addressed, insofar as possible (macroeconomic, investment and finance policies; industry and agriculture policies; trade, investment and integration policies; competition and technology policies; and spatial development policies). Evidence shows that these areas affect the development of agribusiness through the following factors: macroeconomic, investment and finance variables such as the rate of interest, structure of financial system, and public expenditure; incentives to industrial and agricultural

producers; trade protection measures, regional integration, and investment regulations; regulations on competition and market structure, subsidies provided to use and disseminate new technologies; incentives to develop particular regions of a country. Another issue is the coherence of policies, as all these policies mentioned above have to be made coherent in terms of objectives, instruments, and the underlying timeframe. This focus on coherence is not often found, as the available case studies remind us. To reach policy coherence, a policy framework is needed in the form of a vision, an action plan, a medium-term public investment programme, and in the form of subsector operational plans; integrating donor projects and programmes into this framework is also an important task. A key question centres on whether and how public and private sectors cooperate in the task of developing and reforming agro-industry, and how the institutional set-up works to facilitate such cooperation. Other important questions are: how do the economic and structural policies that may affect agribusiness development in general and agro-industry subsectors in particular work in reality? To what extent is there policy coherence between macro policies, agriculture policies, trade and industry policies, competition policies, and technology, structural and spatial policies? Are there trade-offs and conflicts that impede agribusiness development?

The role of key pillars for agribusiness development: The key policy factors, or "pillars" can be understood as the main drivers that move the agro-industry sector and agribusiness enterprises forward (see UNIDO 2011). The eight key pillars are of central importance for the comparative analysis of the country cases; agribusiness dynamics are linked directly to progress in all these factors. The eight pillars are therefore related to the main ways in which value addition can be enhanced by agribusiness enterprises:

Key Pillars:

- *Enhancing agricultural productivity*. How can agriculture be supported so as to ensure a stable and sustainable supply of raw materials for industrial processing?
- *Upgrading value chains*. What are the possibilities for and constraints on upgrading agribusiness value chains in the country?
- *Targeting producers and commodities*. How can producers and commodities be selected for promoting social inclusion?
- *Exploiting local, regional and international demand*. How can local, regional and international demand for agro-industrial products of the country be developed and exploited by agribusiness?
- *Strengthening technological effort and innovation capabilities*. What are the instruments and prospects for increasing the technological base, the innovation capacity, and the human capabilities needed for agro-industrial development in the country?
- *Promoting effective and innovative financing*. How can both conventional and innovative financing mechanisms be adapted to the conditions of agro-industry and developed further for dynamic agribusiness development in the country?
- *Stimulating private sector participation and investment*. How are private agro-industry and agribusiness enterprises supported most effectively? *How can investment conditions be improved?*
- *Improving infrastructure and energy access*. How can the agro-industrial infrastructure be developed and improved, and how can access of agribusiness to sustainable energy sources be provided in the country?

This study presents new evidence on these seven pillars for each of the case study countries. The new evidence allows it to derive the most feasible strategies, which will be of relevance also for other African countries.

The importance of national visions, action plans, and operational plans in moving agro-industry and agribusiness forward: The increasing importance of these aspects is investigated, and

the way forward is determined by new instruments with which to promote these sectors. This process may help to move agribusiness on a path of accelerated and inclusive growth. Many African countries have started with national visions, action plans, public investment plans, and with operational plans, and it is important to see to what extent agribusiness development is part of this exercise. Two issues are important for the present study, namely: how is the national vision translated into action plans and operational plans, and how are the action plans and the operational plans translated into concrete action and implementation. Timeframes for concrete action are needed, and a portfolio of public and private investments can provide a convincing perspective, with specific roles of various stakeholders. Implementation of all these plans should be evaluated carefully, in a participatory process. This requires close coordination between the key stakeholders, namely: African continental, subregional and national organizations; national governments; technical, vocational training and R&D institutions; private sector organizations; associations of producers and cooperatives; intellectual property protection offices; initiators of public-private partnerships (PPPs); local offices of international development organizations; technical support organizations; business support organizations; financial institutions; public and private development agencies, and other key stakeholders involved in the agro-industry and agribusiness sector.

Typology of Case Study Countries

Criteria for Selection of Case Study Countries

Eight countries were selected for the case study: Cameroon, Ethiopia, Kenya, Mali, Nigeria, Senegal, South Africa, and Zambia. Four of these countries have already been investigated in depth by other organizations (FAO, OECD/DC, World Bank), while the present study provides valuable new information about the four remaining countries. All the eight country case studies share a common methodology as outlined above.

Two countries (Nigeria and South Africa) are among the group of **SANE** (South Africa, Algeria, Nigeria, and Egypt) countries. Although North African countries are not part of the exercise, these countries are important players in Africa's agro-industry and agribusiness, as for example Morocco, Egypt, Tunisia, and even Libya. Increasingly there are interactions of the agri-food enterprises of these countries with firms in other African countries (OECD/DC 2007, 2008). However, the selection of two SANE countries gives weight to the increasing importance of these countries for all other African countries, and especially the prospects of the agro-industry sector in Africa. South Africa, as a technology leader in Africa (UNIDO 2011), and Nigeria, as a West African growth pole, are clearly of relevance to such a comparative study. Nigeria and South Africa, alongside the other two SANE countries, have decisive influence based on their huge potential for accelerating Africa's agro-industry, and all the four SANE countries can contribute to a further acceleration of agro-industrial development in Africa (see WEF/AfDB/WB 2007, 2009). Several factors make these countries appropriate strategic partners for other countries: the fact that they have already reached a relatively high degree of internationalization of their large agro-industry firms; the importance of their agro-industry sector innovation systems; the role for the agri-food markets of their smaller neighbouring countries, and the already partly achieved capacity to exploit opportunities from the development of agro-industry equipment, inputs and related services that may be exported to other African countries. The role of the SANE countries as growth poles is especially relevant for the agri-food sectors. The degree of food market interdependence and the level of cross-border agri-food trade in SADC (SAT 2008) show the potential for advances in regional integration and the role that South Africa can play. Nigeria is increasingly integrated in these markets with ECOWAS countries, so that a continuation of reform policies and new moves towards regional integration may help to exploit the potentials.

Four countries included in the comparative study—Ethiopia, Mali, Senegal and Zambia—are categorized as **Least Developed Countries (LDCs).** Countries of this group share similar characteristics in terms of available productive capacities, absorptive capacity for investment and development assistance funds, level of economic, social and human development, especially with regard to their status for financial and trade assistance granted form the donor community. Developing productive capacities is an important issue for these countries, and especially so for food systems and agro-industries (UNCTAD 2006). Although they have in common a high concentration of their exports on one or two commodities (coffee for Ethiopia, cotton for Mali, groundnuts and fish for Senegal, and copper for Zambia), the opportunities for developing non-traditional exports and overcoming the one-sided export dependence are of great interest to the present study. Overcoming import dependence (in the case of food for the urban population) and export dependence (by successes with non-traditional exports) are the policy imperatives for these countries, and the analysis investigates how LDCs can achieve progress in this respect. The four countries were also selected because agro-industrial development offers great chances to develop productive capacities much faster than alternative economic pathways would allow. It is interesting to see which countries are able to exploit these opportunities. As preferences in trade and specific support measures for agro-industrial development are relevant for these countries, the strategies of the international community matter and have to be assessed carefully.

Countries were also selected because of their **role in regional integration**, through Regional Economic Communities (RECs). Mali, Senegal and Nigeria are associated with the ECOWAS and the *Union économique et monétaire ouest-africaine* (UEMOA) integration groupings, while Kenya is part of the East African Community (EAC) and of the Common Market for Eastern and Southern Africa (COMESA), along with Ethiopia. Zambia and South Africa are part of SADC. Cameroon is a member of the Economic Community of Central African States (ECCAS), and the Central African Monetary and Economic Cooperation (CAMEC) mechanism. RECs play an increasing role in Africa's agro-industrial development strategies; this comparative study therefore also aims to highlight the cross-border activities and the manifold opportunities for agribusiness at subregional levels. Initiatives like the Comprehensive Africa Agriculture Development Programme (CAADP), the New Partnership for Africa's Development (NEPAD), the African Peer Review Mechanism of NEPAD (APRM) and other African policy and strategy frameworks show the importance of coordinating the strategies for agribusiness development, but much more is needed at the level of RECs and also at Africa-wide level. Increasing relevance has led to a much better coordination within the RECs and between the RECs (there is new evidence on this; see ECA/AU 2007, 2009). The example of SADC shows how important this issue of regional cooperation is for an agro-industrial strategy, especially so for collective food markets and food industry strategy (see SAT 2008). Opportunities for cross-border trade and for cooperation in agro-industries are also great for Kenya in the EAC (. It is of interest to see how countries like Kenya gain new markets for agro-industrial products in the region, and to see if this is only a reflection of losses in other markets. For the *Communauté Economique des Etats de l'Afrique de l'Ouest* (CEDEAO) and UEMOA there is new evidence in this regard also available (see on Mali the overview by Diakite 2008, and on Senegal CEDEAO *et al.* n. d).

The countries selected for case studies are also representative of the **African geopolitical regions**. While Mali, Senegal and Nigeria belong to the West Africa region and Cameroon to the Central Africa region, Ethiopia and Kenya are part of the East Africa region, while Zambia and South Africa belong to the Southern Africa region. North Africa is not covered for reasons which were already discussed.

Classifying African countries by **international competitiveness** also brings advantages. In the Africa Competitiveness Report 2007 (WEF/WB/AfDB 2007) Cameroon, Kenya, Ethiopia, Mali, Zambia, and Nigeria are grouped in stage one (factor-driven economies), while South Africa has already reached the position of a country at stage two (efficiency-driven economies). No country

has yet reached the stage three (innovation-driven economies). While stage one countries have just reached the basic requirements for competitiveness (with regards to institutions, infrastructure, macro-economy management apparatus, and health and primary education), stage two countries already have efficiency enhancers in place (like a certain level of higher education and training, of market efficiency, and of technological readiness). Innovation and sophistication factors like business sophistication and innovation capacity are not yet strong at stage two, but are important for stage three.

The countries selected for the case studies differ in respect of these stages, the rankings, and the scores. These findings are of importance for assessing agribusiness prospects in these countries. Cameroon – with a rank of 111 out of 128 countries in the GCI/Global Competitiveness Index 2007 (WEF/WB/AfDB 2007) and a score of 3.3 (on a scale of 1 to 7) – is relatively weak in terms of efficiency enhancers. Ethiopia – ranked 123rd with a score of 3.0 – is relatively weak in efficiency and innovation enhancers. Kenya – with a rank of 97 and a score of 3.6 – is by contrast relatively strong in innovation enhancers (business sophistication and innovation). This fact may also help to explain the rather favourable Agribusiness/Agriculture Production (AB/AP) ratio. Mali – with a rank of 122 and a score of 3.0 – is relatively weak in terms of efficiency enhancers. Nigeria – with a rank of 102 and a score of 3.5 – is also relatively weak in terms of efficiency enhancers. South Africa – with a rank of 46 and a score of 4.4 – is relatively weak in terms of efficiency enhancers. Zambia – with a rank of 117 and a score of 3.2 – is especially weak in terms of innovation enhancers but also in terms of efficiency enhancers. The basic message pertinent to this comparison of agribusiness development strategies is that advances in terms of efficiency enhancers will be very important for competitiveness, even when innovation enhancers are still at a low level of development. Development of efficiency enhancers will stimulate development of innovation enhancers and vice versa.

Other groupings of countries relate to **income, poverty and human development,** criteria which were also relevant in the selection of country case studies. According to the categories of low-income countries (LICs), lower-middle-income countries (LMCs) and upper-middle-income countries (UMCs), five countries (Ethiopia, Kenya, Mali, Senegal, and Zambia) belong to LICs, Cameroon and Nigeria are categorized as LMCs, and South Africa is grouped as a UMC (World Bank 2010). While Ethiopia has a ratio of the agribusiness share (of GDP) to agriculture share (of GDP) of 0.54, Kenya has a much higher ratio of 0.88, while the ratios of Cameroon with 0.43 and of Nigeria with 0.38 are quite low. South Africa has however a very high ratio of 4.0, comparable to the ratios of some developed countries (Wilkinson & Rocha 2009). All this shows that there are different degrees of agribusiness development within the group of African LICs, but there are also vast differences in the ratios between the LICs and the LMCs on the one hand and the LMCs and the UMCs on the other. This classification also can be used to show that LICs, LMCs, and UMCs have distinctly different ratios of agro-processing in total manufacturing, a fact that is especially pronounced between the LICs on one side and LMCs and UMCs on the other (Wilkinson & Rocha 2009).

The eight case study countries can also be grouped according to the **Human Development Index (HDI) and the Human Poverty Index** (HPI) based on UNDP reports. This classification is relevant as there is an observed high correlation between the value of the HDI and the level of agro-industrial development (see Wilkinson & Rocha 2009). The agribusiness to agriculture ratio is highly correlated with human development indicators, with low levels of human development being directly related to low AB/A ratios. From these eight countries, looking at the HDI values (UNDP 2007), Cameroon is grouped as a medium human development country (with a value of 0.532), Ethiopia as a low human development country (with a value of 0.406), and Kenya as a medium human development country (with a value of 0.521). Mali is a low human development country (with a value of 0.380), Nigeria is also a low human development country (with a value of 0.470), as are Senegal (with a value of 0.499) and Zambia (0.434) while South Africa is a medium

human development country (with a value of 0.674). It can be observed when looking at the country level that the relatively high AB/A ratio of Kenya is correlates more with its HDI position than with its LIC status, while Nigeria's weak AB/A ratio is correlated more with its low human development status than with its LMC position. Cameroon, as a middle-income and middle human development country, has a very low AB/A ratio, so that other factors (like governance, resource abundance, etc.) have also to be considered; the history of economic policy, the coherence of reform policies, and the degree of political stability are factors to be considered in this context. South Africa's position, with its high AB/AP ratio, is more correlated with its UMC position than with its (rather unsatisfactory) medium human development position, so that other reasons, like the high productivity structure of commercial farming, basic infrastructure and institutions, and the technology level, have more explanatory power than deficiencies in skills development/education/training. The HPI data for these eight countries show more or less similar situations when compared with the HDI data (UNDP 2007). South Africa has in 2007 a rank of 55 and a value of 23.5 % (being downgraded by the probability of not surviving to age 40 and income poverty). Cameroon ranks 64th and has a value of 31.8%, while Kenya has a rank of 60 and a value of 30.8%; all these three countries are in a medium human development position according to the HDI. Senegal has a rank of 97 and a value of 42.9%; Nigeria a rank of 80 and a value of 37.3%; Zambia a rank of 96 and a value of 41.8; Ethiopia has a rank of 105 and a value of 54.9%, and Mali has a rank of 107 and a value of 56.4%. The very low level of the human poverty index for Ethiopia and Mali gives evidence for the great need in these two countries to change the situation by agriculture and agro-industrial development. Senegal and Zambia (but also Nigeria) are next in terms of low HPI values; the demand for new inclusive and agro-based development policies is also evident in these countries.

These eight countries were also selected for case studies because of their inclusion in other, more analytically-based, classifications and typologies. Countries can be grouped according to the **achievements in structural transformation towards industry**. While the share of agriculture in GDP declines with *per capita* income increases, the share of agribusiness in GDP rises. Similarly, the value added in food processing is rising relative to value added in agriculture. Poverty, especially rural poverty, is related to the degree and the characteristic of structural transformation. Bringing all this together the World Bank identifies agriculture-based countries, transforming countries and urbanized countries. The eight case study countries are mostly in the group of agriculture-based countries; in these countries the share of poverty located in rural areas and the share of growth attributed to the agriculture sector are highly inter-related. A high level of rural poverty is associated with a high share of growth being attributed to agriculture. For most of the eight case study countries agriculture is very important for growth and most of the poverty is rural, with poor households being largely dependent on agriculture. This relation holds although in most of these countries the agricultural resources are not exploited fully (reflected in the low AB/AP ratios). Agribusiness development helps in acceleration of growth, and higher agricultural production will be important for these countries if based on sustainable agribusiness development. South Africa is somewhat of an exception as the AB/AP ratio is high, and growth is attributed largely to other economic sectors, but high rural poverty and underdevelopment of "traditional" agriculture are overshadowed by the weight of the commercial farming sector. Other African countries, like Morocco, belong to the group of transforming countries where growth has already accelerated sustainably in other economic sectors, while agriculture is no longer a major source of GDP growth, but poverty still remains rural. The rising disparity between rural and urban sectors is a major policy problem (De Janvry 2009; World Bank 2007). Such a country grouping is important as it helps to identify inclusion strategies so as to combine agricultural development strategies with poverty reduction strategies in a way that does not harm structural transformation. It is of interest to see in the country case studies how agriculture growth, agribusiness development, and rural poverty reduction are synchronized.

The grouping of African countries as coastal, **land-locked, and natural resource-rich** gives a view on opportunities; economic opportunities can be exploited by countries endowed with a good governance system (see UNIDO 2004). Coastal countries may have advantages with regards to developing manufacturing export industries; such countries can advance in the processing and marketing of export goods that are based on agricultural raw materials much faster than land-locked countries because of lower transport costs and more regular supplies of imported inputs. Such countries can also progress more quickly than natural resource-rich countries because the skills and other resources can be concentrated more on agro-processing and agro-related services. Potentially the coastal countries can develop productive capacities and export potential without the risk of large transport cost increases and the risk of large resource price changes, factors that may disrupt manufacturing sector growth. Countries may have either natural resources or access to the sea, or they may lack both. The case studies are therefore of interest to see the potential of land-locked countries to escape this fate on the basis of progressive strategies for agro-industry and agribusiness development.

From the eight case study countries **natural resource-rich countries** are (according to the methodology used in UNIDO 2004; see also UNIDO 2009b) Cameroon, Nigeria, and Zambia, while coastal countries with respective economic opportunities are Kenya, Senegal and South Africa; the remaining two countries are land-locked (Ethiopia and Mali). It is of interest to see how land-locked countries can respond to the limited economic opportunities by pro-active policies and strategies. It is well-known that these groupings reflect opportunities and potentials, and that the factual experiences of the countries in these three groups depend to a large extent on their policies and strategies in the past and on concerted action in the present to exploit their respective advantages. However, for the purpose of deriving conclusions from the comparison of developments in the case study countries this approach is useful. It is possible to formulate the tasks for Cameroon, Nigeria, and Zambia more precisely: how to balance development with more focus on agro-industry and agribusiness, how to overcome the disadvantages of being locked into export dependency based on traditional (oil, mining and timber) exports, and how to move towards non-traditional exports and towards an effective import substitution in food for urban consumers. The basic issue is how resource-rich countries can change the structure of their economy in the direction of sustainable agro-industrial development. Kenya, Senegal and South Africa are – as coastal countries – interesting cases to show to what extent opportunities for agro-based manufacturing and service exports are actually realized, and how such a direction of the economy has to be complemented by policies and other factors of importance for such a turnaround. Ethiopia and Mali, as land-locked countries, provide the opportunity to see if visions, strategies, plans of action, and policy adjustments can generate a political process towards deep agro-industrial and agribusiness development. It may be of interest to see if such countries can exploit their limited resources even more than countries with better economic opportunities (that is, resource-rich and coastal countries).

More explicit on agro-industrial development is the typology proposed by UNIDO and FAO for the support of agro-industry related programme investments to be undertaken by donor agencies and national governments (UNIDO 2009a). The idea behind this approach is it to analyze to what extent countries with a certain absorptive capacity for investments could benefit from a programme initiative to accelerate development of agro-industries and of agribusiness, by strengthening and supporting public goods and facilitative policies, innovative institutions, and provision of financial capital and risk mitigation (UNIDO 2009a). Four key variables are considered to classify countries for programme investments in pursuit of developing agro-industries and agribusiness. These key variables are: the role of agriculture in national economic growth, the extent of government intervention in agricultural commodity markets, the formality of industry supply chains, and political stability. The stage of growth of the agro-industry/agribusiness sector is assessed on the basis of these criteria to classify countries as being at a latent (pre-market) stage, at an introductory stage, at a growth stage, or at a mature stage. The eight case study countries fall mainly into the

categories of introductory stage and growth stage. While Mali, Ethiopia, Senegal, Cameroon, and Nigeria may be considered as countries at the introductory stage, Kenya and Zambia as countries at growth stage, while South Africa is classed as a country at a mature stage. Programme investments will have a high priority in a country at introduction stage and highest priority in a country at growth stage, while countries at mature stage, like South Africa, will see programme investments only for some geographically isolated areas and for some niche crops (UNIDO 2009a). While this approach bears certain similarities the one adopted in the present comparative case study analysis, the approach used in this study to derive a suitable typology of countries is based on a much deeper assessment of strategic, policy, institutional and structural changes in the countries.

Towards an Index to measure Progress in Agro-industry and Agribusiness Transformation

The selection of the eight case study countries for a deep review of agro-industry and agribusiness development are therefore broadly representative and represent a strong rationale from which to derive conclusions and recommendations. The present study adds to these typologies by focusing on ten specific factors: *awareness* about the rationale for agro-industry and agribusiness development; long-term *structural change* towards agro-industries; short- to medium-term *dynamics* of agro-industry and agribusiness subsectors; policy *scope* towards agro-industry sectors; *coherence* of these policies; three groups of key policy factors to improve the AB/AP ratio – the *first group* of factors comprising those initiating dynamic growth of agriculture for raw materials supplies, upgrading agro-industrial value chains, and targeting producers and commodities; the *second group* of factors comprising Science, Technology and Innovation (STI) -related support for agro-industry and agribusiness, traditional and innovative financing mechanisms, and private sector development and investment, with focus also on public-private interactions; and the *third group* of factors comprises agro-industry related infrastructure, especially energy supply, and developing and exploiting demand at local, regional, and global markets. Another factor relates to the *translation* of visions and strategies into agro-industry action plans, while the last factor is concerned with *implementation* of action plans by operational plans and policy action at all government levels.

These ten policy factors (*awareness, structural change, dynamics, policy scope, policy coherence, group one factors, group two factors, group three factors, translation, implementation*) are evaluated by judgment for the conditions in the eight case study countries, and then a summing up is done by using equal weights for the ten factors. This gives the basis for highlighting different dimensions of progress (rather than focusing on the level of development) in the case study countries and for assessing the transformative capacities visible there (by including strategic, policy, structural, and institutional dimensions of agro-industrial development and agribusiness promotion). Obviously countries will differ with regards to these ten factors. As a result of this exercise an *Agro-industry and Agribusiness Transformation Index (AIABTI)* takes account of the summarized performance of a country. Countries can be grouped as "slow transformers" (with up to 4 points), as "medium transformers" (with up to 7 points), and as "rapid transformers" (with up to 10 points). The index considers judgments on the change of hard data (on structural change over the long-term and the dynamics of production and trade), but also judgments on qualitative information based on policy processes such as awareness about new agro-industrial policies, policy scope and coherence, judgments on the progress of key policy factors, and judgments about the formulation and implementation of agro-industrial and agribusiness development strategies. Therefore, this index complements the typology on programme investments for countries in the process of agro-industrial development (presented by UNIDO 2009a). This index allows it to cross-check the results with the other classifications and typologies so as to arrive at a better basis for national and regional policy interventions. The Annex Table (on p. 40) shows the results for the eight countries and the ten criteria for assessment.

Overview

Cameroon: Initiating reforms towards agro-industry and agribusiness development, but so far limited transformation.

The case for agro-industrial development of Cameroon is revealing. The country is dependent on four primary export commodities (cocoa, coffee, tea, and timber), all of which have suffered from price declines on the world market (Dada 2007). The slow growth of the economy in recent years (OECD/AfDB 2010) and the rising imports of food items have increased the pressure to build a more dynamic agro-industry. The restrictions on formal businesses, the lack of support for informal businesses, and the transport bottlenecks in the country also create pressure to improve the conditions for agriculture and agro-industry. Deficiencies with regards to a needed re-regulation of commodity markets after failed liberalization policies also create problems. Cocoa is a good example for showing that the agriculture sector has to be brought to order so as to secure the high quality raw product for agro-industrial development. A national cocoa policy is requested (Dada 2007). As agricultural producers in Cameroon are the only socio-economic group for which poverty has recently increased, agro-industrial development and agribusiness promotion give chances for these producers and for the regions in which they live (see World Bank 2009).

In the case study Cameroon is seen to be a resource-rich country, a country with access to the coast, a country located in Central Africa, and a country with a considerable degree of interaction and integration with other Central African and West African countries. However, the global financial crisis has in fact provoked emergency measures by the government of Cameroon in order to support agriculture, to address the food crisis in the country, but also to address the energy deficit and the severe transport problems (OECD/AfDB 2010). The case for agro-industrial development is therefore well taken, and the analysis of the structure and the dynamics of agro-industry reveal the need for immediate action. Obviously there is little change in structure over the long term and limited structural dynamics over the short- to medium-term. Import dependency on food and export dependency on few products are unchanged realities. Cameroon sets its new strategies and policies purposefully within the context of the Vision 2035 objectives for agro-industrial development for growth, poverty reduction, and global market integration objectives. However, the huge agro-based potentials of the country are not used despite favourable endowment factors and comparative advantages.

Cameroon is now on the way to following a new economic policy strategy somewhere between a highly interventionist and a more market-oriented path. Chapter two outlines the effects of reforms on the dynamics and structural changes with respect to agro-industries. Reforms have contributed to somewhat higher growth in agro-industries, but at quite different rates. There is a concentration of value added by sectors; textile and weaving products, wood products, grain mill products, furniture, beverages, and processed meat and fish industries cover 74 per cent of Cameroon's total agro-industry value added.[3] It is also remarkable that the overall export intensity of the country has trebled in the reform period, this trend being dominated by wood products; the case study reveals a highly divergent performance of agro-industry subsectors. Careful trade analysis reveals the declining competitiveness of various important agro-industries. New strategies are therefore needed to change the situation for the better. Cameroon's long history of import substitution even now continues to have effects; a sharp policy reversal was indeed needed. The question is to what extent the current policy changes are meeting this need.

Similarly, the developments in agricultural and infrastructure policy show the comparatively late changes made to remove obstacles for the producers. Obviously the gaps in infrastructure provision are serious and the policy changes were inadequate for a long period. However, the institutional

[3] According to the author's figures

foundations of policymaking are also considered to be highly inadequate. Competitiveness in the Cameroon economy is impeded not only by complex laws and regulations, and ineffective systems for enforcing intellectual property rights, but also by inadequate supplies of commercial services, poor physical infrastructure, inefficient local government, and weak information and communication systems. With regards to cooperation and dialogue between public and private sectors and the formation of agro-industry PPPs, Cameroon is just starting. In terms of the key policy factors, redesigning agricultural policies and stimulating private enterprise have priority. There are also major challenges in infrastructure and finance for agro-industrial development. Using new technologies for agro-industrial development is still a weak point, which has to do with the lack of incentives for stimulating foreign investment and the resulting lack of local technological, managerial and skills capabilities. Targeting commodities and producers for more inclusive development, and developing and exploiting demand at local, regional and global markets, are issues that need to be discussed more intensively at national level.

Vision 2035 seems not thus far to have been translated into concrete action plans, and the implementation of operational plans does not work at a sufficient level. The documents on the Vision and especially on the new growth and employment strategy (DSCE 2009, MINEPAT 2008) reveal a new consciousness about priorities and immediate reform needs, and there is now increasing urgency to implement the action and implementation plans at all government levels. However, the political and economic reform processes in the country have to be broadened and consolidated (Alemazung & Wonkam 2011), as the record of policy reforms in Cameroon is unfavourable. Important also in this context are the Rural Sector Development Strategy (RSDS) of 2007 and the agriculture sector programme (PSAE-*Programme Sectoriel Agriculture-Elevage*) aimed at developing value chains (palm oil, maize, plantain, cassava, rice, onions, fruits and vegetables, dairy, and poultry). RSDS and PSAE should become quickly instruments to remove the obstacles to progress in this process (see UNIDO/RdC 2010, World Bank 2009, MINEPAT 2008, DSCE 2009).

While there has been in Cameroon an increasing awareness about the case for agro-industry and moderate structural changes, there is also a lack of dynamism in the agro-industry sector, changes delayed by late and hesitant reforms, lack of coherence of policy reforms and severe infrastructure bottlenecks. Major impediments to progress include insufficient coverage of key policy factors for agribusiness development, and an incomplete interaction at policy level of the National Vision 2035, the action plans and the implementation steps.

Based on the information provided in the case study, it can be concluded that Cameroon is a "slow transformer", reaching not more than three points out of ten points when judged against the ten criteria of assessment. The country meets at the moment only the three criteria Awareness, Policy Scope, and Translation. It is not envisioned that Cameroon will move up to a medium position in this assessment unless drastic policy and political changes occur.

Ethiopia: Broadening and deepening reforms towards agro-industry and agribusiness development, but still slow transformation.

The study of Ethiopia presents the case for agro-industrial development in a country with a high growth rate, based on a boom in services, and also some progress in agriculture, but with a difficult macroeconomic situation with a high inflation rate and declining government revenues (OECD/AfDB 2010). Volatile agricultural output and an inflation rate which is propelled by food price increases lead to demands for further and quick political action to advance agro-industry. Ethiopia is, in spite of its huge potential, a net importer of agricultural goods/processed agricultural goods. Consolidating the growth process and improving the current account and budget revenue situation demands urgent action towards agricultural and agro-industrial development. In this context the agro-industrial development strategies have to be adjusted and improved as well as the measures for the promotion of agribusiness. The case study is of interest too because Ethiopia has

followed for years an Agricultural Demand-Led Industrialization (ADLI) Strategy, and recently an Agro-Industry Sector Master Plan for Ethiopia was submitted to guide the development of agro-processing in the country by comprehensive, coherent and detailed action (UNIDO/FAO 2009). The Agro-industry Master Plan for Ethiopia complements other master plans; the Development Master Plan for Priority Crops and Livestock (DMPPCL) of the Ministry of Agriculture and Rural Development (MoARD 2004) and the Livestock Development Master Plan (LDMP) Study of 2007 (MoARD 2007) show the intensive sector work that is undertaken, but all these plans await constructive action and quick implementation.

The author argues that it is possible and necessary to increase the Agribusiness/Agriculture Production (AB/AP) ratio for the country, which is currently very low; the fact is that Ethiopia has high economic growth rates and the growth process could be translated into a higher AB/AP ratio with positive effects on poverty reduction, food security, higher exports, higher public revenues, along with new opportunities for entrepreneurship and private investment. The small scale of agro-industry processing firms in Ethiopia requests action in the form of public and private sector initiatives. It is therefore important – as argued in the study – to translate the high growth rates of the country into more dynamic agro-processing industries through specific public strategies and coherent sector support mechanisms as well as by new public-private sector dialogue forums and public-private partnerships. Development of agro-processing industries and promotion of agribusiness can make economic growth in Ethiopia more broad-based, inclusive and sustainable.

The analyses of the dynamics and structure of agro-industries reveal great discrepancies in size of firms, in capacity utilization, in employment intensity, in value addition, and in export intensity. Capacity utilization is directly dependent on the supply of agricultural raw materials so smaller companies can be supported by agro-systems that will enhance and ensure a regular supply of raw materials. New initiatives, such as the Economic Growth Corridors (EGC) initiative, aim at coordinating supply areas of raw materials with the location of processing industries. The logistical requirements for such innovations are however enormous, as the task is to de-concentrate relatively quickly the locations of agro-industries through the support of such new institutions. It is a pity that data on informal sector enterprises are not yet available, but it is estimated that about 98 per cent of the total processed food supply, especially in flour milling, local oil extraction, preparation of spices and cereal snacks, is informal sector firms-based. There are good arguments presented for bringing more production to the areas where the raw materials are produced, to support infrastructure in the local producing areas, and to do more for the informal enterprises in food processing.

It is also outlined that ADLI is an interesting concept for countries like Ethiopia, but needs some adaptation of objectives and instruments, an updating of programme elements, and complementation so as to be able to incorporate the new trends in technology development, value chain development, and in the development of demand at global, regional and local markets. The generation of technological dynamics in agro-industry is especially an issue for Ethiopia; the national innovation systems have to be developed so as to incorporate the specific issues of an agriculture-based economy. However, a more systematic and coherent approach towards trade and competition will be necessary to stimulate pro-trade activities and to eliminate anti-competitive measures in the country. The issue of control of economic power in Ethiopia is considered, as competition laws and the regulation of markets are important for the survival of small producers. Obviously a greater coherence of trade, environment, food security, agricultural and industrial policies, and support measures for SMEs and small farmers is needed and is envisaged by the policymakers; however some of the measures now await implementation. Although the government works on the basis of master plans, the degree of policy coherence has to be improved, as institutional problems still affect the outcome. Furthermore, the implementation of the master plans has to be based on more concrete action plans and implementation plans, reaching also the local government levels. Although the Public Private Sector Dialogue (PPSD) is starting, the

relevance for agribusiness is limited as the representation at sector levels is insufficient. Much more effort is needed to give a solid base for the involvement of the private sector.

Concerning the key policy factors for agribusiness promotion the upgrading of agro-industrial value chains is a priority and the Agro-industry Master Plan will play a role in this effort. Priority commodities are identified for support, but the implementation issues are not clear and details have yet to be clarified. Agriculture-industry links are of great importance, and more fundamental improvements are needed to ensure adequate raw material supplies in quantity and in quality. Marketing of products is poor and organized by small and medium firms or by government companies. Export incentives and other support measures for trade should be carefully evaluated in terms of efficiency, and the quality of institutions has also to be assessed in this area. Despite the advantages of its location, Ethiopia's export volumes are insignificant. New strategies are therefore required to redress this situation. Good Manufacturing Practices are especially a problem for the many informal, small, non-farm rural and urban cottage industries. STI inputs have to be intensified and training/extension/skills systems upgrading is very important. Investment and privatization agencies have to be evaluated against their real institutional performance in promoting foreign and domestic private investment. Numerous sectors in Ethiopia are, however, reserved for domestic private and for state investment, thus presenting a highly restrictive foreign direct investment (FDI) regulatory framework. Interest rates are high, banks demand collateral which many small players cannot provide, and venture capital and other instruments for financing new agribusiness start-ups are at a rudimentary stage. Other innovative proposals, such as Integrated Agri-food Parks and Rural Transformation Centres may play a role in the future.

Ethiopia is rich in both action plans and master plans. The Agro-Industry Master Plan (UNIDO/FAO 2009), commissioned by MoTI/MoARD, is of great importance for the agro-industrial future of Ethiopia, and is even a model for other developing countries. Similarly, the Livestock Development Master Plan Study (MoARD 2007) has great value, but much more is needed. A National Vision for Ethiopia would be important to guide developments and to give long-term objectives to such action plans and master plans. Sector-wise and subsector-wise implementation plans and operational plans are needed. The lack of a vision for guiding strategies, policies, actions and implementation has serious consequences.

There is increasing awareness about the case for agro-industry, but the structural change and dynamic development indicators reveal only some slight changes. The policy is increasingly broadened in scope and made coherent, and the policy factors for the promotion of agribusiness are partly met. The relevance of strategies and action plans at sector level is increasingly accepted as important and implementation issues are more and more considered as central to development of the sector. While the typology used in UNIDO 2009a is focussed more on the level of development, the index used in this study is related more to progress (but not independent from the level of development of AI, AP and AB).

Based on the information in the case study Ethiopia can be considered a "medium transformer" (with five points out of ten based on the ten criteria for assessment). The country meets five criteria (Awareness, Dynamics, Policy Scope, Group One Factors, and Translation). With a constructive implementation of the programs envisaged Ethiopia can defend this position in the years to come and can even advance further.

Kenya: Inadequate progress in reforms towards agro-industry and agribusiness development and insignificant transformation.

The case study of Kenya is of interest because of the huge agro-industry potential with which the country is endowed. Although Kenya has severe growth problems and is highly affected by external shocks (see OECD/AfDB 2010), the development of agro-industry can contribute to less vulnerability of production, and can generate important employment and poverty reduction

effects. There is an increasing awareness about the developmental potential of agro-industry in Kenya (see JICA/MoTI 2007), and the Kenya Vision 2030 even considers the possibility of a globally competitive and prosperous Kenya (see RoK 2007). The stabilizing role of agro-industry in the political and economic system is emphasized as a major factor for Kenya. The potential is not yet used, and the sector is highly vulnerable to raw material supplies. As 33 per cent of manufacturing output is dependent on agriculture output, the linkages between agriculture and industry are important and should be further strengthened.

Compared to other country cases, the degree of internationalisation of the sector in Kenya is much higher as many multinationals are operating there. Because of the low levels of international competitiveness of Kenya's products the theme of the Vision is important and timely. Kenya can benefit from further East African Community (EAC) integration, and Kenyan agro-industries will benefit especially from this process. Kenyan firms have a strong position in these markets, and they also will benefit from the free movement of labour and capital in the region. The relatively advanced communication and transport infrastructure also give Kenya a favourable position (OECD/AfDB 2010). The mixed performance of the agro-industry sector is highlighted in the case study, which is revealed also by the indicators of country performance and of the contribution to GDP and employment. An examination of the agro-industrial production index (AIPI) reveals that vegetable and fruit processing, oil processing, and canning continue to have stable and strongly rising trends, followed by beverages. A problem seems to be the lack of data and statistical evidence from independent sources outside of government. Besides agro-based manufacturing, the agro-industry-related services constitute an important part of Kenya's agribusiness. The low pay for women in important segments of agro-industry is mentioned as a severe distributional problem, so that public intervention is needed to care for these workers. Other distributional problems matter with regards to the agro-industry. A major issue is how to broaden the narrow export basket of Kenya by coherent policies on agricultural and agro-industrial development. Diversification is a major issue for Kenya so as to become less vulnerable in markets and in production. Competitiveness issues are also very important as Kenya is more and more dependent on exports to COMESA markets and the markets of China and India, but has increasing difficulties in exporting to EU markets. However, no workable strategies to address this fundamental issue are apparent.

Obviously economic policy has a strong influence on agro-industry exports and on agro-industry sector developments, as the review in chapter four points out. Strategic frameworks are integrated in the Vision and in other documents. Improving institutional capacity, reviewing the export incentives and the role of the export processing zones, and renewing and extending the infrastructure are key points mentioned. The bad state of local infrastructure and of water supplies creates severe problems as they are crucial to agro-industries advancement. Coordinating much better agricultural and agro-industrial policies on the one hand and policies on agribusiness promotion on the other is seen as important for future development. Improvements of institutional quality for these sectors are now given more priority, as coordination problems affect the working of the institutions and the synchronization of policies and actions. Logistical problems throughout the domestic production and the export marketing chains impact upon the decline of competitiveness. Institutions for the development of PPPs are there, but mutual distrust impedes their working. Kenya is working on creating the environment for such PPPs in the field of agro-industry, rather than focussing on concrete projects. The Micro, Small and Medium Enterprises (MSMEs) Competitiveness Project is intended to promote the creation of PPPs between the public sector and these enterprises, but the achievements of the project are not yet observable. The involvement of large domestic and foreign enterprises would also be important for its success.

From the point of view of the key policy factors, working on the erratic supply of agricultural raw materials is most important for Kenya, but becoming more adaptable and flexible in value chain management and upgrading – by quality, integration and logistical infrastructure investments – is also a priority issue. It is also important to target small producers and processing units to link them

effectively with large buyers and processors, and as well to target those commodities with good prospects in world and new niche markets. Low public commitment on support for improving technological capabilities for small and medium producers is also a major problem. The private sector could also do more; action is not targeted enough on the development and innovative marketing of new products. However, in some cases, as in horticulture agribusiness, the private sector is performing a "doing alone strategy" to overcome the lack of public services and to avoid bureaucratic behaviour of the government (Nyikuli 2008, Steglich *et al*. 2009). There is a gap between national technological effort and firms' innovation success and a gap in terms of institutional support for technology development towards the small scale producers. Gaps matter also in finance between informal finance and microfinance institutions (MFIs) on the one hand and private banking and public finance corporations on the other. An insufficient and partly uncompetitive infrastructure also harms agro-industrial development. Developing and exploiting demand at local, regional and global levels is a huge task for the public and the private sector in Kenya, and a partnership of all important stakeholders is needed.

Although a national vision and master action plans are in place, the translation of the vision into action plans and operational plans for implementation is still a problem in Kenya. Kenya has a vision (RoK 2007) but it is not clear to what extent concrete actions follow and what the respective degree of implementation is. Kenya may be considered – despite the development level – as a "slow transformer" (with only four out of ten points for the ten criteria of assessment). The country meets at the moment four criteria (Awareness, Dynamics, Policy Scope, and Translation). At the moment it remains to be seen if the Kenya Vision can bring about a move to a medium position.

Mali: Broad-based introduction of reforms towards agro-industrial development and agribusiness promotion and slow transformation.

The case of Mali is interesting as the country has stabilized in recent years at rather high growth rates of around 4-5 per cent; inflation is moderate, budget balance is under control, and only the current account situation is recently worsening. Tax revenues are increasing due to reforms in taxation (see OECD/AfDB 2010). Despite rather cautious budget policies, development of productive sectors and initiation of structural changes in the economy have priority. The country clearly remains committed to implementing its plans and programmes, like the Strategic Framework for Growth and Poverty Reduction (SFGPR) and the ten year Social and Health Care Programme (SHCP), but the public finance management programs (PFMP) are also highly relevant. This strategy of keeping along the line pays off.

Given the vast cultivable area and the population distribution over the country, the development of a decentralized and rural-based agro-based industry should have a high priority in Mali in order to make productive use of the available supply of labour, to generate income and employment, to enhance the standard of living, and to slow down migration and urbanization. The case for agro-industrial development is well taken along these lines. Agro-industrial development and the promotion of agribusiness are key factors for accelerating further growth and human development, but also for the diversification of production and exports and a further intensification of global economic integration.

The study on Mali presents evidence on the farming systems and on the particular spatial problems that require specific agricultural and agro-industrial policies adapted to the local conditions. The study also makes it clear that all estimates of the agricultural potential of Mali have to be considered with caution. There is enough evidence to portray the relation between formal and informal enterprises in the country as crucial for the further development of agro-industry. In terms of unit costs Mali compares favourably with other African and even Asian countries. Given these conditions, there is a base for agro-industrial expansion and dynamic exports. International trade is however constrained by transport difficulties, physical barriers and illicit payments. In a dynamic perspective, some export success was achieved with mangoes, fruits, and green beans. Even a

country like Mali could therefore succeed with high growth rates in some products (export "champions") and could also succeed at a certain level in other products ("achievers in adversity"). However, there are also declining sectors like cotton fibre. The strong growth of processed food imports reveals some scope for import substitution, but there are various preconditions necessary to realise this potential. Urban consumers increasingly demand quality products with labels of known agro-industry producers, so some of the preconditions for import substitution are not easily to be met. Some calculations show a positive trend on exports/imports of processed goods, and public and private sectors of Mali could build on this progress.

The potential for foreign investment in Mali's agro-industry is great, and the prospects for a growing involvement of foreign investors and multinational corporations (MNCs) are considerable. Mali could also benefit from large investors from other African countries. The study provides detailed analysis of agro-industry subsectors, all of which have potential for domestic and foreign producers and investors. Investment opportunities are presented for specific products. The six major agro-industrial subsectors in Mali are the cotton processing industry; animal-based industries (dairy, meat, and leather) and fish processing; cereal processing; sugar refining; the processing of fruits, vegetables, and tobacco; and the processing of cashew nuts and shea (karité). A SWOT analysis shows some potential but for realization many further actions have to be taken. There is however an encouraging number of high potential products.

The policies for promoting agro-industries are well taken: privatization policies are contributing to efficiency, competition and to the stabilization of the economy via the public revenues; carefully targeting the subsidies helps to balance the budget; measures of improving the investment climate promote agro-industries and agribusiness; and policies of integrating supply-side and demand-side policies seem to be effective. Awareness is increasing with regards to the role of agro-industries, but serious constraints remain in agro-industries, as recent enterprise surveys highlight.

Recommendations include a further strengthening of the national innovation system, and an adaptation to the agro-based economy of Mali, as being so relevant for an STI base of agro-industrial development and the promotion of agribusiness. So far, there is no integrated strategy visible on the side of the government for proceeding in this direction, and the institutional machinery to pursue this route has yet to be created. For the eight key policy factors that also matter for agribusiness promotion in Mali, choices are required as obviously small-scale firms and farms and a more decentralized promotion of agriculture and agro-industries have advantages. This model of development requires specific support by these eight key policy factors; such a strategy has yet to be further outlined. For the next decade at least, however, the Malian economy cannot be delinked from cotton, its major export product. Therefore, policies have to address the issue of upgrading the cotton value chain in spite of simultaneously searching for alternatives such as in food processing. Targeting of commodities and producers with regards to social inclusion and structural change still needs consideration by policymakers and much effort by the private sector. There are also gaps in technology; supplies of technology are needed at all levels and in all sectors, and there is also a need for a technology appropriate to a more decentralized and agro-based economy. Strengthening innovation systems in Mali at national and at agricultural sector levels is very important, as the interplay of key actors (enterprises, research and extension institutions, intellectual property offices, business support and technology development institutions, finance institutions, and education and training institutions) is very weak. The cooperation between large and small enterprises and between government and the private sector is also insufficient.

In terms of key policy factors, private sector development (PSD) and investment, financing infrastructure, and developing and exploiting demand at local, regional and global markets are the other weak spots. Action plans and policies are needed to address these issues, including operational plans at local government levels. Some concrete actions have been proposed in more recent programmes for Mali (see Diakite 2008), and certain of these programmes have a cross-border

dimension. Making the move from visions and strategies to action plans and then to operational plans for implementation shows huge effort is needed.

Concerning the transformation index, Mali is a "medium transformer" with six points out of ten based on the list of criteria for assessment. The country meets the six criteria Awareness, Dynamics, Policy Scope, Policy Coherence, Group One Factors and Translation. This evaluation is based on the fact of an increasing awareness, increasing scope and coherence of policies, some evidence of structural change in the production system and dynamics in the export basket, and some improvements to key policy factors that matter for agribusiness development; there have been some positive developments in areas such as value chain upgrading and targeting commodities and producers. There are also positive developments in private sector development and infrastructure development. With these programmes being inaugurated and fully developed Mali could stay in this position and even improve on it despite other still unfavourable factors which are impeding agribusiness. Implementation of plans at local levels is still a problem in the country.

Nigeria: Increasing awareness of the need for policy changes towards agro-industrial development and agribusiness promotion but so far very limited transformation.

The case study for Nigeria, as a SANE country, is of great relevance. So far the country has not managed to escape the boom-bust cycle of the economy. Nigeria earns around 80 per cent of its public revenues from oil and the share of oil in exports is around 95 per cent. The whole growth process of Nigeria is dependent on the oil economy. The share of agriculture was 36.5 per cent of GDP in 2009, making this sector the lead sector even relative to oil and gas (which sector had a share of 32.3 per cent), but this move has not changed the basic structure of the economy. The whole political and economic system is dependent on the oil revenues, but the majority of the people live from agriculture just to survive (see OECD/AfDB 2010). Management of public finance and of boom-bust cycles is still weak, and has to be improved in order to advance agro-industry and agribusiness in the country. Infrastructure, institutions, and the system of public resource mobilisation are not adequate to foster agro-based development, and human development indicators are also quite low (OECD/AFDB 2010).

The important case for agro-industrial development is seen in Nigeria, and Nigeria has besides its huge agricultural resources base a great number of enterprises to care for inputs, machinery and services that are needed for agro-industrial development. Additionally, there are master plans in Nigeria on how to improve the situation for the development of agro-industry. However, the concrete progress of agro-industry and agribusiness is unsatisfactory; the gaps between resources and opportunities for agro-industrial development on the one hand and the constraints and weaknesses in the sector on the other are even widening.

The data on exports show that less than three per cent of the total exports are accounted for by non-oil exports; around 80 per cent of this small non-oil export share is agro-based, but around 90 per cent of this is exported in the form of unprocessed agricultural goods. There is no positive trend visible in terms of non-oil exports and processed agricultural goods for export. The agricultural sector and potentially the agro-industry sector play a fundamental role in employment creation, income generation and poverty reduction. Around 60 per cent of the workers in the food and beverages sectors are in the informal sector. So far, any attempts to integrate the informal sector into the formal economy at beneficial terms for enterprises and workers have failed. Non-farm earnings depend extensively on non-farm agro-processing and agribusiness activities, and female labour employment is largely linked to these sectors. There is virtually no section of Nigerian society that is not linked to income sources from agriculture and its related activities. The cross-border trade with neighbouring countries is important for survival earnings and is so far largely unrecorded.

The Nigerian agro-industry is dominated by cocoa, vegetable oil, cassava, breakfast cereals, fish, sugar manufacturing, and livestock industries. The case study analyses all these subsectors in some

detail. It is evident that the potential scale of production in Nigeria is large, despite the small size of the farms and firms producing, and that the potentials in all these subsectors could be used more fully if pro-active policies were applied. Even in terms of equipment, spare parts, inputs for production, and productive services, local Nigerian firms have developed capacities and capabilities which could be used for a higher agricultural and agro-industrial production. It may be important to build up the firms' innovation capacity on the basis of these capabilities. Processing firms in agro-industry could benefit from the great number of firms producing equipment, inputs and productive services; both groups of firms could benefit from the scale of production in agriculture. However, there are major structural problems with cassava, rice, and sugar: in production, innovation, transport handling and logistics, distribution, and marketing. Severe land ownership problems, the low degree of commercialization (not only in agriculture, but also in livestock industry) and problems with the supply of public and commercial services all play a part. In fishing and the fish industry, development plans are there, but implementation is weak so that value addition is very low. The environment for the subsectors of agriculture, forestry, livestock, and fishing is not enabling.

Policies for agro-industrial development have also some handicaps for historical reasons. The highly interventionist policies of the past have interrupted the regular supply of agro-processors with agricultural raw materials. Now there is a new wave in Nigeria of looking at policy coherence towards agro-industries, but the problem is implementing the policies at state and local government levels. There is a long history of inconsistent agricultural development policies at all government levels. To date, the lack of synergy between agricultural production and post-harvest agro-industrial development remains a major drawback for Nigeria's value chain development.

The commodity sector development efforts received a boost in 2004 with the establishment of the six Presidential Initiatives (PIs) on Rice, Vegetable Oil, Sugar, Cassava, Fisheries, and Livestock, respectively. This means, however, that in recent years specific government interventions played a great role, dominating private market development activities. Although these Presidential Initiatives show that the interest in agro-industrial development has reached highest government levels, they are also signs of a continuation of past approaches towards the sector. A great number of public institutions are caring for agriculture and agro-industries, but there are many overlaps in function and severe problems in reaching the small producers.

Because of past and current policies and programmes, agricultural processing and post-harvest activities remain underdeveloped. PPPs play an increasing role, but they may be too much orchestrated by government and not enough influenced by business actors. There are various such schemes: the nucleus estate initiative; the public-private sector agro-industry investments initiative; and the integrated commodity marketing system initiative. Hopefully these initiatives will be developed further towards more market-oriented schemes. Mutual interest-type PPPs are obviously still too weak and largely unimportant. Land acquisition problems, getting access to public services, to subsidized credit, and to infrastructure – which is so important for agro-industrial development and agribusiness – may be the motivations for private business to enter into cooperation with the public sector. It is not so obvious what the interest of the public sector is in cooperating with such deals; it may be that the services supplied by the private sector and the goods produced give public officials a better position in re-election times. It has not yet been evaluated how beneficial all this is for the country. Important also is the fact that the states in Nigeria have different opportunities and that each state enjoys comparative advantages in specific commodities; this is a good basis for an inter-state competition for a better use of resources. The potential for a decentralized system of agro-industrial development is great, but the need for a coordination of such policies at federal levels is clear. The specialization opportunities and possibilities in Nigeria's agro-industries are great, and so far not at all exploited.

A National Innovation System (NIS) could be developed in Nigeria – on the basis of established institutions and the major actors already in place – to the benefit of agro-industrial development

and the entrepreneurs of the agribusiness sector, by linking the major pillars of the NIS (enterprises; R&D institutions; institutions for financing technical innovations; regulatory institutions, standards setting institutions and intellectual property offices; technological development institutions and business support systems; and the education and training infrastructure at all levels of government). So far, the relation among these pillars of the NIS is very weak. Obviously there is in Nigeria an urgent need for the rehabilitation of the technology infrastructure for agro-industrial development, especially of the R&D institutions, intellectual property offices, and technology development institutions. A better targeting of support funds for technology development in the context of agro-industrial development policies is proposed by the author of the case study.

Some measures to promote private sector development (PSD) are undertaken in Nigeria, but it should be made clear that they also have to work at local, provincial and state levels. Tax and export incentives are put in place, but it is not clear how the enterprises respond to these measures. There is also a lack of information on the impact of public and private capital funds and of new forms of finance for making the agro-industry in Nigeria more dynamic. The role of the private finance institutions in particular should be strengthened as they would be nearest to the firms. High costs for transport and logistical services and an erratic supply and high costs of electricity add to the problems for agro-industry, and signify the bad shape of infrastructure in the country. New plans, like for extension of the electricity supply, are there, but the projected implementation is long-term. High potential export crops could be brought to regional and international markets, but a strategy to support such a trade is still lacking. Branding, packaging, STI inputs, human resources development, and capacity building requirements are further issues in realizing such a strategy, and all these tasks put heavy pressure on governments and private sectors. Specialization of agro-industry producers is now demanded even at ECOWAS regional levels. Processors and manufacturers complain loudly about the multiple taxation system and an unfavourable regime of levies in the region, and all these practices raise the cost of production and limit competitiveness of Nigerian entrepreneurs. There is urgent need to review and to streamline the entire tax system in Nigeria and in the ECOWAS region.

The Nigeria Vision 2020 was launched in 2009 and master plans with defined stages for agro-industrial development are there, but operational and implementation plans are largely lacking (see on the Nigeria Vision/NV and on the related Master plans CBN 2007, FRN/NSC 2009, FRN/NSC 2008). Much more public awareness is needed on this nation-wide effort. Three stages of development matter in Nigeria: creating basic requirements, speeding up efficiency improvement, and harnessing export development. De-concentration of agro-industrial zones and of agro-industry clusters – by way of incentives and policies – is also proposed. New forms of cooperation between private and public sectors and actors would be important, but such proposals still await implementation.

The AIAB Transformation Index for Nigeria portrays the situation of a "slow transformer" with only three out of ten points based on the ten criteria for assessment used in this study. The country meets only the three criteria Awareness, Group One Factors, and Translation. When the Nigeria NV is rigorously applied and implemented, Nigeria could move to a medium position, but there are many preconditions for such a development.

Senegal: Increasing awareness about policy changes towards agro-industry and agribusiness development but so far very limited transformation.

The case of Senegal is interesting as the awareness about agro-industrial development has increased quite recently in the country. The country has suffered from the global financial crisis in terms of economic growth. Tax collection and international competitiveness are the key economic problems. Budget and current account imbalances are severe while inflation could be kept under control (OECD/AfDB 2010). Growth is driven by agriculture and the construction sector, while

human development indicators are still unfavourable. High imports of food relative to the exports of food show that the import substitution potential is great (depending however on the respective elasticity of demand). The low level of processing agricultural raw materials signifies a considerable potential for value addition, employment generation, etc. Value chain development for major and strategic crops is seen as a way to create additional benefits from value addition and employment generation, but also to improve international competitiveness.

It is possible to solve the twin problems of budget and current account imbalances by applying rigorously the new strategy of agro-industrial development and agribusiness promotion. Value addition in agro-industries can generate additional tax revenues as well as foreign exchange earnings. The share of agro-industries in manufacturing value added (and also the share of agro-industries in GDP) is considerable, but is not proportional to the opportunities which the country has with its large agricultural resource basis. Detailed analysis in the case study shows that the food industry is dominating strongly the agro-industry; this also means that other agro-based industries are largely neglected in the country although potentials are there.

Trade analysis reveals that the opportunities for agro-industry exports are still untapped. However, there is a considerable potential when looking at the agricultural exports of the country. Tomatoes, beans, mangoes, and watermelons are produced competitively and are exported in unprocessed form to Europe, Asia, and Latin America where they are manufactured into processed foodstuffs. Data on agro-industrial establishments show that some de-industrialization process has taken place over the past decades, and that a new strategy for developing agro-industries may reverse the trend.

The unfavourable economic development of the country and the fact that the abundant resources in agriculture, forestry, fisheries, and livestock are not yet exploited gave signals to policymakers to work on new growth and development initiatives based on agro-industrial development and the promotion of agribusiness. New programmes of the government since 2007 directly address a new growth strategy based on agriculture and agro-industrialization; there is a move towards agro-industry revitalization in the country. The move towards new policies and strategies is also intended to be more inclusive than past policies have been in terms of poverty reduction and employment generation. The agro-industrial market potential for the poorer segments in Senegalese society has therefore also to be assessed carefully, as there is still a trend to look mainly at the urban middle classes when proposing strategies for agro-industry revitalization. The author of the case study gives some directions in this regard.

Agro-industry trade associations in Senegal are regrettably very weak and disorganized and so have not taken the lead in debates on relevant policy formulation. PPPs are weak or in some areas non-existent. However, although the new agro-industrial strategy was already launched in 2007, the results so far with regards to an effective dialogue between government and the private sector and a dynamic and sustainable process of policy change are not encouraging. It is considered as very important to give the private sector a greater role in self-organization and in policy formation.

Some new programmes for agricultural development and some studies on the upgrading of agro-industrial value chains (for promoting processing of fruits, crops, and fish) were inaugurated recently and new projects wait now for implementation and evaluation. The major preconditions for a new agro-industry strategy are reflected by the policymakers, and the programmes should be organized on the basis of the key policy factors that matter. Weaknesses in the implementation of the new strategy have already emerged, and it is not clear how the problems will be solved. A dialogue between policymakers and the private sector may help in this context; major donor agencies have also a role to play.

An effective import substitution has not yet been achieved because of product quality problems and storage constraints at all levels of the production chain; changing this unfavourable situation was a main reason for proposing the new strategy. The examples for agro-industrial value chain development as presented in the case study show the huge potential, but the requirements for

implementation are complex and the foreseeable impacts of chain development on policies and concrete actions are not yet clear. Too many strategic elements of the proposed value chains are not covered, such as with mangoes, dairy products, and fish. Developing value chain for mangoes means that problems of branding, quality testing, marketing, scale, etc. have to be solved. Established preferences for imported dairy products make it very difficult to develop a domestic dairy value chain on a competitive basis with domestic and regional markets being in focus. Again, quality improvements, marketing advances, and branding initiatives for local Senegalese products are key issues that have to be tackled now. With regards to a fish processing value chain, various factors are responsible for the under-utilization of the considerable potential. The case of rice as a strategic crop is also important, and recent value chain analysis shows its importance in the context of an agro-industrial strategy. However, Senegalese interest groups – from the side of importers and some government offices – have so far blocked an increasing domestic production of rice by lobbying for imports (and also of other products being in high import demand).

Targeting commodities and producers is important for a more inclusive agro-industrial development strategy. Although there is a concentration on food industry by agriculture and agro-industry-related programmes and by research and development on food, this was not sufficient to change the bias towards imports of processed food. Non-food agro-industries were largely or completely neglected. Local demand, local markets, value addition, poverty reduction and employment generation potentials are guiding now more so than before the selection of crops for new value chains. Some new value chains are based on the out-grower/contract farmer principle; this business model is also applied in Senegal and it has some advantages in cases where the buyers of farm produce operate in a competitive environment.

While there are some institutions in Senegal which are doing applied research of relevance to agriculture and agro-industry sectors, a National Innovation System does not yet exist. Such a system is not promoted by government; the pillars and actors constituting such a system are not interlinking actively with enterprises. The enterprises depend on these interactions with research, extension and training institutions but also with finance, technology support, intellectual property protection and business advisory institutions in order to advance with their innovations of processes and products.

Innovative financing for agro-industries and agribusiness is still lacking despite various channels for financing in the country. These funding facilities play some role, but Senegal still has the reputation of a country where access to credit is restricted for smaller producers and processors; therefore a greater effort is needed to broaden and to deepen the access to sources of finance, especially for SMEs.

The recent Strategy of Accelerated Growth (SAG) is of relevance for agro-industrial development as three agro-industry clusters (agriculture and agribusiness; textiles and apparel; fish products and fish farming) are covered in the strategy document; the three clusters can be of great relevance for the country if the new development strategy is implemented. The ICT cluster is also important for the sector. The SAG also intends to achieve better support for informal enterprises by integrating them into the formal economy, especially by associating them with the agro-industrial value chains. So far, however, the programmes are not fully operational (see on the importance of implementing these programmes in full in Senegal: CEDEAO *et al*, n. d., Matsumoto-Izadifar 2008, RdS 2007). The SAG is the single largest programme in the history of Senegal (RdS/Primature 2007), but its relevance is not limited to Senegal. It is also mentioned as an example of more recent agro-industrial growth strategies for Africa (see AfDB/CoT/UNECA/AUC/and KIEP 2010). Because of the supply-side measures proposed and the interaction with demand-side management the SAG can definitely help Senegal to exploit new growth and trade opportunities at regional and global markets. Although Senegal does not yet present a full National Vision, the SAG comes near to it in scope and comprehensiveness. The next step is implementation by bringing action plans and operational plans to the stage of execution.

Based on these findings Senegal can be grouped as a "slow transformer" with three out of ten points based on the ten criteria for assessment. The country meets only the three criteria Awareness, Policy Scope, and Translation. The AIAB Transformation Index for Senegal has a low value, but there is potential to advance within few years to a medium position. With the implementation of the SAG and improvement in the eight key policy factors Senegal could move to a medium position, but there are many preconditions for such a move at the level of political processes.

South Africa: Stalled reforms towards agro-industry and agribusiness development at a relatively high level of development and with only limited transformation.

The case of South Africa is revealing. The decline of growth in GDP has negatively affected the transformation of the economy and society, and it is important to strike a balance between objectives such as growth, fiscal sustainability, and low inflation. Budget and current account imbalances are policy problems that have to be addressed (see OECD/AfDB 2010). Agro-industries are negatively affected too by the structural problems of the country (in transport and energy, in skills development and in public services delivery) which have to be addressed urgently. Furthermore, the innovation and financing policies have to be strengthened along the lines proposed (Jafta & Boshoff 2008, Hanekom 2007, RoSA 2008), so as to be able to move to a higher stage of competitiveness. Skills shortages and management problems affect agribusiness development as well as other economic sectors. Tax system changes which would broaden the base for direct taxes are urgently requested (see OECD/AfDB 2010). Despite the advanced development level, the need for reforms and structural changes is nonetheless great.

There is a strong case for agro-industrial development in South Africa. South Africa has a sophisticated industry and a highly productive commercial agriculture sector, but the question is how agro-industrial development and agribusiness promotion can contribute to inclusive development. Increasing unemployment, increasing inequality, high levels of poverty and unfavourable social indicators for segments of the population demand a reorientation of agriculture and of agro-industrial development policies. Development of agro-industry poses different challenges in South Africa than in other African countries; social inclusion of small producers, land reform, empowerment of neglected groups of the population, specialisation of production and development of new and niche products, increasing the efficiency and integration of agro-industrial value chains, improving access to global markets of highly productive value chains are the most important challenges. South Africa has to be pro-active and to introduce measures addressing these issues. Many gaps still exist, and the supply of logistics infrastructure and of other services required for more dynamic agro-industrial value chains is not adequate to the level of development of the country. The equipment, inputs, production and services sectors that are related to agriculture and agro-industries are highly developed in South Africa, but not enough use is made of this endowment in developing communal agriculture and local agro-industries and in upgrading commercial agriculture and modernising export-oriented agro-industries. South Africa could supply much more equipment, inputs, and services for agro-industries and for agricultural production at subregional African level and even at continental African level, and so could contribute to economic transformation, poverty reduction, and value addition.

There is an open debate in South Africa how industrial policy can be used for speeding up agro-industrial development in a more inclusive way, especially by favouring more the labour-intensive and employment-intensive agro-industry sectors than the capital-intensive industrial and mining sectors. In the new Industrial Action Plans (IAPs) specific sectors are earmarked for support. Although agro-processing, clothing and textiles, bio-fuels, and the forestry-related value addition products are earmarked for financial support, the financial resources are allocated disproportionately to automotive products and to textile and clothing sectors. While this one route is on industry policy initiatives, the other route towards agro-industrial development is to strengthen the purchasing power of the low and the middle-class income earners so that – via the

working of demand elasticities – the agro-industry subsectors are directly supported. This route would be associated more directly with poverty-alleviating growth while the first route could favour more export-oriented agro-industries.

Securing the supply of agricultural produce for agro-industries is also an issue in South Africa, as neglect of land reform, lack of support for communal agriculture, and failure to combat inequalities (horizontal and vertical ones) have negatively affected the development of a broad-based agriculture sector; new initiatives could strengthen the capacity of the sector to produce agricultural output. Agro-industrial development also has a human development dimension, specifically a human poverty reduction dimension, as so many of the poor are dependent on agro-industry production for income generation. The case for agro-industrial development is therefore based on various important dimensions: to combat inequalities, to realise broad-based and inclusive growth, and to improve human development factors. On the other hand, agro-industrial development can lead to international competitiveness in a broader basket of export goods, to specialization in manufacturing, and to market growth associated with scale economies.

The deregulation and opening of the economy is considered to be a rather controversial issue from the point of view of agriculture and agro-industrial development; liberalization and deregulation were associated with productivity increases and improvements of international competitiveness for local primary producers, but in reality the prospects for the sectors are not good, and they face many challenges. Such challenges include the tasks of overcoming the lack of skills and the low productivity of the workforce, reducing the high transport costs, and improving an often unreliable transport system. The domestic agricultural sector shows a lack of cohesion and an inability to specialize so as to produce at a clear comparative advantage. A delicate balance between government actions and private sector activities is needed. In principle, government interventions should stay subsidiary to the role the private entrepreneurs should play as the key drivers of agro-industrial development, but in reality the government can support market development and enhance the functioning of markets.

The agro-industry sector in South Africa has a share of ten per cent of the GDP and is able to produce world specialities. Although there was an upward trend in exports for both food and beverages and for paper and wood products between 1988 and 2008 in absolute terms, most apparent is the fact that South Africa has become a net importer of all agro-industrial products in this period. This is true even for food and beverages, a net exporting sector up to the year 2005, which has become a net importing sector in recent years. Despite this trend, textiles, wearing apparel, and footwear production remain the second biggest employer of all the agro-industries in South Africa, with only food and beverages production employing more people in 2008.

The policy approaches of the government towards agro-industries are manifold. There is a special focus on textile and clothing sector support, but there are more defensive public operations applied than future-oriented ones. The lack of investment in R&D is a problem as it would be the most promising offensive route to increase productivity and to enhance competitiveness, to stabilize production and employment and to increase exports in niche and new products. All groups of agro-industry products in South Africa face specific constraints that should be overcome in a country of this technological sophistication. Even in the new agro-industry subsectors with niche potential regulatory barriers prevent success. Various key action programmes have been inaugurated to improve the situation, but there is so far no evidence as to how they are implemented, if they are successful, and what role the public and the private sectors play in terms of their sustainable realisation.

Inequality and unequal development by regions are important in South Africa. Agro-industrial development has the potential to change this spatial distribution of incomes and opportunities in the longer term. Land reform may broaden the access to agricultural land for poor producers, and a new industrial policy towards agro-industry and the demand of the poorer segments of the

population are seen in the case study as chances and opportunities, but the implementation and feasibility of such strategic reorientations require deeper investigation.

The key policy factors for the promotion of agribusiness give a mixed picture. Although the share of processed agricultural goods in exports has increased, the share of agricultural exports in total exports has declined. On the other hand, the respective agriculture import share in total imports has increased. There is a great potential for import substitution provided that South Africa exploits its abundant natural resources and provided that the agricultural and agro-industrial value chains can be made more dynamic and efficient. The competitiveness of some of these chains may be the result of some natural factors, but in other cases it might be due to a variety of historical reasons. The question that arises is whether there is scope for targeting specific value chains in order to reach certain goals, such as stimulating employment and reducing poverty in certain areas. South Africa is the exclusive producer of both Rooibos and Honey bush teas, yet it is estimated in the case study that only five per cent of Rooibos exports and ten per cent of Honey bush exports are packaged in South Africa. It is quite astonishing that measures to make companies benefit along the whole value chain and to increase further the international competitiveness of South African producers of these local teas are not part of a programme for a dynamic tea sector value chain. Chances would be great for developing value chains based on organic agriculture, but the potentials are not at all exploited (TIC/FRIDGE/INR (2008).

Targeting commodities and producers for value addition and social inclusion only makes sense if such actions are based on proper research and development (market research and production-related research). It is not obvious that enough research and development has been done to prepare such an effort. The advantages of targeting certain value chains should be taken but in such a way as not to interfere too much with the normal market mechanisms. Great care is recommended when targeting commodities and producers in South Africa because of difficulties with micro-management. Through more research and development, coupled with sufficient public and private investment into value chain development, it is expected that the ensuing expansion of innovative capacity can improve the harvesting, post-harvesting and value-adding process in the local agricultural and agro-industrial subsectors. Much more could be done for Science, Technology and Innovation (STI) to reach the ambitious targets set in agro-industry plans and action programmes and to meet the expectations of the producers and entrepreneurs. At the South African level of development more emphasis on eco-friendly technologies and bio-related technologies could be expected. Although there is more emphasis on such directions of technology, implementation is delayed (see RoSA 2008). There is also a dilemma between food security objectives and energy security objectives, as utilizing the technological and economic opportunities of bio-fuel production is an obvious option for commercial agriculture, but this route may conflict with a more inclusive development. Policy decisions are therefore needed to balance the interests of certain groups of producers.

A detailed and concrete package of measures and instruments to promote private investment in South Africa's agro-industry is regrettably not becoming visible, and similarly, detailed and concrete public investment plans and initiatives to complement and encourage private sector investments are not really forthcoming.

There is no evidence that innovative financing instruments play a significant role in agricultural development and for agro-industrial development and agribusiness promotion. This also has to do with the dualistic structure of South Africa's agriculture and its agro-industry subsector; commercial farming is based on the use of traditional finance instruments, while for small-scale and communal farming innovative new financing structures have yet to be created and introduced. The understanding of the dualistic structure of the South African agriculture is still weak and presents a task for educationists (Wigley, n. d.).

Concerning market development, it is necessary to analyse recent changes more deeply. There are different trends in the trade of agro-industry products in subregions in Africa and in major global trading areas, and subregional, regional and international trade policy initiatives also impact on the pattern of trade and on the prospects of trade. The regional trade developments in Africa have to be studied carefully, because of the increasing importance of these markets for South Africa (OECD/DC 2008). The regional trade developments in the SADC area are increasingly important for South Africa and have to be studied carefully (see Southern Africa Trust/SAT 2008). There is discussion about a collective food security strategy for the SADC countries, and South Africa can benefit from this. In terms of common raw material sourcing for SADC agro-industries the cooperation among the SADC countries is nowadays forthcoming (UNIDO 2011). The trade relations with COMESA and EAC countries are important for South Africa, and new initiatives are underway to bridge the gaps between SADC, EAC and COMESA. Of very great relevance are the increasing investment flows from South Africa to other African nations in agribusiness, and the full potential is not yet exploited (see OECD/DC 2008). By such investment flows South African agribusiness enterprises can access large regional markets and can export knowledge and services, but they can also export inputs and equipment, and source raw materials.

While South Africa has developed various industrial development plans and key action programmes, there are still severe structural impediments to realising a strategy that favours small producers, labour-intensive agro-industrial production, and a broad-based and inclusive agro-industrial development process. Oligopolistic and non-competitive behaviour at markets, limited government capacity, skills shortages, gaps in innovation policy, unequal economic opportunities at spatial, ethnic, and income levels, land access problems, and many other unsolved issues have to be mentioned and are roadblocks on the move to progress.

Because of all this evidence presented in the case study, it is only possible to group South Africa as a "slow transformer" - with three out of ten points derived from the ten criteria for assessment, despite its huge potential and the achieved level of development. The country meets only the three criteria Dynamics, Policy Scope, and Translation. At a high level of commercialization and development the further progress in the country is obviously quite limited.

Zambia: Broadening and deepening reforms towards agro-industry and agribusiness development and slow transformation.

The case study of Zambia is of great importance as it presents a land-locked and resource-rich country with great agricultural and agro-industrial potentials and opportunities. Zambia has seen remarkable economic growth rates and has done better than projected during and after the global financial crisis (OECD/AfDB 2010). An economic diversification programme was started and has now been implemented by the government of Zambia. Improved fiscal performance adds to the optimistic outlook. Only the inflation record is a problem, but this has been brought under control as budget and current account balances are managed quite well. However, severe constraints to progress – in infrastructure, institutions, policymaking, civil service, energy supply, etc. – still cause concern, but there is action in these fields.

The major case for agro-industrial development in Zambia is economic diversification, but also highly relevant as a case for agro-industrial development is sustainable rural development, with the promotion of non-farm economic activities aimed at reducing rural poverty (as indicators show that these rates are still very high). Also relevant for policymakers as a case for agro-industrial development is the better use of the potentials and opportunities offered by Zambia's plentiful natural resources that could be exploited in a wider regional context. The largely untapped agricultural and water resources give the base for a dynamic agriculture with potentials for agro-industry processing; subregional markets could be supplied, but also the potential for supplying the local markets is increasing, with incomes growing and advances in agro-industrial processing

technologies. A great potential for import substitution of food is there, and the environment is improving such that there is the chance to realise it.

The drastic decline of the manufacturing value added share in GDP in Zambia should be corrected by the new economic diversification programme. Revitalization of manufacturing is underway in Zambia, and the road towards agro-industrialization is visible. Since 1999 high growth rates of agro-industry subsectors can be seen in Zambia, and agro-industry now covers around 96 per cent of total manufacturing activity. This is a good base for further development and specialization in the regional SADC context.

Agro-based non-traditional exports (NTEs) have more than doubled between 2001 and 2007, driven mostly by the expanded production and export of primary agricultural products: tobacco, cotton lint, coffee, and maize. However, agro-processed products accounted for only 26 per cent of the increase. In the last two decades the interest in private-led growth and in agro-industrial development was considerably stimulated through deregulation policies, liberalization policies, and other more direct support policies. It is obvious that agriculture and agro-industry are considerably enhanced by private sector–led growth. However, there are still limits to the effective import substitution of processed agro-industry products because of the insufficient quality of local produce.

The case study reveals intensive cooperation between public and private sector institutions in terms of policy dialogue and policy formation, involving key players in agro-industry and agribusiness. Donor agencies too are involving themselves more and more in institution building and policy formation, insofar as their projects and programmes are affected by such elements. The monitoring and evaluation of projects and programmes is necessarily reorganized by such dialogues between public and private sectors and donor agencies. An impressive list of institutions is presented in the case study, but there may be some overlaps in terms of objectives, functions, working modalities, and implementation schemes. Zambia is obviously using not only a mere privatization strategy, but a strategy to launch effective PPPs on the basis of privatization projects.

National policies in Zambia are increasingly built around and derived from the National Vision 2030, but some sceptical voices raise doubts about the consistency of policies and programmes. There seems to be a compromise between the stated liberalization principles and policies of the government and some highly interventionist, and from time to time ad-hoc, measures. This mix (and the potential lack of consistency) affects agricultural and agro-industrial development policies, as not in all cases are policies and programmes market-driven and private sector-led.

For the various national policy areas coherent frameworks should be derived in the context of the National Vision, but in reality the applied policies and directions are somewhat different; some examples for this divergence are given in the case study, and this policy approach is called an "interventionist liberalized policy". In agriculture policy and in agro-industry policy this is reflected in the currently unpredictable policies and discretionary and restrictive government actions in terms of restrictions, such as export bans and import quotas, and in terms of uncertainties, such as with import tariffs. The argument is that unacceptable levels of price instability should be avoided by such interventions. Public support is increasingly behind poverty reduction programmes, and not for direct support to develop infrastructure and agriculture. Ninety-three per cent of planned public sector expenditure on agriculture was in 2009 earmarked for the poverty reduction programmes, like the Food Reserve Agency (FRA) and the Fertilizer Input Support Programme (FSIP), while for core agriculture sector activities and for related infrastructure only seven per cent was allocated. This is a remarkable figure, showing a huge gap between long-term objectives and short-term actions. However, the political acceptance of policies is kept in mind by the politicians when deciding upon such actions. Major stumbling blocks are also land and competition policies; progress in this regard is slow. Access to land and access to markets for new firms are thus key issues to be tackled.

Analysis of key policy factors shows that there was some progress in sourcing agricultural raw materials, although further support measures are needed. Upgrading of agro-industrial value chains is still constrained by many factors, although contract farming and out-grower schemes play an increasing role (so that small farmers can be involved in competitive markets). There are various programmes in Zambia to involve SMEs into the agro-industry sector activities, and monitoring and evaluating such programmes is increasingly important; it is also possible to connect them to larger agro-industrial production entities.

To achieve accelerated agro-industrial development in Zambia, capacity must be strengthened at three levels: at the micro level (enterprises), at the meso level (sector and business associations), and at the macro level (government agencies and technical institutions). There is demand for action at all three levels, but some progress has been achieved in recent years. A better targeting of producers and commodities by policy and support action is also important. The major subsectors identified within agriculture and agro-processing for targeting include: cotton, tobacco, paprika, coffee, leather products, sugar, oil cakes, essential oils, organic soaps and honey. However, it would be necessary to develop much more concrete policy frameworks for these products and to analyse the potential for inclusive development. STI inputs are increasingly of relevance in modernising and developing further agro-industry in Zambia. Some successes are there, but the level of STI development is largely insufficient. S&T development in Zambia is constrained by inadequate funding, by weak policy implementation, and by misalignment between policy intent and actual resource allocation. Innovation depends on a deeper involvement of enterprises in the context of the national innovation system (NIS). However, a NIS is largely absent in Zambia.

FDI is attracted by a liberal policy framework with some incentives, and there is also interest from the side of Zambian large companies to partner with large foreign agro-industry firms. Innovative financing instruments are more widely used; public and private schemes are supported. Energy policy action is considered as very important, especially so for a further rapid agro-industrial development; in this context more renewable energy projects are requested. Infrastructure policy is very important and a focus has to be given to various groups of producers. Targeting new action towards three groups of farmers is recommended: small scale (traditional) farmers, emerging farmers, and commercial farmers. Specific programmes for these three groups are requested, especially in terms of infrastructure projects and irrigation facilities. There are still imbalances in dealing with the respective demand of these groups of farmers. ICT infrastructure is increasingly used, and extension of facilities is important for dynamic agro-industrial development. Market information systems (Mobile/M market information) for farmers and M-banking devices are increasingly used, and these are reducing transaction costs. Local and subregional market opportunities are increasingly used by Zambian agricultural and agro-industry producers. SADC is a growing market for Zambian products, but the conditions for trading such products in the subregion are highly complex (see SAT 2008), as Zambia is already integrated in the regional food market. Zambia is one of the countries influencing regional price formation of agricultural products and food markets especially when production surpluses are exported to the region (SAT 2008, p.28). Regional food security policies and regional agro-industrial development policies have for all these reasons to be much better synchronized. Zambia is obviously well positioned at regional level for agriculture and agro-industry, and international market options are increasingly open for enterprises in the country.

There are however some institutional coordination problems. The development and implementation of policies affecting agro-industry is the responsibility of a number of ministries and agencies, and some of the specific mandates and some overlapping responsibilities of these institutions have been found to inhibit agribusiness and agro-industrial development. For enhancing agro-industrial development it is definitely necessary – as proposed – to organize the Zambia Development Agency (ZDA) as a one-stop-shop.

Zambia has made progress, although there is a great need to increase productivity in all agro-industry subsectors and to strengthen the competitive position of agribusiness firms. The problems are taken on offensively by policymakers and by agribusiness. A comprehensive export development programme – covering regional and global demand – has to be developed and implemented, and an infrastructure and irrigation development plan would have to be developed to allow a dynamic expansion of the sector. Further action on most of the key policy factors is also needed. There is also the expectation that more consistency in policies would be beneficial.

As a result of all this change in the country Zambia can be considered as a "medium transformer" with six out of ten points according to the ten criteria for assessment. The country meets the six criteria Awareness, Structural Change, Dynamics, Group One Factors, Group Three Factors, and Translation. Much more needs to be done in terms of policy scope and policy coherence as well as in science and technology so as to advance further.

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Annex Table: Agro-industry and Agribusiness Transformation Index (AIABTI)

Category/Country	Cameroon	Ethiopia	Kenya	Mali	Nigeria	Senegal	South Africa	Zambia	Summing Up for Single Category
Awareness	*	*	*	*	*	*		*	7 points
Structural Change								*	1 point
Dynamics		*	*	*			*	*	5 points
Policy Scope	*	*	*	*		*	*		6 points
Policy Coherence				*					1 point
Group One Factors		*		*	*			*	4 points
Group Two Factors									No point
Group Three Factors								*	1 point
Translation	*	*	*	*	*	*	*	*	8 points
Implementation									No point
Summing up for ABAI Transformation Index	3 points	5 points	4 points	6 points	3 points	3 points	3 points	6 points	33 points by countries and by categories

Abbreviations and Acronyms

ADLI	Agricultural Demand Led Industrialization (strategy)
AfDB	African Development Bank
AB	Agri-business
AB/AP	Agribusiness/Agriculture Production ratio
AI	agro-industry
AIPI	agro-industrial production index (for Kenya)
AIABTI	agro-industry agribusiness transformation index
AP	agricultural production
APRM	African Peer Review Mechanism (of NEPAD)
ASGISA	Accelerated and Shared Growth Initiative for South Africa
AU	African Union
AUC	African Union Commission
CAADP	Comprehensive Africa Agriculture Development Programme
CAMEC	Central African Monetary and Economic Cooperation
CBN	Central Bank of Nigeria
CEDEAO	Communaute Economique des Etats de l'Afrique de l'Ouest
CFR	Council on Foreign Relations
COMESA	Common Market for Eastern and Southern Africa
CoT	Committee of Ten (African nations)
CTSE	Comite Technique de Suivi des Programmes Economiques, MINEPAT, Cameroun
DESA	Department of Economic and Social Affairs (of the United Nations Secretariat)
DC	Development Centre (of OECD)
DMPPCL	Development Master Plan for Priority Crops and Livestock (in Ethiopia)
DSCE	Document des Stratégies pour la Croissance et l'Emploi (en Cameroun)
DST	Department of Science and Technology (of South Africa)
EAC	East African Community
ECA	Economic Commission for Africa (UNECA)
ECCAS	Economic Community of Central African States
ECOWAP	Commission de l'Agriculture, l'Environnement et des Ressources en Eau Politique Agricole Regionale
ECOWAS	Economic Community of West African States
EGC	Economic Growth Corridors
EU	European Union
FAAP	Framework for African Agricultural Productivity
FAO	Food and Agriculture Organization
FAFS	Framework for African Food Security
FARA	Forum for Agricultural Research in Africa
FAAP	Framework for African Agricultural Productivity (in Accra, Ghana)
FAFS	Framework for African Food Security
FDI	foreign direct investment
FRA	Food Reserve Agency
FRN	Federal Republic of Nigeria
FRIDGE	Fund for Research into Industrial Development, Growth and Equity, TIC
FSIP	Fertilizer Input Support Programme
GAIF	Global Agro-Industry Forum (in New Delhi)
GCI	Global Competitiveness Index (of World Economic Forum)
GDP	Gross Domestic Product
HDI	Human Development Index
HPI	Human Poverty Index

IAPs	Industrial Action Plans (in South Africa)
ICT	Information, Communication and Telecommunication
IFAD	International Fund for Agricultural Development
INR	Institute for Natural Resources
INTECH	Institute for New Technologies, Maastricht: United Nations University/UNU
JICA	Japan International Cooperation Agency
KIEP	Korea Institute for International Economic Policy
KOAFEC	Korea Africa Economic Cooperation
LDMP	Livestock Development Master Plan (of Ethiopia)
LLDCs	Least Developed Countries
LIC	low income countries
LMC	ower middle income countries
M	Mobile (Services)
MAPSKID	Master Plan Study for Kenyan Industrial Development
MDGs	Millennium Development Goals
MERIT/ UNU	Maastricht Economic and Social Research and Training Centre on Innovation and Technology (of United Nations University)
MFIs	micro finance institutions
MINEPAT	Ministere de l'Economie, de la Planification et de l'Amenagement du Territoire (en Cameroun)
MNCs	multinational corporations
MoARD	Ministry of Agriculture and Rural Development (of Ethiopia)
MoTI	Ministry of Trade and Industry (in Ethiopia)
MoTI	Ministry of Trade and Industry (in Kenya)
MSMEs	Micro, Small and Medium Enterprises (Competitiveness Project in Kenya)
NEPAD	New Partnership for Africa's Development
NESC	National Economic & Social Council (of Kenya)
NIS	National Innovation System
NSC	National Steering Committee (for the Nigeria Vision 2010)
NTEs	non-traditional exports
NV	Nigeria Vision
OECD	Organisation for Economic Cooperation and Development
OECD/DC	Organisation for Economic Cooperation and Development/Development Centre
ONUDI	United Nations Industrial Development Organization/UNIDO
PDDAA	Programme Detaille de Developpement de l'Agriculture Africaine
PFMP	public finance management programs (of Mali)
Pis	Presidential Initiatives
PNIA	Programme National d' Investissement Agricole (in Senegal)
PPSD	Public Private Sector Dialogue
PRMN	Programme de Restructuration et de Mise a Niveau de l'Industrie des Etats membres de l'UEMOA
PPAMNQ	Plan de Mise a Niveau Qualite, Programme Pilote D'Appui A La Mise A Niveau, La Normalisation Et La Qualite Du Cameroun
PPPs	public-private partnerships
PSAE	Programme Sectoriel Agriculture-Elevage (Cameroun)
PSD	private sector development
REC	Regional Economic Community
R&D	Research and Development
RdC	Republique du Cameroun
RdS	Republique du Senegal
RoK	Republic of Kenya
RoSA	Republic of South Africa

RSDS	Rural Sector Development Strategy (in Cameroon)
SADC	Southern Africa Development Community
SAG	trategy of Accelerated Growth (in Senegal)
SANE	South Africa, Algeria, Nigeria, Egypt (country group)
SAT	Southern Africa Trust
SCA	Strategie De Croissance Acceleree (en Senegal)
SMEs	Small and Medium Enterprises
SWOT	Strengths, Weaknesses, Opportunities, Threats (analysis)
TIC	Trade And Industry Chamber
SROEA	Sub Regional Office for Eastern Africa of FAO
SFGPR	Strategic Framework for Growth and Poverty Reduction (of Mali)
SHCP	social and health care programme (of Mali)
SMEs	Small and medium enterprises
SITC	Standard International Trade Classification
SROEA	Sub Regional Office for Eastern Africa (of FAO)
STI	Science, Technology and Innovation
TIPS	rade & Industrial Policy Strategies (in Pretoria)
TIC	Trade And Industry Chamber (South Africa)
UA	Union Africaine
UEMOA	Union Economique et Monetaire de l'Ouest Africain
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNU	United Nations University
UMC	upper middle income countries
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WEF	World Economic Forum
WB	World Bank
ZDA	Zambia Development Agency

Chapter 2 | Cameroon

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Introduction: The case for agro-industrial development

It is widely recognized that agriculture, in connection with industry, constitutes a competitive value-adding business sector; it has a positive development impact and contributes to a country's economic growth. In Cameroon, agriculture contributes more than half of the country's non-oil export revenues and employs almost 60 per cent of the economically active population (World Bank, 2009). Moreover, agriculture accounts for nearly 20.2 per cent of gross domestic product (GDP) (Kessous & Ekoka, 2008). However, the agricultural producers are the only socio-economic group for which poverty has increased recently. For instance, in 2007, 87 per cent of the poor were rural, up from 82 per cent in 2001. Therefore, with around 80 per cent of the poor living in rural areas (Fambon *et al*. 2000), and given one of the Government's growth and employment creation strategy objectives is to reduce poverty to a socially acceptable level (see DSCE 2009), increasing growth in the agro-industry would play a strategic and pivotal role in poverty reduction in rural areas.

Agro-industrial development depends on a combination of the available potential and on policy choices. Agriculture and agro-industry are important value-adding business sectors, with a highly positive development impact, and with a great contribution to a country's economic growth. In its Vision 2035 Cameroon emphasizes this role. Given that one of the development objectives of the Vision 2035 is to reduce poverty to a socially acceptable level (DSCE 2009), the agro-industry sector can play a strategic role in pro-poor growth strategies. The development of agro-industry can have an important impact on the livelihoods of rural farmers, for example, creating possibilities for income generation and thus representing an important instrument for rural poverty reduction. On the other hand, agro-industrial development can also contribute to broad-based industrialization and to a diversification of the export base.

It is generally accepted that economic growth depends on a combination of opportunities and political as well as policy choices (Collier & O'Connell, 2008). Cameroon has enormous potential for farming, livestock and fishery development alongside immense natural forest resources and considerable scope for the development of hydroelectric power. The distinctive opportunities open to Cameroon are as follows: an abundance of labour (as in most developing countries), land abundance and favourable agricultural potentials,[1] a diversified production and resource base, (i.e. Cameroon produces and exports a broad range of non-oil commodities),[2] and the position of the country as a net oil exporter, etc. In sum, Cameroon is blessed with a diversity of soils and weather patterns, high quality pasture land in the highlands and many areas suitable for fish farming. There is an enormous potential for both food crops and cash crops (cocoa, coffee, cotton, rubber, sugar cane, tea and palm oil) as well as for livestock and fisheries. Yet although an estimated 9.2 million hectares out of a total land mass of 47 million hectares are suitable for agriculture, only 1.8 million

[1] Cameroon has an area of 475,000 km^2. The agricultural area represents on average 19 per cent of the total area use while the forest area represents 77 per cent of the total area use (Kobou *et al*. 2008).

[2] They include both natural resources and agricultural products, e.g. aluminum, cocoa, coffee, cotton, natural rubber, wood, etc. For instance, with a forest area of 17.5 million ha and an industrial round wood export volume of 1.28 million m^3, Cameroon is among the world's top five exporters of tropical logs (Wunder, 2005, p.70).

hectares, 26 per cent of the available arable land, are used for agriculture. The country also boasts immense natural forest resources covering an area of almost 20 million hectares with more than 300 tree species (Njikam, 2008), and Cameroon is one of the world's top five exporters of tropical logs (Wunder, 2005).

In the face of these opportunities Cameroon followed two main development strategies: interventionist policies, with the state playing a dominant role in the production from political independence in 1960 until the mid-1980s, and market-oriented policies since the early 1990s. In terms of political system, the country followed a single party system in the period 1960-1990 and a multi-party system thereafter. The combination of previous opportunities and choices yielded the following growth outcomes. During the 1960s Cameroon experienced an increase in the economic performance; real GDP *per capita* increased by 0.7 per cent per annum. The 1970s were characterized by an exceptional growth performance; real GDP *per capita* grew by 4.6 per cent per annum. During the 1980s the Cameroonian economy still experienced a positive growth rate, but the level of growth has tended to remain below the previous decade, i.e. real GDP *per capita* grew on average at a rate of 1.44 per cent per year. In the 1990s a slowdown in the economic performance occurred, as real GDP *per capita* declined on average by 1.4 per cent per year. Cameroon's economy has shown a recovery during the recent period 2000-2007, but the level of growth has tended to remain low, and real GDP *per capita* grew at an annual average rate of 1.2 per cent. So, Cameroon's growth performance has not only been below potentials, but has also been very unstable, contrasting with the existence of favourable preconditions, for example, a well diversified resource endowment (see DSCE 2009 & GESP 2003). Careful consideration should be given to the better utilization of this huge potential, and it is an important task to assign agro-industry a more significant role in this effort.

Structure and dynamics of agro-industries

Dynamics of agro-industry subsectors

In the industrial sector (see Table 2.1), the extent of job movements differed substantially across industries and sub-periods. The pre-reform period (1988 – 1993) with highly state interventionist policies was marked by job losses in 8 out of 12 industries, while the remaining sectors recorded gains in their workforce, with the paper-printing subsector leading in gains. It can also be seen that in the post-reform period (1990 – 2001) with broad-based liberalisation policies the growth rates of employment were higher than in the pre-reform period in 6 industries, namely textile and weaving, wood and furniture, chemicals, building materials, mechanical and electrical, and transport equipment.

Table 2.1: Pre-and post-reform trends in Cameroon manufacturing

(annual percentage change, unless otherwise indicated)								
Industry	Number of Firms (in units)		Employment		Real Production		Labour Productivity	
	Pre-reform	Post-reform	Pre-reform	Post-reform	Pre-reform	Post-reform	Pre-reform	Post-reform
Food processing	113	54	12.01	7.44	8.02	11.98	-17.88	4.23
Beverage-tobacco	13	11	-0.97	-6.53	8.48	3.59	-7.58	10.83
Textile-weaving	33	13	-8.25	4.82	-3.26	5.63	5.44	0.78
Wood-furniture	68	35	-24.20	4.15	3.83	0.79	26.88	-3.23
Paper-printing	24	25	16.53	7.10	3.53	10.55	-11.16	3.23
Chemical	20	27	-9.01	2.43	4.55	9.60	14.90	7.01
Rubber-plastic	15	12	-15.13	-23.85	-5.81	4.34	10.99	37.01
Building materials	7	3	-6.09	10.81	7.40	3.53	14.36	-6.56
Metal product	3	6	3.76	-15.74	-0.57	11.33	-4.17	32.13
Mechanical-elect.	37	14	-4.53	0.97	-6.18	5.75	-1.73	4.74
Transport equip.	6	3	-10.36	10.70	-16.74	27.27	-7.12	14.96
Miscellaneous	3	4	2.57	0.56	-6.74	16.48	-9.08	15.83
	Average firm size (in units)							
Food processing	1098	4952						
Beverage-tobacco	5373	1414						
Textile-weaving	778	483						
Wood-furniture	1102	4611						
Paper-printing	1442	848						
Chemical	4700	852						
Rubber-plastic	819	649						
Building materials	617	250						
Metal product	134	225						
Mechanical-elect.	124	309						
Transport equip.	225	963						
Miscellaneous	40	48						

Source: Author's construction using Industry Annual Survey (2005) data of the National Institute of Statistics/NIS.

Notes: [a] Ratio of output to total employment.

The production experience of industries was very mixed. Before trade reform, 9 out of 12 industries recorded a contraction in production, with transport equipment experiencing the largest decline of 16.7 per cent per annum. The remaining industries recorded an expansion in production. With trade reform, all industries experienced rising output, with transport equipment experiencing the largest increase of 27.3 per cent per annum. The labour productivity also varies widely across industries and sub-periods. Five industries experienced increasing output per worker before trade reform, with wood-furniture leading. After trade reform, labour productivity dropped only in two industries, while the remaining industries recorded improvements in labour productivity, with the most dramatic increase of nearly 37 per cent per year occurring in rubber and plastic.

Finally, official figures in Table 2.1 reveal a significant decline – nearly 39.5 per cent – in the number of manufacturing firms following trade liberalisation. Some sectors have almost disappeared. For instance, in textile-weaving and mechanical-electrical products subsectors the number of firms fell by about 60.6 and 62.2 per cent, respectively. As far as the average firm size is concerned, one would expect the size of firms to increase over time as a consequence of trade

liberalisation. The post-reform employment in firms has increased in 5 out of 12 industries, whereas in the remaining sectors there was an unexpected negative change in the size of the average firm.

Agriculture and forestry are Cameroon's leading economic activities, accounting for 20.2 per cent of GDP and providing employment for some 49 per cent of the active population (Kessous & Ekoka, 2008). With 80 per cent of the population living in rural areas and being reliant on agriculture-related activity, and with a high proportion of the rural population living in poverty (Fambon *et al*. 2000), agro-industry is the obvious engine of economic growth, welfare enhancement, and poverty reduction. The so far largely untapped potential can be utilized much better, and the Vision 35 and the new Growth and Employment Creation Strategy (DSCE 2009) are intended as the foundation for this process.

Concerning specifically the agro-industry, which is further disaggregated, the data for the recent period 1993-2003 (see Table 2.2) show that the agro-industrial production has increased on average by 6.1 per cent annually over the period, though with large variations between different subsectors. Indeed, trade liberalization increases foreign competition and makes the least productive industrial enterprises shut down. This competitive elimination raises the average productivity.[3] Output increased in all agro-industrial subsectors, spearheaded by forestry-related industry with growth rates of 10.5 per cent per year in wood, 9.5 per cent in paper, and 6.5 per cent in furniture. There was strong growth also in dairy products, fruit and vegetables (9.9 per cent per year), animal feeds (9 per cent), beverages and sugar (7.5 per cent), and grain mill products (7.1 per cent). Agro-industrial employment increased on average by 4.2 per cent per year, with the strongest expansion being in processed meat and fish (18.3 per cent), followed by dairy products and fruit and vegetables processing (12.1 per cent). However, employment declined in beverages and sugar confectionary and in tobacco.

Table 2.2 also suggests that the labour productivity grew modestly over the period, with value added *per capita* increasing by 0.8 per cent a year. Six subsectors reported increased labour productivity, with cocoa, coffee, tea and sugar confectionery in the lead (13.5 per cent annually), while in eight industries productivity declined over the period, with the steepest fall in processed meats and fish (-13.4 per cent a year). A widely held view is that exporting industries tend to be more productive, possibly because they learn something in the export market that confers a productivity advantage (Helpman, 1997). However, despite the substantial increase in export intensity, the productivity of firms in the wood subsector has declined. This corroborates the findings of Clerides *et al*. (1998) who used productivity and export data from Mexico, Colombia, and Morocco and could not find evidence that exporting improves productivity, as well as the results of Bernard and Jensen (1999) with respect to American manufacturing plants.

In order to know how large or small the subsectors are and how important they are for the economy as a whole, such data are provided; the last two columns in Table 2.2 provide figures for value added by subsector, in both value and percentage terms. The subsector shares of total value added suggest that, at least in quantitative terms, the textile and weaving, wood, grain mill products, furniture, beverage, and processed meat and fish industries dominated the agro-industry during the 1993-2003 period, with textile and weaving leading. Together, they accounted for nearly 74 per cent of agro-industry value added. For the remaining industries we see that the value added share ranges from 1.76 per cent (leather and footwear) to 4.66 per cent (starches and starch products).

Table 2.2: Output, employment and labour productivity, average annual growth rate (%) in Cameroon agro-

[3] See Muendler (2004) among others for an empirical assessment of the competitive elimination process among the Brazilian manufacturers.

industrial subsectors, 1993-2003 (unless otherwise indicated)						
SIC	Description	Output	Employment	Labour Productivity	Value Added	Value Added Share (%)
008	Processed meat and fish	4.4	18.3	-13.4	574	7.4
009	Grain mill products	7.1	3.9	4.3	791	10.3
010	Cocoa, coffee, tea and sugar confectionery	7.5	-10.0	13.5	232	3.0
011	Oleaginous and prepared animal feeds	9.0	0.4	10.3	353	4.6
012	Starches and starch products	5.9	7.8	-4.1	359	4.7
013	Dairy products, processing of fruit and vegetable	9.9	12.1	-0.4	245	3.2
014	Beverage	3.4	-6.5	4.8	575	7.5
015	Tobacco	4.8	-1.9	11.7	211	2.7
016	Textile and weaving	3.7	4.4	-2.3	2199	28.5
017	Leather and footwear	0.7	3.8	-6.2	136	1.8
018	Wood	10.5	8.8	-1.3	797	10.3
028	Furniture	6.7	6.4	1.1	771	10.0
019	Paper and printing	9.5	7.3	-3.0	282	3.7
022	Rubber products	2.1	7.9	-4.1	188	2.4

Source: Author's calculations using annual industrial survey data available at the National Institute of Statistics-NIS.
Note: [a] Expressed in 10^9 constant 1993 CFA francs

Foreign trade in agro-industry products

After achieving independence in 1960, Cameroon embarked on an industrialization strategy based on import-substitution policies. This strategy was marked by the extensive use of quantitative restrictions and controls, high levels of tariff, widespread rent-seeking activities, etc. However, Cameroon failed to industrialize using inward-looking strategies.[4] Since the late 1980s and the early 1990s, policies that reduced the openness to foreign trade have been largely reversed as Cameroon undertook to liberalize its trade regime. Economic theory suggests that benefits of trade liberalization include among others (i) a reduction in static inefficiency arising from resource misallocation and waste, (ii) an enhancement of learning and technological change through opportunities to access intermediate and capital goods embodying modern technologies and so being able to stimulate productivity and exports, (iii) further advantages as liberalized economies are less prone to wasteful rent-seeking activities and are better able to cope with adverse shocks, and (iv) an improved access of domestic producers and consumers to less expensive and higher quality goods from abroad.[5] In sum, there are positive externalities to be gained from participating in foreign trade. For decades, Cameroon has foregone these advantages by overly interventionist and restrictive policies.

Cameroon's main trade policy instrument is the tariff. With the momentum gained by trade liberalization in the mid-1990s, Cameroon's current trade policies and practices are largely

[4] The inward-looking policies were successful in terms of growth rates for almost two decades. For instance, in the period 1961-1979 the average annual sector-wide growth rate was 9.7 per cent (Tybout *et al.*, 1997). However, the Cameroonian industry closed the century with a mixed record. For instance, the contribution of the industrial sector to GDP dropped from 24 per cent in 1993 to 19.7 per cent in 2000 (Ministère du Développement Industriel et Commercial, 2001). There were also, among others, major price distortions, the domination of industry by foreign and public interests, and the underdevelopment of the indigenous private sector.

[5] For a further elaboration see among others Rodrik (1993), Winter (2004) and Legrain (2006).

determined by its participation in the Economic and Monetary Community of Central Africa (CEMAC). To effectively transform free trade into a development opportunity, the Cameroonian Government, through the Growth and Employment Strategy Paper (GESP) 2003, specifically targeted a key challenge for the whole economy, namely increased regional and international trade. However, the achievement of this objective faces considerable constraints that should be adequately addressed, for example: (i) lack of political will among the CEMAC Member States, (ii) poor local production sectors as a means to building a genuine capacity for trade, (iii) non-tariff barriers for intra-regional trade, and (iv) bad governance, etc. To address these constraints, a more active regional integration policy is required.

As far as the post-liberalization period is concerned, Table 2.3 shows that export intensity almost trebled in the agro-industrial sector from 8.1 per cent of output in 1993 to 26.5 per cent ten years later, while the share of imports has barely changed at 11.5 per cent in 2003 (and 10.2 per cent in 1993). However, the crude figures mask the dominance of the wood sector as well as the very different performance in the various subsectors. In fact, in more than half of the subsectors – 8 out of 14 – export intensity has declined, and although there were substantial increases in wood, dairy products and processed fruit and vegetables, in all these cases the increases were occurring from a very low base. Therefore, and in terms of outward-orientation, the figures in Table 2.3 indicate difficulties of most agro-industrial subsectors; their participation in global trade is limited, possibly reflecting weak infrastructure, low levels of technology and know-how, the deficient quality and quantity of exports, and an inability to overcome non-tariff barriers to trade, such as sanitary and phyto-sanitary measures. This is consistent with the view of most observers, for example, Chang *et al*. (2009) who believe that the benefits of trade liberalization depend on the economic and institutional characteristics that enable a country to adjust to the new conditions imposed by international openness.

The wood industry dominates agro-industry trade, with exports accounting for over half of total output in 2003, underlining the industry's exceptionally strong competitiveness position. In contrast, while export intensity in the furniture subsector has increased, the export share of production in 2003 was an infinitesimal 0.3 per cent. In dairy products and processed fruit and vegetables the export intensity has more than doubled to 18 per cent. With the exception of the two subsectors – wood, and dairy, fruit and vegetable processed products – the absolute export figures are only marginal, meaning that reported changes in export intensity are very small. The import share of the agro-industrial production was virtually unchanged over the ten-year period, but the subsectors have experienced divergent trends as there was a decline in imports as a share of output in 10 of the 14 subsectors. In some industries import intensity fell markedly – notably in leather and footwear, grain mill products, and tobacco – but for most of the others, while percentage changes were substantial, in absolute terms the magnitudes were slight.

Given the fact that even large percentage changes in export and import intensity are hardly meaningful for interpretation if manufacturing value added is very small, the annual rates of change in addition to changes over the entire period are also reported. We see that export intensity grew in all subsectors except in furniture. Import intensity increased in 7 out of 14 subsectors, with the tobacco industry leading, and it decreased in the remaining subsectors. The largest decline (-12.95 per cent) occurred in wood.

Table 2.3: Trade orientation in agro-industry, 1993 and 2003

Subsector	Export share				Import share			
	1993	2003	%	Annual	1993	2003	%	Annual

			change	percentage change			change	percentage change
Processed meat and fish	0.05	0.003	-94.43	8.17	0.06	0.059	-8.39	2.33
Grain mill products	0.003	0.0002	-93.70	6.31	0.32	0.22	-31.89	-0.31
Cocoa, coffee, tea and sugar confectionery	0.60	0.49	-18.28	0.40	0.09	0.10	9.99	6.21
Oleaginous and prepared animal feeds	0.10	0.01	-86.55	4.18	0.13	0.04	-64.99	-5.36
Starches and starch products	0.005	0.005	-1.66	8.42	0.003	0.01	318.46	24.39
Dairy products, processing of fruit and vegetable	0.08	0.18	126.30	15.18	0.41	0.34	-16.07	-1.10
Beverage	0.01	0.02	52.08	9.51	0.06	0.06	5.98	3.07
Tobacco	0.05	0.03	-27.19	15.86	0.31	0.10	-69.06	31.79
Textile and weaving	0.09	0.11	24.39	4.09	0.05	0.03	-43.56	-4.26
Leather and footwear	0.04	0.01	-63.26	6.63	0.69	0.18	-73.38	-4.59
Wood	0.10	0.52	435.42	3.14	0.003	0.001	-78.99	-12.95
Furniture	0.001	0.003	277.26	-0.29	0.07	0.03	-57.14	11.42
Paper and printing	0.02	0.01	-31.34	9.62	0.52	0.29	-44.46	-4.67
Rubber products	0.35	0.59	67.98	8.97	0.31	0.42	37.28	4.17
Total	0.08	0.26	228.60	1.86	0.10	0.11	12.7	2.08

Source: Author's calculations using annual industrial survey data available at the National Institute of Statistics/NIS.

In sum, agro-industry in Cameroon is still in its infancy, mostly supplying the domestic market, and to a limited extent also supplying regional markets. To improve the competitiveness of its industrial products in the international market Cameroon could provide, in addition to previous measures, attractive incentives for export promotion, for example, tax rebates against exports, duties drawback systems, export expansion grants to boost non-oil exports, working capital funds to exporters at a concessional rate of interest, and so on. However, the budgetary impact of all these measures has to be studied carefully, as well as the specific impact on incentives to export for entrepreneurs in Cameroon.

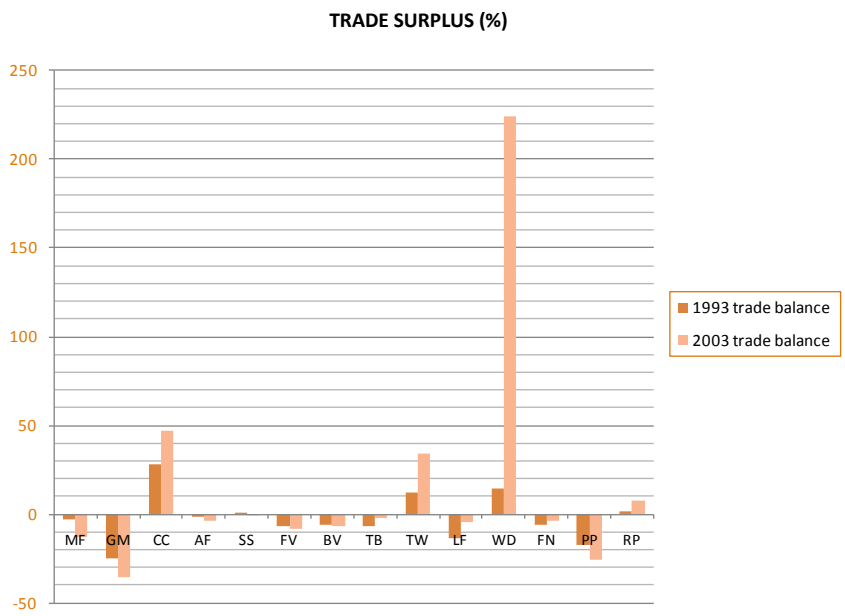
As far as Figure 2.1 is concerned, the agro-industry imports rose faster than the exports in 10 out of 14 subsectors, leading to trade deficits. Indeed, the agro-industry trade balances of all these 10 subsectors were negative in 1993 and 2003. The remaining four subsectors managed to increase their exports in the period 1993-2003, leading to a significant trade surplus, with the wood industry leading. It is necessary to identify the agro-industrial products in which Cameroon has comparative advantages in trade. Trade between Cameroon and its trading partners may be dominated by an inter-industry type, that is, exports and imports are represented by different commodity groups. The inter-industry trade is caused by the differing factor endowments of trading partners, whereby each country tends to export goods whose production requires a high input of factors being relatively abundant in this country (Helpman, 1999).

Contrary to inter-industry trade, the intra-industry trade is an exchange of commodities belonging to the same commodity group. It is driven by product differentiation and economies of scale rather than by factor endowments. Intra-industry trade is usually measured by the Grubel-Lloyd (GL)

1975 indices. In this chapter the extent of intra-industry trade in agro-industrial products is measured for the period between 1993 and 2003.[6]

An examination of the GL indices reported in Table 2.4 suggests the prevalence of inter-industry trade in grain mill products, wood, and paper-printing subsectors. Indeed, the GL indices are close to zero in those subsectors, indicating a complete specialization and that all trade is inter-industry trade.[7] The GL indices increased over the period analyzed for paper and printing products, but declined for grain mill and wood products. The GL indices also reveal that the furniture subsector in 1993 and the processed meat and fish industry in 2003 were characterized by inter-industry specialization.

Figure 2.1: Trade balance for agro-industrial products, 1993 -2003



MF	Processed meat and fish	TB	Tobacco
GM	Grain mill products	TW	Textile and weaving
CC	Cocoa, coffee, tea and sugar confectionery	LF	Leather and footwear
AF	Oleaginous and prepared animal feeds	WD	Wood
SS	Starches and starch products	FN	Furniture
FV	Dairy product, processing of fruit and vegetable	PP	Paper and printing
BV	Beverage	RP	Rubber products

Source: Author's calculations using annual industrial survey data available at the National Institute of Statistics (NIS).

With the GL indices being close to unity the prevalence of intra-industry trade is confirmed in the remaining eleven subsectors, suggesting a greater degree of trade integration. The intra-industry trade was relatively great (in the initial analyzed year of 1993) in five subsectors (processed meat and fish, oleaginous and prepared animal feeds, starches and starch products, textile and weaving, and rubber products), but has deteriorated over time. The patterns over time indicate increased

[6] The Grubel-Lloyd indices were calculated in the following way: $= 1 - \frac{\sum_i |X_i - M_i|}{\sum_i (X_i + M_i)}$, where GL is the Grubel-Lloyd index of intra-industry for a given year, X_i and M_i are respectively the values of exports and imports of product i in the given year. A zero value implies a complete inter-industry trade of the country in commodity i, and the unit value stands for complete intra-industry trade.

[7] A good overview of the relevance of economic theory to explaining the existing patterns of trade is given in Krugman (2000) among others.

intra-industry trade in the remaining six subsectors, with furniture leading. This finding is consistent with theoretical expectations arguing for an increase in the degree of intra-industry trade with trade liberalization.

There is no exact way to measure comparative advantage but export data in the form of Revealed Comparative Advantage (RCA)[8] provide an "after-the-fact" picture of a country or an industry's competitive position. Given the lack of data on the regional exports and imports of agro-industrial products, and besides decomposing total trade flows into inter-industry and intra-industry trade, an approach based on Havlik *et al*. (2001) uses therefore a more concise instrument to analyze agro-industry trade specialization, the so-called revealed comparative advantage (RCA).[9] A positive and high value of RCA for a particular product approximates a high degree of competitiveness of the country in the production of this product. In turn, a strongly negative RCA indicates a lack of competitiveness. Changes in the value of RCA over time can be interpreted accordingly.

Calculations of RCAs in agro-industry trade for the period 1993-2003 allow us to identify the broad areas of comparative advantage of Cameroon (see Table 2.4). The results reveal that Cameroon has a comparative advantage (i.e. a positive RCA value) in cocoa, coffee, tea, sugar, textile and weaving, wood and rubber products industries. It is also worth noting that while in 1993 Cameroon had a comparative advantage in starches and starch products, by 2003 this had become a comparative disadvantage. The picture of comparative advantage also reveals that Cameroon had a comparative disadvantage (a negative RCA value) in the remaining subsectors analyzed.

Comparative advantage is a dynamic concept because a country's ability to produce certain goods changes through time, as do world market conditions. In the light of this, Table 2.4 compares the results for 2003 with those for 1993. The changes in the value of RCA over time indicate an increase in RCA of three subsectors, namely (i) textile and weaving, (ii) wood, and (iii) rubber products. This increase in RCA suggests a successful industrial restructuring in those subsectors.

Table 2.4: Inter-industry, Intra-industry Trade and Revealed Comparative Advantage in

[8] Revealed comparative advantage is a measure of the relative economic performance of a country or industry defined as the country's share of world exports of a particular product divided by its share of total world exports. Where the RCA exceeds unity the country or industry has demonstrated comparative advantage in the production of that product.

[9] Revealed comparative advantage is defined as follows: $RCA_i = \frac{X_i - M_i}{X_i + M_i}$ where RCA_i is revealed comparative advantage of the country in production of product i, X_i and M_i are respectively the values of exports and imports of product i. Given this definition, the RCA can take values between -1 and 1.

Cameroon's Agro-industry, 1993 and 2003							
SIC	Description	Gruber-Lloyd Indices			Revealed Comparative Advantage		
		1993	2003	% change	1993	2003	% change
008	Processed meat and fish	0.838	0.084	-89.98	-0.162	-0.916	463.860
009	Grain mill products	0.018	0.002	-88.89	-0.982	-0.998	1.688
010	Cocoa, coffee, tea and sugar confectionery	0.256	0.33	28.91	0.744	0.670	-9.934
011	Oleaginous and prepared animal feeds	0.874	0.459	-47.48	-0.126	-0.541	329.015
012	Starches and starch products	0.75	0.563	-24.93	0.250	-0.437	-274.85
013	Dairy products, processing of fruit and vegetable	0.322	0.681	111.49	-0.678	-0.319	-53.008
014	Beverage	0.375	0.498	32.8	-0.625	-0.502	-19.622
015	Tobacco	0.266	0.53	99.25	-0.734	-0.470	-35.984
016	Textile and weaving	0.702	0.394	-43.87	0.298	0.606	103.23
017	Leather and footwear	0.104	0.14	34.62	-0.896	-0.860	-4.093
018	Wood	0.064	0.003	-95.31	0.936	0.997	6.530
028	Furniture	0.027	0.216	700.00	-0.973	-0.784	-19.369
019	Paper and printing	0.07	0.086	22.86	-0.930	-0.914	-1.712
022	Rubber products	0.93	0.831	-10.65	0.070	0.169	142.684

Source: Author's calculations using annual industrial survey data available at the National Institute of Statistics-NIS.

However, RCA deteriorated in cocoa, coffee, tea and sugar confectionery, indicating unsuccessful industrial restructuring in these sectors. Moreover, these results could be explained by the combination of structural change and declining competitiveness. It may be that the fall in the RCA indices across a number of agro-industrial subsectors reflects the fact that many indigenous (traditional) subsectors have found it increasingly difficult to compete internationally. On the structural side, the fall in RCA may well be the result of a substantial structural change in the Cameroonian economy over the last decade, including the aftermath of trade liberalization which resulted in the decline of many indigenous (traditional) industries. However, not all industries have suffered – witness the dramatic improvement in the competitive position of the rubber products and textile and weaving industries (Table 2.4).

It is therefore necessary to look beyond these indices towards pro-active policies towards agro-industrial development and towards key policy factors for promoting agribusiness.

Policies for developing agro-industries

Direction of economic strategies

Given Cameroon's considerable endowment in raw materials, trade and industrial policies have been designed to enhance the competitiveness of industry and to boost economic growth through promoting the processing of raw materials. To this end, policies of import substitution and promotion of Small and Medium Enterprises (SMEs) were adopted during the immediate post-independence period. Under the influence of the Singer-Prebisch hypothesis, the import-

substitution policy, pioneered by several development partners, was implemented[10]. A country is said to follow an import substitution strategy when the effective exchange rate on the imports is higher than that on exports. In this case, the incentive structure gives an advantage to producing locally as compared to importing. Due to the intense macroeconomic instability of the 1980s and even the occurrence of negative growth rates, Cameroon has embarked upon a trade reform programme.

The policy of import substitution implemented by way of tariff and fiscal protection measures, special programmes and *ad hoc* non-tariff measures dominated the first three decades after the country's independence in 1960. At the domestic level, there were four individual taxes on imports: the custom duty, the import turnover tax, the fiscal entry duty, and the complementary tax.[11] The custom duty was levied on the cost insurance freight (c.i.f.)[12] value of the imported goods, and was subject to a wide variation (5 to 30 per cent), both across and within sectors and regardless of origin. The import turnover tax was levied at 10 per cent of the c.i.f. value inclusive of custom duty, fiscal entry duty, and the complementary tax. It could be zero for some imported first necessity goods, but sometimes reached 72 per cent of the c.i.f. value for some luxury imports. The fiscal entry duty was a tariff levied on the c.i.f. value of imports whatever the country of origin, at the rate between 5 and 90 per cent. The complementary tax was levied on the *ad valorem* basis at the rate between 0 and 100 per cent.

For the non-tariff barriers (NTBs), an annual 'General Trade Programme' regulated foreign trade and classified goods by tariff lines into four categories: 'sensitive' goods were imported under very restrictive conditions; 'twinned' goods necessitated a prior authorization to import a quantity in proportion to the local purchase; 'government-controlled' goods necessitated a prior authorization to be imported; and the last category were 'freely imported' goods. Other protective measures were the price controls which were based on protected costs of production plus a margin for profit and marketing. Official reference prices were national prices used by the government as a basis for imposing tariffs. They were usually used as a means of combating under-invoicing of imports.

Cameroon's investment code provided for four incentive systems, whereby the benefits depended on the importance of a particular investment to the economy. In addition to these incentives, Cameroon has a number of institutions designed to support investment and to promote private enterprises in the country. There are two groups of such institutions: Financial institutions, such as the National Investment Company, SNI, and Facilitating institutions, such as the Cameroon Chamber of Commerce, Industry and Mineral Resource (CCIM).

Within the CEMAC member states, there were two main taxes: the internal production tax and the unique tax. Enterprises which were registered with the unique tax system were exempted from all taxes and duties within the CEMAC zone. These enterprises paid only a tax called unique tax. However, access to the unique tax regime was very difficult, hence the creation of a domestically administered variant, the internal production tax regime.

In sum, during the 1960s the authorities followed an import substitution policy using a combination of tariff protection and, more importantly, *ad hoc* measures favouring individual firms. These measures included quantitative import restrictions, extensive controls on the domestic

[10] A country is said to follow an import substitution strategy when the effective exchange rate on the imports is higher than that on exports. In this case, the incentive structure gives an advantage to producing locally as compared to importing.

[11] The custom duty, import turnover tax, and the fiscal entry duty were dictated by the CEMAC (Communauté Economique et Monétaire de l'Afrique Centrale) norms, while Cameroon created the complementary tax. In addition to Cameroon, CEMAC comprises the following countries: Central African Republic, Chad, Equatorial Guinea, Gabon, and the Republic of Congo.

[12] C.i.f means that cost, insurance and freight to port of discharge are included in the import price.

credit market, labour legislation that made it difficult to dismiss workers, price controls on domestic commodities, and setting up large-scale firms to serve domestic and regional markets.

In addition to following the previous trade policies, during the next decade (to 1981) the policy of import substitution was broadened with the "Cameroonization" of economic operators and the promotion of SMEs, by extending the range of incentives already in place. To help the National Investment Company (SNI) achieve its goals, the Commission for the Development and Management of Industrial Zones (MAGZI) was established in 1971, charged with developing industrial areas and leasing them to private sector firms. The Centre for Assistance to SMEs (CAPME) was created in 1972, tasked with helping entrepreneurs to establish businesses, while three years later in 1975, the Fund for Securing and Assisting SMEs (FOGAPME) was set up to make loans to SMEs. The National Centre for External Trade (NCET) was created in 1979 to expand exports of manufactured goods by carrying out market research to determine how best to penetrate foreign markets. Simultaneously and paradoxically, the government imposed qualitative and quantitative restrictions that included the annual publication of a 'General Trade Programme'.

Disillusion with this plethora of cascading taxes and the sometimes conflicting policy interventions in the economy resulted in 1988 in the implementation of a structural adjustment programme (SAP). As already noted, the arguments in favour of openness are well known, for example, promotion of the efficient allocation of resources through comparative advantage, dissemination of knowledge and technological progress, promotion of competition in domestic and international markets, and so on. Cameroon has embarked on new strategic orientations and policies.

Trade policy

Trade liberalization first took the form of eliminating non-tariff barriers (NTBs). Therefore, between 1989 and 1993, foreign trade was progressively liberalized with the elimination of NTBs as more and more commodities were placed on the free import list, so that by 1993 almost all quantitative restrictions (QRs) had been abolished. Some "sensitive" imports remained as 'government-controlled' goods for which import licenses were still required, though these were virtually automatic. Price controls and the system of reference prices were abolished.

For tariff barriers, the tariff regime was simplified, with a drastic reduction in the number of lines facing specific tariffs. Exports became more competitive and imports more expensive with the 50 per cent devaluation of the regional currency (the CFA Franc) in January 1994. A new turnover tax was introduced as part of the SAP, accompanied by the reform of government procurement, technical requirement measures, and anti-dumping and competition policies. However, the Competition Act, which has been on the books since July 1998, has not yet been fully implemented, partly because the body responsible for competition policy, the National Competition Commission (NCC), has not yet been established. Similarly, the new legislation on dumping and the marketing of subsidized imports, aimed at compensating for unfair competition while providing protection for local manufacturing, has still to be implemented.

Trade liberalization gained further momentum in 1994 within the regional framework of CEMAC's Regional Fiscal Reform Programme (RFRP). Tariffs were rationalized, and Cameroon's fiscal entry duty was replaced by a custom duty levied on all imports. Import duties ranged from 5 per cent of the c.i.f value for necessities, to 10 per cent for capital goods, 20 per cent for intermediates, and 30 per cent for current consumption goods. There is a Common External Tariff (CET) for trade with third countries, and since 1998 inter-country trade within CEMAC has been duty free. The import turnover tax and the complementary tax were replaced by a turnover tax on all imports as well as all domestic production at three different rates: a zero rate for exempted goods, a reduced rate of 5 per cent, and a normal rate of 12.5 per cent. The internal production tax was abolished while the unique tax was replaced by a Generalized Preferential Tariff (GPT) which was a proportion of the normal customs duty rate.

Agricultural policy

In agriculture too, Cameroon adopted an interventionist stance during the first three decades of independence. At the core of the policy was Cameroon's search for green revolution benefits to be achieved by subsidizing agricultural inputs, such as fertilizer, farm machinery, seeds, credit, and land. Marketing boards were set up to help commercial crop exports, while the prices of both commercial crops for export and of food for domestic consumption were kept artificially low.[13] Government fixed producer prices for basic products, regulated markets, and determined both distribution and profit margins. Furthermore, an export tax was levied on most agricultural products while some import substitutes were subjected to import duties in order to protect local producers. Cocoa, coffee, and cotton prices were fixed each year by Presidential decree on the recommendations of the National Producer Marketing Board (NPMB). In the cocoa and coffee sectors the National Producer Marketing Board imposed fixed margins at each stage of the marketing process, thereby stabilizing prices for producers and exporters and shouldering all the risk.

With the advent of the structural adjustment programme (SAP), the quantitative restrictions (QRs) on imports and exports were abolished and most parastatals were privatized. Export taxes on some agricultural products – cocoa, coffee, cotton, sugar and palm oil – were removed recently, and while there have been some reforms in forestry, export restrictions and taxes still apply to some forestry products.

In the Growth and Employment Strategy Paper (GESP 2003) of the Government of Cameroon, agriculture development features prominently as a way to reduce poverty. Specifically, as the key income generating activity and the main source for economic growth and poverty reduction in rural areas, this document highlights the importance of economic diversification with a strong focus on agricultural development. However, the developments since have shown how difficult changes in the sector are and how severe the poverty situation still is. The development of agriculture faces structural constraints and weaknesses that should have been adequately addressed since then. The Africa Competitiveness Project (ACP) (World Bank 2009) addresses some of these issues, and the new strategy document of the government (DSCE 2009) also argues and works in this direction. These constraints include, among others, difficult access to land, limited access to agricultural inputs (fertilizers, improved seeds, etc.), poor rural infrastructure, weak linkages to markets, and poor access to financial resources. Moreover, supporting the development of the agro-industrial sector is another priority objective in the Government's new growth and employment strategy (see DSCE 2009; MINEPAT, 2008). The key area of the programme consists in removing the main obstacles to the emergence of a second-generation agriculture, that is, a semi-intensive and industrialized agriculture able to ensure food security and self-sufficiency. The strategy specifically targets the following challenges, (i) strengthening producer organizations, (ii) improving rural infrastructures, (iii) increasing producers' access to financing facilities, and (iv) strengthening the market linkages. The agro-industry components of the strategy are emphasized sector by sector (see MINEPAT, 2008).

Infrastructure Policy

Regarding infrastructure endowments, reforms were focused on transport, telecommunications, and energy infrastructure. Transport services include railways and roads, airlines, and sea transport. Responsibility for the road network is shared among the Ministry of Public Works (MoPW), local authorities, users and local associations. These various decision-making levels have led to a fragmentation of the policy and management of road transport. Land traffic is important for transporting intermediate and final goods as well as for the employees for commuting to work.

[13] Food prices were kept low in order to satisfy urban consumers, and especially to please the employers who have to pay wages.

Poor transport networks usually lead to an inappropriate incentive system and to inefficient management, such as, (i) unreliable supply of inputs and goods produced, (ii) waste of time on the road, (iii) decrease in the quantity of transportation services and resultant higher costs of production, (iv) inefficiency in inputs utilization followed by decreases in the producers' productivity, etc. (Winston, 1998).

As indicated in the new Growth and Employment Strategy Paper (DSCE 2009, p. 25), the implementation of the Poverty Reduction Strategic Programme (PRSP) since 2003 (in the frame of the GESP 2003) did not bring about the necessary structural changes in the Cameroonian economy. Two main factors are put forward by way of explanation: the poor competitiveness of the productive sector, and the deficiency of key factor inputs like infrastructure and energy. Indeed, poor infrastructure and the fact that large parts of the country can only be reached with difficulty, is one of the major obstacles to improving the economy's competitiveness. In particular, about 56 per cent of the entire road network, which totals some 50,000 km, is classified as primary roads. Only 12.5 per cent of the primary roads are tarred, while the rest are dirt roads and tracks. The road density in Cameroon is less than 3 km per 1000 inhabitants. Therefore, the agro-industrial development in Cameroon is seriously constrained by poor transport infrastructure. Significant progress is however underway to improve the road links, namely to neighbouring countries and to the road corridor that connects Cameroon's three main ports, Kribi, Limbe, and Douala.

The railway system, formerly the Régie Nationale des Chemins de Fer du Cameroun (REGIFERCAM), has been privatized and is now operated as a private sector monopoly, CAMRAIL, which, the government hoped, would lead to fresh investment and to service improvements. However, there is no guarantee of this given the poor state of the network infrastructure and the operator's monopolistic position. In 1995, Cameroon had a total of 1,007 km of railroad, decreasing (-1.9%) to 988 km by 2003. A rehabilitation project begun in 2003 is expected to improve the safety and efficiency of rail transport.

Maritime transport activities are managed by the Douala Portal Authority which handles 95 per cent of the country's maritime traffic. Unfortunately, operating conditions at Douala port have not been conducive to agro-industrial expansion, the main constraints being inefficient customs clearance and corruption within the customs administration.[14] If the port infrastructure is to play the role envisaged by the Government, Cameroon should focus on providing efficient ports capable of a quick turnaround of vessels and containers, which seems a long way off.

Fixed telephone services are provided by the Cameroon Telecommunication (CAMTEL) while since January 1999, when the market was deregulated, two international private operators, Orange and MTN (Mobile Telephone Network), have boosted connectivity dramatically with the rapid growth of mobile telephony. Indeed, in the late 1990s, the telecommunications policy and the market structure were characterized by two facts: (i) the partial privatization of the state monopoly in the fixed line segment, and (ii) the opening up of the mobile and internet market for competition. The mobile phone market is dominated by two private operators, while the partially privatized state-owned operator provides both mobile phone and the fixed line services.

The internet sector is dominated by various private service providers, while the market is regulated by a so-called independent regulatory agency. With the increased liberalization, access to information and communication technology (ICT) increased dramatically in Cameroon. For instance, 'new' ICT such as mobile phones and the internet (and associated applications such as Voice Over Internet Protocol (VOIP) transmitting telephone calls over the internet) have become

[14] According to the US Department of Commerce, 'Customs fraud is endemic in Cameroon and protracted negotiations with customs officers over the value of imported goods that have not been subject to [official customs] valuation are common in Cameroon.' (http://www.amchamcam.org/).

available to growing numbers nationwide. In 2005 and 2007 Cameroon had respectively 15 and 20 internet users per 1,000 people, compared with 3 internet users per 1,000 people in 2000.

The most rapid growth has occurred in mobile phone usage. The number of mobile subscribers (per 1,000 people) increased from 7 in 2000 to 138 in 2005 and to 156 in 2007, while the population covered by mobile telephone increased from 30 per cent in 2000 to 73 per cent in 2005 and then to 86 per cent in 2007 (World Bank, 2008).[15] However, and of relevance to agro-industrial firms, some serious constraints still remain due to the high costs of calls, accessibility problems, and weak management by the regulatory agency.

When the state of the telephone system is rudimentary, communication between firms is limited. The transaction costs of ordering, gathering information, and searching for services are high. Inadequate telecommunication services also lead to inappropriate incentive systems and to inefficient management, such as holding physical conversations that could be handled in moments over a working phone line. The result is the increase in X-inefficiency (Winston, 1998). As the telephone system improves, the costs of doing business fall and output might increase for individual firms in the different sectors of the economy. Telephone infrastructure, by lowering the fixed and variable costs on information acquisition, thus provides significant benefits; their presence allows productive units to produce better. Moreover, the ability to communicate will increase the ability of firms to engage in new productive activities (Leff, 1984). In sum, telecommunication infrastructure provides facilities for communication and saves time, energy, labour, and capital by condensing the time and space required for production, consumption, market activities, government operations, and educational and health services. By reducing inherent delays at various stages of production, the availability of communication allows for improved production efficiency.

Electricity and water are produced and distributed by the Société National d'Electricité (AES/SONEL) and Camerounaise des Eaux (CAMWATER). With the privatization of state monopolies the government established multiple regulatory agencies such as ARSEL (Agence de Régulation du Secteur de l'Electricité) for the electricity sector, and ART (Agence de Régulation des Télécommunications) for the telecommunications industry. However, the powers of government ministries, to whom these regulatory bodies are responsible, overlap with those of the regulatory authorities as well as the National Competition Commission (NCC).

As far as the energy and water production constraints are concerned, the most recent data available show that in the five years to 2000 electricity and water production increased by only 21 per cent and 16 per cent respectively over a five-year period. Such low rates of growth are partly attributable to severe drought, but also to insufficient investment in new facilities and inadequate spending on maintenance. As a result agribusiness growth is constrained by rationing and frequent water and electricity outages. When the state of power infrastructure (electricity and water) is poor, the costs and production techniques are directly affected. Indeed, a poor electricity supply imposes huge costs on the firm arising from idle workers, materials spoilage, lost output, damage to equipment, and restart costs. Similarly, the power outages are one of the major factors in low capacity utilization in industries. Further, in a context of shortage of power and of high utility prices, firms mostly produce their own power by buying generators, thus leading to an increase in the costs of production. Frequent power cuts and voltage fluctuations thus have tangible output consequences since they force industrial establishments to undertake extra investment in generators in order to avoid production losses as well as damage to machinery and equipment. Such extra investments raise industrial costs and make it difficult for domestic industries to compete in price,

[15] Although the number of mobile phone subscribers and internet users is growing, the majority of mobile telephone and internet accounts are concentrated in the urban areas. This is due to the limited, weak or poor telecommunications infrastructure, low levels of computerization outside of the urban areas, and lack of human resources in the rural areas.

facing strong competition following trade liberalization from their foreign counterparts (Lee & Anas, 1996). In sum, power generation shortages carry the risk of disorganization of industrial production.

Although agro-industrial development in Cameroon is still seriously constrained by poor infrastructure (energy, water, transport, internet and all forms of telecommunication) and by weak institutions, bad policies and inappropriate government practices, some correcting action is undertaken and some progress is visible (see DSCE 2009 and MINEPAT 2008).

Institutional frameworks for policies

As stated by Klein and Luu (2003, p. 433), 'Development is no longer regarded as a gradual, inevitable transformation from self-sufficiency to specialization and participation in the division of labour. Instead, progress follows the creation and evolution of institutions that support social and commercial relationships.' Indeed, institutions reduce information costs, encourage capital formation and capital mobility, allow risks to be priced and shared, and otherwise facilitate cooperation (Levine 1997).

Structural reforms notwithstanding, state intervention in the economy is substantial, especially in the form of government prescriptions, decrees, orders and instructions rather than legislation as prescribed in the constitution. The existing judiciary system in Cameroon is complex owing to the coexistence of jurisdictions of modern and traditional law.[16] Moreover, private sector operators are prey to cumbersome bureaucracies – a multiplicity of decision centres and poor cohesion and coordination – along with high levels of corruption and an inefficient judicial system. There are cases that have taken more than a decade to resolve in the courts and legal expenses are high, as a result of which private sector firms are reluctant to use the courts.

The World Bank's Doing Business 2010 Report (Table 2.5) puts Cameroon in a very disturbing position. As far as ease of doing business is concerned, Cameroon is reported to occupy the 171st position out of 183. Other rankings are as follows: starting a business, 174th, dealing with construction permits, 164th, employing workers, 126th, registering property, 143rd, getting credit, 135th, protecting investors, 119th, paying taxes, 170th, trading across borders, 149th, enforcing contracts, 174th, and closing business, 98th. According to "Doing Business," it takes at least 34 days to start a business, 426 days to obtain a construction permit, 93 days to register property, 23 days to trade across borders, 800 days to get contracts through, and 3.2 years to close a business.

The institutional improvement features prominently in the Government Vision of 2035. Particularly, the seventh priority highlights the importance of improving the institutional framework, the administrative management, and the governance system. However, the recently released Doing Business Report for 2011 (World Bank 2010) underscores that Cameroon, while having improved its overall 'ease of going business' ranking, still ranks badly internationally for indicators such as 'paying taxes' and 'enforcing contracts'.

The story is not different on the Transparency International reports, which show Cameroon as still having huge corruption problems. On the basis of the Transparency International's annual index, for the period 2005-09 for instance, the Corruption Perceptions Index (CPIs) in Cameroon stands between 2.2 - 2.4. Since a higher score means less (perceived) corruption, an index of less than 5 points implies that corruption is endemic in Cameroon.

Table 2.5: Cameroon's "Doing Business" Indicators in 2010

[16] The traditional law offers judgments on matters of opposing persons in the same community.

Indicator	Ranking	Indicator	Duration
Doing business	171st	Start a business	34 days
Starting business	174th	Obtain a construction permit	426 days
Dealing with construction permits	164th	Register property	93 days
Employing workers	126th	Trade across borders	23 days
Registering property	143rd	Get contract through	800 days
Getting credit	135th	Close business	3.2 years
Protecting investors	119th	-	-
Paying taxes	170th	-	-
Trading across borders	149th	-	-
Enforcing contracts	174th	-	-
Closing business	98th	-	-

Source: World Bank's "Doing Business Report 2010", Washington D C: World Bank 2009

In sum, and despite ongoing structural reforms to modernize the administration, competitiveness in the Cameroon economy is impeded not only by complex laws and regulations, and ineffective systems for enforcing intellectual property rights, but also by inadequate commercial services, poor physical infrastructure, inefficient local government, and weak information and communication systems.

Public-private sector interaction

Agribusiness development is driven by private enterprise, so strong communication and cooperation between the public and the private sector is essential. The public sector has a crucial role to play in influencing the business environment and providing public goods: infrastructure, education, health, and the rule of law and the protection of property rights. Policy initiatives to attract foreign direct investment (FDI) can expand national access to new agricultural business models and technologies. Public-private sector cooperation can enhance the effectiveness of regulatory frameworks and private sector compliance.

The Cameroonian authorities have taken a number of steps to enhance public-private sector cooperation, most importantly with the establishment of the Competitiveness Committee (CC) in 1997. Its main task was to identify obstacles to firm-level competitiveness in Cameroon and to propose appropriate solutions. An Inter Ministerial Committee (CIESP), an informal framework incorporating private sector representatives, was created to review competitiveness issues and to suggest measures to address them. This was replaced in 2009 by the Cameroon Business Forum (CBF), tasked with overseeing the implementation of reforms designed to improve the business environment. The CBF is a formal body with its own permanent secretariat.

So far, successful examples of PPPs (Private Public Partnerships) in Cameroon's agro-industry are scarce, and such ventures could stimulate further the agribusiness sector in the country.

Key policy factors for promoting agribusiness

Progress in terms of key policy factors is crucial for the increase in productivity of the economy as stated in the 2035 Economic Vision, and especially for the growth of agribusiness in Cameroon.

Boosting agricultural output and productivity

Four main policy thrusts are required:

- Ensure adequate supplies of agricultural raw materials. This is a major challenge given the severity of the constraints to agribusiness development noted above – physical infrastructure, agricultural raw material handling, and distribution and marketing. These constraints explain the country's elevated production cost structure which should be tackled by an ambitious public investment programme, especially in infrastructure.
- Strengthen institutions and administrative coordination. Given that in Cameroon the ministries of Agriculture, Livestock and Fishing, Commerce, Finance, and Industry all have a role to play in fostering agribusiness, boosting agricultural output could encounter delays if these institutions work largely in isolation with little coordination. This risk could be addressed through the implementation, coordination and governance provisions in the implementation arrangements.
- Design and implement a coherent, integrated and well-coordinated agribusiness strategy to support and promote the growth of agribusiness firms at all levels, foster and enhance value chain integration and product specialization, and encourage new enterprises. Policies and institutions are needed also to help integrate the informal sector into the agribusiness mainstream, particularly so in the context of globalization and international competitive pricing. A coherent strategy is essential to encourage investment and to tackle contentious world trade issues. Above all, public service reform is vital if existing dysfunctional input and output markets are to be restructured and the deterioration in the delivery of agricultural services to agribusiness be reversed.
- As market competition increases it is necessary to build competitive agro-industrial firms. It is necessary to enhance productivity in firms with existing technologies or to develop new technologies through the incorporation of foreign components, products and materials. The use of imported raw materials and inputs can be helpful – learning occurs through the incorporation of new intermediate products invented abroad into the local production chain.[17] Simultaneously, producers need to adopt and modify a number of technologies, already widely used in agro-industry in developed economies, such as used for packaging, for pre-processing at farm levels, traceability technologies, for cold stores and value chain participation.

Stimulating private enterprise development and investment

In Cameroon, private sector stakeholders are reluctant to increase investment in the absence of major improvements to the policy and regulatory environment. To exploit the comparative advantage possessed by the agro-industrial sector, the country should set up effective public-private sector partnerships. An overarching strategy for agribusiness development should seek to increase private sector participation in the provision of services that are currently provided by public sectors institutions. At present, public-private partnerships are usually limited in scope and often biased towards the public sector. The envisaged strategy would improve the availability and quality of market information which is often a significant constraint to private sector expansion. This would improve market efficiency and competitiveness by providing easily available and reliable market information. At the same time it will be important to build the capacity of the private sector trainers, of training institutions and of specific service providers that will be able to train entrepreneurs while also helping to improve technical and managerial skills in agribusiness enterprises.

To attract investors (including FDI) and entrepreneurs, it is essential to address shortcomings in the domestic business environment, including policies, institutions, and infrastructure. There may be a case for using special concessions and incentives to enable new investors to acquire suitable

[17] For the existing models of productivity gains from importing see among others Connolly (2003) and Keller (2004).

land at a reasonable cost. At present, government land is mostly allotted for industrial purposes. In future, the government should similarly authorize the allotment of land for agro-industries.

By agglomerating demand – in urban areas and in zones of industrial activity – and by streamlining the supply chain – in areas such as quality, standards, packaging, and pricing – retail chains are key players in the food chain. So-called buyer-driven chains exert great influence on the demand side, and by helping reduce losses and by cutting costs along the supply chain they make a valuable social contribution. To strengthen these crucial links between consumers and producers, the government should foster the development of retail outlets in different parts of the country, possibly by streamlining existing laws governing land allocation.

Upgrading Value Chains

A value chain consists of all value-generating activities, sequential or otherwise, required to produce, deliver and dispose of a commodity (Schmitz 2005). Since Cameroon has a strong agricultural resource base, agro-industry value chains can play a key role in poverty reduction. Agro-industries stimulate demand for domestic-produced agricultural commodities; production of processed foods helps improve food security, and the range of basic consumer goods that are supplied is increased. Opportunities to develop and upgrade value chains could be through:

- Reducing the costs of doing business by increasing the bargaining power of producers, especially small-scale, and improving access to technology, information and capital.
- Promoting farm linkages through effective producer organizations being able to make joint decisions in investment, production and marketing. Value chain development depends on the coordination of farm operations of planting and harvesting with off-farm processing to avoid the threat of post-harvest losses so endemic in Africa.
- Facilitating and strengthening linkages between farmers engaged in agribusiness activities and research and extension providers able to address their specific technology and knowledge needs that could enable them to participate in high value production systems.
- Help build and strengthen links among enterprises and farmers, and between service providers, farmers and entrepreneurs. Where such linkages do exist in Cameroon, they are weak and industry associations focus more on policy lobbying than building alliances and promoting vertical and horizontal integration. Enterprise links with farmers through contracts and vertical integration arrangements also tend to be weak and, in the absence of retail chains, remote from consumers. Service providers to farmers and entrepreneurs tend to work in isolation while those from the public sector are often unable to provide effective services due to lack of funding, bureaucratic obstacles, and the absence of a client- and business-oriented culture.

Crucial to upgrading agro-industrial value chains is an adherence to standards, quality consistency, volume requirements, and timely delivery. These goals can only be attained where the domestic environment – policies, institutions, and infrastructure – is business-friendly. Accordingly and as already stated, value chain upgrading requires an appropriate and effective regulatory framework to align quality and certification requirements for locally produced products with international standards.

Value chain development and upgrading is a function of synergies and governance rules, aimed at achieving higher returns through targeting identified market opportunities. Therefore, the costs of forming linkages need to be minimized to ensure that adequate incentives are created to facilitate the collective approaches necessary to capture value adding opportunities.

Agro-industrial infrastructure

New investment in agro-industry-specific infrastructure, ranging from agro-industrial parks to retail chains for perishable products, technology demonstration centres, warehouses and cold

storage for horticulture produce, is a major priority. Such market infrastructure is a prerequisite for the successful development and upgrading of value chains. In Cameroon additional market yards, storage facilities, distribution centres, and pack houses need to be built to facilitate the movement of agricultural commodities along the supply chain. This should be accompanied by improved management of the existing infrastructure.

Post-harvest technologies – especially storage and transportation facilities – are a major stumbling block to agro-industrial growth in Cameroon. Accordingly, high priority should be given to the creation of supply chain infrastructure and support services for the sector to create modern infrastructure corridors, integrated with appropriate surface transport connections, cold storage facilities, auction centres, and retail chains. To this end land should be made available for activities associated with agricultural produce marketing, as at present in Cameroon there is no provision for land allotment for these activities.

The importance of rural road development for improving transportation and communication cannot be over-emphasized, and increased investment in rural communications should also be accorded high priority. A possible – transitional – solution to power and water supply problems would be to declare agro-food processing a seasonal industry, exempt from the payment of minimum charges for electricity and water during closure periods. However, more important are long-term solutions to these infrastructure problems.

Financing Agribusiness and Agro-industrial Development

A major challenge is how best to access traditional and innovative financing mechanisms (including finance from the Diaspora) for agro-industrial development. A related issue is how to improve access to credit, especially for small-scale farmers and entrepreneurs. Suggested options include the creation of an Agribusiness Support Fund (ASF) to serve farmers, cooperatives and entrepreneurs, and/or matching grant schemes.

The development of financing mechanisms is as likely to follow as to lead economic development. In Cameroon's case investment in basic infrastructure – roads, electricity, water, and telecommunications – should be given priority along with institutional reforms to combat corruption and to reduce the administrative burden on agribusiness. Moreover, and in order to improve the ability of the rural population to participate in their own development and to defend their interests, decentralization initiatives should be rapidly implemented.

Increased investment from abroad in agribusiness, including Diaspora investment and finance inflows, will depend on improved returns on investment in agro-industry which, in turn, will depend upon higher levels of domestic and export demand, improved macroeconomic and sector policies, and a more conducive business climate.

At present, the bulk of agro-enterprises in Cameroon rely on internal sources of funding to finance investment. Since these funds are often inadequate, there is a strong case for government to set up an Agribusiness Support Fund (ASF), to provide matching funds on a grant basis to finance a range of capacity-building services aimed at increasing enterprise productivity and profitability, and to facilitate enterprise start-ups. Agribusiness support funding would also be used for demand-driven research and extension services. This is important as part of a long-term diversification strategy.

Innovative financing schemes for agro-industry enterprises and for agro-industrial value chains are not yet practiced in Cameroon, such as finance by lead firms/organizations of value chains like supermarkets, export organizations, multinational corporations, large domestic companies, and producer organizations. In agriculture there is also a gap in innovative financing. Warehouse receipt systems for agribusiness, microfinance schemes, venture capital schemes, etc. should be developed and used for a dynamic agriculture.

Innovation, technology and capacity building

As indicated in the new Strategic Document for Growth and Employment (DSCE 2009), two broad issues have to be tackled:

- Broadening the country's technological base, innovation capacity and human capabilities for agro-industrial development, and
- Adapting and upgrading technology for processing traditional/indigenous products.

In this context, Cameroon would need to adopt appropriate policies to attract foreign direct investment (FDI). As FDI is the largest source of private finance for developing countries there is intensive competition between regions to attract it. FDI is diverse, so it is useful to distinguish between types of FDI with a view to identifying economic determinants by motive. Three major types of FDI are usually identified as: (i) market-seeking (investment seeking to access large domestic and or regional markets), (ii) efficiency-seeking (investment seeking to specialize and to divide production in line with the comparative advantage of different location; this is often export-oriented FDI), and (iii) resources-seeking (FDI in oil and gas extraction, mining, forestry, agriculture, livestock, and fisheries). FDI into Cameroon is currently concentrated in the latter category. To diversify, Cameroon will increasingly need to attract other types of FDI. Of the two first-mentioned categories, Cameroon needs to focus on attracting efficiency-seeking FDI since the country has the ambition and potential to embark on a structural transformation process in which manufacturing industry is to constitute an engine of future growth. Cameroon has the potential to supply the West African and the Central African markets if the preconditions for direct investment are properly met.

In order to attract efficiency-seeking investments from abroad, the Cameroonian Government could intervene in the following areas:

- *Cost competitiveness.* The ability to provide cost advantage to investors which is determined by the cost of labour, energy, power, transport, finance, and the productivity level achieved; the required action could consist in improving the infrastructure as planned in the long run;
- *Quality*. The ability to provide consistently globally acceptable quality which is determined by the level of technology, labour and staff skills; the action required could be a consistent upgrading of technology levels and skills levels;
- *Business climate*, as determined by the following factors, (i) profitability of firms, (ii) challenges of starting a business, (iii) labour laws, and (iv) incentives; the action required could consist in improving the enabling environment;
- *Political stability*, that is, to provide confidence to investors as determined by the past record and by the perceived future development; the action required could be good governance;
- *Predictability* of the timeframe for incentives, that is, the ability to provide investors with the confidence for making long-term investments as determined by a stable policy framework; the action required could be to legislate on incentives for the long term (10 years);
- *Functioning infrastructure*, that is, the ability to (i) provide a reliable supply of power, fuel, and water, and (ii) to provide roads and an efficient and safe handling of merchandise to and at the ports; the action required could consist in improving the infrastructure as planned in the long term.

In terms of trade, investment and technology flows, Cameroon can improve the level of its multilateral commitments. This would create confidence in the irreversibility of its reforms and render them more credible, thus improving its ability to attract the much wanted foreign investment. Cameroon can improve the level of its multilateral commitments through two principal options for liberalizing its trade regime in a non-preferential way: by unilateral liberalization (reductions in import barriers) and by reciprocal liberalization (in the context of a multilateral round of trade negotiations, which entails in addition to reductions in import barriers,

the binding of many or all tariffs at new lower levels, and the acceptance of new rules, procedures, and disciplines). Cameroon's trading partners can assist its reform efforts by ensuring stable and increased access to their markets, in particular for products of export interest to Cameroon, e.g. agro-industrial products.

Action is required to increase investment in agricultural education, especially at postgraduate level, to replenish Cameroon's greying agricultural research establishment: at the technical levels to produce the large number of well-trained technicians required by modern agriculture and value chains, and at the vocational levels to instil in rural households the basic skills needed to access and master new production technologies. Curricula at teaching institutions should be updated and upgraded to provide appropriate training and skills development for agribusiness. Teaching institutions need also to improve output, quality, uniformity, and continuity of supply, while providing agribusiness training to regional and special area staff. Ministry of Agriculture and Rural Development (MoARD) and Ministry of Trade and Industry (MoTI) agencies and all the offices in the country responsible for alignments with World Trade Organization (WTO) regulations and international product standards need to be restructured and rationalized.

Targeting commodities and producers: combining value addition with social inclusion

A key question for policymakers is which commodities and which groups of producers in the country should be targeted for value addition and social inclusion. Answering this involves an empirical study to determine and to exploit the competitive advantage of targeted agricultural and agro-industrial markets, and to identify agribusiness-oriented livestock interventions which are consistent with the industry's comparative advantage. A second stage is to target policy interventions and resources towards specialization in a range of specific products with comparative advantage. Finally, policymakers should identify and work with farmer groups and processors that have demonstrated the potential to increase production, productivity, processing, and marketing of products with revealed comparative and competitive advantage. However, all this has yet to be done in the context of developing Cameroon's agro-industrial potential while promoting social inclusion in all regions and for all groups of rural households.

Developing and exploiting local, regional and international demand

Although most agro-industrial production is consumed in Cameroon there are some niche market export opportunities in the region. One such opportunity arises from the exchange rate differential between Cameroon and Nigeria whose currency has tended to be overvalued, often substantially so, partly reflecting the 'Dutch Disease' effects of its reliance on oil and gas exports. As a result, Cameroonian exports are relatively cheap in Nigeria and also in other regional 'Dutch Disease' markets, such as Gabon, Equatorial Guinea, and Chad. These exchange rate differentials allied with the domestic bias against agriculture in oil-exporting economies provide agro-industrial export opportunities for Cameroon.

Regional demand for agro-industrial exports from Cameroon could be developed through the following actions:

- Countries in the region need to form strategic partnerships through regional value chains that enhance investment, trade, marketing and food security;
- Promotion of public-private partnerships at regional as well as national levels is needed to capture economies of scale and complementarities of diverse resource endowments, based on comparative and competitive advantages;
- Cameroon's food and agricultural markets are highly fragmented along regional, national, and even local lines; policies to tackle this fragmentation are needed, so as to develop and to manage increased production, transport, storage and marketing of food crops, for example, to invest in

transport infrastructure corridors to link high-potential production zones and major market areas within and across regions;

- Harmonization of regulations concerning agricultural trade, investment, and movement of persons involved in delivering trade-related services is advised;
- Formulating a trade and infrastructure strategy with neighbouring trading partners is important, as proximity and similarity of needs are crucial to expanding and accessing regional markets (Porter 2008).

At national level, appropriate strategies include:

- Aligning national agricultural and trade policies with regional agendas;
- Strengthening national trade and political institutions;
- Improving agricultural productivity and local market access by smallholder farmers and;
- Providing for greater macroeconomic stability and closer national economic policy coordination.

Strategies for developing and exploiting regional and international demand for agro-industrial products include:

- Rationalizing business and financial regulations to allow cross-border linkages of financial markets;
- Eliminating trade and investment barriers;
- Simplifying regulations concerning the transfer of investment funds;
- Simplifying and harmonizing cross-border regulations and documentations, such as the movement of persons involved in delivering trade-related services;
- Establishing modalities for improving regional infrastructure, including transport, energy and communication;
- Standardizing consumer and industrial regulations, such as environmental and safety standards;
- Creating regional institutions, e.g. within the Regional Economic Community (REC) with a view to progressing towards common monetary instruments and eventually one currency;
- Identifying and developing cross-border clusters that have direct dealings with strategic value chains, and;
- Developing a regional marketing strategy.

Further measures could be envisaged for agribusiness exports. These could be promoted by:

- Providing an air cargo complex for perishable products at the different airports from which these products are exported, and
- The provision of financial assistance for exporters, e.g. a freight subsidy.

Good intentions notwithstanding, the political will and the commitment to push the regional integration agenda forward are lacking. Political leadership on this front over the past three decades amply demonstrates the absence of the necessary political commitment to actually implement measures agreed upon at the high-level meetings. The integration agenda has not been effectively pursued because some countries are unwilling to cede powers to a supra-regional body for fear of losing autonomy and sovereignty. Indeed, the Secretariat of the Central African Regional Economic Community (REC) has no legal power to ensure that member countries fulfil their obligations. This is reflected in the constant shifts of deadlines for the removal of trade

barriers and of the obstacles to factor mobility. These implementation problems are the result also of the absence of effective and regionally-agreed central enforcement mechanisms.

Embedded in these problems is the reluctance of many Central African States (CASs) to accept the authority of supra-regional rules so soon after achieving a sovereign status.

A further problem arises from overlapping membership with other RECs, giving rise to frictions and implementation problems, including poor attendance at meetings and conflicts in programme implementation at the national level. In most instances, countries that belong to more than one REC find it very difficult to meet their obligations to the different communities.

The poor and inadequate trade facilitation mechanism (TFM) in the Central African region also constitutes a major impediment to the export of value added products to regional markets. Compounding the problems of inadequate infrastructure are the numerous roadblocks on regional highways, delays at border posts, long and inappropriate customs clearance formalities, and the extreme level of corruption.

Visions, Plans of Action, and Way Forward

It is now high time to translate the Vision of the country into concrete action and implementation plans. The documents *Vision du Cameroun à l'Horizon 2035* and *Document des Stratégies pour la Croissance et l'Emploi (DSCE)* of 2009 for the decade 2010-2019 should be taken as the frame for more concrete action and implementation plans. The elaboration of an action plan*Plan de Mise à Niveau* (PPAMNQ/ Programme Pilote d'Appui à la Mise à Niveau, la Normalisation et la Qualité du Cameroun)is considered as an important step forward; this will be helpful in making concrete implementation steps and so reducing the increasing import dependence of the country on basic food items.

Although considerable progress has been achieved in reforming the trade policy in Cameroon, the agricultural exports are still highly taxed relative to other developing regions. There is therefore an urgent need to shift domestic prices towards export parity prices by removing export taxes and replacing them with other (less distortionary) revenue sources. There is also an urgent need to eliminate major impediments to regional trade by banning arbitrary export restrictions, streamlining border logistics, and harmonizing standards and regulations.

It is equally crucial to permit entrepreneurial farmers to acquire unused land (namely in low population density regions) or to allow land to change hands over time to those who can use it most productively while still protecting the interests of local populations. This will help to create a sufficient raw materials base for agro-industry.

Public investment must be increased in irrigation, roads, energy, telecommunications, overall logistics (especially port infrastructure), and agricultural research. Private investment should be promoted by improving the business climate to facilitate the entry of private seed and agro-processing companies. There is a case, too, for the government to link rural savings-and-loan associations more closely to broader commercial banking systems in order to provide greater financial intermediation and diversification of risks.

Inter-institutional linkages and coordination are also critical for stimulating investment, while facilitating access to credit will help to alleviate one of the critical constraints on agro-industrial development. This can be done on the one hand through direct credit access and on the other through indirect credit access (via increased creditworthiness by, for instance, the use of supply channels as collateral). In particular, efforts need to focus on: (i) improving enterprise creditworthiness and reducing the perceived level of risk faced by financial institutions in lending to agribusiness, and (ii) enhancing the capacity of financial institutions to identify agribusiness

lending opportunities and to appraise and supervise agribusiness loans. In the process of promoting agribusiness for Cameroon's prosperity, the challenges that lie ahead are:

- Land reform: Cameroon has to construct sets of institutions and equitable enforcement structures that will enable smallholders to access land and to engage successfully in profitable commercial agriculture;
- Devising efficient land policies and laws and establishing relatively low-cost mechanisms for the certification of land rights of communities and individuals in communities, and then translating the legal provision into practice;
- Creating space for strong farmer organizations while promoting vigorous private-sector and civil society organizations;
- Building strong and effective institutions to make markets more efficient and less risky;
- Strengthening state-owned banks in agriculture, while helping build self-sustaining rural financial systems with outreach to farm populations;
- Arguably the most important challenge of all relates to the role of the state in providing a conducive enabling environment, that is, a business environment characterized by favourable macroeconomic policies, adequate infrastructure, a strong human capital base, competent government administration, and political stability;
- Develop governance structures and capacities for the state to assume an important facilitating role in the development of a dynamic agro-industrial sector that does not rely on heavy-handed state management and investment, but flows from the interaction of private investors, farmers' organizations, rural communities, and civil society organizations.

The issues of the political will and the commitment of the government to push the agro-industrial development agenda forward have to be linked up with the issues of the economic reform agenda and the regional integration agenda. Political leadership is requested on these issues, but over the past three decades Cameroon has not followed such a future-oriented course. This is amply demonstrated by the absence of the necessary political commitment to actually implement measures agreed upon at the high-level meetings. The regional integration agenda has not been effectively pursued by Cameroon, and this has also affected the economic reform agenda and the agro-industrial development. New policies since 2003 (GESP 2003) and especially new orientations since 2009 – in the context of the Vision 2035 and the Growth and Employment Strategy of 2009 (DSCE 2009) – may now give hope for real changes.

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Abbreviations and Acronyms

AERC	African Economic Research Consortium
AES-SONEL	Société National d'Electricité
ARSEL	Agence de Régulation du Secteur de l'Electricité / Electricity Sector Regulatory Agency
ART	Agence de Régulation des Télécommunications / Agency for the Regulation of Telecommunications
ASF	Agribusiness Support Fund
CAMTEL	Cameroon Telecommunications
CAMWATER	Cameroon Water Utilities Corporation
CAPME	Centre Nationale d'Assistance aux Petites et Moyennes Entreprises / National Centre for Assistance to SMEs
CASs	Central African States
CBF	Cameroon Business Forum
CC	Competitiveness Committee
CCIM	Chambre de Commerce, d'Industrie et des Mines du Cameroun / Cameroon Chamber of Commerce, Industry and Mines
CEE	Countries of Eastern Europe
CESifo	Centre for Economic Studies ifo, München
CEMAC	Communauté Economique et Monétaire de l'Afrique Centrale / Economic and Monetary Community of Central Africa
CET	Common External Tariff
CFA	Communauté Financière Africaine / African Financial Community
CIESP	Comité Interministériel Elargi au Secteur Privé / Interministerial Committee Extended to the Private Sector
c.i.f.	cost, insurance, freight
CPI	Corruption Perceptions Index
CTSE	Comite Technique de Suivi des Programmes Economiques, MINEPAT, Cameroun
DSCE	Document des Stratégies pour la Croissance et l'Emploi (of March 2009 for the period 2010 to 2019)
DSRP	Document de Stratégie de Réduction de la Pauvreté, 2003
FCFA	Francs Communauté Financière Africaine
FDI	Foreign Direct Investment
FOGAPE	Fonds d'Aide et de Garantie des Crédits aux Petites et Moyennes Entreprises / Fund for the Assistance to SMEs
GDP	Gross Domestic Product
GESP	Growth and Employment Strategy Paper (see DSRP of 2003)
GL	Grubel-Lloyd (Index)
GPT	Generalized Preferential Tariff
ICT	Information and Communications Technology
MAGZI	Mission d'Aménagement et de Gestion des Zones Industrielles / Industrial Zones Development and Management Authority
MDIC	Ministère du Développement Industriel et Commercial
MINEPAT	Ministere de l'Economie, de la Planification et de l'Amenagement du Territoire
MoARD	Ministry of Agriculture and Rural Development

MoPW	Ministry of Public Works
MIT	Massachusetts Institute of Technology
MTN	Mobile Telephone Network
NAMA	Non-agricultural Market Access
NBER	National Bureau of Economic Research
NCC	National Competition Commission
NCET	National Centre for External Trade
NIS	National Institute of Statistics
NTB	Non-Tariff Barrier
NPMB	National Producer Marketing Board
PPAMNQ	Plan de Mise à Niveau Qualité, Programme Pilote D'Appui A La Mise A Niveau, La Normalisation Et La Qualité Du Cameroun
PRSP	Poverty Reduction Strategic Programme
QR	Quantitative Restrictions
RCA	Revealed Comparative Advantage
REC	Regional Economic Communities
RFRP	Regional Fiscal Reform Programme
REGIFERCAM	Régie Nationale des Chemins de Fer du Cameroun
SAP	Structural Adjustment Programme
SME	Small and Medium-scale Enterprises
SNI	Société Nationale d'Investissements / National Investment Corporation
TFM	Trade Facilitation Mechanism
VOIP	Voice Over Internet Protocol
WTO	World Trade Organization
WIIW	Wiener Institut für Internationale Wirtschaftsvergleiche

Chapter 3 | Ethiopia

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Introduction: The Case for Agro-industrial Development

Ethiopia is well endowed with natural resources. With a total land area of 110.4 million hectares, of which 13.9 million (12.6 per cent) is arable, and a great variety of climatic conditions and soil types, the country can produce many agricultural commodities. Furthermore, water resources are hardly tapped, meaning that there is great potential for increasing agricultural production under irrigation. In 2008, the population was estimated at 74 million people, with an annual growth rate of 2.6 per cent (Ministry of Finance and Economic Development/MoFED), plentiful labour for agricultural growth as well as a large potential market for agro-industrial output.

Over the decade from 1997/98, Ethiopia's GDP at constant market price showed large annual increases of between 6.1 and 13.6 per cent (apart from 1997/98 and 2001/02) making it Africa's fastest growing non-oil economy (Table 3.1). Agro-industry and agribusiness – the processing and marketing of agricultural production for intermediate and for final consumption – are underdeveloped, with a very low ratio (0.54) of agribusiness to agriculture in terms of contribution to GDP, illustrating that Ethiopia remains a largely agriculture-dependent economy. Typically, as an economy becomes more sophisticated, the agribusiness to agriculture ratio increases so that in the USA agribusiness contributes thirteen times more to GDP than agriculture while in South Africa the comparable figure is four times more.

It is therefore important to translate the high growth rates of the country, through specific public strategies and coherent sector support mechanisms, into more dynamic agro-processing industries. Development of agro-processing industries and promotion of agribusiness can make economic growth in Ethiopia more broad-based, inclusive and sustainable.

Table 3.1: GDP Growth Rate by Sector at Constant Prices (%)

Industry/year	1997/98	1999/00	2001/02	2003/04	2004/05	2005/06	2006/07	2007/08
Agriculture & allied activities	-9.6	3.1	-1.9	16.9	13.5	10.9	9.4	7.5
Crop	-16.7	4.7	-3.7	25.6	19.5	15.0	11.0	8.0
Animal farming	0.5	0.6	0.2	8.0	5.9	4.9	7.9	7.3
Industry	5.2	5.3	8.3	11.6	9.4	10.2	10.2	10.4
Manufacturing	0.1	7.5	1.3	6.6	12.8	10.6	8.3	7.1
Food & beverages	8.2	11.6	-6.0	6.1	8.5	6.9	n/a	n/a
Others	18.6	51.9	109.0	36.6	227.4	71.4	n/a	n/a
Services	3.2	10.4	3.3	6.3	12.8	13.4	13.5	17.0
Distributive services	1.5	6.7	4.1	6.5	15.1	13.5	14.5	14.2
Other services	5.5	13.3	5.3	5.1	9.9	11.4	13.8	17.8
GDP (constant market prices)	**-3.5**	**6.1**	**1.5**	**13.6**	**11.8**	**10.9**	**11.1**	**11.6**

Source: MoFED (2007, 2008)

A vibrant agribusiness sector promotes entrepreneurship, provides capital and services to farmers, raises demand for agricultural products and connects farmers with markets through the handling, processing, marketing and distribution of agricultural products. As a result, employment and income are generated, the productivity and quality of agricultural production are enhanced, and food security and innovation throughout the value chain are improved.

In fact, an increasing agribusiness to agriculture ratio has been shown to be highly correlated with basic measures of socio-economic development such as the Human Development Index (HDI); a low HDI score is directly related to low ratios of agribusiness to agriculture (Wilkinson & Rocha 2008). This relationship is particularly marked in countries with low levels of human development, which are mostly agriculture-based. In addition, catch-up in terms of socio-economic development is highly and positively correlated with output growth that is driven by agriculture and agro-related manufacturing and service activities.

Structure and Dynamics of Agro-industries

Basic information

Agro-industry in Ethiopia is dominated by small-scale operations, with a total of 40,273 registered manufacturing firms (CSA 2006), excluding informal micro- and cottage-scale manufacturing units. A mere 1,244 (three per cent) of the registered businesses fall into the medium-to-large-scale category, but food and beverages is the largest single subsector comprises 30 per cent (381 agribusinesses) in 2006/07 (Table3.2).

Table3.2: Number of Food and Beverage Businesses (2005/06 and 2006/07)

Industrial group	2005/06			2006/07		
	Large- & medium-scale	Small-scale	Totals	Large- & medium-scale	Small-scale	Totals
Meat, fruit & vegetables	8		8	9		9
Edible oils & fats	33	834	867	26	n/a	26
Dairy	3		3	3		3
Grain milling	90	57	147	86	n/a	86
Animal feeds	5		5	1		1
Bakery	160	990	1,150	180	n/a	180
Sugar & confectionery	14	918	932	16	n/a	16
Macaroni & pasta	6		6	9		9
Other food products	16	89	105	13	n/a	13
Spirits	11		11	14		14
Wine	2		2	2		2
Malt & liquor	8		8	9		9
Soft drinks & mineral water	17		17	13		13
Grain milling services		19,744	19,744		n/a	
Totals	373	22,632	23,005	381		381

Source: CSA (2006, 2007a, 2007b)

The great majority of agribusinesses consist of small-scale manufacturing units with less than 10 employees and usually working without power-driven machinery. Table 3.2 shows the predominance of small-scale grain millers, accounting for 86 per cent of the food and beverage subsector. Information from the informal sector is very limited but it can be presumed that many

micro and cottage-scale industries, which serve low-income consumers, operate in grain milling, edible oil milling and baking.

In 2006/07 the key industries among large and medium-scale enterprises in terms of value added were sugar and confectionary, malt and liquor, soft drinks and mineral water, and baked goods (Table 3.3).

Table 3.3: Employment and Value Addition by Large and Medium-Scale Food Agro-industry (2001/02-2006/07)

Subsector	No. Establishments			No. Employees			Value added (ETB million)		
	2001/02	2005/06	2006/07	2001/02	2005/06	2006/07	2001/02	2005/06	2006/07
Food & beverage (total)	239	373	381	28,860	35,892	46,080	1,000	n/a	1,790
Meat, fruit & vegetables	9	8	9	2,231	1,508	2,086	42	n/a	43
Vegetable & animal oils & fats	30	33	26	1,175	1,754	991	12	n/a	28
Dairy products	2	3	3	648	690	760	13	n/a	29
Grain milling	12	14	86	3,601	8,819	3,697	432	n/a	21
Animal feeds	7	8	1	162	3,916	61	204	n/a	2
Bakery	60	90	180	3,926	3,981	6,008	69	n/a	142
Sugar & confectionary	11	16	16	6,916	4,632	19,620	105	n/a	763
Macaroni & pasta	124	160	9	476	5,900	1,427	48	n/a	43
Other food products	4	6	13	809	1,060	1,394	na	n/a	67
Spirits	11	11	14	885	1,070	1,104	25	n/a	35
Wine	9	16	2	534	1,842	510	22	n/a	36
Malt &liquor	1	2	9	3,449	543	4,091	n/a	n/a	438
Soft drinks & mineral water	3	5	13	4,048	176	4,331	1	n/a	143

Source: CSA (2004 and 2008). Note: ETB = Ethiopian Birr; at the 2007/1 exchange rate of 1 US$(USD) = 8.89 Ethiopian Birr (ETB)

In terms of employment, it is also the sugar and confectionary industry which – with nearly 20,000 employees – contributes by far the most among the large- and medium-scale enterprises. It is followed by the bakery (around 6,000 employees), soft drinks and mineral water (4,300), and malt and liquor (4,100) sectors.

In terms of gross value of production (GVP), three groups of food and beverage industries stood out among large- and medium-scale industries in 2006/07: the sugar industry, with more than a third of total food and beverages GVP, the malt and liquor, and soft drinks and mineral water

industries. Among small-scale industries edible oil and fat processing has a high GVP share with 61 per cent in 2005/06, the last year for which figures are available (Table 3.4).

Table 3.4: Gross Value of Production by Food and Beverages Industries (2005/06-2006/07)

Industrial group	Average Gross Value of Production (ETB '000), 2005 - 2007		
	L&M-scale industries	Small-scale industries	Totals
Meat, fruit & vegetables Processing	106,683	0	106,683
Edible oils & fats	148,378	101,468	249,846
Dairy	99,352	0	99,352
Grain milling	520,533	1,453	521,986
Animal feeds	11,284	0	11,284
Bakery	410,782	36,546	447,327
Sugar & sugar confectionery	1,727,747	2,740	1,730,486
Macaroni & spaghetti	212,194	0	212,194
Other food products	315,486	5,595	321,081
Spirits	143,600	0	143,600
Wine	80,081	0	80,081
Malt & liquor	1,245,079	0	1,245,079
Soft drinks & mineral water	654,598	0	654,598
Grain milling services	0	18,616	18,616
Total food & beverages	5,685,795	166,416	5,852,211
Other manufacturing Industries	11,124,854	706,521	11,831,374

Source: CSA (2007a,2007b,and 2008)

Using capacity utilization as an indicator of industrial performance, the best performing agro-industries are found to be the ones with regular supply of raw materials (Table 3.5).

Table 3.5: Capacity Utilization in Food and Beverages Industries by Subsector (2005/06 - 2006/07)

Industrial group	2005/06			2006/07		
	Estimated Gross Value of Production (ETB '000)	Value of Production at full capacity (ETB '000)	Value of Production as per cent full annual capacity	Estimated Gross Value of Production (ETB '000)	Value of Production at full capacity (ETB '000)	Value of Production as per cent full annual capacity
1. Large & medium-scale enterprises	**5,403,839**	**8,198,292**	**65.9**	**5,967,750**	**8,402,727**	**68.99**
Meat, fruit & vegetables processing	61,688	321,283	19.2	151,677	318,653	41.42
Edible oils & fats	176,410	331,100	53.3	120,346	326,731	34.99
Dairy	99,013	128,636	77.0	99,690	117,480	83.12
Grain milling	522,026	1,291,170	40.4	519,040	1,367,418	36.48
Animal feeds	14,893	36,211	41.1	7,675	31,685	15.19
Bakery	379,143	662,890	57.2	442,420	632,106	66.85
Sugar & sugar	1,483,016	1,487,270	99.7	1,972,477	2,027,300	96.41

confectioner						
Macaroni & spaghetti	191,476	458,494	41.8	232,912	396,008	57.76
Other food products	465,563	674,661	69.0	165,408	312,588	51.79
Spirits	137,106	193,215	71.0	150,094	194,398	76.37
Wine	72,212	71,317	101.3	87,949	88,052	98.99
Malt & liquor	1,116,994	1,317,991	84.7	1,373,164	1,626,422	83.21
Soft drinks & mineral water	664,296	1,224,054	54.3	644,899	963,885	61.49
2. Small-scale enterprises	**295,600**	**682,586**	**43.3**			
Edible oils & fats	202,935	510,845	39.7	n/a	n/a	n/a
Grain milling	2,905	12,880	22.6	n/a	n/a	n/a
Bakery	73,091	123,298	59.3	n/a	n/a	n/a
Sugar confectionery	5,479	11,633	47.1	n/a	n/a	n/a
Other food products	11,190	23,930	46.8	n/a	n/a	n/a
Totals	**5,699,439**	**8,821,982**	**64.2**	**5,967,750**	**8,402,727**	**68.99**

Source: CSA (2007a, 2007b, 2008)

Examples include the sugar industry with an integrated local raw material supply system, breweries and wineries that rely on high ratios of imported raw materials, and the dairy industry which has a well-organized system for collecting raw materials. Moreover, because these industries are comparatively large, they are better able to access working capital.

The majority of food processing establishments are under private ownership. Data for 2005/06 indicate that nearly 80 per cent of food and beverage businesses were privately owned, while 11.5 per cent were state-owned and 8.8 per cent under partnerships or other forms of cooperative ownership. In general, state-owned enterprises tend to be significantly larger. In fact, the majority of food and beverage companies with a capitalization above ETB 1 million (US$112,350) are state enterprises, although a number of them – for example, three sugar enterprises, four malt and liquor factories, and two soft drinks and mineral water enterprises – have been offered for privatization.

On the basis of capital invested, the public sector is the major player in the food industry. During the period 2000 to 2006 the number of food and beverage agribusinesses owned by the public sector remained essentially constant (CSA 2006, 2007a). Over the same period, the number of privately-owned companies increased by about 50 per cent from 201 (2000/01) to 330 (2005/06), with particularly strong expansion in the number of privately-owned bakeries and grain mills. This followed the change in government policy after 2001, which encouraged private businesses.

Agro-industry is highly concentrated in three main regions. Fifty-four per cent of large- and medium-scale agro-processing firms are concentrated in Addis Ababa, another 15 per cent in Oromia, and nearly 10 per cent in Amhara. Overall, food manufacturing enterprises are located close to major urban centres, thus benefiting from good infrastructure (transport, telecommunications, and utilities), availability of skilled labour, and access to markets. For most food industries close proximity to raw materials is not a major factor for site selection, except in the case of sugar and malt manufacturers, given demanding delivery schedules, bulk intake, and the risk of damage incurred during long-distance transport.

Going forward, it seems probable that there will be stronger links between the supply of raw materials and the location of processing plants, partly as a result of the recent government Economic Growth Corridors (EGC) initiative, which is one of the strategies of the 2005-2010 Plan for Accelerated and Sustained Development to End Poverty (PASDEP). According to this EGC initiative, new agribusinesses will be located close to areas of raw material supply. The government has identified potential agricultural commodity production zones but faces significant challenges in mobilizing the necessary infrastructure investment and providing the other support services required to make the EGCs a reality.

The bulk of Ethiopia's agro-processed products are retailed locally. Small-scale agro-processing and cottage industries do not have access to modern distribution and retail chains and are therefore restricted to localized distribution and markets. In contrast, large- and medium-scale agro-industries do have access to packaging materials and market outlets such as supermarkets and grocery stores. Some products, like sugar, normally have distribution linkages to national wholesale and retail systems, but for bulky commodities, such as edible oils, retailing is restricted to a limited radius around the production sites and is mainly distributed to urban consumers. The distribution of perishables, such as dairy and meat products, is even more clustered around production sites due to the lack of refrigeration facilities and poor transport.

Although agriculture is the mainstay of the economy, Ethiopia is a net importer of agricultural commodities. In 2007 the country imported crops and livestock products worth $5.749 billion while exporting agricultural goods worth $1.284 billion (FAOSTAT). Agricultural imports include dairy products, vegetables, cereal products, such as flour and malt, animal and vegetable fats and oils, and sugar and sugar confectionary. While most prepared foodstuffs are manufactured locally, consumers often prefer imported products because local supplies are irregular and the quality is poor.

Coffee remains the single most important export commodity but over the last decade Ethiopia has managed to diversify its export portfolio with the emergence and expansion of non-traditional exports, particularly oilseeds, pulses and cut flowers. As a result, the share of non-coffee exports rose from 30 per cent to 64 per cent between 1998 and 2008 (World Bank 2009a). The main other Ethiopian processed food export commodities include dried spices, edible oils and animal feed. Exported volumes, however, are relatively low. For instance, teff flour and '*injera*' bread (a pancake-like bread made of teff flour) are exported to Europe and North America in small quantities, mainly to meet demand from the Ethiopian Diaspora communities. There are further opportunities to export *injera* to Israel and to other Middle Eastern countries.

The main export destinations of Ethiopian products are regional countries, such as Djibouti (edible oils, spices, animal feed) and the Middle East (honey and spices). The Ethiopian government has long recognized the limited performance of trade in processed agricultural products and has therefore designed different export incentives and facilitation programmes to boost export development (see below).

Contribution to manufacturing and value addition

Even though the food agro-industry sector is still in its infancy, the large- and medium-scale food and beverage industry contributed ETB 5.4 billion to the total gross value of production in 2005/06 and nearly ETB 6 billion ($671 million)[18] a year later (see Table 3.4). Of this, sugar and malt accounted for more than half in 2006/7. The value of production contributed by small-scale food processing enterprises in 2005/06 accounted for $34 million, dominated by edible oils and fats, bakeries and grain milling, and these sectors accounted for 94 per cent of the value of production. There are no meaningful figures for the output of informal, micro- and cottage-scale

[18]At the 2007 exchange rate of 1 US$(USD) = 8.89 Ethiopian Birr (ETB)

businesses. Even so, agri-food processing is the most important sector within manufacturing, contributing more than half of manufacturing GDP and 3.4 per cent of total GDP.

As noted above, Ethiopia imports processed foodstuffs on a large scale signalling opportunities for domestic entrepreneurs to expand agri-food processing. In order to achieve this outcome, policymakers are promoting a shift towards "agricultural commercialization" of the production-processing chain in a strategy called 'Agricultural Development Led Industrialization' (ADLI) (see ECOSOC 2007). This strategy envisages value addition for all parts of the network, with a key role for the food industry.

As of 2006/07, the food and beverage sector adds a value of ETB 1,790 million (around $201 million, see Table 3.3 above). The largest contributor – 43 per cent of the total food and beverage sector – is the sugar and confectionary industry, followed by the malt and liquor sector with a share of 24 per cent, and then the bakery and soft drinks and mineral water sectors with a share of 8 per cent each.

Generation of Employment and Income

Agriculture and related activities is by far the main employer of labour accounting for nearly 90 per cent of national employment (Table 3.6). Industrial employment is split almost evenly between large and small business (Table 3.7), with the food and beverage sector accounting for more than 40 per cent of employment in manufacturing. Among small-scale businesses, grain milling services stand out with a share of 86 per cent of all SME food industry employment (Table 3.8).

Table 3.6: Share of Employment by Sector in Ethiopia (1994–2004)

Sector/year	Share by sector (per cent)		
	1994	1999	2004
Agriculture, hunting, forestry & fishing	90.0	89.5	89.7
Manufacturing (large & medium scale)	1.8	1.7	1.8
Food & beverages industries	0.09	0.07	0.05
Other manufacturing industries	1.71	1.63	1.73
Mining & quarrying	0.1	0.1	0.1
Construction	0.3	0.3	0.3
Electricity, gas & water supply	0.1	0.1	0.1
Wholesale, retail trade & catering	4.2	4.1	4.2
Transport & related works	0.6	0.5	0.5
Banking, insurance & business services	0.1	0.1	0.1
Public admin. social, cultural, personal & household services	2.8	3.7	3.3
Totals	100.0	100.0	100.0

Source: CSA (1994, 1999, 2004)

Table 3.7: Employment by the Manufacturing Sector

Industrial group	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
1. Large- & medium-scale businesses						
1.1 Food manufacturing	28,860	30,570	31,359	31,693	35,660	46,080
1.2 Other manufacturing industries	69,276	70,834	74,022	77,457	82,808	88,883
Sub totals	98,136	101,404	105,381	109,150	118,468	134,963
2. Small-scale businesses						
2.1 Food & beverages	n/a	n/a	n/a	n/a	9,108	n/a
2.2 Grain milling services	n/a	n/a	n/a	n/a	58,013	n/a

2.3 Non-food industries	n/a	n/a	n/a	n/a	46,549	n/a
Sub-totals					113,670	
Grand totals	**98,136**	**101,404**	**105,381**	**109,150**	**232,138**	**134,963**

Source: CSA (2007a, 2007b)

Table 3.8: Number of Employees in Food and Beverage Businesses

Industry group (businesses)	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
1. Large & medium- scale	***27,460***	***28,860***	***30,570***	***31,359***	***31,693***	***35,660***	***46,080***
Meat, fruit & vegetables	2,888	2,231	2,208	1,481	1,230	1,508	2,086
Oils & fats	1,342	1,175	1,473	1,256	1,160	1,715	991
Dairy	435	648	627	757	646	689	760
Grain milling	3,324	3,601	3,849	4,587	4,264	3,963	3,697
Animal feeds	178	162	171	238	177	172	61
Bakery	3,616	3,926	4,170	4,190	6,006	5,748	6,008
Sugar & confectionery	6,123	6,916	7,521	6,937	6,794	8,810	19,620
Macaroni & pasta	435	476	566	1,041	1,043	1,058	1,427
Other food products	842	809	957	1,186	1,231	1,841	1,394
Spirits	1,030	885	921	1,180	993	1,065	1,104
Wine	588	534	492	462	345	543	510
Malt & liquor	2,784	3,449	3,345	3,659	3,612	3,916	4,091
Soft drinks & mineral water	3,875	4,048	4,270	4,385	4,192	4,632	4,331
2.Small-scale businesses						***67,121***	
Meat & meat products	n/a	n/a	n/a	n/a	n/a	-	n/a
Edible oils & fats	n/a	n/a	n/a	n/a	n/a	3,734	n/a
Grain milling	n/a	n/a	n/a	n/a	n/a	162	n/a
Bakery	n/a	n/a	n/a	n/a	n/a	3,575	n/a
Sugar confectionery	n/a	n/a	n/a	n/a	n/a	1,441	n/a
Other food products	n/a	n/a	n/a	n/a	n/a	196	n/a
Grain milling services	n/a	n/a	n/a	n/a	n/a	58,013	n/a
Grand totals	**27,460**	**28,860**	**30,570**	**31,359**	**31,693**	**102,781**	**46,080**

Source: CSA (2006, 2007, 2008)

Table 3.9 shows that between 2005 and 2007 the employment share of state-owned enterprises increased sharply to 62 per cent from 52 per cent, mainly reflecting a 124 per cent increase in the sugar and confectionery industry specifically intended for job creation at the state-owned sugar mills. Bakeries, soft drinks and mineral water, and grain milling provided most of the jobs in privately-owned manufacturing firms.

Table 3.9: Number of Employees in State and Private Agro–Industry Enterprises (2005/06 and 2006/07)

Number of employees by type of businesses ownership

Industries	2005/2006			2006/07		
	State	Private	Totals	State	Private	Totals
Meat, fruit & vegetables	985	523	1,508	1,412	674	2,086
Edible oils & fats	967	748	1,715	538	453	991
Dairy	335	354	689	318	442	760
Grain milling	995	2,925	3,920	868	2,829	3,697

Animal feeds	-	172	172	-	61	61
Bakery	801	4,947	5,748	675	5,333	6,008
Sugar & confectionery	8,617	193	8,810	19,291	329	19,620
Macaroni & pasta	885	173	1,058	516	911	1,427
Other food products	157	1,684	1,841	100	1,294	1,394
Spirits	589	476	1,065	640	464	1,104
Wine	543	-	543	510	-	510
Malt & liquor	2,763	1,153	3,916	2,831	1,260	4,091
Soft drinks & mineral water	939	3,693	4,632	924	3,407	4,331
Totals	18,576	17,041	35,617	28,623	17,457	46,080
Share by ownership (%)	52.2	47.8	100	62.1	37.9	100

Source: CSA (2005, 2006, 2008)

Employment has grown more rapidly in food and beverages – 9.6 per cent annually between 2001/2 and 2007/7 – than in manufacturing as a whole (6.5 per cent per year). In privately-owned agribusinesses, employment increased by 42 per cent over the period while in state enterprises in the sector it increased by 70 per cent largely due to increased employment at sugar factories. Productivity – value added per worker – is at $2,300 much higher in the agro-industry sector than in manufacturing as a whole, where the average is $1,560. There are no reliable figures for the informal sector but it is estimated that there are more people employed in food processing in the informal than the formal sector, especially in rural areas. Indeed, it is estimated that the informal food processing sector in Ethiopia contributes about 98 per cent of total processed food supply, especially in flour milling, local oil extraction, preparation of spices and cereal snacks (e.g. *'kolo'* and *'kocho'*) (MoTI *et al.* 2009, 2010).

Trade performance

Exports

Ethiopian exports are dominated by agricultural commodities (EEPA 2010, World Bank 2004); 80 per cent of exports are agricultural products with limited value addition. Coffee maintains its dominance as the top export commodity, although its relative share in the country's exports has been falling over the last decade, reaching its lowest level in recent history in 2009 at 26 per cent of total exports. Coffee exports still accounted for some 60 per cent of Ethiopia's foreign exchange earnings in 2008. In 2009/10, Ethiopian exports reached the record level of $2 billion, three times the average annual export level of the previous ten years.

Oil seed exports have grown from less than $50 million in 2000 to $357 million in 2009, mainly due to the export of sesame seeds. Other notable non-coffee exports are gold ($281 million), chat ($210 million), flowers ($170 million), and pulses ($130 million). Export products with annual sales of $10 million or more include products such as processed meat, vegetables, textiles and clothing, spices, leather products, minerals, and cotton. There has been encouraging progress in local value addition, with the value of textile exports now being twice that of cotton ($23 million versus $11 million). However, live animal exports still far outweigh that of processed meat (by approximately three times), while hide and skins exports are roughly two and a half times that of processed leather exports, indicating the significant potential for increased value addition.

In terms of exports by country of destination, Ethiopia is moving away from traditional European and American markets, to China and to the region (Somalia, Sudan, South Africa, Saudi Arabia, the United Arab Emirates/UAE). Thus, without neglecting long-standing historical trade links, Ethiopia's exporters are well-served by paying equal attention to increasingly important neighbouring and regional markets in the developing world.

In general, Ethiopia's export volume is much lower than that of African countries with much smaller populations, such as Uganda and Tanzania (with more than $3 billion per year). *Per capita* export from Ethiopia is also very low, only $24, compared to a $200 average in sub-Saharan Africa. Exports of goods in Ethiopia are only about 7 per cent of GDP, compared to an average of nearly 30 per cent of GDP in sub-Saharan Africa. There is a tremendous potential in Ethiopia for value addition, employment generation and export development in the case that the agro-industrialization strategy of the country succeeds. Development of exports within integrated value chains is an important new strategy, and Ethiopia can learn from other countries in this respect (see Tezera 2004).

Imports

Ethiopia's total imports have again reached a record level of US$10 billion in 2009, up from 2 billion in 2000 (EEPA 2010). Petroleum, machinery, transport and telecommunications equipment accounted for the main import goods into Ethiopia over the last 3 years. Wheat and palm oil imports have been increasing in recent years; in 2009, Ethiopia imported $440 million of wheat and $201 million of palm oil. This is approximately 30 per cent of the country's total export earnings. Recently the government has encouraged commercial agricultural investments in wheat and palm oil production to reduce the level of agricultural imports. A great import substitution potential is there, and success in realizing these opportunities depends on the new agro-industrial development strategy.

Policies for developing agro-industries

Agro-industry policy within economic development policies

The Ethiopian government's agro-industrial development objectives are based on the 'Agricultural Development Led Industrialization' (ADLI) strategy, which was introduced in the mid-1990s and whose objectives are imbedded in a number of policies, programmes, strategies and reform plans (see also ECOSOC, ADLI Strategy, 2007). The ADLI strategy includes clearly identified commitments designed to create an enabling policy and institutional environment. These include socio-economic measures, as well as the implementation of judicial and civil service reforms, the promotion of education and institutional development, the improvement of governance, and the enhancement of public and private organizations' effectiveness and efficiency.

Efforts have also been made to facilitate private sector participation and development as an essential prerequisite for sustainable socio-economic development. The devolution of governance to the lower levels of government has created an enabling environment to foster community empowerment. Moreover, in line with ADLI, various commitments were made to maintain a stable macroeconomic environment, deepen and strengthen the functioning of a market-oriented economic system, and create a more conducive environment for the development of efficient product and factor markets. The frameworks, policies, strategies and instruments devised to boost agro-industrial development are discussed below.

Rural development policies, strategies and instruments

Rural development policies, strategies and instruments have been introduced to encourage the two-way traffic between agriculture and industry and, in so doing, capture the synergy between the two sectors in the form of strong forward and backward linkages. The main outcomes of these enhanced agribusiness linkages with agriculture can be expected to lead to – in quantity and quality – improved provision of raw materials to industry, increased capital accumulation for industrial development, and greater foreign currency earnings. Manufacturing supports and facilitates backward linkages by absorbing agricultural output for further value addition, supplying modern

inputs for transforming agriculture, absorbing surplus rural labour, and meeting the requirements of the rural population for consumables and durable goods.

According to the ADLI strategy, agricultural development is considered the key for the overall development of the country; rural and agricultural development is considered the major instrument for rapid and sustainable growth, helping to eradicate poverty, improve food security, and boost living standards. The goal is one of transforming agriculture from subsistence to commercial production with emphasis on agricultural diversification and the production of high value crops and livestock. The following measures will further support agricultural development:

- Introduction of appropriate extension packages that will enhance farmers' choice of technologies.
- Expansion of micro-financing institutions to facilitate credit and financial services to borrowers.
- Establishment of an institute for diploma-level training for extension agents and more technical and vocational education and training (Agricultural Technical and Vocational Education and Training/ATVET) in agriculture.
- Better performance of markets supplying agricultural inputs (fertilizer, seed, etc.) and trading outputs.
- Improved organization, strengthening and diversification of autonomous cooperative societies to provide better marketing services that will enable them to act as a bridge between small-scale farmers and the commercial sector.
- Better use of water resources, water harvesting and small-scale irrigation.
- More effective agricultural research that matches and is responsive to the market.

In sum, the strategy seeks to foster integrated rural development by encouraging strong linkages between agriculture and agro-industry.

Trade and competition policy

The Trade Practice Proclamation No. 329/2003 (MoTI 2003) was designed to promote open competition, in part by prohibiting anti-competitive practices, including the formation of monopolies. The Proclamation addresses price fixing, collusive tendering, allocation of production and sales quotas, and refusal to deal or sell.

In some circumstances, however, the Proclamation provides for the authorization of anti-competitive agreements where they are deemed to be in the national interest, by protecting enterprises that may have significant impact on national development. Where it is found to be necessary, the Proclamation also provides for price controls for certain basic consumer goods.

Several reforms have been instituted which directly facilitate trading activities. These include among others:

- Financial sector reform: Government is paving the way for the establishment of private banks and insurance companies. Initiatives have also been taken to facilitate private sector participation in export trade through new investment and privatization incentives. At the same time the government monopoly over export trade is being reduced.
- An export duty incentive scheme is designed to promote exports.

However, a more systematic and coherent approach towards trade and competition will be necessary to stimulate pro-trade activities and to eliminate anti-competitive measures. Control of economic power is an issue in Ethiopia.

Environmental policy strategy

A National Environmental Policy was first introduced in April 1997 (EPA *et al*. 1997). It encompasses environmental policy issues for providing institutional coordination, a legislative framework, and provisions for the monitoring, evaluation and policy review of facilities and mechanisms. Highlighting the importance of agriculture, the sector was accorded top priority amongst the ten sectors covered in the policy. Included in the section on "Soil Husbandry and Sustainable Agriculture" are ten individual policy items of which the first three relate to:

- Uninterrupted and continuous access for farmers to land and natural resources (for crop and livestock production).
- Increased agricultural production, as may be practical while sustaining, improving and intensifying existing farming systems by adopting technologies that are biologically stable and appropriate under prevailing environmental and socio-cultural conditions.
- Promoting the use of appropriate organic matter and nutrient management for improved soil structure, nutrient status and microbiology in order to improve soil conservation and land husbandry.

Widespread land degradation is a major constraint on natural resource management in present-day Ethiopia. The opportunity cost of reduced agricultural output in terms of social well-being and economic growth is serious and far-reaching. To confront this threat, the government has implemented various preventative and recuperative measures, including a Conservation Strategy of Ethiopia (CSE) and an Ethiopian Environmental Policy (EEP).

Food Security Strategy

The Food Security Strategy (FSS) focuses on the chronically food-insecure and on people living in moisture-deficit and pastoral areas (see MoARD 2002). Water harvesting, the introduction of high-value crops, and livestock and agro-forestry development are also included, but little attention is paid to high-potential areas, and the strategy needs to recognize the interaction between arid and high-potential areas. Acknowledging that food security is a complex multi-sector challenge, central elements of the strategy include strengthening and enhancing the capability of agriculture-related institutions. However, much more has to be done to develop such a strategy at regional and states level in Ethiopia and to improve the institutional quality in this respect.

National Industrial Development Strategy

Together with the agricultural development policy, a National Industrial Development Strategy (NIDS) has been devised with the target of reaching middle-income country status within ten years. The starting point is the sustainable use of national resources and mobilizing the pool of low-cost labour available to drive the agricultural sector. The strategy relies primarily on what is called the 'Initial Principles of the Strategy', of which seven principles can be highlighted in support of agro-industrial development:

- Accept private capital as the engine of industrial development
- Adhere to the guiding principles that provide the basis of the ADLI
- Subscribe to and promote export-led industrialization
- Focus on labour-intensive industries
- Coordinate foreign and domestic investment
- Provide strong state control as appropriate

- Mobilize the entire society by forming strong coordination between government and private entrepreneurs, link industrial capitalists with small-scale farmers, and strengthen employer-employee cooperation.

The strategy emphasizes the creation of an environment in which entrepreneurs are encouraged to play a key role. Methods of achieving this include:

- Creation of a stable and development-friendly macroeconomic environment.
- Building an efficient financial sector, consisting of banks, insurance and pension institutions, non-bank financial institutions and rural financial institutions.
- Constructing essential infrastructure including roads and road transport services, railways and railway transport services, air transport services, telecommunications services, electric power services and similar services.
- Access to potable water and land.
- Initiate and promote human resource development programmes.
- Create an administrative system which encourages efficient development based on transparency, accountability and effectiveness.
- Develop strategies for building strong competitive markets.
- Establish effective information and taxation systems to support development.
- Establish an effective and independent judicial system.

NIDS prioritizes agro-processing subsectors with food processing textile, meat, hides and skins receiving special attention, along with construction activities and SME and cottage manufacturing enterprises.

Micro and small enterprises development strategy

The strategy focuses on the development of micro- and small-scale enterprises (MSEs) in the portfolio of national agro-industries. MSEs are mostly local resource-based and the number of people who depend on them for their livelihood is far greater than those dependent on medium- and large-scale industrial units, most of which are urban-based.

Further, the strategy puts forth a number of principles to successfully accomplish these MSE objectives. These include:

- Legalization of the informal sector.
- Facilitation of access to finance, appropriate technologies, market information and advice (e.g. technical, business, financial, etc.).
- Provision of physical infrastructure and incentive schemes.
- Encouragement of partnerships.
- Strengthening capabilities for entrepreneurship, skills and business management.

Plan for accelerated and sustained development to end poverty

In the late 1990s the government drew up a medium-term poverty reduction programme, the Sustainable Development and Poverty Reduction Programme (SDPRP) that was implemented during the three-year period 2000/01-2003/04 (see MoFED 2002). Its successor, the "Plan for Accelerated and Sustained Development to End Poverty" (PASDEP), covering the five-year period (2005-2010), emphasizes the greater commercialization of agriculture and the role of the private

sector while intensifying efforts to achieve the Millennium Development Goals (MDGs) (see MoFED 2006).

PASDEP reflects the evolution in strategic thinking about the role of agriculture in securing faster economic growth. Contrary to what was envisaged in ADLI, PASDEP notes that the country's overall growth performance has not yielded expected poverty-reduction results over the long term. It therefore lays out a more comprehensive action plan in which the commercialization and intensification of agriculture is given enhanced prominence along with a geographically differentiated strategy.

PASDEP highlights the risks of volatile economic growth and rapid population growth while the urban sector and most agro-industries are accorded greater importance.

Market–oriented development master plan

A market-orientated Development Master Plan (MoARD 2004), designed to increase production of marketable surpluses for priority crops and livestock,19 and developed by the Ministry of Agriculture and Rural Development (MoARD), has been implemented since June 2004. Objectives of the Master Plan are to:

- Encourage the use of modern technologies to optimize production and yields (at least doubling national yields of major crops).
- Encourage selected woredas (districts) to specialize in one or two export commodities and then gradually to convert areas used for other commodities to the specialized export commodities.
- Strengthen the capabilities of other woredas so that they can double production and supply to local markets.
- Make use of the best means of production such as water harvesting, irrigation, relay cropping, inter-cropping and similar means to optimize productivity.
- Encourage producers to improve local food security and, as appropriate, to explore trading in international markets.
- Shift from subsistence production to market-oriented modes.

Accordingly, *woredas* adjacent to each other have been identified for distribution of inputs and the collection of outputs for export. A total of 173 *woredas* with potential for specialization in eight main food crops have been selected, with an additional 38 *woredas* chosen for cotton production.

Methods of increasing crop yields have been identified, including using appropriate seed varieties, minimizing the effects of moisture stress, and reducing losses from diseases and pests, which provide support activities to boost farm efficiency. Recommended actions include:

- Strengthening effort for research and technology.
- Training MoARD staff and strengthening the extension system.
- Developing essential infrastructure.
- Strengthening service cooperative societies, market information systems and linkages between investors, producers and/or cooperative societies.
- Strengthening rural credit systems that will provide services to farmers and cooperative societies.

[19] Crops: wheat, barley, teff, lentils, chickpeas, faba and haricot beans, cotton, sesame, coffee and spices; and livestock; dairy, meat, poultry, apiculture, sericulture, fisheries, and hides & skins.

- Improving the use of traditional institutions, exploring the potential of locally available materials, and ensuring the efficient dissemination of proven technologies.

Similar support has been provided for livestock producers for boosting dairy, meat and poultry production. The strategy for dairy development focuses on encouraging market-oriented production systems and the development of appropriate technology packages and extension services, training farmers through ATVET (Agricultural Technical and Vocational Education and Training) and FTC (Farmers' Training Centre) programmes, integrating dairy development, promoting dairy markets, and facilitating technology transfer. The development strategy for meat producers includes the development of appropriate technology packages, market planning, quality control, certification systems for live animals and meat hygiene, and establishing disease-free zones. For poultry, the strategy emphasizes commercial production based on exotic breeds and the introduction of crossbreeds to enhance the production and consumption of poultry products.

Policy consistency

A coherent agro-industrial development strategy depends on there being a sound institutional framework that coordinates and manages required support services across a range of government and non-government institutions and development partners. At present these functions are dispersed across different institutions, without coherent coordination.

The Ministry of Trade and Industry (MoTI) has an Agro-industrial development Department to assist and support the development of the sector. However, it is presently understaffed both at the federal and regional levels and needs to be strengthened to create an action-oriented department with a clear mandate for involving the private sector. One of the major functions of the department should be the analysis and monitoring of Ethiopia's agro-industry sector to provide market information to the government and industry stakeholders. For Ethiopian agribusiness to become internationally competitive it is imperative that industry players are kept well informed of contemporary and expected developments both nationally and globally.

At the operational level, a Manufacturing Efficiency and Response Unit (MERU) should be established to collect information on day-to-day problems so that appropriate solutions can be devised. With non-tariff barriers taking on increased significance as potential obstacles to trade, support for a well-established Food Safety Assurance System (FSAS) is extremely important. Health and safety regulations are becoming more sophisticated and stringent by the day, and for traceability reasons concepts such as HACCP (Hazard Analysis and Critical Control Point)[20] and GLOBALGAP (Global Good Agricultural Practices)[21] should be introduced in the food processing industry.

Critical problems that need to be addressed in order to provide a consistent and coherent policy support for agro-industrial development include:

- The absence of a dedicated support organization to act as the focal point for the development of the sector, that is, the whole value chain of the sector.
- Limitation in coordinating different support and regulatory activities relevant for the development of the entire value chain.
- Unreliable, out of date and inconsistent agricultural, food processing and trade statistics (domestic and international).

[20] This is a preventive approach to ensure food safety. It is used in the food industry to identify potential food safety hazards, so that key actions, known as Critical Control Points, can be taken to reduce or eliminate the risk of hazards.

[21] Until 2007 known as "EurepGAP", GAP stands for Good Agricultural Practices; this is a common standard for farm management practice, which was developed in the late 1990s by a number of European supermarkets and suppliers, using the HACCAP guidelines published by Food and Agriculture Organization (FAO), and it is now the most widely implemented farm certification scheme.

Public-private sector interaction

Over the past 18 years, the Ethiopian government has sought to improve the business environment for private sector involvement in the economy and to enter into public-private partnerships geared towards promoting economic and social development. Both the Sustainable Development and Poverty Reduction Programme (SDPRP), for the years 2000/01 to 2003/04, and the National Industrial Development Strategy (NIDS) recognized the importance of the private sector as the engine of economic growth and in poverty reduction.

PASDEP (2005-2010) reinforces the government's commitment to improve the environment for private investment and business activities, 'as the sector is a key for the development of both the industrial and the export sectors,' (MoFED 2006). The role of the state is defined as one of complementing and intervening selectively to rectify market failure, providing an enabling environment, and facilitating the development of the private sector. The three main areas of private sector involvement are the following:

- The agricultural and rural sector, where there is considerable potential for the private supply of inputs and services to farming, as well as for investment in private agro-processing enterprises.
- Infrastructure, including power generation, downstream telecommunication services, and construction.
- Social services provision, including education (e.g. private primary and secondary schools, vocational training, higher education) and health care services.

In 2002 the Public Private Dialogue (PPD) Forum, which meets quarterly, was created to provide a platform for communication between business and the public sector on government policies and strategies, their implementation and potential obstacles (see MoTI 2007, Ferede 2007). PPD is jointly chaired by the Government and the Ethiopian Chamber of Commerce, and includes representatives from the primary, secondary and tertiary sectors.

Since its establishment, the Ethiopian PPD Forum has been successful in dealing with tax-related issues, such as value added taxation, the stamp duty on investment loans and border taxation, the application of duty draw-back schemes, issues related to competition between domestic traders, and loan requirements. In addition to discussions between the public and private sector, the Forum provides an opportunity for exchange between the various private sector actors.

However, many difficulties remain to be addressed: 90 per cent of the discussion agenda is initiated by the private sector but seldom accompanied by specific recommendations. Furthermore, translating agreements reached at the Forum into policy actions has proved difficult because of the constraints of human resource capacity and the absence of follow-up mechanisms.

In addition to the national PPD Forum, Sectoral Dialogue Forums were introduced to further public-private consultation by linking sector associations such as the flower producer and exporter association with their respective government institutions. As the experience from other countries has shown, to make public-private consultation more effective and to further strengthen private sector development, the forums in Ethiopia need to improve the participation of sectoral associations and to widen the range of civil society groups that contribute to PPD.

Key policy factors for promoting agribusiness

Value chains with comparative advantage

The value chain concept is very useful in agro-industrial development since it provides a strong linkage between agricultural production, agro-processing/value addition and marketing. It is a useful tool for identifying opportunities and constraints as the raw material moves from primary producers, through value addition (in terms of form, structure and time) until it reaches the final

consumer. It provides investment guidelines, which can be used in the identification and formulation of appropriate agro-industry projects, as well as for the development of strategies for improved agricultural and rural development.

A value chain represents the full range of activities required to bring a product or service from conception through the different phases of production, transformation and delivery to consumers. It comprises a series of actors from producers and processors, to traders/exporters/retailers and consumers. It also includes providers of support services such as input suppliers, banks and transporters whose participation significantly influence the efficiency of the value chain. For agribusiness development it is important to have a clear understanding of how the services are managed and how markets for the services are organized.

Vertical linkages refer to the flow of products, services and information along the commodity value chain. A vertically well-integrated value chain means there is effective flow of information between the chain actors and that the agribusiness linkages are well balanced in such a way that the transaction and handling costs are low, resulting in competitive prices. In Ethiopia vertical linkages are weak, as a result of agricultural production being poorly matched with agro-industrial demand. Most of the commercial agro-industries (except sugar) operate below capacity, partly due to inadequate supplies of raw materials. The strengthening of vertical linkages through such mechanisms as contract farming, warehouse receipts and agricultural commodity exchange, are essential for enhancing agro-industrial development.

Horizontal value chain linkages refer to networking and information flows between actors within the same value chain segment. Horizontal linkages improve efficiency by enhancing information flow and strengthening the bargaining position of actors in a particular value chain segment. Farmer groups or producer cooperatives are said to contribute significantly to producers' returns from value chain participation. In countries such as Ethiopia where production, marketing, agro-processing and value addition is undertaken by informal sector actors and Medium, Small and Micro Enterprises (MSMEs), the scale of operations is often too small to be economically viable. Accordingly, horizontal linkages in the form of farmer organizations help to scale up operations by creating joint-demand for services such as assembly, bulking and transportation of produce. In the same way, MSMEs in agro-processing benefit from collaborated supplies and agri-food parks, which could be accessed through joint ventures.

Strategies for agro-industrial development should therefore concentrate on commodity value chain development by strengthening vertical and horizontal linkages, providing capacity building and technical support to improve agro-industry performance and supporting investment projects, by way of public private partnerships.

The investment needed to support these initiatives for the entire agricultural sector is enormous. Accordingly, it is essential for the Ethiopian government to establish priorities and focus on the commodities with the largest potential payback. PASDEP has identified priority agricultural products earmarked to receive special focus during the plan period (2005-2010) including cereals, oil seeds, pulses, fibre crops, fruits, vegetables, coffee, tea, and spices (MoFED 2006) and at time of writing, a number of programmes are being drawn up, with some in implementation stage, for these subsectors.

An analysis of the Ethiopian food agro-industry based on the functions and activities along the value chain was carried out during the preparation of an Agro-industry Master Plan (MoTI *et al.* 2009, 2010) to prepare subsector focused interventions for the coming five years. This review, which emphasized agricultural commercialization and agro-industrial development, focused on:

- The importance of commodities to the economy on the basis of:
  - the population involved in production, marketing, processing and related services, especially from the perspective of income generation and employment;

  - the importance to national food security; and
  - the contribution to foreign exchange;
- Competitive advantage in farm production and agro-processing relative to other, especially neighbouring, countries;
- Attractiveness of the industry to investors;
- Access to the requisite technology, infrastructure, services, and facilities; and,
- Potential for short-term impact: the sectors and commodities likely to show significant improvement along the value chain without requiring major investment in infrastructure.

Altogether 22 subsectors were assessed as a result of which 12 main commodity groups were classified into 3 major categories:

A first group of priority commodities: These are commodities of significant importance to the economy due to the number of people involved in their production and their contribution to food security and to foreign exchange earnings, and commodities with the potential to have an impact in the short term with relatively little investment. This group includes cereals (wheat, maize, teff and barley), oil seeds (sesame, Niger seed, linseed and rape seed), coffee, and sugar. The value chains for these commodity groups were analyzed and strategies to support commercialization and agro-industrial development have been proposed, except for sugar, which already had an industrial development strategy.

A second group of priority commodities: Commodities in this group meet the same criteria as priority commodities with the exception that they would require significant investment in infrastructure and a concerted effort to enhance their global competitiveness. They include: dairy, meat, tea, fruits and vegetables. The value chain strategy for these commodity groups will be implemented during a later phase of the master plan.

A third group of priority commodities: These commodities have a competitive advantage in comparison to other countries – they are attractive to investors and have the potential for a short-term impact. However, they have a relatively low national economic importance and are more relevant for the niche or specialized market development. The group includes honey, pulses, spices, and grapes/wine.

A further detailed assessment of the performance of these priority value chains was then conducted with respect to raw material supply, institutional structure, business environment, compliance with industry regulations, and marketing structures, as well as an evaluation of constraints and opportunities after which a strategy was developed to improve their competitiveness in local regional and international markets.

Agro-industry links to agriculture

Food agro-industrial development is closely linked to the performance of the agricultural sector, since it is its main source of basic raw materials. Close vertical links between agriculture and agro-industry are essential to ensure that raw material supplies are available at the time and in the quantity and qualities required for the production line.

At the same time, agro-industrial development is critically important for the expansion and diversification of the agriculture sector in Ethiopia, irrespective of scale. Development of the agro-industrial sector creates opportunities for making a significant contribution to the transformation of agriculture and, by extension, to the development of the economy as a whole.

Although Ethiopia has the potential to support strong growth in both agriculture and agro-industrial production, vertical integration between the two sectors, especially for SMEs, remains rudimentary to the point where a – possibly the – major constraint on agro-industrial growth is

under-utilization of the existing capacity due to an insufficient and inconsistent supply of raw materials from agriculture.

Because agricultural production is mostly a rain-fed commodity, supply is seasonal which hampers agro-industrial operations requiring regular and consistent supplies. The problem is further aggravated by poor storage facilities: warehouses and cold storage. Some 90 per cent of production comes from small-scale, subsistence farmers with average land holdings of only 0.2 ha *per capita*, down 60 per cent over the last 40 years, mainly due to population growth and the scarcity of off-farm employment in rural areas.

Yields are low and production techniques are inefficient. Smallholders producing over 95 per cent of the raw materials used by agro-industry only sell to the market when they have a surplus. Market-oriented production is underdeveloped, thereby exacerbating the supply problems of agro-processors. In most cases linkages between farms and agro-processing firms are very weak so that very often growers are unaware of the product specifications required by processors.

Furthermore, there are very few organized and market-oriented farmer associations and cooperatives, which limit grower bargaining power as supply is highly fragmented and scattered over large areas, resulting in very high bulking, transport and related handling costs. The spatial pattern of production reduces the producer potential to pool resources in order to improve access to storage, transport, grading and packaging facilities. Improving horizontal integration among farmers would be highly beneficial in creating economies of scale and vastly improving post-harvest handling and value addition activities.

As well as inadequate quantities of raw material supplies from farms, poor quality is a persistent problem for processors. Grain millers complain that they get wheat supplies with bread and pasta varieties mixed. Furthermore, the level of quality in cleaning, sorting and grading is completely inadequate and impurities and foreign matter as high as 15 per cent by weight have been observed. Poor storage and handling facilities further contribute to quality deterioration and contamination, especially from pests and disease.

Post-harvest losses in Ethiopia are exceptionally high due to multiple handling of products by many actors between farmers and processors, exacerbated by weak post-harvest infrastructure, including inadequate packaging, lack of cold storage facilities and defective transport facilities. Post-harvest losses are estimated to be as great as 40 per cent of production for highly perishable products and 20 per cent for cereals and pulses.

In sum, agro-industry is faced with chronic supply chain problems, such as supplier-driven farming practices, inconsistent supply, poor quality of raw material delivery, and poor vertical linkages – all of which are issues that must be addressed to improve the performance of Ethiopia's agro-industry.

Some of the problems analyzed above – unreliable supply, poor product quality, and weak vertical linkages – could be addressed through the development of an efficient contract farming network. In contract farming systems agro-processors or marketing companies provide inputs to growers – seed, fertilizer, finance, and technical back-up – in return for the guaranteed delivery of crops or livestock products. The conditions of exchange are agreed among transaction partners in the form of legally enforceable agreements that encompass production technology, prices, technical and financial support, and risk sharing.

Domestic and international marketing and trade

Although the commercialization of agriculture leading to increased production is a top policy priority in Ethiopia, the marketing systems necessary to generate this transformation are poorly developed. At present, marketing systems are informal and dominated by small and medium scale private traders. Formal marketing consists of the Agricultural Marketing Corporation (AMC), a government agency established in l976 with a mandate to influence the supply and the price of the

main commodities by purchasing grain from producer associations at fixed prices. In addition, there are a few market-oriented cooperatives and farmer associations, and the recently formed Ethiopia Commodity Exchange (ECX).

Factors constraining the development of efficient markets include licensing requirements and import restrictions, lack of access to capital by traders, poorly developed physical infrastructure and information systems, poor marketing facilities and services, and weak market integration. Marketing mechanisms to improve vertical integration, such as contract farming, have been used in Ethiopia, but their use is still very limited and needs further development. Similarly, the use of a commodity exchange to link producers and buyers was introduced only recently, and its efficacy in linking producers and buyers and stabilizing seasonal price fluctuations is as yet unproven. Well-functioning grain markets would benefit both producers and consumers by reducing marketing margins and transaction costs, thereby potentially lowering food prices to consumers while simultaneously raising price incentives to producers.

International marketing of agro-industrial products is also inefficient. Despite copious arable land with the potential for productive agriculture, competitive advantage because of its proximity to Europe and the Middle East, and lower energy costs relative to most competitor countries – all of which are crucial for export performance – Ethiopia runs a very large deficit in its agro-industrial trade. Apart from small volumes of products like spices, honey, and animal feed, there are virtually no exports of processed products. In addition, major trade flows are limited to a small number of countries (for example, Djibouti, Egypt and Sudan). There is the potential for Ethiopia's agro-industry sector to develop markets through regional trade agreements, such as the Common Market for Eastern and Southern Africa (COMESA), of which Ethiopia is a member (see COMESA 2010). In short, substantial improvements in the entire marketing system are needed.

Two key challenges are the need to diversify production while finding new markets within the COMESA region. The collection and distribution of market information will need to be streamlined while national manufacturing processes and equipment, as well as testing and certification facilities, must be strengthened so that exporters comply with national and international quality standards.

Hitherto the government has relied on export incentives, matching grant schemes, transport and port facilitation, and an export award programme to encourage and recognize high performers, who then become eligible for a range of different benefits and incentives during the following year. Under the export incentive scheme, exporters are exempted from custom duties and taxes payable on raw materials or semi-processed goods inputs used in the export production. They are therefore able to access inputs at world market prices and are exempt from export taxes. The Ethiopian Matching Grant Scheme (EMGS), funded by the World Bank's International Development Association (IDA), supports the export and business development activities of private exporters with product development and market diversification.

Government and private institutions have improved horizontal integration to encourage and support exporters with the logistics needed to get their goods to final destinations. The major domestic stakeholders are the Ministry of Trade and Industry, Ethiopian Shipping Lines, Ethiopian Maritime and Transit Services Enterprise, Ethiopian Customs Authority, and Transport Enterprises. The Ethiopian Customs Authority has introduced computerized systems to streamline customs clearance of exports and imports, thereby reducing delays in transit and delivery. There are special tariff incentives for exporters of textiles, garments, and leather and leather products.

As analyzed above, despite advantages of location, Ethiopia's export volumes are insignificant. New strategies are therefore required to redress this situation. Branding, product quality and diversification are the hallmarks of the modern consumer market. Ethiopia needs to develop its manufacturing and marketing capabilities if it is to satisfy the demands of the modern consumer and to compete in export markets. Branding is a widely used strategy in the agro-industry, but

requires substantial economies of scale that are beyond the present scope of Ethiopian manufacturing. New market opportunities include the growth of niche markets in organic and health foods and Ethiopian specialties for the Diaspora. Countries such as Columbia have succeeded with the national branding of export products to foster consumer awareness as with the marketing of "Pure Columbian Coffee" that is promoted by the government.

Because consumer patterns are constantly evolving, market research and market intelligence are especially important, along with greater flexibility so that agro-processing firms can adapt rapidly to meet shifting market demand. The Agro-industry Master Plan calls for the strengthening of the Ethiopian Export Promotion Department (EEPD) with funding shared by government and the private sector. At present, the Department is wholly funded by the state. Public funding of export promotion agencies can be the catalyst for industry-wide efforts, as the competitive nature of the private sector hinders cooperation among its players to jointly promote exports. Private sector funding of export promotion, however, tends to increase the efficiency of the agency, because the private sector demands effective, market-relevant services and information, while additional funding makes it possible to recruit and train highly qualified personnel. International experience suggests that public-private partnerships are the most efficient mechanism for the financing and management of export promotion agencies.

Agro-industry upgrading and modernization

The development of the agro-industrial sector in Ethiopia is still in its infancy. Apart from a few modern factories, agro-processing firms have inappropriate or obsolete processing and ancillary equipment. Most of the factories are old, some dating back more than 50 years. Minimal support and facilities are available to modernize equipment and to keep pace with innovations while state-owned factories, in particular, operate with completely outdated equipment and facilities.

Product quality is inconsistent and poor and, with the exception of the Modjo oil processing companies, most firms are not accredited under international quality standards programmes. While the majority of the medium and large commercial firms observe Good Manufacturing Practices (GMPs)[22], the small and cottage industries do not have the capability nor can they afford modern equipment to comply with international quality standards. Most operations lack managerial and technical skills, as well as training programmes to upgrade the employee performance.

Excess capacity in agribusiness translates into slim profit margins and constrains investment. In the large- and medium-scale food and beverage firms, capacity utilization in 2006/07 averaged 69 per cent (Table 3.5). Capacity utilization reaches acceptable levels in dairy and malt and liquor (83 per cent), sugar and sugar confectionery (96 per cent) and the wine industry (99 per cent), but others operate at less than 50 per cent capacity (Table 3.5). Capacity utilization in the small-scale food and beverage industry is generally low, estimated at 23 per cent for grain milling and 59 per cent for bakeries (2005/06). The main explanation of low capacity utilization is weak relationships with other actors in the supply chain, exacerbated by limited management skills, obsolete equipment, and quality problems that limit the market demand, resulting in high overhead and operating costs.

In addition to inadequate investments at firm level, government investment to modernize Ethiopia's agro-industry has been inadequate. Most of the personnel employed in the industry are poorly trained and lack the necessary qualifications in food technology, especially but not only in state-owned firms. Even if qualified personnel were available, the family-owned, the small-scale and the cottage industry enterprises could not afford to pay their salaries.

[22] GMPs are guidelines which address the quality control of food, pharmaceutical product and medical device manufacturing. They include, e.g., clear definition and control of manufacturing processes, appropriate training of operators, records of manufacture and distribution, and a system for recall.

Overall, outdated technology in the Ethiopian food processing sector is at least partly attributable to a "competitiveness squeeze": many agribusiness firms experience intense price competition from regional and international products, arising from the combination of global trade liberalization and market expansion by multinational businesses. This means that operations must be upgraded for firms to survive and to compete successfully in the home market.

That said, procurement of machinery, equipment and spare parts is expensive and existing businesses do not have access to the financial resources necessary to finance modernization. A host of challenges faces manufacturers wanting to modernize, including the lack of skilled manpower, lack of efficiency throughout the industrial production chain, inadequate services, lack of technical advice, and limited market information. Industrial support services and new infrastructure are urgently required to support agro-industry modernization.

Prospects for STI and human capacity for agro-industrial development

So far, there is not enough commitment for strengthening STI in Ethiopia. This is a crucial problem as any upgrading of value chains for agro-processing requires STI inputs at all stages of the value chain. The commitment for sector and national innovation systems is also rather weak. As STI inputs are of core importance for modernizing agro-industries in Ethiopia, this policy factor is of relevance for discussing improvements for all the other policy factors and policy issues.

Education and skills are fundamental to a successful agro-industrial development programme. In Ethiopia inadequate human resource capability is reflected, for instance, in low labour productivity. Value added per worker is estimated to be $1,560 in Ethiopia compared with $3,457 in Kenya, $2,910 in Rwanda and $2,061 in Tanzania.

Larger companies, such as those in the sugar and beer industries, have effective systems in place for staff recruitment, training and development. These two subsectors employ more than 50 per cent of the workers in large- and medium-scale food and beverage operations. However, in 2005/06 the Ethiopian agro-industry sector employed more than 102,000 workers, of which over 67,000 were employed by small- and micro-scale food processors that do not have the means to invest in training or employee development. Because staff turnover rates are high firms are reluctant to invest in training, resulting in poor levels of productivity.

To date, government investment in higher and vocational education to build technical and managerial skills in agribusiness has been inadequate. At present there are five universities with food science and technology programmes: Addis Ababa University and Horomaya offer post-graduate studies (MSc and PhD programmes), and undergraduate courses in food science and post-harvest technology are provided at Awasa, Bahirdar, and Jima. However, there is little interaction between industry and the universities and closer coordination is necessary to resolve the mismatch between training institutions' output and industry requirements.

Skills development, worker education and stronger higher education and vocational training systems, including closer links with industry, constitute an important pillar for agro-industrial growth. Hence, the agro-industry master plan advocates state support to enterprises to conduct in-house training. This has been found to yield higher returns than other post-school training modes, both in developing and industrialized countries (MoTI/MoARD/UNIDO/FAO, 2010).

This could be done in a number of ways: directly subsidizing training expenditures, imposing a one to two per cent training levy on the payroll of companies and using the revenue to help finance approved in-house training programmes, or making all training expenses fully tax deductible (Malaysia, for example, gives a 200 per cent tax deduction for training and R&D).

Since small and micro-scale processors do not have the means to invest in training, large firms could be contracted to offer training to employees from smaller companies or, alternatively, subsidized training programmes could be provided by industry associations, vocational colleges, or

government institutions. Internship schemes can be used to build closer links between industry and training institutions.

Prospects for private enterprise and FDI in agro-industries

Foreign direct investment (FDI) is the most important vehicle for countries to plug into global value chains. Technology transfer *via* FDI comes as a complete package of skills, support, operating know-how and finance while also providing access to industrial country markets. Attracting FDI is therefore vital for Ethiopia to become a stronger global player in agro-industry.

The investment climate in Ethiopia benefits from considerable resources of land, reasonably priced labour, a continuously improving infrastructure, good investment opportunities, a large potential domestic market demand, and the country's location in close proximity to highly attractive markets of the Middle East and Europe. A 2006/07 Investment Climate Assessment Study by the World Bank concluded that there have been substantial improvements in the business environment compared to 2001/02 (World Bank 2009b).

But the pace of reform to attract more FDI has slowed since the 2002-2004 initiatives to improve business registration, tax administration and competition policy and, as a result, Ethiopia's Doing Business rank declined from 101st in 2004 to 116th in 2008,[23] before recovering to 107th out of 183 countries in 2009 (see World Bank 2009c: World Bank's Doing Business Report 2010). Ethiopia recorded its highest ranking (43rd) for paying taxes and its lowest (159th) for trading across borders. It is ranked tenth in Africa behind a number of Southern African countries – Mauritius, South Africa, Botswana, Namibia and Zambia – as well as two of its close neighbours and regional competitors, Rwanda and Kenya. Although progress has been achieved in improving the investment climate, many challenges remain, especially access to land and credit, and the state of the infrastructure.

In the last decade the government has made significant efforts to create a favourable environment for investors and to open up the investment regime. Both the Ethiopian Investment Commission (EIC) – an autonomous government body – as well as the Ethiopian Privatization Agency (EPA) are active actors in promoting the country as a location for FDI. The same investment laws and systems of incentives apply to domestic and foreign investors. Numerous sectors are, however, reserved for domestic private and state investment, thus presenting a highly restrictive FDI regulatory framework, even compared to many developing countries in the region (UNCTAD, 2007).

Incentives for both domestic and foreign investors engaged either in new enterprises or in expanding existing firms include tax exemptions and tax holidays, privileges in repatriation of capital and profits, and guarantees against expropriation. For agribusiness projects land is made readily available at a very low lease cost.

Since the early 1990s the creation of a more business-friendly investment climate has attracted increased FDI. The stock of inward FDI is estimated to have increased from $124 million in 1990 to $941 million ten years later and to $3.7 billion in 2008 (UNCTAD 2009). Thirteen sub-Saharan economies have larger inward stocks of FDI, of which six are oil exporters. In terms of sectors, manufacturing attracted most FDI, but the share of agriculture, hunting and forestry was in 2008/09 at 22% (Table 3.10).

[23] It isthe 111th country in 2008 after recalculation of rankings to reflect changes to methodology and the addition of two new countries (World Bank, Doing Business 2010, 2009c).

Table 3.10: Distribution of FDI Projects by Sector in Ethiopia, 1999/00 – 2008/09

Sector	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	2008/09	
										No.	(%)
Agriculture, hunting & forestry	5	6	5	15	70	138	169	239	375	226	22
Construction	5	1	2	1	13	20	34	46	72	58	5.6
Education		2	2	1	5	16	17	41	26	22	2
Fishing	2						2	2	1	7	0.7
Health & social work	1	n/a	n/a	3	5	9	10	26	29	14	1.4
Hotels & restaurants	3	n/a	n/a	2	20	32	46	99	164	65	6.3
Manufacturing	17	19	15	36	99	171	228	376	583	388	33.6
Real estate & related business	8	10	5	17	50	127	198	298	325	164	15.9
Other businesses	3	3	2	1	23	31	28	29	101	88	8.5
Grand totals	**44**	**41**	**31**	**76**	**285**	**544**	**732**	**1156**	**1676**	**1032**	**100**

Source: EIA/Ethiopian Investment Agency (2009)

Investments by domestic entrepreneurs have been increasing since the enactment of the investment code and regulation in 1992. The number of domestic investment projects reached a cumulative total of 5,315 in 2006/7, with real estate and related activities accounting for 43 per cent. Agriculture and manufacturing projects accounted for 33 per cent of total domestic investment (MoTI/MoARD/UNIDO/FAO 2010). However, although the number of FDI projects licensed each year has increased dramatically, the share of projects that are operational has fallen from a high of over 50 per cent in 2001/2 to as low as 5.6 per cent in 2008/9.

FDI projects in Ethiopia tend to be larger and more capital-intensive than domestic investments, thereby generating relatively few new jobs. FDI projects produce mainly for the domestic market, and they are concentrated around Addis Ababa, Oromia and Amhara.

The Agro-industry Master Plan proposes a systematic and aggressive promotion of food processing and marketing in Ethiopia to attract global players. The Ethiopian Investment Promotion Agency (EIPA) needs to be strengthened, adequately staffed and funded to market the country as an investment destination for the multinational companies. It is obvious that promotion is not simply handing out generous tax incentives or grants to investors; these play a small role in effective promotion and tend to attract investors with short-term horizons. Effective promotion is rather 'selling' the real economic advantages of Ethiopia to long-term investors.

Financing agro-industry by traditional and innovative mechanisms

A major constraint cited by micro- and small-scale agro-industries in Ethiopia is the reluctance of formal financial institutions to finance SMEs. Traditional financial institutions – notably banks – are ill-suited to the task at hand of providing working and long-term capital for small and emerging businesses. Interest rates are high, banks demand collateral which many small players cannot provide, and venture capital and other instruments for financing new agribusiness start-ups are at a rudimentary stage in Ethiopia. Even when financing is available, small and new agro-industrial firms lack market information and the expertise to access finance.

Accordingly, any strategy that seeks to promote agro-industrial development and upgrading must address this constraint. The Agro-industry Master Plan proposes that the government establishes an agro-industry financial facility in collabouration with international financial institutions, such as

the World Bank (WB), African Development Bank (AfDB), International Finance Corporation (IFC), and International Fund for Agricultural Development (IFAD). Technical assistance and cost sharing in the preparation of business plans is critical and some form of financial support is recommended to reimburse agro-industry entrepreneurs for an element of project preparation cost. Under this support scheme, financial assistance could be released after an agribusiness commences operations.

Agro-industry infrastructure and improving access to sustainable energy

Road transport, by far the dominant means of transport, accounts for over 90 per cent of freight movement in Ethiopia. Both paved and gravel roads radiate from Addis Ababa to the main cities, towns and centres with commercial, industrial and agricultural activities. International highways also link Addis Ababa to neighbouring countries like Djibouti, Kenya, and the Sudan. Air transport services provide further means for agro-industrial product distribution.

Most food processing industries are located close to the markets they serve and at a long distance from agricultural production areas. Under-developed infrastructure – roads, electricity, and water supplies – militate against the decentralization of agro-industry, but Economic Growth Corridors (EGCs), when eventually implemented, might provide the required infrastructural support for agro-industrial development in rural areas. Improved infrastructure would help connect farmers to markets, and the creation of appropriate platforms, such as Integrated Agri-Food Parks (IAFPs), would address many supply chain problems. Indian experience shows that where infrastructure is put in place, industry parks have been successful.

Integrated agri-food parks and rural transformation centres

An important pillar of the agro-industry master-plan is the proposal to establish pilot Integrated Agri-Food Parks (IAFPs) to be located in strategic production hubs, where there is latent economic potential, such as in Economic Growth Corridors. This will lead to the transition of the Ethiopian agro-industry into an organized, high-tech, safe, demand-led sector, with a high value added orientation.

IAFPs are clusters of firms grouped together to share infrastructure and services – roads, power, telecommunications, material supplies and transport, and administrative and management services – as well as to exploit the opportunities for joint training and other synergies, which can arise from joint efforts. The clustering of firms within industrial parks provides the critical mass needed to justify investment in shared services ranging from infrastructure and business support services to efficient, eco-friendly waste recycling and disposal facilities, which could not be provided effectively to widely dispersed firms. IAFP platforms contribute to supply chain integration while strengthening linkages between farmers and markets, thereby enhancing productive efficiency and reducing post-harvest losses. Food parks also ensure higher returns due to high quality output, off-season availability, better traceability, and higher productivity.

Successful replication of such pilot IAFP schemes across strategic production hubs would support the transition to organized, high-tech, demand-led, safe and high-value operations. Furthermore, food parks could be instrumental in creating an environment favourable to the transition of informal micro-food processing enterprises into formal SMEs by offering tax, financial and training incentives. IAFPs would enhance regional economic security and benefit rural communities, becoming a focal point for development, thereby attracting further investment and creating additional wealth that will filter into the communities at large.

Other major advantages of IAFP include the transfer of technology in agriculture and processing, due to migration of efficient international best practices in production and processing to produce internationally competitive products. There are spillovers too in higher returns to farmers, greater supply reliability of raw materials for agro-processors, and the establishment of business centres to

offer specialized services, such as restaurants and retail stores as well as government extension and support services.

The aim is to create parks with world class facilities for hi-tech agriculture and processing that will be integrated with a minimum of 20 to 25 Rural Transformation Centres (RTCs). These RTCs are located in the catchment areas for the collection or procurement of agricultural and horticultural produce. They will act as aggregation points where farmers can sell their produce and purchase inputs, and they will require investment in supportive social infrastructure, such as schools and primary healthcare.

Institutional capacity

The absence of a dedicated support organization for agro-industry that would coordinate different support and regulatory activities, including provision of statistics and quality and safety assurance infrastructure, is a serious shortcoming that must be addressed. Accordingly, the agro-industry master plan seeks to build institutional capacity to coordinate support for the entire value chain by strengthening the Agro-industrial development Unit which could then act as a focal point for development. The Unit would be accountable to the MoTI and would foster networks, particularly with MoARD and the regional states, as well as selected universities and research institutes.

In addition, the Quality and Standards Authority for Ethiopia (QSAE) should be strengthened so that it can collect and disseminate the Sanitary and Phyto-Sanitary (SPS) requirements for different agricultural products and markets. QSAE should have the authority to establish standards, coordinate implementation in each product sector, and then monitor compliance.

Micro and small-scale agro-industries

Most agro-industry operations in Ethiopia are micro and small-scale, operating with backward technology, limited skills, and inadequate funding, disadvantaged also by deficient infrastructure and logistics systems. Given their dominance within the sector and their role as a source of employment and income in any development strategy, they should be accorded equal priority with larger-scale enterprises. The agro-industry master plan advocates strengthening the microfinance sector to address financial constraints in small and medium enterprises (SMEs) by making some seed financing available to enable SMEs to develop their businesses by adapting appropriate technology, acquiring production premises, and providing training for their personnel. Extension and support services must be enhanced, and a strategic programme has to be designed that focuses on support for the upgrading of the micro and cottage industry sector.

Visions, plans of action, and way forward

Along the lines of the above mentioned Agro-industry Master Plan, specific action plans have been developed by the Ethiopian government (MoTI and MoARD) with assistance from UNIDO and FAO, and in association with the UNDP (see MoTI *et al*. 2009, 2010):

- The strategy addresses constraints faced by smallholder farmers and small-scale agribusinesses and proposes the establishment of IAFPs. Initially, by 2015, five pilot IAFPs, each with 20 RTCs, are to be created in carefully selected areas of Economic Growth Corridors.
- The Plan of Action provides for feasibility studies to select appropriate areas for IAFPs, investment in appropriate infrastructure (roads, water, electricity) needed to establish the Food Parks, and an awareness campaign for entrepreneurs in the agro-processing sector underpinned by one-stop windows to facilitate the establishment of new businesses.

- The Plan of Action promotes contract farming so that by 2015 a targeted 80 per cent of large and medium-scale food manufacturers will purchase the bulk of their raw material through contract farming.
- The Master plan targets international financial institutions to provide funds for agro-industrial development allied with the establishment of an Agro-Industry Fund to work in close collaboration with agencies like the African Development Bank, the World Bank and the International Finance Corporation as well as with private banks. An additional microfinance scheme for micro and cottage industries is also to be set up.
- The Plan also emphasizes building institutional capacity to coordinate the required support services across a range of government institutions, development partners and other organizations as a key aspect of the agro-industrial development strategy. To achieve this, the Agro-industrial development Unit will be strengthened while joint initiatives by universities, research institutes, professional associations, industry and farmers should be organized. A fundamental pillar for the success of the agro-industrial development strategy is the creation of a skills and education system which is aligned with the needs of the agro-industry. To this end centres of excellence among the universities should be identified.
- The Plan of Action seeks to strengthen the Ethiopian Export Promotion Department (EEPD) with funding shared by the government and the private sector.
- A lack of awareness of the favourable Ethiopian investment climate has led to limited FDI inflows to the agro-processing sector. In order to encourage investments in the agricultural sector and agro-industry in Ethiopia, an investment promotion department should be established that will build a database of potential investment opportunities and will match these to the needs of investors.
- Micro and small agro-processing industries need to be upgraded and modernized in order to compete with products in local, regional and international markets. The aim is to achieve a level of operation for micro and small agro-industry firms at 85 per cent of their capacity, as well as meeting required quality standards, by 2015. A Strategic Programme (SP) to support the upgrading of selected model agro-operations will be implemented.

Despite this great endeavour and vision to synchronize these master and action plans, the lack of financial resources for developing agro-industries and promoting agribusiness is a problem in Ethiopia, and it has to be overcome quickly. Such a Vision should provide the objectives to guide the planners in preparing their master plans and to care then for more realistic and implementable action plans.

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Abbreviations and Acronyms

ADLI	Agricultural Development Led Industrialisation
AfDB	African Development Bank
AMC	Agricultural Marketing Corporation
ATVET	Agricultural Technical and Vocational Education and Training
COMESA	Common Market for Eastern and Southern Africa
CSA	Central Statistical Agency of Ethiopia
CSE	Conservation Strategy of Ethiopia
UNECOSOC	United Nations Economic and Social Council
ECX	Ethiopia Commodity Exchange
EEP	Ethiopian Environmental Policy
EEPD	Ethiopian Export Promotion Department
EurepGAP	European Good Agricultural Practices
EGC	Economic Growth Corridors
EMGS	Ethiopian Matching Grant Scheme
EIA	Ethiopian Investment Agency
FAO	Food and Agriculture Organization
EEPA	Ethiopian Export Promotion Agency
EIPA	Ethiopian Investment Promotion Agency
ETB	Ethiopian Birr
EEPD	Ethiopian Export Promotion Department
EurepGAP	European Good Agricultural Practices
EGC	Economic Growth Corridors
EMGS	Ethiopian Matching Grant Scheme
EIA	Ethiopian Investment Agency
FAO	Food and Agriculture Organization
EEPA	Ethiopian Export Promotion Agency
EIPA	Ethiopian Investment Promotion Agency
ETB	Ethiopian Birr
EEPD	Ethiopian Export Promotion Department
EurepGAP	European Good Agricultural Practices
GVP	Gross Value of Production
HACCP	Hazard Analysis and Critical Control Point
HDI	Human Development Index
IAFP	Integrated Agri-Food Park
IDA	International Development Association (of the World Bank Group)
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IT	Information Technology
MDGs	Millennium Development Goals

MERU	Manufacturing Efficiency and Response Unit
MoARD	Ministry of Agriculture and Rural Development
MoFED	Ministry of Finance and Economic Development
MoTI	Ministry of Trade and Industry
MSEs	Micro- and Small-scale Enterprises
MSMEs	Micro-, Small-, and Medium-scale Enterprises
NIDS	National Industrial Development Strategy
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PPD	Public Private Dialogue
QSAE	Quality and Standards Authority for Ethiopia
R&D	Research and Development
RTC	Rural Transformation Centre
SPS	Sanitary and Phyto-sanitary Standards
SDPRP	Sustainable Development and Poverty Reduction Programme
SME	Small- and Medium-scale Enterprises
SP	Strategic Programme
STI	Science, Technology and Innovation
TRIMS	Trade Related Investment Measures
UEA	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
WB	World Bank

Chapter 4 | Kenya

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Introduction: the case for agro-industrial development

Kenya is a largely agriculture-based economy, with the sector being the leading contributor to both exports and GDP[24]. However, the potential of the sector is not currently matched by processing and marketing capacity, resulting in very little value addition: most farm produce is exported, marketed or consumed in unprocessed form (FAO 2008; Atieno 2005).[25] Agro-industrial development has a stabilizing role in economic growth and development. Agro-processing, being one of the main subsectors of the manufacturing industry in sub-Saharan Africa (SSA), transforms agricultural raw materials to finished or semi-finished products for intermediate and final consumption. Textiles, leather products, and agri-food processing are the main sectors with the potential to enhance regional industrial performance and to contribute to integration of the subregion into the world economy (UNIDO 2005). The main issue for agro-industrial development in Kenya, however, is vulnerability to adverse factors affecting the agricultural sector, especially with respect to the supply of raw materials.

Agriculture's significance to the economy and its link to agro-industry have important implications for the country's realization of development objectives, most notably the Millennium Development Goals (MDGs). As the dominant economic activity in the country, agriculture is the main source of the country's economic growth, export earnings, employment generation, and is a source of food security and a stimulus to the generation of off farm employment. In addition it is a major source of raw materials for the manufacturing sector with 33 per cent of the manufacturing sector output derived from agricultural output (Onjala 2010). However, given the sector's poor performance, especially with respect to production and value addition in its products, its contribution to these development indicators has been limited thus far. Poverty indicators in the country show that poverty is higher in rural areas as compared to urban areas, and that the Human Development Index (HDI) scores have also been lower in rural areas of the country (UNDP 2001, 2002, 2005). The lack of value addition to agricultural products contributes to food insecurity, especially through increased vulnerability to fluctuations in production. The majority of those employed in agriculture have low incomes, with correspondingly low standards of living. The unrealized potential of agribusiness for broad-based development is largely due to the lack of value addition identified above. Poor production technology is another constraint, for instance, the fishing sector has its potential constrained by the part-time and subsistence nature of artisanal fishing in the country (Onjala 2010).

The country's agro-processing industry serves both domestic and foreign demands and consists of dairy, fish, meat, grain, fruits and vegetables, edible oils and fats, sugar, baked goods, beverages, and tobacco. Other important exports in the sector include hides and skins and textiles. The sector is estimated as the country's largest manufacturing subsector, accounting for over 30 per cent of total manufacturing output. In 2004, there were more than 1200 businesses in Kenya's food and beverage processing industry, including small, family-owned businesses, large businesses listed on the Nairobi Stock Exchange, and subsidiaries of multinational companies (FAO 2008). Agro-

[24] The agriculture sector has contributed in 2009 with a share of 24.4 per cent of the GDP (Republic of Kenya 2010).

[25] 91 per cent of agricultural exports are classified as low value (Onjala 2010).

processing has remained a major source of output for the manufacturing sector. The sector also witnessed increased investment in the textiles industry under the Export Processing Zones (EPZ) (Were 2006).

There are also major multinationals are operating in the sector that cater for both domestic and export markets, either independently or through joint ventures. These include Nestlé, Unilever, Cadbury, Coca Cola, Del Monte, and Wrigley. The sector has recorded steady growth over the years and this is attributed largely to the increased demand for Kenyan goods from the regional markets of East Africa and the COMESA (Common Market for Eastern and Southern Africa) region. Some studies have estimated that export trade between Kenya and other East African states has fluctuated between 20-50 per cent of total exports (Onjala 2010; Were 2006).

The African Growth and Opportunities Act (AGOA) of the United States has become another source of markets for Kenya's agro-industrial products. Positive trends in the growth of the economy from 2002 onwards have also proven favourable and the country's trade policy objectives have since shifted towards a more open regime, which has strengthened and increased access to overseas markets for processed products. Noting that a major reason for the weak competitiveness of Kenya's agricultural exports is the limited capacity for value addition, the country's Vision 2030 targets increased market access through value addition by processing, packaging and branding the bulk of agricultural produce (Republic of Kenya 2007).

The country's vision for 2030 is also to make Kenya globally competitive and to improve the quality of life. The nature of participation in international trade is therefore important. The share of manufacturing exports has not only remained low, but has also been declining (Onjala 2010). In terms of global competitiveness, Kenya is ranked 98th in the Global Competitiveness Index by the Global Competitiveness Report, with innovative capacity (ranked 48th), the quality of education (ranked 34th), and a sophisticated financial system (ranked 37th) being the main supporting factors (World Economic Forum, 2010). The country's competitiveness is also demonstrated through revealed comparative advantage (RCA) calculations.

Existing studies have shown that Kenya has a strong revealed comparative advantage in only a few commodities being traded internationally. These are hides and skins products and sisal fibre products (Onjala 2010). However, there are also other Kenyan export products with some competitive position, although the RCA values may be much weaker, and efforts are therefore needed to increase export competitiveness.

Structure and Dynamics of Agro-industries

Agriculture is the dominant activity in the country, with 70 per cent of the country living in rural areas and 75 per cent of the rural population deriving their livelihood from agriculture. Kenya has embraced the goal of industrialization in order to achieve structural transformation for the economy. The Economic Recovery Strategy (ERS) (Republic of Kenya 2004) and the Vision 2030 (Republic of Kenya 2007) recognize the mutually reinforcing relationship between agriculture and industry, and that a vibrant and productive agricultural sector provides a crucial foundation for industrialization. Agribusiness has the potential for strengthening industrial linkages and contributing to technological innovation and regional development. It is estimated that 20 per cent of those employed in the formal sector and 15 per cent of those in the informal sector are engaged in agro-industrial activities. Approximately 40 per cent of the employees in the rural and peri-urban areas are employed in agro-industry (JICA and MoTI 2008).

The present study considers products that may be tradable or non-tradable either at the regional or international levels, from the following subsectors making up the agro-industry sector: food and beverages including livestock and fish products; leather and leather products; textiles and garments; wood and wood products; horticultural products; and agro-industrial inputs for increasing

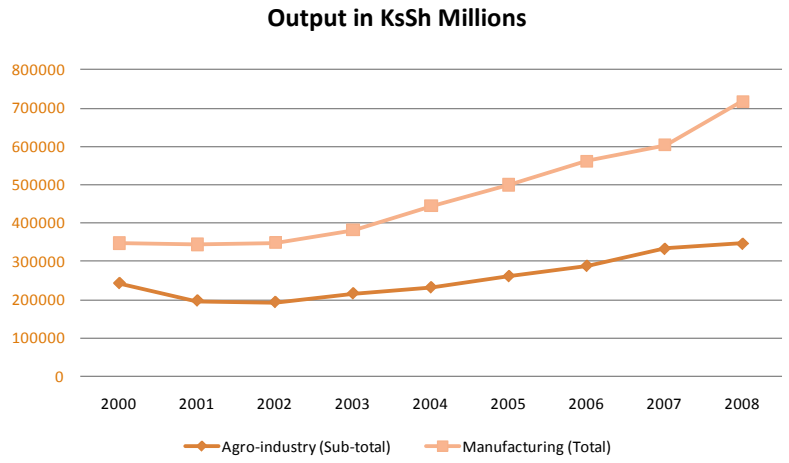
agricultural productivity (UNIDO, 2005). Agribusiness enterprises fall into four major categories: farms; farm input supply businesses; agro-processors; and marketing and distribution services. In African countries, Kenya included, these activities are found both in the formal and informal enterprises, and range in size from large to small and micro enterprises.

Productivity levels in agro-industry are low, reflecting the limited scale of activities mainly due to dispersed sources of raw materials as well as backward technologies and weak managerial and technical skills. Due to the scattered distribution of processing plants, transport costs are high and the location of agro-industrial activities is critical to viability. As the population urbanizes, demand for processed foods in urban areas is growing rapidly, thereby enhancing the attractiveness of value-addition activities.

Contribution of agro-industry to GDP

Agro-industry is one of the major sectors in the Kenyan economy in terms of its contribution to GDP (Figures 4.1 and 4.2). The manufacturing sector is the third largest contributor to GDP with a share of 10 per cent, after agriculture (24 per cent) and wholesale and retail trade (11 per cent) (Republic of Kenya 2009a). Kenya's manufacturing sector is fairly large by regional standards, and is also one of the major sources of incomes, especially in the urban areas (Were 2006). 2003 were characterized by inter-industry specialization.

Figure 4.1: Contribution to GDP

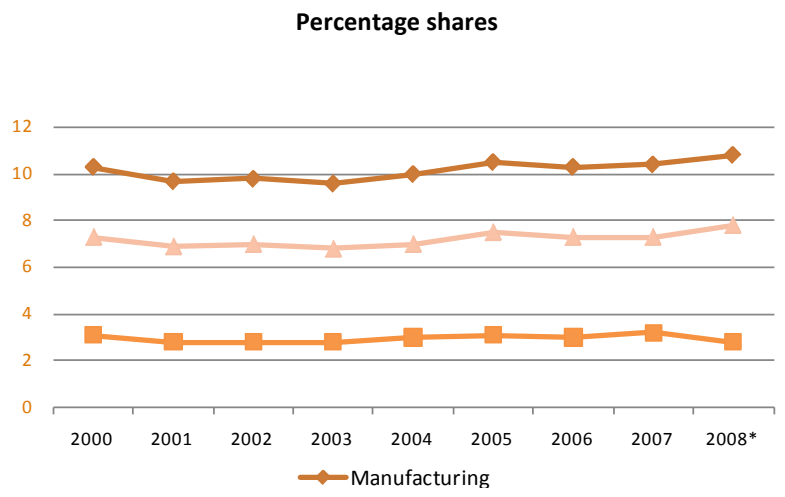


Source: RoK, Statistical Abstracts, various issues

Note: The presentation of the statistics does not give the share of agro-industry, but only food, beverages and tobbaco, which are also the major component of agro-industry. The absolute values of agro-industry compared to manufacturing are provided.

Agro-industry is also a major contributor to the country's manufacturing. It is the leading contributor to manufacturing value added (MVA), accounting for 70 per cent of the total (JICA and MoTI 2008). Within the sector, food processing is dominant, with grain milling being the leading contributor to value addition; it is estimated to contribute up to 25 per cent of the total value addition, while its contribution to employment is also estimated to be the largest at 33 per cent of the total labour force among the large enterprises. This, however, differs between individual commodities among the large scale producers, with coffee and tea taking an estimated 43 per cent of the labour force. The earnings from agro-processing accounted for 30 per cent of total export value, an equivalent of 70 per cent of total manufacturing by 2007 (JICA and MoTI, 2008).

Figure 4.2: Percentage Contributions to GDP



Source: RoK Statistical Abstracts, various issues

The sector also has the largest share in the number of formally registered enterprises estimated at 459 (22 per cent) of the formally registered enterprises, and representing 18 per cent of the entire number of manufacturing firms in the country. In terms of scale, it also has larger scale enterprises than those of other sectors as evidenced by sugar mills and some fruit canning firms, while some agro-processing subsectors like tea processing, grain mills, oil extraction mills, and dairy processing are smaller in scale, but larger in numbers, hence having high employment potentials and capacities. It is further estimated that up to 20 per cent of those employed in the formal sector and 15 per cent of those in the informal sector have been engaged in agro-industrial activities (JICA and MoTI 2008).

The sector has been one of the main contributors to growth in the domestic economy. This is mainly attributed to its links with agriculture, which is a major player in the country's economy.

Table 4.1: Quantum Indices of Manufacturing Production, 1976 = 100

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Meat and Dairy Products	85.9	86.1	85.4	89.8	104.8	118.7	125.3	154.8	145.1
Canned vegetables, fish, oils and fats	391.8	423.3	397	405.3	466.7	469.2	556	680.5	663.3
Grain Mill Products	157.6	143.1	174.4	177.7	193.3	231.2	253.6	246.9	247.2
Bakery Products	295.5	299.9	290.8	284.3	185.1	202.6	212.8	204.6	194.6
Sugar and Confectionery	206.1	195.2	238.6	218.9	250.9	237.7	232.4	251.3	248.7
Miscellaneous foods	246.4	262.3	240.2	250.8	269.1	271.1	257.6	295.4	274.5
Total Food Manufacturing	199.4	200.8	210.9	211.1	233.5	235.6	239	269.2	259.3
Beverages	166.4	157.9	164.9	176	200.6	232.6	259.5	314.7	335.1
Tobacco	160.2	155.9	123.5	126.7	142.6	195.2	273.5	324.8	323.9
Beverage and Tobacco	166.1	158.2	160.2	170.3	193.8	229.2	263.8	319	337
Textiles	115.5	114.7	120.4	106	89.3	97.1	102.3	104.1	79.5
Clothing	167.2	172.8	178.4	188.1	187.3	269.4	379.1	396.6	457.9

Leather products and Footwear	54.6	59.5	81.6	99	75.2	116.6	124.4	124.1	126.3
Wood and Cork Products	75.1	71.7	59.7	51.2	40.5	39.2	39.2	39.5	44.2
Furniture and Fixtures	56.1	57	56.9	55.1	56.9	57.6	58.1	58.7	64
Paper and Paper Products	258.5	263.3	270.2	362.7	336.3	427.5	414.2	403.4	522.6
Printing and Publishing	424.5	424.5	436.5	428	422.4	419.8	286.8	295.1	197.1
Rubber Products	588.1	581.1	671.3	712.8	707.3	760.3	816.5	725.8	558.3
Total Manufacturing	**281.4**	**283.1**	**286.5**	**290.6**	**310**	**334.1**	**353.5**	**378.4**	**374.5**

Source: RoK, Statistical Abstract 2009b (various issues)

The quantum index[26] (Table 4.1 above) shows that foods, like meat and dairy products, grain milling, beverages and tobacco, are among the leading sectors in manufacturing and the main contributors to growth. The sector has, however, experienced negative growth in the year 2007/2008, but has still remained among the major contributors to the manufacturing sector (Republic of Kenya 2009b).

The quantum indices for the sector show that most sectors of agro-industry have recorded positive growth in the last five years. The positive performance of the sector has been attributed to both the increase in demand for industrial products from processing firms as well as increased supply through agricultural production of some products (Republic of Kenya 2008; 2009a).

In the recent past, the sector has registered a mixed performance. The key agricultural products with links to agro-industry, like horticulture, dairy, production of canned vegetables and fruits, fish, oils and fats, have experienced growth. Beverages and tobacco grew by 5.6 per cent, while textiles production dropped significantly by 23.7 per cent. The drop in textiles has been attributed to the competition from imported products, reflected in the positive performance of clothing, which subsector benefits from imports. The performance of the sector is however generally highly related to the agricultural sector performance. Paper and paper products on the other hand recorded a growth of 29 per cent (Republic of Kenya 2009a). According to Kenya's current blueprint for development, the Vision 2030, the agro-industry sector is viewed as having special significance, with food, beverages and tobacco contributing 28.9 per cent of manufacturing GDP, while textiles, apparel, leather and footwear contribute six per cent of GDP (Republic of Kenya 2008). The earnings from agro-industry in the country registered six per cent of GDP in 2006, accounting for 30 per cent of export value and 70 per cent of the total MVA.

An examination of the agro-industrial production index (AIPI) reveals that vegetable and fruit processing, oil processing and canning continue to have stable and strongly rising trends followed by beverages. These categories surpass the trends of the manufacturing sector in total production. On the other hand, bakery/confectionary and wood products subsectors have shown downward trends (Republic of Kenya 2009a).

In terms of exports, food, beverages and tobacco subsectors are among the sector's highest exporters, contributing 18 per cent of the total export earnings. However at the same time, food, beverages and tobacco also import a lot of their raw materials, which reduces its net exports. The sector is also the leading contributor to the country's exports. Earnings from food and beverages exports accounted for 42 per cent of total export earnings. Agro-processing has the largest share of exports within the manufacturing sector, contributing most to export earnings (JICA and MoTI 2008; Republic of Kenya 2008). Other empirical studies give similar trends in terms of the sector's contribution to GDP, manufacturing production, exports, and employment (Onjala 2010; Were

[26] The quantum index represents the annual quantity changes over time, with one year as the base. In Table 4.1, 1976 is the base year (1976 = 100).

2006; McCormick & Atieno 2002). There is, however, limited empirical evidence documenting the sectoral contributions by using independent surveys coming from outside of government statistics. Were (2006) uses the RPED (Rural Programme on Economic Development) data which are based on a sample of manufacturing firms, while McCormick and Atieno (2002) use a sample survey of manufacturing firms in selected urban centres only.

Employment, value addition and productivity in agro-industry

Table 4.2 shows that agro-industry is the major source of employment in the manufacturing sector, accounting for 73 per cent of the number employed by large firms (average for the years 2006-2008). Over this period the sector accounted for 66 per cent of the manufacturing sector earnings and for 5.9 per cent of the economy-wide formal sector earnings.

The majority of the Kenyan population lives in rural areas where income-generating opportunities are limited. Rural non-farm earnings from trade, agro-processing, manufacturing, commercial and other service activities are therefore a major contributor to rural household incomes, complementing meagre earnings in agriculture and helping to diversify household risks while smoothing out consumption patterns in rural areas (UNIDO/ IFAD/ FAO 2008).

Estimates by the Ministry of Trade and Industry (MoTI) show that 20 per cent of the employment in the formal sector and 15 per cent of those in the informal sector are engaged in agro-industrial activities. Since most processing sites are located in rural areas, agro-industrial enterprises employ rural people and account for an estimated 40 per cent of all employment in rural and peri-urban areas. This excludes those employed directly in agriculture (MoTI 2006).

Table 4.2: Number of employees engaged by large agro-industry firms and establishments (2006–2008)

Agro-Industry	Number of employees engaged, 2006–2008		
	2006	2007	2008
Meat and Dairy Products	8,053	8,696	5,666
Canned vegetables, fish, oils and fats	9,266	10,421	7,950
Grain Mill Products	5,909	5,964	4,438
Bakery Products	2,090	2,111	2,263
Sugar and Confectionery	16,326	15,537	14,606
Miscellaneous foods	30,866	31,100	21,946
Beverage and Tobacco	7,416	7,798	7,660
Textiles	41,751	44,782	43,000
Clothing	10,009	10,092	6,570
Leather products and Footwear	1,613	1,534	2,038
Wood and Cork Products	7,788	7,782	5,092
Furniture and Fixtures	2,865	2,893	1,869
Paper and Paper Products	8,130	8,203	7,701
Printing and Publishing	6,398	6,562	3,638
Rubber Products	3,099	3,581	2,113
Sub Total	**161,579**	**167,056**	**136,550**
Total Manufacturing	**222,362**	**231,702**	**186,088**

Source: RoK, Statistical Abstracts, various issues.

While food processing is the dominant subsector in terms of value addition, of employment in large enterprises, and in the number of enterprises, grain millers are the largest employers, with 37

per cent of the food processing employment and with the fastest rate of job creation. Among the large-scale producers, 43 per cent of the workforce is employed in "other" foods, which include tea and coffee. For firms operating outside the export processing zones (EPZs), food processing, beverages and tobacco were assessed as having a high growth potential, with value addition of over 10 per cent and high levels of productivity (JICA and MoTI 2008).

The beverages and tobacco subsector is the fourth largest contributor to value addition (9 per cent of the total), and paper and paper products rank as the fifth largest contributor to value addition (5 per cent). For beverages and tobacco, labour productivity is over twice the average in the manufacturing sector. The textiles sector is the second largest contributor to employment after food subsectors (JICA and MoTI 2008). Clothing manufacture is the main activity in the EPZs, accounting for 68 per cent of the total garment output in Kenya. In 2008, clothing and textiles accounted for 26.6 per cent of manufacturing employment in large-scale firms (Table 4.3). Looking at trends in the performance of textiles and clothing in terms of production and employment, we can see that the production of textiles has continued to fall steadily since 2000, while that of clothing has continued to increase. On the other hand, employment in textiles shows an increase between 2006 and 2007, but falls in 2008, while employment in clothing also falls between 2007 and 2008. While there is no obvious explanation for these trends, discussions with key players in the industry reveal that there are a number of plausible ones. The increase in clothing production versus the decline in textiles production can be explained by the proliferation of textiles imports from India and China, which affected domestic textiles production. Some of these textiles imports are processed and re-exported as garments, thus being reflected in increased production in clothing. Employment decline in both sectors can be explained by the casualisation (casual work organization) of employment which makes it easy for employers to lay off workers. The price squeeze in the international markets for exports, with demand for high quality, increases the cost of production, leaving labour as the only input through which they can reduce costs, mainly by laying off workers. The decline of employment in both sectors in 2008 can also be explained by the post-election violence experienced in the country, which displaced most workers in these sectors.

In addition to agro-industry, there are a number of other activities that are indirectly related to agro-industry and which generate substantial employment opportunities, notably retailing, construction, trade, transport, and logistics. The performance of these activities depends on the performance of agriculture and, by extension, agro-industry. The increasing involvement of female employees especially in the non-traditional, high-value agro-chains, such as horticulture, where women make up three-quarters of the workforce, and fruit and fish products, points to the proliferation of job opportunities in agribusiness (Wilkinson & Rocha 2008). However, despite the increase in employment in these subsectors, studies of female employment in the non-traditional export sectors, like fishing, show that women are mainly employed in the low paying and precarious activities of these sectors (Atieno 2006).

Table 4.3: Exports of Principal Commodities (Percentage Values)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Coffee, not roasted	9.8	6.1	5	4.6	4.4	4.7	4	4	3.1
Tea	29.3	28.4	26.2	24.1	22.7	21.8	20.7	17.9	19.8
Sisal Fibre and tow	0.5	0.6	0.6	0.7	0.7	0.6	0.5	0.3	0.5
Meat and Meat Preparations	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.3
Pyrethrum extract and flowers	0.6	0.8	0.6	0.7	0.6	0.6	0.5	0.1	0.1
Hides, skins and fur skins, undressed	0.4	0.5	0.3	0.4	0.6	0.4	0.3	0.1	0
Wattle bark and extract	0.2	0.2	0.1	0	0	0	0.1	0	0
Pineapples, tinned	2.1	2.5	2.8	2.8	2	1.9	1.2	1.4	1.6
Cotton, raw	0	0	0.1	0	0	0	0	0	0

Wool, raw	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0
Cashew nuts	0.2	0.3	0.1	0.1	0.1	0	0	0.1	0.1
Beans, peas and lentils	6.5	0.1	0.4	0.5	0	0.1	2.1	1.8	1
Oil seeds, oil nuts and oil kernels	0	0.1	0.1	0.2	0.2	0.2	0	0.2	0.1
Butter and Ghee	0	0	0	0	0	0	0	0	0
Maize, unmilled	0	0	1.3	0.1	0.2	0.1	0.2	0.2	0.1
Horticulture	17.7	16.3	21.6	26.7	24.9	23	21.4	21.7	22.1
Sub total	**67.5**	**56.1**	**59.5**	**61.2**	**56.8**	**53.7**	**51.2**	**48.1**	**48.8**

Source: RoK, Statistical Abstract (various issues)

Note: Figures do not sum to 100 per cent as there are other principal commodities that also contribute to Exports and are not included in the table since they are largely non-agro-industry related.

Kenya's export basket is narrow, dominated by primary agro-based commodities, thereby increasing the country's vulnerability to international market price fluctuations and highlighting the necessity of export diversification through value-addition such as agro-processing. The country has a "natural comparative advantage" in specific agro-industrial sectors, especially in traditional tropical crops and in non-traditional exports. At the global level, Kenya has demonstrated the capacity to compete in certain agro-industry sectors like fruit, horticulture, fish products, and livestock products, which already constitute a significant part of the country's exports (see Table 4.3 above).

Major agro-industrial exports from Kenya include tea[27], horticultural products, unroasted coffee, and beans. Together, the export value of these commodities is in total approximately 50 per cent of the value of total (agro-industrial and non- agro-industrial) export products (JICA and MoTI 2008). A trend observed during the past five years is that the percentage values of the major agro-industry commodities have declined significantly, except for horticultural products (see Table 4.3).

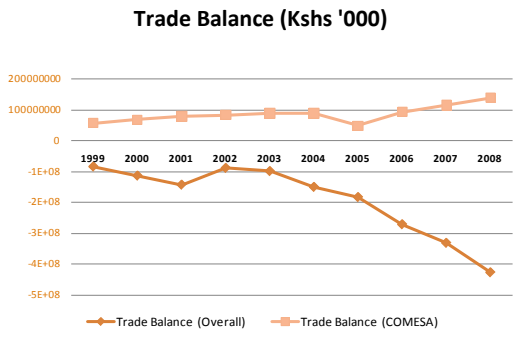
An important factor in competitiveness however is the fact that Kenya's agro-industrial commodities are constrained from increasing their export market share by strict quality standards and high production costs for processors among other factors. Partly because of the quality standards, Kenya has expanded its market share mainly in the COMESA (Common Market for Eastern and Southern Africa) region compared to the European Union (JICA and MoTI 2008). Figures on the direction of trade show that, although the total value of exports to the African region has shown signs of reduction, the region continues to be the major destination of Kenya's exports. Figure 4.3 shows that while the country's overall balance with the rest of the trading partners is negative, the balance of trade with COMESA countries continues to be positive, implying that Kenya's trade position is stronger within the COMESA region but not for the rest of its trading partners like the European Union (EU), and India and China, who are also emerging as major trading partners with Kenya. While for the European Union the quality and standards requirements for exports are important, for China the main issue is that policies have been put in place to increase the competiveness of its exports to Kenya, compared to Kenya's exports to China (Onjala 2010; Kamau & McCormick 2010).

Trends in the country's principal exports and imports also give an indication of the country's performance on trade. Since 2005, earnings from food and beverage exports accounted for up to 42 per cent of total export earnings. In terms of quantity, the exports of beverages, leather, and tobacco have also increased, but were mainly destined for the neighbouring countries (Republic of Kenya 2007; 2009a). This is consistent with the trends in the Balance of Trade against COMESA and other countries (see Figure 4.3).

[27] Kenya is the world's largest tea exporter, with its contribution estimated at 28 per cent (Onjala 2010).

Given appropriate policies, Kenya could target markets for organic, fair trade and original products with strong growth potential in high-value outlets domestically, as well as for export markets. This should be coupled with enhanced competitiveness of the industry and enhanced value-addition processes that improve product safety and quality, as well as the efficiency of technical processes and business practices. Agro-industries in the country must pay close attention to such critical issues as adherence to standards, quality consistency, volume requirements, and timely delivery (UNIDO/ FAO/ IFAD 2008).

Figure 4.3: Trends in the Balance of Kenya's Balance of Trade (1999-2008)



Source: RoK 2009

Policies for developing agro-industries

Reorientation of policies

The macroeconomic policy environment is important for the development of the agro-industry sector. Most agro-industrial firms are privately owned and promotion of the sector therefore requires the implementation of business-friendly policies that reinforce the efforts of industry players. Macroeconomic policy is designed to stimulate the growth of agro-industries, build business confidence and enable agro-industry exports to compete with foreign suppliers in the world market. The government has maintained macroeconomic balance through a number of policy measures such as the control of the budget deficit and inflation, steady progress towards free multilateral trade through tariff reduction, maintenance of a competitive exchange rate, and increased allocation of government expenditure towards infrastructure. All these measures have worked to stimulate the development of agro-industry, especially those in the export-oriented sectors like beverages, fish processing, textile and garments among others (Republic of Kenya 2007). However, while the move towards free trade may be expected to benefit agro-industry, it has also led to other challenges with respect to access to export markets and competition from imports in the domestic markets.

The effect of macroeconomic policy can be seen from the country's changing economic performance: growth has responded with varying degrees of success to the differentpolicy regimes in place at different times (Mwega & Ndungu, 2002). The country's economic performance experienced a significant decline since the early 1980s to 1990s, after experiencing a positive performance in the 1960s and 1970s.

Since independence in 1964, Kenya has implemented three distinct economic policy regimes with differing effects on agro-industrial development:

- Immediately after independence in the early 1960s to the late 1970s, the government adopted an import substitution industrialization strategy that involved the protection of infant industries by way of quantitative restrictions, import licensing, foreign exchange controls, high tariffs on competing imports, and an overvalued exchanged rate. The import-substitution policy

promoted agro-industry which became the leading manufacturing sector with the manufacture of consumer products, like clothing, textiles, foodstuffs, beverages and tobacco. However, the high level of protection contributed to inefficiency within the sector, which hindered the development of competitive industries. Moreover, import substitution was an inward-looking strategy biased against exports as a result of which competition among firms was mainly confined to the domestic market (MoTI 2006). The policy became unsustainable in the late 1970s and had to be abandoned.

- The second policy regime, resulting from the realization that the import substitution policy was no longer sustainable, started from the early 1980s and saw the introduction of economic reforms. The Structural Adjustment Programmes (SAPs) implemented over this period were marked by the sharp reduction in the protection of industry. During this phase agro-industry underwent radical change as trade liberalization exposed manufacturers to stiff competition from imports, leading to the collapse of some of the industries which were previously protected under import substitution. Among the industries that were mostly affected by liberalization were agro-processing industries, like textiles, and food processing industries, like meat processing and dairy products (MoTI 2006).
- In phase three in the 1990s policy shifted decisively towards export-led industrialization focusing on enhanced efficiency, stimulating private investment, and boosting export earnings. There was comprehensive implementation of trade liberalization and deregulation of domestic trade. Export promotion measures included the establishment of export processing zones (EPZ) whereby investors enjoyed ten-year tax holidays and unrestricted foreign ownership. Other export-oriented measures included duty and VAT (Value Added Tax) exemptions under the Export Promotion Programme Office (EPPO) now referred to as the Tax Remission for Export Office (TREO) (MoTI 2006; Were 2006). These measures stimulated agro-industry so that by 2004 clothing and agro-processing accounted for 80.6 per cent of EPZ exports (MoTI 2006). Table 4.3 further shows that, by 2008, exports of principal exports (from EPZs and non-EPZs) constituted 48.8 per cent of total exports.

Strategy frameworks

The initial strategy for the country's industrialization was set out in Sessional Paper Number 2 of 1996 on Industrial Transformation to the Year 2020 (Republic of Kenya 1996). The strategy earmarked specific sectors for support based on the sectors' resilience and potential for high and dynamic growth. The first stage of the strategy comprised government's selective encouragement of labour-intensive, resource-based and light manufacturing industries where the country has a comparative advantage. Agro-based industries, like textiles, horticultural processing, skins and hides, leather, tea, coffee, and sugar processing, were among the industries selected for support.

The current policy framework for the industrial sector is found in the country's latest blueprint for development, the Vision 2030 (Republic of Kenya 2007). The overall goal of this policy framework is to develop a vibrant manufacturing sector capable of promoting the creation of durable, decent and productive employment opportunities, stimulating economic growth and strengthening linkages between small, medium and large scale firms. The policy framework focuses on strengthening local production capacity, raising the share of Kenyan agro products in regional markets and developing new niche market agricultural products. It seeks to scale up agro-industrial enterprises by encouraging consolidation and the establishment of special zones and parks for better targeting of services to export firms within the zones and parks. In addition, development of various industrial clusters is also proposed and putting in place measures to protect agro-processing industries from counterfeit and dumping in order to increase their competitiveness via increased production and consolidation (Republic of Kenya 2007).

An initial cluster pilot project will be set up in Mombasa to allow for easy importation of necessary materials and exporting of finished products. The proposed cluster will be an agro-industrial zone incorporating activities such as blending and packaging of fertilizers, teas and coffees and a consolidated meat and fish processing facility to encourage growth of offshore fishing. A second pilot agro-processing cluster is to be located in Eldoret because of its strong potential for agricultural expansion and access to the airport, while a third will be located in Kisumu for the processing of vegetables, horticulture, fish processing, and for producing fruit juices. In addition, an SME park is to be set up in Nakuru for meat processing (Republic of Kenya 2008). While these are projects lined up by the government, one challenge to their realization is that there is no timeline for their realization as the availability of funds remains the key to their implementation.

Tax reforms aimed at reducing the tax burden on agribusiness are aimed at stimulating growth in the sector, while the harmonization of Kenya's tax regime with those of its trading partners in the East African and COMESA regions is expected to boost regional exports of agro-processed products while also encouraging value addition.

Trade policy

Kenya's trade policy objectives include moving towards a more open trade regime, strengthening export market access for Kenyan products, especially for processed goods, and a further integration into the world economy (Rottger & Silva 2008). Although the Kenyan government has been reluctant to offer export credit guarantee schemes for insuring against special risks faced by small-scale exporters, including agro-industrialists, it has put in place a number of export promotion incentives, such as the EPZs and VAT and duty exemptions, to partially offset an inherent anti-export bias. Some research has observed that the increase in export orientation of firms can be attributed to increased trade openness, following the implementation of trade liberalization reforms and export promotion programmes like the creation of the EPZs in the 1990s and the utilization of the AGOA initiative in 2000, which has especially spurred exports of textiles and garments (Were 2006).

The current trade regime does not specifically target the promotion of agro-industry but does acknowledge that there is a role for trade policy in assisting companies to develop the capacity to become active exporters. This is the shared responsibility of the Export Promotion Council (EPC), the Local Authorities (LAs), and the National Chambers of Commerce (NCC) (MoTI 2007).To safeguard the sector from the dumping of poor quality agro-industrial imports the Kenya Bureau of Standards (KBS) is required to ensure that imports meet minimum quality standards.

Technology policy

Recognizing that innovation through research and development (R&D) is essential for the development of agro-industry in Kenya, the government's technology policy offers incentives to the private sector designed to boost funding and support for industrial R&D especially in agro-industry. The Kenya Industrial Research and Development Institute (KIRDI) has a central role to play along with institutions that work in collaboration with sector associations, training centres, standards institutes, and technology support bodies. There have also been efforts to increase links between public and private sector research institutions to improve the dissemination of technology across the agro-industrial sector.

The Kenyan government acknowledges that conformity assessment encompassing testing, inspection, certification, accreditation and calibration is essential for the realization of an efficient and competitive agro-industry. To ensure that agro-products meet international market standards the government will enhance the Kenya Bureau of Standards (KEBS)'s participation in international standardization work (MoTI 2006). The KEBS is the body charged with the development of standards, implementation and accreditation, and forms the contact point for

CODEX Alimentarius, which incorporates the WHO/FAO international food standards and ISO-related standards.

Infrastructure policy

The poor state of infrastructural development in the country is a major constraint for agribusiness development. The government has therefore focused on improving the quality and efficiency of existing infrastructure with a focus on transport, energy, communications, water and sanitation, and land. Agro-industries are heavily water-dependent, and the government's Water Act sets out the regulatory and institutional framework for the management of the country's water resources underpinned by an elaborate public investment plan for water supply services.

Agricultural policies and agro-industrial development

Kenya's Strategy for the Revitalization of Agriculture (SRA) (MoA/Ministry of Agriculture and MoLF/Ministry of Livestock and Fisheries 2004) identifies the promotion of agro-processing and rural industries as one of the strategies for developing the agricultural sector. The strategy is designed to strengthen the complementarity and interdependence of agriculture with agribusiness by promoting forward and backward linkages and prioritizing rural industrialization. The SRA seeks to promote partnerships between smallholder farmers and agribusiness in the form of contract farming, thereby providing assured access to markets for small-scale farmers. It also proposes the prioritization of agro-industrial development in the investment code (MoA and MoLF 2004).

In other initiatives, the Ministry of Agriculture (MoA) is promoting value addition by addressing the barriers to rural agro-processing, which include licenses, product standards, entrepreneurial skills, high cost of equipment, and packaging. Priority is also being given to active involvement in multilateral and bilateral trade negotiations with the objective of expanding and diversifying agricultural products and markets.

The ministry also works closely with relevant institutions to support the inter-ministerial Food Safety Coordinating Committee (FSCC) to ensure that agricultural exports meet international quality and safety standards. It has proposed the establishment of agribusiness development centres for skills and technology transfer to agro-industries (MoA 2009, Information).

The regulatory and facilitative roles in agro-industry are played by government organizations like the Horticultural Crops Development Authority (HCDA), the Ministry of Trade and Industry (MoTI), the Export Promotion Council (EPC), and the private sector through the Kenya Association of Manufacturers (KAM) and the Fresh Produce Exporters Association of Kenya (FPEAK). EPC coordinates and harmonizes export development and promotion activities. It provides support services such as market information, training and advice to exporters through the Centre for Business Information in Kenya (CBIK). FPEAK represents its members and liaises with the public and private sectors as well as international organizations. It also provides market information on export markets, post-harvest handling to guarantee quality, packaging, and ensures adherence to established Codes of Good Practices.

Key informant interviews with the Ministry of Agriculture however revealed a lack of coordination among ministries responsible for agro-industry, including the Ministry of Cooperative Development and Marketing (MoCDaM), the Ministry of Regional Development (MoRD) and the Ministry of Water Services (MoWS). This is an important area where reforms are needed to ensure stronger coordination.

Policy responses to emerging agro-industry market opportunities

Kenya's agro-processing sector should be able to exploit growing international demand for tropical commodities, but competition among producer countries has recently become fierce with the

emergence of new exporters not just in Africa but also in Asia and Latin America. At the same time, Kenya's competitive advantage in tropical commodities has been eroded due to increasing input prices especially for small-scale processors unable to exploit economies of scale (JICA and MoTI 2008).

At the regional level, Kenya's agro-industry enjoys a greater market and related opportunities given the country's membership of Regional Trade Arrangements (RTAs). The removal of tariff and non-tariff barriers among RTA member states helps to facilitate access to wider markets for the country's agro-industrial exports. This enhances further exploitation of economies of scale as well as attracting the much needed foreign investment into the country. Kenya is already an active participant in the East African Community (EAC) which has since expanded and embraced a common market[28], in COMESA, the Intergovernmental Authority on Development (IGAD), and the Cross Border Initiative (CBI). The ACP/EU economic partnership agreement is another such agreement to which the country belongs.

Since the 1990s, investment in Kenya's neighbours has eroded the country's competitiveness in the COMESA region. Despite this, Kenya continues to export low-value agro-industrial products to the COMESA market because the demand for high-value commodities within the region is very small. This has been attributed to the fact that most COMESA countries have large rural populations living in poverty (JICA and MoTI 2008).

The development of an internationally competitive agro-processing sector is constrained by a range of factors, including the small scale of operations, which limits the technology that can be used, along with poor access to raw materials resulting in low levels of capacity utilization. Furthermore, the seasonality of raw material production affects agro-industrial productivity negatively. This problem could be alleviated by increased vertical integration, whereby local processing would provide semi-processed products while final processors transform them further into end products. Diversification through using materials procured from different cropping seasons could also improve the rate of utilization of existing processing capacity (JICA & MoTI 2008). This also calls for improving the storage system for agro-products to ensure products are available throughout the year across seasons. This will also reduce the on-farm wastage, which is currently a major challenge.

In industrialized countries the demand for agro-processed products has shifted to reflect changing lifestyles with raw foods taking a market share from dried and canned foods. Frozen foods are taking over from canned foods because they are perceived to have higher nutritional value, while in the fruit juice chain imported concentrates are being processed domestically into juices for the local market. This is a major source of competition for local processors and fruit and vegetable farmers.

These trends are apparent in the changing pattern of horticultural exports from Kenya. The EU and Japan, which are Kenya's major export destinations, consume less canned vegetables, fish, and corned beef and more semi-processed and frozen foods. However, due to irregular electricity supply in the COMESA region, canned and bottled products can still be exported to the COMESA market (JICA and MoTI 2008).

Poor quality packaging makes products less competitive in the global markets in addition to shortening the expiry dates. Kenya, in recognizing the importance of packaging, established a Packaging Institute in 1996, but unfortunately this was not followed up with an appropriate support system. With increasing global competition, it is important to build a "Kenya brand" to differentiate Kenyan products from others, but as yet there is no strategic plan to achieve this.

[28] Tanzania and Uganda alone are the largest destination of Kenya's exports, accounting for about 30 per cent.

The packaging of produce into small units to meet consumer demands such as ready-to-eat or ready-to-cook exports is necessary for capturing markets. The Horticultural Crops Development Authority (HCDA) has invested in central pack houses to enable small-scale horticultural farmers to export fresh produce, while there are other market opportunities for small-scale processors in the sale of small packages of milk and fruit juices to domestic retail outlets as well as the airline and tourist industry.

Public – private sector cooperation and dialogue in agro-industry

Public-private sector cooperation includes setting a conducive policy framework and an enabling regulatory environment, developing integrated value chains, mobilizing finance for infrastructure investments, providing effective mechanisms for service delivery, and undertaking research and development. Some of the more formalized mechanisms of partnership include issuing service and management contracts, leasing land or other assets, concessional use of public assets, license user rights authorization for carrying out regulated activities, and outsourcing or franchising (FAO 2008).

The potential benefit of partnerships has become increasingly recognised especially with the gradual convergence of interests between public sector development agencies and the corporate world. This has led to the growing emphasis on private-public sector partnerships in promoting economic development (UNIDO 2002). Partnerships can include business associations, small and micro enterprises, large national and multinational corporations. They can facilitate upgrading efforts where stakeholders such as governments, final goods producers, suppliers, industry associations, research institutions, and civil society organizations work together. Within a partnership, each partner plays a distinct role, and the proper combination of the specific strengths and expertise guarantees a sustainable success (McCormick & Atieno, 2003).

In Kenya the use of Public-Private Partnerships (PPPs) as a development tool is constrained by the lack of a clear regulatory framework for PPPs, the absence of comprehensive incentive regimes for the private sector to participate in PPPs, and the failure to harmonize the rules for the application of best PPP practices. The formation of the Kenya Private Sector Alliance (KEPSA) as an umbrella group of business associations has taken the lead in providing a mechanism through which the private sector can come together to engage the government on cross-cutting issues such as the use of PPPs. Alongside KEPSA, other business associations are engaging in dialogue with the government, either on a sector-specific or issue-specific basis. These include the Kenya Tanners Association (KTA) of leather goods manufacturers for leather products, and the Eastern and Southern African Leather Industry Association (ESALIA) (MoA 2009, Information; Onjala 2010).

In the agro-industry sector, a number of organizations have a key role for the development of PPPs, including sector-specific associations such as the Kenya National Chamber of Commerce and Industry (KNCCI), the Kenya Association of manufacturers (KAM), the Federation of Kenya Employers (FKE), the Fresh Produce Exporters Association of Kenya (FPEAK), and the Kenya International Freight Forwarders and Warehousing Association (KIFFWA). It is important to note that although these organizations are not sector-specific either to agriculture or agro-processing, they serve the interest of the agro-processing subsector.

Hitherto, the relationship between the private and public sectors has been characterized by mutual mistrust and a failure to appreciate their interdependence. The public sector does not view the private sector as a partner that provides tax revenues, while, for its part, the private sector does not regard its public counterparts as facilitators of an enabling environment which necessary for growth and profitability. This problem is compounded by the absence of strong dialogue mechanisms (MoTI 2006).

To strengthen public-private sector dialogue and cooperation, the government proposes through its Private Sector Development Strategy (PSDS) a rationalized and improved interaction between the

public and private sectors in order to enhance effective service delivery (MoTI 2006). It has restructured public-private sector dialogue around Medium Term Expenditure Framework (MTEF) sector working groups which have become an important forum for interaction between the two.

The government intends also to fast track capacity-building in agribusiness associations. The PSDS is expected to provide support to ensure that Kenya Private Sector Alliance (KEPSA), Kenya National Farmers Association (KNFA), Kenya National Chamber of Commerce and Industry (KNCCI), and other agribusiness associations play their rightful role. In addition, the government will identify high-level public sector champions to promote and advocate the principles of PSDS. It also aims at developing a Business Confidence Index (BCI) and at providing support for agribusiness associations to establish linkages with other regional and international agribusiness associations (MoTI 2006).

Public-private partnerships in agro-industry

Areas of public-private cooperation in agro-industrial development include research, advisory services, transport, storage, irrigation, market information, and finance. Returns from agricultural research are high, indicating large potential payoffs in terms of value added. The public sector in Kenya continues to have an important role focusing on basic research and in the development of prototype technology. In addition to its own research activities the public sector has other responsibilities such as establishing intellectual property rights and initiating and encouraging public-private cooperation in undertaking agricultural research and its funding and management (FAO 2008).

There are, however, significant weaknesses that reduce the effectiveness of the dialogue between public and private sector. It is not always well-structured and much of it takes place informally (MoTI 2006). Some cases, however, provide exceptions. Such is the case with leather products, where the relationship between the Government of Kenya and international organizations, like the International Livestock Research Institute (ILRI), in improving the quality of leather products by specific programmes has been important in the upgrading of value chains and in improving market access. Cooperation includes training and the opening of abattoirs in close proximity to farmers.

In other agro-industrial subsectors however, the PPP potential has not been fully exploited and through the PSDS the government is seeking to achieve a rationalized and improved interaction between the public and private sectors that will enhance effective service delivery (MoTI 2006).

Reforms to improve the environment within which public-private sector cooperation and dialogue takes place include: the Civil Service Reform Programme (CSRP), the Public Enterprise Reform Programme (PERP), the adoption of Result-Oriented Management Techniques (ROMTs), and the introduction of Strategic Plans (SPs) and Performance Contracts (PCs). From their side, private sector agro-industries have put in place measures aimed at improving their relationship with the public sector, accepting that sound corporate governance principles should form the basis of private sector operations. Some private firms have introduced corporate social responsibility (CSR) programmes as a contribution to overall development (Republic of Kenya 2006). Strengthening public-private sector cooperation and dialogue in agro-industry depends on the implementation of well-structured exchange programmes between public and private sectors at management levels, through which the players in agro-industries can engage with the public sector (Republic of Kenya 2006). Box 4.1 describes an initiative to use PPP to strengthen agro-industries in the country involving the public and private sectors, as well as development partners. Outside the realm of PPPs, there are cases of inter-firm cooperation in agribusiness, such as the provision of funding to farmers through microfinance institutions like the Equity Bank, the Cooperative Bank, and the Agricultural Finance Corporation. Private companies (Amiran being an example) also provide greenhouse production technology packages for farmers, especially in horticulture. Significantly,

these partnerships operate without government intervention.

Box 4.1: Public and Private Sector Partnerships Supporting Agro-industrial Development: The Case of the Micro, Small and Medium Enterprises (MSMEs) Competitiveness Project

Support measures for agro-processing have included the MSMEs Competitiveness Project. This is a five year World Bank-supported project to support the development of the private sector. The Ministry of Trade and Industry (MoTI) is implementing the project through public and private sector partnerships. The main objective is to increase growth and competitiveness of the MSMEs in the country through access to finance, strengthening enterprise skills and market linkages, and improving the business environment.

The financial access component works to deepen and expand the reach of financial services to MSMEs. The strengthening of enterprise skills and market linkages component has a value chain matching grant whose objective is to strengthen competitiveness and raise value added in the supply chains of the cotton, pyrethrum, coffee, and leather sectors by enhancing access to business development services and strengthening linkages between MSEs and their markets.

The other important component is that of improving the business environment and is aimed at improving the business environment for MSMEs and providing an enabling environment for private investment.

The MSMEs Competitiveness Project has held a value addition workshop for cotton farmers and livestock keepers with the aim of creating awareness on value addition opportunities in the cotton and leather subsectors, providing skills on methods of improving the quality of skins and hides, and increasing cotton production.

A new leather curriculum to be offered at the University of Nairobi is expected to shore up the sector in terms of technical support. The need to advance the leather technology in Kenya by leather degree courses in learning institutions has been underscored as one of the key areas for improving the global competitiveness and the quality of Kenyan hides and skins. The sector has faced diminishing skills and knowledge, leading to the production of low quality products. Reviving and strengthening leather associations and partnerships among chain players are other measures to improve the sector.

Source: Republic of Kenya and World Bank, The MSME Competitiveness Project, Pamphlet

Key policy factors for promoting agribusiness

Enhancing agricultural growth for agribusiness

Kenya has immense agricultural potential, especially in the production of fruits and vegetables, but, because this is not matched by proportionate processing and marketing capacity, farmers incur heavy post-harvest losses. This makes agro-industry a priority sector for industrialization, spearheaded by horticulture which also provides opportunities for increased foreign exchange earnings through non-traditional exports and value-adding activities. Also underexploited is the livestock industry whose development would expand agro-industrial production substantially.

Kenya is able to produce a variety of agricultural products throughout the year but because most crops are harvested at the same time, seasonal oversupply reduces prices and returns to farmers. Wastage rates are high because it is not feasible to add value to the produce at the point of production while storage facilities are poor and market access difficult. Market fluctuations arising from oversupply and shortages discourage investment in expansion resulting in a situation where, in the fruit juice industry, despite the country's rich production potential, Kenya still imports concentrates for juice-manufacture for the domestic market.

In horticulture the opportunity exists for crop diversification in suitable agro-ecological zones, thereby opening up new income-generating projects, creating additional jobs, and increasing export earnings. Despite this potential however, fresh produce exports as a proportion of total fresh produce production stands at only 3 per cent (Republic of Kenya 2003).

Fruit and vegetable processing, including canning, dehydration, freezing and juice extraction, is linked directly with horticulture. Most raw materials are locally produced but raw material supply to processors is erratic because of seasonality in production and transport constraints between farms and agro-industrial factories. There is fierce competition too from direct exporters of fresh horticultural produce that bid up farmgate prices with adverse implications for capacity utilization.

The sector is also facing new forms of competition mainly from imported fruit juices and concentrates, used by local juice makers.

The promotion and strengthening of contract farming is one way of tackling the problem of erratic input supplies. Effective measures are needed also to strengthen the production of high quality agricultural produce through modern husbandry techniques that will enhance farm profitability and attract greater investment. Quality must be improved to ensure compliance of products with sanitary and phyto-sanitary, social, environmental, and traceability requirements.

A second option is the location of processors near farms, but because so much agricultural production comes from dispersed small farms this will be difficult to achieve. Increased farm production could also be encouraged by way of appropriate incentives to processors and investors to reduce the wastage of raw materials and to cut transportation costs. A good example is the location of cooling centres within production areas by HCDA.

The problems encountered by subcontractors are illustrated in the sunflower industry where processors, such as BIDCO, complain of inadequate incentives, singling out the high taxes imposed by local authorities on the marketing of the produce by farmers to the factory, thereby increasing the cost of the raw materials. As a result, some agro-processing firms – Njoro Canners and Kenya Canners – have shut down their operations due to lack of raw materials despite the fact that the products are grown. Processors are unable to access the produce due to high marketing costs. The challenge is to protect domestic processors to the stage where they become viable due to improved efficiency and upgraded products.

Upgrading value chains in Kenya's agribusiness

Upgrading in agribusiness takes many forms, ranging from product or processes upgrading, the upgrading of the entire value chain or upgrading the capacity and competence of the Kenya Bureau of Standards (KEBS) to provide certification services to guarantee the quality of products. This will require strengthening the laboratory capacity of KEBS, including setting up satellite laboratories to serve processors outside the capital city of Nairobi. This should be complemented by the establishment of a national accreditation body to coordinate all accreditation and certification activities in the country.

Other measures suggested during the interviews with industrialists and stakeholders include encouraging the processing of domestic concentrates, instead of using imports, and creating linkages with farmers through appropriate incentives. Provision of necessary infrastructure, like roads, electricity and communication, as well as coordination of the various players is important for national competitiveness.

In addition to strengthening the existing quality assurance bodies, the government, with private sector cooperation, will need to establish sectoral training institutions. The private sector should contribute to competence and capacity within individual firms and institutions through support for information and communication technology (ICT) and the development of specific skills. Enhancing agro-processing technology and its access especially by small scale farmers is critical for upgrading, and measures should be introduced to facilitate linkages between government agencies to improve service provision and the operating environment for PPPs.

Empirical evidence suggests that successful countries build on their comparative advantage in primary commodities through investment in innovations to increase value addition. Governments play an important role in such cases by providing infrastructure, business service technical upgrading, and technical assistance to the private sector. In Kenya, the opportunity for upgrading

some value chains in the agro-industry could take advantage of the already existing export opportunities where the country has a comparative advantage for value addition. Horticultural exports provide a suitable example for Kenya. Areas of upgrading could include taking advantage of the changing lifestyles and consumption patterns in the export markets where consumers prefer fresh produce to processed products. This could be achieved through improved packaging to improve the shelf life of the fresh produce exports. Connected to this is also the need to invest in efficient transportation to minimize wastage through from the production to the marketing.

It is noteworthy that one of the factors to which the success of the horticultural sector can be attributed is the investment in infrastructure and logistics for air freight for perishable products as well as safety and quality assurances. The establishment of the Kenya Plant Health Inspectorate Services (KEPHIS) has played a key role in supply control and in the establishment of traceability systems. In addition, the upgrading of packaging house facilities, like improved water sanitation and advanced cold treatment and cold storage systems, have been undertaken by private enterprises in fresh produce export, enabling them to meet the demand for high quality fresh produce like salads and other semi-prepared vegetable products in the UK (FAO 2008).

Targeting commodities and producers for value addition

The Ministry of Trade and Industry (MoTI) has identified as priority industries processing fruits and vegetables, dairy produce, meat, hides and skins, fish and fish products, fermented beverages, and vegetable and animal oils. The main reason for this selection is based on the high production potential in the country which is not currently exploited.

Box 4.2: Enhancing Agricultural Growth for Agribusiness: The Case of the Dairy Subsector

The dairy sector is one of the main agro-industry subsectors with great potential in the country. It accounts for 14 per cent of the agricultural GDP and 3.5 per cent of the total GDP. Dairy production is one of the major activities in the livestock sector and a major source of livelihood for many smallholder farmers (Leksmono et al. 2006; KDB/Kenya Dairy Board 2007; Ngigi 2005). The dairy industry is based predominantly on smallholder production, which accounts for about 70 per cent of the total annual milk production in the country (KDB/Kenya Dairy Board 2007).

The subsector is however constrained by poor quality of production. Despite being a highly market-oriented sector, the vast majority of marketed milk is sold in raw or unpasteurized form, with raw milk accounting for 75 per cent of milk sales. Further gains in dairy production and marketing are constrained by a number of factors such as lack of quality feeds, poor breeding services, poor animal health leading to diseases, poor young stock management leading to inadequate nutrient uptake, and poor milk procurement, collection and cooling centres reflected in the inadequacy of such centres resulting in low quality of produce handling and inefficient transportation. To cope with increasing demand for milk and milk products, the Kenya dairy policy proposes measures to improve animal productivity and milk procurement as well as distribution systems. This also calls for an improvement in market information flows. Among the measures to increase dairy production for agribusiness are improvements in milk processing and packaging, increased and rapid expansion of rural access road networks, encouraging milk collection centres to install appropriate dairy equipment to be used in times of need, and the promotion of the development and use of proper packaging technologies in the country to reduce packaging costs. Milk quality and pricing is another area discouraging the production of milk in the country. Pricing, especially of milk, is not based on quality, hence discouraging the upgrading of milk quality by farmers. Prices are kept uniform regardless of the quality of the product, resulting in disincentives for upgrading the quality of the produce.

Source: Leksmono C., J. Young, N. Hooton, H. Muriuki and D. Romney, 2006

The main strength of fruit and vegetable processing is its access to abundant locally-grown raw materials, though wastage rates are very high due to limited processing capacity. Wastage in the mango industry has been estimated at a quarter of total production (JICA and MoTI 2008). Small processing firms can undertake primary processing to reduce these losses and then sell in bulk to larger firms. Interviews with officials from government ministries revealed that there is no targeting of specific products for upgrading. From the interviews too, the absence of coordination across the several ministries dealing with agro-industry was evident, with official agencies at times operating at cross purposes.

There are, however, initiatives to strengthen the sector. The MSME Competitiveness Project, a World Bank-sponsored project with the main objective of developing the capacity of MSMEs through strengthening institutions and providing services, is one such initiative (Box 4.1). It focuses on strengthening marketing through partnerships and linkages and provides grants for agro-based activities, like coffee, cotton and leather products, for the production and processing of these products. Box 4.2 gives a description of the dairy sector as an industry with potential for upgrading.

Technological effort, innovation capacity, and human capabilities

Increased investment in technology, skills development and innovation are prerequisites for accelerating agro-industrial development. This will be extremely difficult to accomplish, however, because the growth potential of agro-processing lies largely with small-scale processors, especially in the food industry, operating with outdated technologies, low-quality inputs, and high operational costs. According to discussions with the Ministry of Agriculture, the small scale processors are disadvantaged even in the domestic market since products must have a standardization mark from the KEBS/Kenya Bureau of Standards, which is very difficult for them to obtain. In order to strengthen the technological capacity of these small-scale processors who are key players in the sector, it is essential to monitor trade practices that undermine the competitiveness of domestic industry, especially to control import dumping and the sale of near-expiry fruit juices in the local market.

Public support in strengthening technological effort in Kenya has been strong in areas like promoting research and development (R&D), technology transfer towards new activities, upgrading of logistics infrastructure, developing of institutions for quality control and traceability systems, supporting the linkage between producers and global value chains, as well as providing technical assistance to small and medium producers. There is, however, need for research to be targeted towards discovering new products that can be produced competitively. This brings into light the role of research institutes, like the Kenya Industrial Research and Development Institute (KIRDI) and the Kenya Agricultural Research Institute (KARI), in developing technologies that fit the needs of the small-scale agricultural producers and processors who are the key to the development of agro-industry in the country. Currently, small-scale processors and small-scale farmers face the challenge of acquiring the existing technology to make them competitive. The role of institutions that encourage and protect innovation is also important in strengthening technological effort and the capacity of small-scale processors. The role of the Kenya Industrial Property Institute (KIPI) in registering and protecting innovations is also important in strengthening local innovation capacity.

Stimulating private enterprise development and investment

The role of the private sector in the development of agro-industry in the country is important, and this has increasingly been recognized. It has been argued that Kenya's private sector operating in agro-industry can be classified as being dualistic in nature, with a small proportion of large enterprises and a large proportion of medium, small and micro enterprises that operate parallel to each other without many linkages. The indigenous agribusiness sector in Kenya is dominated by micro and small enterprises which are largely informal and operate outside the realm of an institutional and legal support system (Rottger & da Silva 2008). Private enterprises are important for development as they respond to profit opportunities by investing and opening up opportunities for employment and an improvement of general wellbeing.

Given the important role of the private sector, it is important to have an enabling environment that promotes private sector activities. The government is therefore the most important player in creating the enabling environment for private enterprise development in the sector. Such an environment includes the regulatory framework, policies and institutions that affect the sector. In

Kenya, small-scale enterprises face a number of challenges in their activities, especially lack of conducive regulatory and policy frameworks, poor infrastructure, and lack of access to services, especially finance. These constraints have limited their ability to realize their potential contribution. Addressing these challenges is therefore a key to stimulating private enterprise development and investment.

For its part, the government has over time recognized the importance of private enterprise development as reflected in various government policy documents (Republic of Kenya 1996, 2006). According to Kenya's Vision 2030 (Republic of Kenya 2007), the government is committed to scaling up its support to the private sector by encouraging consolidation and establishing special zones and parks so that services to agro-export enterprises are better targeted. In addition the government is promoting the development of industrial clusters in the expectation that this will promote agribusiness. Recognizing that Kenya's competitive advantage lies in agro-industrial exports the government offers investment incentives designed to promote value addition. Furthermore, to expand markets for processed products in traditional and new markets, effective promotion programmes are needed, but market surveys, trade missions, and fairs and exhibitions are undertaken by the Export Promotion Council (EPC) in collaboration with the private sector (MoTI, 2006).

Some of the measures that are necessary to stimulate private enterprise development include the introduction of a single business permit as a way of reducing the bureaucratic red tape for doing business. The need for prudent monetary and fiscal policies is also important in developing an enabling environment for doing business for the private sector. The maintenance of a stable macroeconomic environment enhances private enterprise development by reducing uncertainty. The removal of administrative and regulatory barriers to investment is also important for stimulating private investment. As most agro-processing firms are small scale, the challenge of lack of access to financial services is critical, and therefore the support for financial institutions that provide financial services to such firms, like the microfinance institutions, is important.

Facilitating financing for agribusiness and agro-industrial development

Finance is critical for the development of agro-industry in the country. Due to the lack of finance, many enterprises, especially small enterprises, are not able to acquire the kind of technology that can enable them to compete and to access markets for their produce. For a long time before the onset of liberalization, the government had a policy of encouraging the provision of finance to industrial enterprises as a way of stimulating both industrial development and agricultural development. Public financial institutions were therefore established to facilitate access to credit. These included the Industrial Development Bank (IDB), the Kenya Industrial Estates (KIE) and the Development Finance Corporation of Kenya (DFCK).

While these initiatives were important in stimulating the development of domestic enterprises, they still remained beyond the reach of a majority of enterprises, especially due to their lending terms and conditions. With the development and proliferation of microfinance institutions (MFIs), there has been increased access to finance, especially by the micro enterprises. A challenge however remains that the MFIs are not able to provide credit that enables microenterprises to graduate. The enactment of the Microfinance Act in the country, which brings in the regulation of the MFIs, while at the same time bringing discipline in their activities, is an important step in increasing access to financial services, especially by small firms in the sector.

The microfinance institutions have also come up with innovative ways of providing credit to farmers, thus overcoming the challenge arising from traditional approaches to credit provision. While the official financial institutions established to provide credit to farmers, such as the Agricultural Finance Corporation (AFC), were not able to meet the credit needs of small-scale farmers due to lack of collateral, the MFIs have come up with innovative approaches of providing

credit to farmers for specific commodities using the produce as a collateral. They also introduced insurance in the package to ensure repayment.

Dairy is one sector which has been targeted by MFIs and by commercial banks for credit, while other products financed by such institutions include vegetables.

Improving agro-industrial infrastructure and access to sustainable energy sources

Infrastructure is a critical component for industrial development. This is mainly so because of its direct effect on the cost of production. Infrastructure is highly important in determining a country's competitiveness. In Kenya, poor infrastructure has been seen as one of the key constraints to strengthening the country's competitiveness. Because weak infrastructure is responsible for the high cost of transporting raw materials for processing or accessing markets, increased investment in transport facilities is essential along with providing enlarged budgets for regular road maintenance. Infrastructural investment will be needed also to build and expand industrial parks and industrial incubators in the EPZs to boost export volumes and to improve export quality through innovations. The high cost of energy has also been identified as a constraint to the sector, underscoring the need to explore new and cheaper sources of energy along with investment in energy-saving technologies.

The infrastructure limits the country's ability to compete with imports within the domestic market and to penetrate new markets. Other infrastructural difficulties also manifest themselves through the high cost of electricity, and hence the high cost of production and eventually prices. Poor distribution systems make the country's agro-products more expensive compared to those of competing countries. It is, for instance, estimated that in the textiles and clothing sector electricity contributes up to 67 per cent of the cost of an export-oriented finished garment (KEPSA 2007). The erratic nature of electricity supply also further affects the sector through losses in production. Firms that can afford standby generators have to incur additional costs which are then reflected in their costs of production and hence the prices of their products.

The poor quality of roads diminishes the enterprise competitiveness and profitability through delays in transportation, which has more negative implications for perishable commodities like agro-products. Exports of agro-products also very often face strict deadlines for delivery, which are also affected by poor infrastructure.

It remains to be seen to what extent concrete actions and worked out programmes follow from the Vision 2030.

Developing and exploiting local, regional, and international demand

Agro-industry has the potential to develop and exploit the regional and international demand for its products. Changing consumption patterns globally offer opportunities to diversify agro-industry exports, especially meat and processed fruit and vegetable products. There are a number of opportunities to realize this, which include encouraging the domestic processing of concentrates that can be used by processing firms throughout the year to satisfy domestic demand, developing the exploitation of regional production potential by encouraging the location of processing firms in the producing areas, and enhancing the capacity of institutions like the Kenya Plant Health Inspectorate Services (KEPHIS) to ensure that it is an approved source of status for the EU market. Establishing processing firms at the production points will reduce perishability and will add value at the production point. An example of this value addition has already been implemented by the HCDA through the introduction of pack houses within a given radius. This enables farmers to add value and to sell the produce to processors before it perishes.

Exploiting the existing demand at different levels will, however, require addressing some of the challenges that face the sector. The most important of these challenges relates to addressing the transport constraints that increase the cost of transporting raw materials from producers to the

processors. In addition to focusing exclusively on international demand, agro-processors can also take advantage of domestic demand by feeding into other sectors and the changing consumption patterns. Fruit processing firms and dairy firms can be commissioned to supply the airline industry and supermarkets. The vegetable producers can add value to their products and sell in packaged form for ready consumption.

Visions, Plans of Action, and Way Forward

A plan of action must be developed setting out the strategy whereby Kenya can become a major player in international markets for agro-industrial products, based on the expansion of agro-exports commensurate with the country's agricultural production potential. The strategies and policies should include:

- Strengthening the production of high-quality agricultural products to ensure a sustainable supply of raw materials to processing firms; this requires the collaboration of research institutes and processing firms. An example is in the fruit processing subsector, where low quality produce has been blamed as one of the reasons behind the inability to process and export locally produced fruits like mangoes;
- Improving the quality of raw materials through modern farm husbandry techniques;
- Increasing profitability in agribusiness to attract greater investment by actors all along the value chain. This can be done by reducing the cost of doing business through an enabling environment;
- Ensuring the compliance of fruit and vegetable products with sanitary and phyto-sanitary, social, environmental, and traceability requirements;
- Advancing technology on farms and in value addition activities such as processing, packaging, and labelling;
- Investing in improving infrastructure to reduce transportation costs and investing in industrial parks and clusters;
- Encouraging the use of fertilizers and agro-chemicals;
- Increasing investment in skills development institutions, the KEBS, and agricultural training institutes and extension services;
- Launching Public-Private Partnership Programmes to foster innovation and technical progress along the agribusiness value chain.

The way forward for the Kenyan agro-industry lies in developing initiatives at national, regional and global levels that will involve a wide range of government ministries and public and private sector institutions, as well as donors and international lenders. The Ministry of Trade and Industry together with the private sector representatives, such as the National Chamber of Commerce and Industry and the Federation of Kenya Employers, should undertake the major primary responsibilities in moving such a plan of action for the agro-industry forward. The public-private partnerships will play an important role with the government providing the necessary environment while the private sector takes advantage of the incentives to invest. This is already taking place through the involvement and engagement of the Kenya Private Sector Alliance (KEPSA) and the Kenya Association of Manufacturers (KAM) in dialogue with the government. The concrete actions that such institutions need to address will include:

- Strengthening information and communication technologies (ICT);
- Initiating training programmes on industrial performance, using the value chain approach and determinants of industrial competitiveness, and putting in place a project for strengthening

institutional capacities for training and research institutions. Institutions like ISTA (International Seed Testing Association) may take the lead in this;

- Identifying and supporting priority subsectors in agro-industry;
- Identifying specific value chains within each priority subsector as candidates for support;
- There is also need for stronger coordination between the different ministries dealing with the subsector like the ministries of agriculture, and trade and industry in order to harmonize the policies that affect the sector;
- The key issues to be addressed are poor infrastructure to reduce transportation costs and perishability, as such losses and the high transportation costs make the sector uncompetitive;
- One critical area for moving the sector is implementing policies. Most policies are formulated but not implemented.

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Abbreviations and Acronyms

ACP/EU	African/Caribbean/Pacific Countries/European Union Partnership
GOA	African Growth and Opportunities Act
AERC	African Economic Research Consortium
AFC	Agricultural Finance Corporation
AIPI	Agro-Industrial Production Index
BIDCO	Oil Refineries Ltd. (a Kenyan manufacturer of a range of edible oils)
BCI	Business Confidence Index
CAMI	Conference of African Ministers for Industry
CBI	Cross Border Initiative
CBIK	Centre for Business Information in Kenya
CODEX	CODEX alimentarius
COMESA	Common Market for Eastern and Southern Africa
CSAE	Centre for the Study of African Economies (Oxford University)
CSR	Corporate Social Responsibility
CSRP	Civil Service Reform Programme
DFCK	Development Finance Corporation of Kenya
EAC	East African Community
EPC	Export Promotion Council
ERS	Economic Recovery Strategy
EPZs	Export Processing Zones
EPC	Export Promotion Council
EPPO	Export Promotion Programme Office
EPT	Environment and Production Technology Division (of IFPRI)
ESALIA	Eastern and Southern African Leather Industry Association
FAO	Food and Agricultural Organization
FKE	Federation of Kenyan Employers
FPEAK	Fresh Produce Exporters Association of Kenya
FSCC	Food Safety Coordinating Committee
GAIF	Global Agro-industry Forum
GDP	Gross Domestic Product
HCDA	Horticultural Crops Development Authority
HDI	Human Development Index
ICT	Information and Communication Technology
IDB	Industrial Development Bank
IFPRI	International Food Policy Research Institute
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
ISTA	International Seed Testing Association
JICA	Japan International Cooperation Agency

KARI	Kenya Agricultural Research Institute
KAM	Kenya Association of Manufacturers
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Plant Health Inspectorate Services
KEPSA	Kenya Private Sector Alliance
KIE	Kenya Industrial Estates
KIFFWA	Kenya International Freight Forwarders and Warehousing
KIPI	Kenya Industrial Property Institute
KIRDI	Kenya Industrial Development and Research Institute
KNNCI	Kenya National Chamber of Commerce and Industry
KNFA	Kenya National Farmers Association
KTA	Kenya Tanners Association
LAs	Local Authorities
MAPSKID	Master Plan Study for Kenya's Industrial Development
MDGs	Millennium Development Goals
MoA	Ministry of Agriculture
MoCDaM	Ministry of Cooperative Development and Marketing
MoLF	Ministry of Livestock and Fisheries
MoRD	Ministry of Regional Development
MoWS	Ministry of Water Services
MFI	Microfinance Institute
MTEF	Medium Term Expenditure Framework
MOTI	Ministry of Trade and Industry
MSEs	Micro and Small Enterprises
MSMEs	Micro Small and Medium Enterprises
MVA	Manufacturing Value Added
NCC	National Chambers of Commerce
ODI	Overseas Development Institute
PCs	Performance Contracts
PERP	Public Enterprise Reform Programme
PPPs	Public-Private Partnerships
PSDS	Private Sector Development Strategy
RCA	Revealed Comparative Advantage
R&D	Research and Development
ROMTs	Result-Oriented Management Techniques
RTAs	Regional Trade Arrangements
RPED	Regional Programme on Enterprise Development
SAPs	Structural Adjustment Programmes
SPs	Strategic Plans (SPs)
SSA	sub-Saharan Africa
SRA	Strategy for Revitalization of Agriculture

TREO	Tax Remission for Export Office
UNCSD	UN Commission on Sustainable Development
VAT	Value Added Tax
WHO	World Health Organization

Chapter 5 | Mali

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Introduction: the case for agro-industrial development

Agriculture is Mali's key industry. It provides employment for more than 75 per cent of the labour force (LoC 2005) and accounts for 36.5 per cent of its GDP (data of 2007; World Bank 2008). Apart from gold which has emerged as Mali's leading export product since 1999 and presently accounts for 75 per cent of its export value, exports are essentially agro-based (18 per cent of export earnings; COMTRADE data of 2008)[1], with cotton and livestock being most important.

Industry contributes 24.2 per cent of GDP, of which construction, public works, infrastructure, and the extractive industry (e.g. gold mining) have a share of 21.1 per cent while manufacturing has a share of 3.1 per cent (data of 2007: World Bank 2008). Data on the share of agro-industries in GDP are not available; an estimation based on information provided below could be 1.5 per cent of GDP.

The turnover of the agro-industries is about one-third of total industry (including the extractive industry); the agro-industries' share of value added is about one quarter of total industry; its share in industrial exports is less than one-third (Table 5.1).

Table 5.1: Turnover, value added, and export value of agro-industry and total industry, Mali 2005

Turnover	**in million F.CFA**	**share**
Food, beverages, and tobacco	134,260	14.97 %
Textile and clothing	186,751	20.82 %
Total industry	896,918	100.00 %
Value added	**in million F.CFA**	**share**
Food, beverages, and tobacco	27,303	9.06 %
Textile and clothing	39,840	13.23 %
Total industry	301,238	100.00 %
Direct exports	**in million F.CFA**	**share**
Food, beverages, and tobacco	1,933	0.38 %
Textile and clothing	139,576	27.10 %
Total industry	515,089	100.00 %

Source: MIC 2006 = République du Mali, Ministère de L'industrie et du Commerce, Secrétariat General, Cellule de Planification et de Statistique (2006), Recensement Industriel 2006, Bamako.

Mali is one of the world's poorest countries, ranking 160 out of 169 countries in the UNDP's 2009 Human Development Index, and 160 out of 169 in the Human Poverty Index (UNDP 2010). It is estimated that Malian families invest more than half of their household income in food expenditure (Ember, ed. 2001). With a food consumption of 2,579 kcal/capita/day (data of 2005; FAOSTAT database) based on national production and on some food imports (food preparations, rice, sugar, and flour) the country on average still has only little more food available than what is considered

[1] In 2000, agro-based commodities contributed 37per cent of export earnings. The decline of the relative share results from the increase of gold exports.

to be the borderline to hunger (2,500 kcal). In 2005 (latest year available), 11 per cent of the total population was undernourished (FAO, Food Security Indicators), and one third of the children aged under five are underweight (UNDP 2009).

Seasonal unemployment in agriculture is common and lasts four to seven months per year, and is twice as common for women as for men (MEFP *et al*. 2007, p. 30). Therefore, especially in rural areas, poverty is widespread. It affects three quarters of the rural population vis-à-vis one third of the urban population. Significant differences in the incidence of poverty also exist between the South and the North of Mali, reflecting *inter alia* different agricultural conditions and the respective distance from the relatively more affluent capital, Bamako, and its opportunities to market labour and farm products.

Resulting from these conditions is a long tradition of temporary migrant labour, especially within the agro-pastoral zone (including medium-distance migration of groups of women for temporary labour in harvesting), as well as a more recent rural-to-urban and international migration (AfDB 2005, p. 10). Although there is a general trend in small countries for population concentration in the capital city, this is particularly pronounced in the case of Mali's capital, Bamako. Nevertheless, the share of the proper urban population is still low at around 16 per cent, but estimates are up to 40 per cent of the population living in urban areas when also considering the outskirts of the cities (AEO 2009). Migration, urbanization, and population imbalances can be expected to increase dramatically in the near future. According to AfDB estimates, the urban population is growing by 5.2 per cent p.a. as compared to an overall demographic growth of 2.3 per cent p.a. (AEO 2009).

For these reasons, the development of a decentralized, rural, and agro-based industry should have a high priority in Mali to make productive use of the available supply of labour, to generate income, to enhance standards of living, and to slow down migration and urbanization. The case for agro-industrial development is well taken along these lines. Agro-industrial development and the promotion of agribusiness are key for accelerating growth and human development, for diversification of production and exports and for a further global economic integration.

Structure and dynamics of agro-industries

Agriculture: base for agro-industries

Three major farming systems are in use:

- a mixed cereal-and-root-crop system in the administrative regions of Sikasso and the southern parts of the Koulikoro and Kayes regions;
- an agro-pastoral system in the four central regions: northern parts of Sikasso, Kayes, Koulikoro, Ségou, Mopti, southern parts of Tomboctou; and
- the pastoral livestock production system in the North, viz. parts of Tomboctou, Gao, and Kidal regions.

Rainfall is irregular, especially in the North. However, Mali is crossed by the Senegal River and the Niger River, whose vast flood plains support agriculture and are used for grazing in the dry season. In addition, they allow for irrigation: the Office du Niger, a 1932-established irrigation zone, is one of the largest of its kind in West Africa, making Mali's most productive agricultural area lie along the banks of the Niger River between Bamako and Mopti and extending south to the borders of Guinea, Côte d'Ivoire, and Burkina Faso. While irrigation water is mainly used for rice and sugar, the cultivation of millet, sorghum, and cotton is a rain-fed production.

Small-scale traditional farming dominates the agricultural sector, with dry-land subsistence farming undertaken on about 90 per cent of the cultivated area. Only 15 to 20 per cent of the agricultural production is sold on markets. In spite of some recent successes, the performance of the

agricultural sector is fragile, characterized by vulnerability to climatic conditions and the vicissitudes of the world cotton market.

The cotton subsector

In the 1990s, Mali was the largest cotton producer in West Africa, contributing about one quarter to the regional production, and reaching an all-time maximum of seed cotton production (621 TMT) in 2003. Recently, the area planted with cotton in Mali has been reduced significantly, with production declining to its lowest value in over 20 years in 2008: 190 TMT, representing a share of 11 per cent of the Western African region's production (own computation based on FAOSTAT data). Mali has been outperformed by Burkina Faso, Nigeria, and Benin as the main cotton producer country in the region. The bulk of Mali's cotton is exported to Asian processing countries (China, Thailand, Viet Nam, Pakistan, Indonesia, India, and Bangladesh – together 60.5 per cent in 2008, computed from COMTRADE database) as well as to West African neighbours (Senegal, Togo, and Côte d'Ivoire – together 28.1 per cent, although it can be assumed that African destinations were for transit, too).

In the 1990s, production costs in the West African region were among the lowest in all the cotton-producing regions (Oxfam 2002; Boccanfuso and Savard 2007). Especially after the 1994 F.CFA devaluation, West African producers could increasingly exploit these absolute and comparative advantages. In Mali, the area harvested increased considerably between 1993 and 1997 (by *extensification*). However, while area productivity stagnated or even declined in Mali (and in other West African producer countries) during the following decade (computed from FAOSTAT data), yields per ha increased by more than 30 per cent compared to the late 1990s in China and the US, and by more than 70 per cent in India (by *intensification).*

One important reason for the increase of soil fertility outside of Africa (especially in India) can be found in the introduction of genetically modified cotton which is more resistant to certain pests (Rohstoff Report 2008). An important reason for the decrease of soil fertility in Mali can be found in changes in agricultural practice. In the past, this used to involve alternating crop cultivation (cotton in rotation with cereals and groundnuts) for 10-12 years and then leaving the field to rest for 10-15 years. With the increase in family size in rural Mali, growing demand for food crops has forced farmers to increase the cultivation period and to decrease the fallow. Moreover, cultivation is extended to marginal lands, while farmers' funds to invest in fertilizer have simultaneously decreased (even if some implicit subsidies are still in use, see MEF 2009 in IMF 2009b, p. 29). The result is a downward trend of average soil fertility (Kidron *et al*. 2009), and cotton production in Mali is losing much of its absolute cost advantage. Moreover, the fact that the F.CFA-exchange rate vis-à-vis the Euro is fixed implies that the exchange rate to most other currencies, including the US Dollar, has been appreciating since 2000 which added to Malian cotton losing price competitiveness.

Due to rising petrol prices making synthetic fibres relatively more expensive as well as due to changing consumer preferences, worldwide demand for cotton has increased over recent years. However, following the world-wide extensification and intensification of cotton production, supply of cotton has increased even more (Rohstoff Report, 2008). This resulted in world market prices being cut by over half between 1995 and 2002. Partly reacting to the oversupply of cotton, partly exacerbating it, around the turn of the century governments worldwide – in China, the United States, and the European Union – subsidized cotton producers. Cotton subsidies in 2002 are estimated to have amounted to $2.0 billion in the US, $1.7 billion in the EU, and $0.8 billion in China (Adjovi 2004, quoted in Boccanfuso and Savard 2007). Due to a WTO dispute settlement (DS 267) a complaint by Brazil was adopted in 2005 and the US was urged to withdraw its cotton subsidies (WTO 2005), contributing to a subsequent slight increase in the world cotton price.

The cotton value chain in Mali is still dominated by the state-owned CMDT (Compagnie Malienne pour le Développement des Textiles/ Malian Textile Development Company), which so far holds a monopsony for cotton as well as a monopoly for selling fertilizers and pesticides. CMDT only now is to be partially privatized. The Malian government has also paid subsidies to its cotton producers via the CMDT, paying purchasing prices to farmers about 5 per cent higher than the sales prices on the international market. In this way, the world wide oversupply and the successive lowering of world market prices have resulted in not only a significant loss of Mali's net export revenue from cotton, but the subsidies to its cotton producers to stabilize incomes have also resulted in the use of significant shares of the national budget for this purpose ($0.064 billion, or 3.5 per cent of the 2005 budget, computed from data in Matsumoto-Izadifar 2008, p. 16), for which alternative uses in productive investments had to be sacrificed.

In an attempt to overcome the dependency on global market forces as described above, some farmers with the support of NGOs, such as the Swiss "Helvetas", have shifted to ecological cotton farming, ensuring higher purchasing prices and reducing burdens to the environment. However, their share in overall production is still insignificant (less than 1 per cent).

The food crops and livestock subsectors

As a result of the depression in cotton production in Mali, farmers have increasingly shifted to the cultivation of food crops (Matsumoto-Izadifar 2008, p. 15). Furthermore, precipitation in recent years has been average or even above. As a combined result of both factors, the production of most staple foods (roots, tubers, and cereals, especially wheat and rice) and of fruits and vegetables has increased. The annual growth rates (Compound Annual Growth Rate/CAGR, 2000-2008) were 27.0 per cent for cassava production, 25.5 per cent for sweet potatoes, and 24.7 per cent for yams (computed from FAOSTAT data). Tomato production grew at a rate of 21.6 per cent p.a. and production of green beans at 15.6 per cent p.a. In contrast, and again as a result of international markets developments being unfavourable to Malian producers, sugar cane production has been nearly stagnant (CAGR 1.4 per cent).

Even more pronounced than in crops, the number of all kinds of livestock in Mali has increased significantly during the past decade, also largely due to favourable weather conditions. Between 2000 and 2008, the number of asses has increased by 8.7 per cent per year, of camels by 13.6 per cent p.a., of cattle by 4.3 per cent p.a., of goats by 4.6 per cent p.a., and of sheep by 6.2 per cent p.a. (CAGR computed from FAOSTAT data). Livestock represents Mali's second-largest agro-based export commodity and is exported mainly to Senegal (60.5 per cent of livestock exports in 2008), as well as to Côte d'Ivoire and Benin (COMTRADE database).

Whether the increases in food and livestock production, which Mali enjoyed in the past decade, will be more than a temporary phenomenon depends heavily on the accessibility of further land resources. With regard to estimations of the country's agricultural potential, some prudence is advisable. It has been estimated that in Mali out of a total of approximately 12 million hectares of cropland (rainfed and irrigated), only 3.5 million hectares are currently being exploited. The overall potential of irrigable land has been estimated to be 2.2 million hectares, out of which only 11 per cent has been developed (AfDB 2005, p. 14). However, already now the degradation of natural resources has become a point of concern: the salinization of soil resulting from irrigation, erosion resulting from extensive fire wood collection, the depletion of water due to animal overload (resulting in conflicts between farmers and herders), and the overfishing in the Niger River. Therefore, an extension of agriculture to marginal soils in fragile eco-environments may have short-term benefits only. In contrast to such "neo-Malthusian" fears (supported by studies such as Kidron *et al*. 2009, based on evidence from the district of Kita, northeast of the capital Bamako), a "Boserup-inspired" (Boserup 1965) view argues that the high demands made by a rising population will trigger technical innovation in agriculture leading to both improved land care and rising production (a view supported by studies such as Tappan and McGahuey, 2005, based on

evidence from the OHVN/ Office de la Haute Vallée du Fleuve Niger, an irrigation zone in the Koulikoro region, southwest of the capital). Obviously, much more research is necessary before a conclusion can be reached about the true potential of Mali's overall agricultural production.

An overview of agro-industry

With the non-agricultural sector of the Malian economy being dominated by services and trading (both formal and informal), the number of formal manufacturing enterprises in Mali is small (about 350 enterprises in 2006; MIC/ Ministère de L'Industrie et du Commerce 2006), but there are numerous informal businesses. Within the manufacturing subsector of formal industry, the share of agro-based enterprises is overwhelming: The subsector of food and beverage accounts for about two thirds of all industrial enterprises in Mali (see Table 5.2). By compiling from a number of printed and electronic sources, the present study could locate over 120 formal enterprises from the agro-alimentary subsector – meat and fish processing, fruit and vegetables processing, oils and fats, dairy products, grain mill products, sugar, and beverages (ISIC Rev. 3 groups 151-155) – as well as around 50 other agro-based manufacturing enterprises (including textile industry). The micro structure of the food and beverage industry, as visible from this data, reveals a diversification across all subsectors of food industry, with the largest numbers of enterprises in grain mill products, processing of fruit and vegetables, and beverages.

Table 5.2: Sector distribution of formal enterprises, Mali 1997/2006

	1997	2006
Total number of formal enterprises (est.)	2,200	...
Number of (formal) enterprises covered by survey	1,646	326+
o/w industry (excluding construction)	156	326+
o/w non-manufacturing industry (water & electricity, extractive industry)	24 = 15 %	17 = 5 %
o/w manufacturing industry other than agro-based	132 = 85 %	92 = 28 %
o/w agro-based non-food industry (paper, furniture, textile, leather)		15 = 5 %
o/w food and beverage industry		202 = 62 %

Sources: OEF, Observatoire de l'emploi et de la formation 1997, Bilan de l'emploi. Etude sur le secteur moderne, Bamako, oef-mali.org/index.php?option=com_docman&task=cat_view&gid=17&Itemid=32, p.7; L'Essor, 2007, Recensement industriel : Un état des lieux édifiant.

Sector associations include the Assemblée Permanente des Chambres de Métiers du Mali (APCMM) and the Féderation Nationale des Artisans du Mali (FNAM).

Structure of agro-industry

Based on findings from two surveys (OEF 1997; MIC 2006), the formal sector agro-industrial enterprises can be described with regard to *size, regional* and *age distribution* as follows:

The majority (85 per cent) of industrial enterprises is small and medium-sized (< 50 employees). Permanent employment in agribusinesses is roughly 10,000 (< 0.2 per cent of total labour force), two thirds of which is in the food and beverage industry. Permanent employment in the food and beverage industry has steadily increased in recent years, from 4,500 in 2003 to 6,000 in 2006 (MIC 2006). In addition, temporary employment can be estimated to be about five times larger than permanent employment. In sum, 1 per cent of the total labour force is employed in formal agribusiness (OEF 1997, MIC 2006).

The manufacturing industry is heavily concentrated in the capital city, Bamako (around two thirds) along with two minor clusters of manufacturing enterprises in the regions of Sikasso (10-12 per cent of all manufacturing enterprises) and Ségou (8 per cent). While Ségou is home to two important agro-industrial enterprises (sugar refinery and textiles), the region of Sikasso is the most

densely populated region of Mali after the capital city, which results in a market potential giving the base for a more pronounced division of labour. Three quarters of the industrial enterprises that were extant in 2006 had only been founded in the 1990s or later (that is, they are younger than 15 years).

Only a very small number of enterprises use industrial technologies (chain production): two flour mills, a handful of rice mills, some bakeries, four oil mills, two sugar mills, one peanut paste producer, five dairies, two tanneries (LTA/IER 2005), a handful of soft drink producers, a beer brewery, as well as a few spinning and weaving factories. A number of agribusinesses operate on a semi industrial basis, with the principal operations being mechanized but chain production still being absent. The majority of agribusinesses in Mali are "artisanal" and have a market-oriented production, but their technology is also mainly traditional and only partly mechanized. A significant share of agribusiness is household-based. They use only manual, often traditional technology, and produce on a very small scale, based on personalized contracts. Household-based and artisanal enterprises largely operate informally (LTA/IER 2005).

Informal sector activities have increased particularly during the decline of consumer spending power after the devaluation of the F.CFA in 1994 (MEFP *et al*. 2007, p. 48). This indicates that the demand for informal sector products (including food preparations) tends to be inelastic; a 1 per cent rise in income results in a less than 1 per cent rise in demand for informal sector products. For inferior goods, demand can even decrease when *per capita* income rises beyond a threshold value, because consumers turn towards formal sector products or imported products. The importance of the informal sector for employment varies according to location: with shares from 50 per cent of non-agricultural employment in Bamako to 90 per cent in rural areas. This lends further support to the hypothesis about an only small positive or even negative income elasticity of consumer demand towards informal sector products, as real income levels in provincial towns can be expected to be on average lower than in the capital.

An indicator of the distribution of informal employment among various subsectors is the distribution of trades represented in the Fédération Nationale des Artisans du Mali (FNAM). These figures indicate that out of a number of nearly 20,000 artisans (obviously the "upper segment" of the informal sector) agro-related professions include 6 per cent carpenters, 7 per cent weavers, 8 per cent food processors, 10 per cent dyers, and 40 per cent tailors (MEFP *et al*. 2007). From these figures, we may estimate that out of a total of 1 million people active in the informal sector, 600,000 are in the textile and apparel subsector, 80,000 in food and beverages, and 60,000 in wood working.

Productivity of agro-industry

Turnover (sales) per employee can be calculated as $114,900 in total industry in 2005, $42,700 in food and beverages and $117,200 in textiles. Compared to data provided on sales per employee in foreign investment enterprises in all of Africa, which are $65,000 for the food and beverage industry and $14,600 in textiles (UNIDO 2007a, p. 66), it turns out that turnover per employee in the textile industry in Mali was well above the all-African average, while in the food industry it was below average. In Mali, gross value added was 34 per cent of turnover in an all-industry average of 2005, while it was much lower in the textile industry and the food industry (21 per cent and 20 per cent). Some interesting details for gross value added (GVA) as a percentage of the turnover in processing of 16 different types of processed food can be seen from data from technology incubator pilot projects (Koreissi, Diouf and Hamaker 2009) in three towns (Mopti, Bandiagara, Gao), to be between 10 per cent for *wassa* flour and 63 per cent for *tianguiri*, with a median of 45 per cent. From these data one might expect substantial increases in the profitability of agro-alimentary businesses from even small technological changes.

Labour productivity (GVA/ Gross Value Added per Permanent Employee) can be calculated for the same year, 2005, as $38,600 in total industry (including gold mining), $25,000 in textile industry, and $8,700 in the food and beverage industry (computed with data from MIC 2006). Although it is not clear whether the data series are really compatible, it might be pointed out that in 2002 value added per worker in Mali's "agro-industry" were calculated as only $4,700 (World Bank 2005, p. 66). The same source gives capital productivity (VA/ Value Added per Capital) as 72 per cent for agro-industry, which is very low if compared to other industrial sectors in Mali (for metal, 133 per cent). A summary of key performance data for 2005 is provided in Table 5.3.

Table 5.3: Key Economic Performance Figures, Agro-industry Mali 2005

	Gross value added, in mill. F.CFA	Turnover in mill. F.CFA	Permanent employees	GVA as a share of turnover	GVA in mill. FCFA per permanent employee	Turnover in mill. FCFA per permanent employee
Total Industry	301,238	896,918	14,808	34 %	20.3 (=38,581 $)	60.6 (= $ 114,870)
o/w Food and beverages	27,302	134,260	5,963	20 %	4.6 (=8,684 $)	22.5 (= $ 42,700)
o/w Textiles	39,839	186,751	3,022	21 %	13.2 (=25.001 $)	61.8 (= $ 117,198)

Source: Own calculation from MIC 2006 = République du Mali, Ministère de L'industrie et du Commerce, Secrétariat General, Cellule de Planification et de Statistique, Recensement Industriel 2006, Bamako, pp. 33, 55, 57.

Monthly salaries of unskilled workers in the whole manufacturing industry were reported to have been on average 39,000 F.CFA ($75) in 2006 (Les Echos 16/03/2006, World Bank 2005, p. 43; down from 45,000 F.CFA as reported in a 1996 survey, OEF 1997) which was considerably higher than in India ($50) and a number of African countries, but much lower than in Kenya ($99) and in Senegal ($144) (however, the source does not take structural differences in the manufacturing sectors of these countries into consideration). According to a different survey, unskilled workers in Mali received a monthly gross salary between $63 (horticulture) and $191 (food and beverages), while skilled workers received between $121 (horticulture) and $292 (food and beverages). Technical workers received between $258 (textiles) and $692 (food & beverages) per month (MIGA 2006). Also from this study one may conclude that labour costs in all subsectors of the Malian agro-industry are below the unweighted average of other African countries (including the medium-level wage-cost countries South Africa and Mauritius). Wages in Bamako in all industries are much higher than in other regions (OEF 1997). Monthly incomes in the informal sector in 2004 were estimated to be between 20,000 F.CFA ($38) and 365,000 F.CFA ($692), female artisans having a greater spread than male artisans (MEFP 2006, p. 49-50; no specific data for agro-industry available).

The industry-specific data given above are in line with the general picture that although labour productivity in Mali was halved between 1980 and 2002, it is still high by African standards (with the exception of Senegal) and current wages are low (World Bank, 2005). As a result, in terms of unit labour costs Mali compares favourably to most other African countries and even to India (albeit it is less competitive than China).

Agro-industry in international trade

Transport and export procedures

Being landlocked, resource-scarce and insufficiently equipped with transport networks, Mali faces strong physical difficulties in participating in international trade. In general, road conditions outside of urban areas are poor. In 2004, only 18 per cent of all roads were paved (World Bank's WDI/ World Development Indicators database), which is about the sub-Saharan African average.

However, as a consequence of a very uneven distribution of the population, roads are also very unevenly distributed in Mali. A suitable road network for national and international marketing is only available, if at all, in the more densely populated southwest of the country. Mali's main transport link to the coast is the paved road between Bamako and Abidjan (Côte d'Ivoire), the most important seaport for Mali. Other interstate roads connect Bamako with Dakar (Senegal), Ouagadougou (Burkina Faso), Tema (Ghana), Lomé (Togo), and Kankan (Guinea).

In addition to obstacles deriving from distance, these roads are subject to transportation obstacles from illicit actions. For the first quarter of 2009, the Union Économique et Monétaire Ouest Africaine's (UEMOA) Observatoire des Pratiques Anormales (OPA) estimates illicit collections on the Bamako-Ouagadougou-Tema/Lomé road to be 7,784 F.CFA per 100 km in Mali (as opposed to 1,667 F.CFA in Togo), and illicit stops in Mali to be 30 minutes per 100 km (as opposed to 5 minutes in Togo) (CdS/ Club du Sahel 2009, p. 9). Traffic on the Bamako-Dakar road is only insignificantly less harassed (Bamanet, 11/12/2009).

These practices do not only impede international exports but also create an essential stumbling block for regional integration. Mali should play its part in removing it, independently of developments taking place in this respect in its neighbouring countries (for a broader view see Collier 2007). In fact, in most recent years, Mali was already able to significantly reduce bureaucratic transport impediments; the time to export in the World Bank's standardized cargo shipment procedure case study was reduced from 44 days in 2008 to 32 days (10 days for transportation, 22 days for procedures) in 2010 (World Bank 2009). Rail transport from Mali to the port of Dakar has also been improved recently (MIGA 2006). In spite of this acceleration of export procedures there is still a long way to go to the benchmark value of Denmark's 5 days.

The long time required for exporting products is especially problematic for fresh fruit, for which the only alternative is air transport. Collier rightly stated, 'being landlocked is not a choice, but being air locked is largely a matter of airline regulation and competition policy' (Collier 2007, p. 6). On the bright side, Mali was able to increase its international freight (loaded and unloaded) between 2002 and 2008 by 17.0 per cent per year, following a rehabilitation of Bamako International Airport with assistance from the World Bank and the Millennium Challenge Corporation (MIGA 2006). Nevertheless, the present volume of 6.5 TMT (loaded and unloaded international freight) is a tiny fraction of what Mali exports, as for instance, the weight of Mali's fruit exports alone (SITC, 057) in 2008 was 15.4 TMT. On the other hand, the fact that essentially only commodities with a high value per weight ("Thuenen commodities") can feasibly be transported by air has to be taken into consideration as an important export barrier.

Agro-based exports: volume, structure, direction, and development

All figures on Mali's trade should be treated with caution in the light of their limited reliability (see for example DTIS 2004, p. 9).

Table 5.4: Main Agro-exports, 3-digit level, Mali, 2000/2008

SITC Rev. 3 code	Commodities	Value in US $, 2000	Share in agro-based exports, 2000	Value in US $ 2008	Share in agro-based exports, 2008	CAGR (2000-2008)
---	All exports	472,688,704	---	1,918,264,275	---	19,1%
---	All agro-based exports*	173,601,009	*share of total exports: 37 %*	346,344,097	*share of total exports: 18 %*	9,0%
263	Cotton	162,481,792	93.595%	203,062,255	58.630%	2.8%
001	Live animals	169,164	0.097%	112,953,823	32.613%	125.5%
057	Fruit, nuts, excl. oilnuts	792,180	0.046%	5,317,314	1.535%	69.2%
222	Oilseed (sft.fix veg.oil)	282,270	0.016%	4,151,421	1.199%	86.6%

022	Milk and cream	n.a.	n.a.	2,757,710	0.796%	n.a.
611	Leather	2,387,458	1.375%	1,946,726	0.562%	-2.5%
041	Wheat, meslin, unmilled	n.a.	n.a.	1,869,101	0.540%	n.a.
652	Cotton fabrics, woven	548,711	0.316%	1,804,051	0.521%	16.0%
098	Edibleprod.preprtns,nes	162,473	0.094%	1,757,067	0.507%	34.7%
223	Oilseed (oth.fix.veg.oil)	561,538	0.323%	1,598,853	0.462%	14.0%
651	Textile yarn	1,042,192	0.600%	1,116,405	0.322%	0.9%
054	Vegetables	1,543,006	0.889%	1,040,501	0.300%	-4.8%
642	Paper, paperboard,cut	60,728	0.035%	952,586	0.275%	41.1%
625	Rubbertyres, tubes,etc.	75,625	0.044%	945,891	0.273%	37.1%
658	Textile articles nes	1,790	0.000%	685,599	0.198%	180.5%
062	Sugar confectionery	162,034	0.093%	617,888	0.178%	18.2%
111	Non-alcohol. beverage	57,585	0.033%	586,029	0.169%	33.6%
112	Alcoholic beverages	n.a.	n.a.	543,310	0.016%	n.a.
292	Crude veg. materials, nes	54,835	0.032%	458,662	0.132%	30.4%
122	Tobacco, manufactured	21,677	0.012%	373,743	0.108%	42.7%

*Source: Own computations with data from UN Comtrade Database [retrieved 2009/11/25]. *) Includes items not listed in this table. Note: CAGR:Compound Annual Growth Rate*

In particular, trade is sometimes incorrectly recorded as being to or from Senegal or Côte d'Ivoire, while those goods in fact merely pass through the two countries. Furthermore, informal trade contributes to an underestimation of some trade flows, for instance in the case of livestock. Nevertheless, the overall picture of Mali's trade is unambiguous. The country's most important agro-based exports are cotton (59 per cent of all agro-exports, 2008), livestock (33 per cent), and fruits and nuts (1.5 per cent) – see Table 5.4 and Table 5.5. Among the processed agro-based commodities leather, woven cotton fabrics, edible product preparations, textile yarns, textile articles n.e.s., sugar confectionary, non-alcoholic beverages, alcoholic beverages, and manufactured tobacco are of some relevance.

By destination, vegetable and fruit exports are directed to Europe and to the neighbouring countries (see Table 5.5).

Table 5.5: Destination and Competitiveness of Vegetable/Fruit Exports, 4-/5-digit level. Mali 2008

SITC, Rev. 3	Commodity	Export value in thousand US $	Top export destinations	Share of exports	RCA
05	Vegetables and Fruits	6,594	See below	0.344%	
o/w 05797	Mangoes, etc., fresh / dried	4,704	43 % France, 30% Netherlands, 16 % Germany, 7 % Côte d'Ivoire	0.245%	0.18
o/w 054	Vegetables, fresh, chilled, frozen or simply preserved ...	1,041	55 % Côte d'Ivoire, 19 % Sierra Leone, 15 % Spain	0.054%	3.85
o/w 0577	Edible nuts, fresh or dried, whether or not shelled or peeled	595	39 % Côte d'Ivoire, 21 % Senegal, 18 % Denmark	0.031%	2.03

Source: Own computations with data from UN Comtrade Database [retrieved 2009/11/25].

Note: RCA: Revealed Comparative Advantage, to measure competitiveness of export products

Mali's exports have free access to the European Union (EU) market under the Cotonou Agreement as well as preferential access to the North American market under the Africa Growth Opportunity

Act (AGOA). In addition, being a member of the UEMOA makes Malian exports to other members of the West African customs union duty-free. However, the fact that the F.CFA-exchange rate vis-à-vis the Euro is fixed implies that the exchange rate to most other currencies, including the US Dollar, has been appreciating since 2000. In addition to transport impediments, this is one of the reasons why exports of most commodities are confined to neighbouring F.CFA-countries and to the Euro zone. Exemptions to this are the export of cotton fibre to major processing destinations in Asia (China, Thailand, Vietnam, Pakistan, Indonesia, India, and Bangladesh) as well as exports of some other agricultural products (such as oil seed) to China.

In a dynamic perspective, Mali has experienced some success with exports of mangoes and green beans. Whereas the average annual growth rate of all world imports was 15 per cent in the period 2004 to 2008, it was 16 per cent for world mango exports (HS 0804), 14 per cent for world exports of not-roasted groundnuts (HS 1202), and 9 per cent for world exports of leguminous vegetables (HS 0708).[2] Mali's producers were able to increase their world market share during this period by 28 per cent for mangoes, 137 per cent for groundnuts, and 140 per cent for leguminous vegetables (especially green beans), classifying these products as "champions" (in the case of mangoes) and (in the case of groundnuts and beans) as "achievers in adversity" (calculated on the basis of ITC/ International Trade Centre data; see also ITC 2007 on the Trade Performance Index/TPI) – an export success, based on about 50 enterprises in Bamako specializing in fruit and vegetable exports. On the 4- and 5-digit level, Mali displays a revealed comparative advantage[3] in the production of mangoes and edible nuts. Fruits and vegetables are mainly exported to neighbouring Côte d'Ivoire and Senegal as well as to a few European countries.

On the other hand, cotton fibre has to be considered as a product belonging to a group of "declining sectors" in the light of world trade growth and Mali's change in world market share, while cotton yarn and woven cotton fabrics are "achievers in adversity". In these cases, however, re-exports have to be taken into consideration, as Mali has a negative trade balance for cotton fabrics ($-14,937,000), and exports were mainly to neighbouring Mauretania. Livestock exports can be termed "achievers in adversity", while leather falls between the categories of "declining sectors" and "achievers in adversity" (Table 5.6).

Table 5.6: Trade Competitiveness of Selected Agro-related Export Commodities, Mali 2004/ 2008

HS 2 Code	Commodity	Exported Value (,000 US $), 2008	Annual Growth of World Imports, 2004-2008, p.a.	Share in World Exports, 2008	Annual Increase in World Market Share, 2004-2008, p.a.
0102	Live bovine animals	79557	14 %	1,20 %	22 %
0104	Live sheep and goats	33112	9 %	3,34 %	6 %
0708	Leguminous vegetables ...	225	9 %	0,03 %	140 %
0801	... Cashew nuts ...	353	12 %	0,01 %	16 %
0804	... Mangoes ...	4708	16 %	0,09 %	28 %
1202	Groundnuts, not roasted	2694	14 %	0,18 %	137 %
4104	Leather of bovine ...	561	-1 %	0,01 %	n.a.
4105	Sheep/lamb skin leather	758	11 %	0,16 %	7

[2] HS classification was used here because ITC data analysis is not available in SITC classification. Re-computation in SITC classification is possible, but time-consuming and will not provide substantially different results.

[3] The computation of RCA values can be misleading in the Malian case as the overwhelming position of gold in exports dwarfs the share of all other commodities in the Malian export basket relative to their share in world exports.

4106	Goat/kid skin leather	366	4 %	0,06 %	2 %
4113	Leather further prepared	262	6 %	0,01 %	n.a.
5201	Cotton, not carded	202578	4 %	1,85 %	-17 %
5207	Cotton yarn	801	-11 %	0,22 %	5 %
5208	Woven cotton fabrics	1770	4 %	0.01 %	15 %

Source: Own compilation with data from ITC, www.trademap.org/countrymap/Product_SelProductCountry.aspx

Processed food: volume, structure, origin, and development of imports and trade balance

While in 2008 Mali's exports of food (mainly unprocessed) amounted to $135 million (excluding livestock with $22 million), imports of food amounted to $417 million. Unprocessed food, viz. rice, sugar, and wheat constitute 20 per cent of Mali's agro-based imports (3.9 per cent of total imports), while processed food (SITC 098 preparations n.e.s., SITC 422 oils, SITC 122 manufactured tobacco, SITC 022 milk, SITC 046 flour, SITC 048 cereal preparations) constitutes 33 per cent of Mali's agro-based imports (6.3 per cent of total imports). This fact shows the scope for import substitution provided, however, that firstly production for local consumption plus potential exports meets minimum efficient scale requirements and, secondly, that the difference between income elasticity of demand for imported products, which can safely be assumed to be larger than unit, and an income elasticity of demand for import-substituting products, which can safely be assumed to be smaller than unit, is not too large. Comprehensive data on demand elasticities are not available (there are few exemptions – sugar and oil – to be considered). The strong compound annual growth rate (CAGR) during recent years both in value and in weight of nearly all types of processed food imports (SITC 048 and 098; Table 5.7) may indicate both: a window of opportunity for import substitution based on a simple trend analysis – or a very high income elasticity of demand for imported food, especially from a growing urban middle class (such as employees of international agencies, which provide an increasing share of employment in Mali).

Table 5.7: Processed Food Imports, 4-/ 5-digit level, Mali 2008

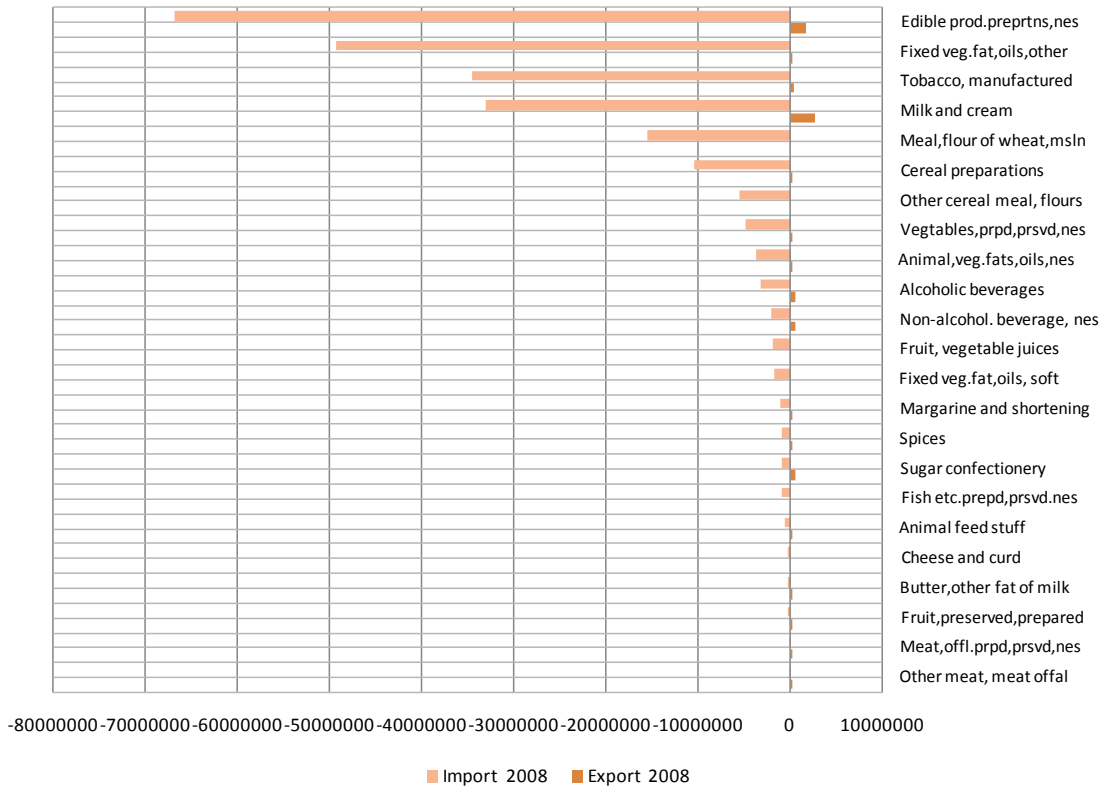
SITC Rev. 3 Code	Commodity	CAGR (2004-08). Value	CAGR (2004-08). Weight	Import Value (,000 US$), 2008	Main countries of origin, 2008
048	***Cereal preparations***	27.4%	8.7%	***10,418***	***See below***
o/w 0481	Cereal grains, preprd. nes	52.1%	38.3%	326	46 % France
o/w 0482	Malt	13.1%	0.5%	1,348	44 % Belgium, 29 % France, 27 % Germany
o/w 0483	Macaroni, spaghetti etc.	24.4%	1.7%	4,982	52 % Côte d'Ivoire, 30 % Italy, 4 % UAE, 4 % Turkey, 3 % Senegal
o/w 0484	Bread, baked goods	38.1%	31.4%	3,588	See below
o/w 04842	*Sweet biscuits, waffles etc.*	39.3%	35.5%	*2,908*	*75 % Senegal, 8 % Côte d'Ivoire*
o/w 04849	*Bread and bread products*	36.0%	-0.3%	*623*	*78 % France, 16 % China*
098	***Edible Prod. Preprtns., nes***	13.4%	5.5%	***66,911***	***See below***
o/w 0981	Homogenized food preptns.	33.4%	34.2%	255	51 % France, 43 % Bulgaria
o/w 0984	Sauce, seasoning, condiments	36.6%	30.4%	4,675	50 % France, 18 % Senegal, 7 % Côte d'Ivoire, 5 % USA
o/w 0985	Soups, broths and preparations thereof	18.2%	14.8%	34,628	64 % Côte d'Ivoire, 27 % Spain, 4 % Senegal, 3 % Burkina Faso
o/w 0986	Yeasts	-38.9%	-33.0%	881	40 % Belgium, 33 % France, 13 % Senegal

o/w 0989	Food preptns.,nes.	15.4%	-4.6%	26,472	See below
o/w 09891	*Pasta, cooked; couscous*	46.5%	14.6%	*1,911*	*53 % France, 16 % Italy, 11 % Tunisia*
o/w 09893	*Food prep. for infant use*	21.8%	-33.8%	*5,487*	*82 % France, 17 % Ghana*
o/w 09894	*Malt extract, food preparations of flour, meal etc.*	12.3%	-5.5%	*12,995*	*85 % Ireland, 13 % France*
o/w 09899	*Other food preparations*	12.1%	3.8%	*6,066*	*41 % France, 19 % Spain, 17 % Malta, 14 % South Africa*

Source: Own computations with data from UN Comtrade Database [retrieved 2009/11/25]

The trade balance on processed food is overwhelmingly negative (see Figure 5.1).

Figure 5.1: Trade Balance on Processed Food Trade, Mali, 2008



Source: Own computations with data from UN Comtrade Database [retrieved 2010/01/09]. Negative values indicate imports, positive values indicate export.

However, some changes can be discerned over time: the coefficient of intra-industry trade (Grubel-Lloyd Coefficient, G_n) for several commodities changed for the better, indicating an increase in Malian exports relative to imports, viz. in the cases of butter (SITC 023, G= -0.71 in 2008, up from G= -1.00 in 2000), alcoholic beverages (SITC 112, G= –0.71 in 2008, up from G= -1.00 in 2000), and non-alcoholic beverages (SITC 111, G= -0.56 in 2008, up from G= -0.78 in 2000). On the other hand, for several processed food items the coefficient of intra-industry trade deteriorated, indicating a smaller value of exports relative to the value of imports, viz. in the cases of animal feed stuff (SITC 081), where Mali turned from a net exporter (G= 0.92) to a net importer (G= -0.23) as well as in the cases of other cereal meal, flour (SITC 047, G= -1.00 in 2008, down from G= -0.34 in 2000) and fixed vegetable fat, oils, soft (SITC 421, G= -1.00 in 2008, down from G= -0.80 in 2000); see for details also Table 5.8.

Table 5.8: Trade Balance on Processed Food, Mali 2000-2008

SITC Rev 3 code	Commodities	Export value in ,000 US $, 2000	Import value in ,000 US $, 2000	G (2000)	Export value in ,000 US $, 2005	Import value in ,000 US $, 2005	G (2005)	Export value in ,000 US $, 2008	Import value in ,000 US $, 2008	G (2008)	ΔG
012	Other meat, meat offal	0	49	-1.00	0	61	-1.00	1	123	-0.99	0.01
017	Meat,offl.prpd,prsvd,nes	0	81	-1.00	0	176	-1.00	5	123	-0.91	0.09
022	Milk and cream	0	17457	-1.00	234	16733	-0,.7	2757	33095	-0.85	0.15
023	Butter, other fat of milk	0	143	-1.00	0	78	-1.00	40	239	-0,.1	0.29
024	Cheese and curd	0	46	-1.00	8	101	-0.85	0	264	-1.00	0.00
037	Fish etc.prepd,prsvd.nes	0	178	-1.00	0	219	-1.00	0	847	-1.00	0.00
046	Meal,flour of wheat,msln	0	5520	-1.00	0	9304	-1..0	0	15526	-1.00	0.00
047	Other cereal meal, flours	60	120	-0.34	25	1083	-0,.5	0	5542	-1.00	-0.66
048	Cereal preparations	268	3268	-0.85	108	5073	-0.96	1	10418	-1.00	-0.15
056	Vegtables,prpd,prsvd,nes	5	2292	-1.00	763	2156	-0.48	232	4770	-0.91	0.09
058	Fruit,preserved,prepared	2	37	-0.87	1	33	-0.98	3	210	-0.97	-0.10
059	Fruit, vegetable juices	1	320	-1.00	0	714	-1.00	0	1901	-1.00	0.00
062	Sugar confectionery	162	362	-0.38	387	725	-0.30	617	925	-0.20	0.18
075	Spices	1	105	-1.00	50	291	-0.70	75	972	-0.86	0.14
081	Animal feed stuff	643	28	0.92	1272	124	0.82	314	506	-0.23	-1.15
091	Margarine and shortening	0	231	-1.00	163	646	-0.60	41	1033	-0.92	0.08
098	Edible prod.preprtns,nes	162	22587	-0,.9	477	37524	-0.97	1757	66910	-0,.5	0.04
111	Non-alcohol. beverage, nes	57	474	-0.78	191	666	-0.55	586	2101	-0.56	0.22
112	Alcoholic beverages	0	267	-1.00	78	1257	-0.88	543	3203	-0,.1	0.29
122	Tobacco, manufactured	21	6367	-0.99	642	25916	-0.95	373	34471	-0.98	0.01
421	Fixed veg.fat,oils, soft	133	1183	-0,.0	0	2440	-1.00	0	1741	-1.00	-0.20
422	Fixed veg.fat,oils,other	7	1442	-0.99	1777	10196	-0.70	147	49238	-0.99	0.00
431	Animal,veg.fats,oils,nes	68	3287	-0.96	39	2194	-0.96	79	3677	-0.96	0.00

Source: Own computations with data from UN Comtrade Database [retrieved 2010/01/09]. The Grubel-Lloyd Coefficient (Gn) to indicate intra-industry trade is calculated as (Xi-Mi)/(Xi+Mi).

Δ G is computed as the

Foreign Direct Investment in agro-industry

Mali's Foreign Direct Investment (FDI) stock is $1.1 billion in 2008, equalling 12.4 per cent of GDP (as compared to 32 per cent as the African average). In the year 2008 inflows were $127 million, which contributed 7.4 per cent to gross fixed capital formation in Mali (as opposed to 25 per cent as the African average; all data from UNCTAD 2009). So far, FDI inflows to Mali are concentrated on mining, petrol exploration, and the services sector (including wholesale trade and transport). The proportion of foreign direct investments in Mali's agro-industry is small. Affiliates of foreign investors in the agro-industry sector of Mali include:

- CMDT, the main player in the cotton sector (buying, ginning, exporting), is 60 per cent state-owned and 40 per cent owned by the Compagnie Française des Textiles.
- COMATEX S.A., an integrated textile company, formerly state-owned, in which 80 per cent of a basic capital of 1.5 billion F.CFA ($3.2 mill.) is owned by the Chinese textile company COVEC, and 20 per cent by the Malian state (Nouvel Horizon, 26/01/2009).
- FITINA S.A., a cotton spinning mill, was set up in 2002 with an investment of $10 million from French and Mauritian investors (CDE 2004).
- Société Brasseries du Mali (BRAMALI) is owned by Brasseries et Glacieres Internationales (BGI) of Blanquefort, France-based Groupe Castel (includes Neptune mineral water and Castel wine), the world's number two in the beverage industry. Apart from soft drinks (including Coca-Cola

bottling), production in Bamako/Mali includes beer brewing (brands: Castel, Monopoly, Guinness).

- "Sadasy S.A., a factory scheduled for opening in Koulikoro in 2010, which will use Swedish technology to crush agricultural residues (such as waste wood and rice straw) into panels. The overall costs (of 11.8 billion F.CFA or $25 million) are financed by IDC (Industry Development Corporation, a South-African development agency) and Malian banks. It is planned to employ 160 employees (Indicateur, 28/01/2010).
- South Africa's Durban-based Illovo Sugar, a subsidiary of Associated British Foods plc, has announced that it has approved a $208 million investment in the sugar, biomass, and ethanol industry. It is meant to cover 10 per cent of Mali's gasoline needs, supply electricity, eliminate sugar imports completely, and meet demand for sugar in the region. Illovo Sugar will hold a 70 per cent stake in the $120 million Société Sucrière de Markala sugar refinery project, while the remaining stake will be held by the government of Mali (4 per cent), the US Baton Rouge-based Schaffer Group (a project developer, 4 per cent), and private Malian investors. In addition there are two public components in the whole project, which is also supported by the African Development Bank. The project aims at processing 190 TMT of sugar p.a., based on a 14,000 hectare irrigated cane-growing area, and to employ 5,000 people (news.mongabay.com, 28/11/2007; US Embassy to Mali 2007; AfDB 2009). However, due to land conflicts with the local community (Le Républicain, 09/04/2009) – about 2,000 inhabitants will be affected by involuntary resettlement (AfDB 2009) – the project's future is still open.

The potential for foreign investment in Mali's agro-industry is great, and the prospects for a growing involvement of foreign investors and multinational corporations (MNCs) from countries other than those mentioned above are considerable.

Major agro-industry subsectors in structure and dynamics

The six major agro-industrial subsectors in Mali are the cotton processing industry; animal-based industries (dairy, meat and leather) and fish processing; cereal processing; sugar refining; the processing of fruits, vegetables, and tobacco; and the processing of cashew nuts and shea (karité). Table 5.9 provides an overview of the production quantities in some of these industries in recent years.

Table 5.9: Production of Processed Agro-industrial Commodities, Mali, 1995-2007

Year	Woven fabrics, cotton, tsqm	Wheat flour, tmt	Sugar, ref. tmt	Fish, dried tmt	Groundnut oil, crude, tmt	Soft drinks, thl	Cigarettes, mill. units
1995	9,238*	24	31	12	31**	79	22
2000	7,725	22	28	13	43	180	231
2005	5,908	62	30	14	63	419	330
2006	5,522	72	31	6	25	333	626
2007	7,290	56	32	9	16	274	547

*Source: UNdata, Industrial Commodity Statistics Database/ICSD, data.un.org/Explorer.aspx?d=ICS [retrieved 2010-11-05]; Notes: * data of 1996, ** data of 1997; mt = metric tons, tmt = thousand metric tons, tsqm = thousand square meters, thl = thousand hectolitres; ICSD Data on cotton sewing thread refer to SITC Rev. 3 6512, while Mali is not covered with respect to SITC Rev. 3 6513 (cotton yarn) in the ICSD database.*

Cotton processing industry

Cotton is Mali's most important non-food agricultural product. Following the industry's decline in the 1990s, presently less than 1 per cent of Mali's cotton production is processed within the country (Embassy 2010). Reasons for Mali having been unable to develop a viable textile industry

include: (1) the inability to profitably manage a state-owned company, which is related to the lack of human capital and properly functioning institutions; (2) the upward trend of the exchange rate of the F.CFA (anchored to the Euro) vis-à-vis the US-Dollar since 2000, leading to strong import competition in the apparel industry (in 2008, 80 per cent of the cotton fabrics imported from Mali were from China); (3) the dumping of second-hand clothes from High-income Countries (HICs). In addition, technical backwardness, high prices for raw materials (near world market prices for cotton fibre), high energy costs, and a low demand from consumers for locally produced fabrics have all played their part.

As a result of these developments, in 2006 fabric production in Mali was only about half of the level of ten years before (see Table 5.9). In 2004, a report found that spinning was the only segment where the West African region was still competitive (CDE 2004). However, there are indications that in recent years Mali has lost even this advantage, as spinning companies have closed down. On the other hand, as a result of the liberalization of capital imports and the world-wide increased mobility of capital, Mali was also able to attract some foreign capital to make use of the country's relatively low unit labour costs in the spinning and weaving industry. One of the few fabric producers in Mali is an integrated textile complex in the city of Ségou, a joint venture with a Chinese company. Another one is a former state-owned company, which, after having been abandoned for several years, has recently been bought by an overseas Malian, and there is also a spinning mill financed with capital from Mauritius.

The integrated textile complex in the city of Ségou reported 1,500 employees, a turnover of 5.2 billion FCFA ($10.9 million) and a value added of 1.1 billion FCFA ($2.3 million) in 2007 (Le Ségovien, 15/01/2008). In 2008, production was 450 metres of yarn and 10 million metres of printed fabrics, which was again as high as Mali's total output of woven textiles in the mid-1990s. However, the lack of adequate technology is, in spite of recent investments from the Chinese partner, still considered a major issue (Nouvel Horizon, 26/01/2009).

Mali is a net exporter of cotton yarn and a net importer of cotton fabrics. Yarns are exported to neighbouring countries (Mauritania, Burkina Faso, and Côte d'Ivoire (together 74.2 per cent in 2008), and to China (13.2 per cent). Cotton fabrics were mainly exported to Mauritania (72.0 per cent in 2008), the remainder to Côte d'Ivoire and Burkina Faso.

Further investment opportunities promoted by the government of Mali include spinning, the production of loom-state fabric, and the manufacture of basin-dyed cloth (Embassy 2010). In a SWOT analysis, MIGA 2006 mentions low wage rates for unskilled and skilled workers in the Malian textile industry but their poor availability as a characteristic of this industry, while the apparel industry is said to be characterized by both poor availability and high wage rates for skilled and unskilled workers. However, given the fact that spinning and weaving factories in China and other Asian producer countries are able to exploit larger economies of scale and have access to cheaper raw materials, it does not seem realistic that Mali will be able to attract the large investments being obviously necessary to expand cotton processing – at least as long as the gap in unit labour costs between Asian producers and West Africa is not large enough to attract investment aimed at cost-cutting (Collier 2007). On the other hand, the existence of a large market in West Africa with special consumer demand (*pagne, booboos*) can be an asset also for foreign investors.

Cotton oil is produced by a company (HUICOMA/ Huilerie Cotonnière du Mali) which is the largest cotton oil factory in West Africa, with a capacity of over 340 tmt of seeds per year. The company was founded as a state-owned enterprise in 1979, while in 2005 the majority of the shares were sold to a private investor. Apart from cotton seed and its by-products, the company is also involved in groundnut oil production and shea nut processing (soap, cosmetics), as well as livestock food. The company owns three production sites with an annual production of over 40 tmt of

refined cotton oil; 15 tmt of soap, and over 230 tmt of livestock food. It employs 855 full-time staff and 300 seasonal workers (HUICOMA, Company information, www.afrikm.com/tomota).

Dairy, meat, and leather

Mali possesses one of the largest livestock populations in West Africa. As a result of its steady increase over recent years, the domestic supply of fresh milk, meat, and hides and skins has also improved. As animals are kept in unfavourable conditions, illnesses are widespread. As a result, the quality of the traded hides and skins is poor, and exporting remains far below the country's potential.

Processing raw milk to pasteurized milk, curdled milk, yoghurt, butter, ghee, and cheese takes place both in family-based, artisanal small enterprises and in a few semi-industrial and industrial enterprises (LTA/IER 2005, p. 23). One of the main constraints for the smaller milk-processing units is their low bacteriological quality.

The total production of cattle meat in 2008 was 140 tmt, followed by sheep (44 tmt), and goat (43 tmt; FAOSTAT data). Slaughter of livestock mostly occurs outside of modern, controlled structures. In recent years, the registered supply of cattle hides grew by 11 per cent p.a., goat skins by 6 per cent, and sheepskins by 7 per cent (CAGR 2000-08, computed from FAOSTAT data). Only a small amount (25 per cent) of the total hides and skins available enters the market, while the bulk of it is domestically processed (LTA/IER 2005, p. 24). Tanning is traditionally performed by female household members. There are also a few industrial tanneries, operating with a total annual capacity of 0.1 million hides and 3.5 million skins (2001) (LTA/IER 2005, p. 24). Leather is processed in artisanal workshops at a low level of mechanization, the main products being bags, portfolios, and sandals. The poor quality of raw material and the lack of access to capital for technological upgrading constitute the principle bottlenecks for the leather industry. The export of leather has declined by an annual rate of 2.5 per cent in recent years (CAGR 2000-08; computed from COMTRADE data). The main export destinations in 2008 were Senegal (41 per cent), Italy (38 per cent), and Spain (14 per cent).

Fish processing

Mali is one of the largest freshwater fish producers in West Africa. The most important fishing ground in Mali is the Central Niger Delta (80 per cent of catches), followed by Lake Sélingué (Sankarani River) and Lake Manantali (Bafing River). Fishing is exclusively small-scale, often exercised in cooperatives, and it is a seasonal activity (March to June, in the low water period). Having been stagnant for several years, catches have sharply declined recently (see Table 5.9). The reason can be seen in the water resources of the Niger River and in the pressures on aquatic ecosystems due to increased water abstraction for irrigation. The construction of the Manantali dam, which created Lake Manantali, also had a detrimental impact on local fisheries (Bosshard 1999). Consequently, the annual average consumption is presently (2005) 8.7 kg, down from 15.1 kg a decade earlier (FAOSTAT database). Nevertheless, fish still provides one third of the animal proteins consumed (LTA/IER 2005, p. 18).

Given the low availability of refrigerator lorries to transport fresh fish to consumers, approximately 80 per cent of the catches are processed on the spot – usually smoked in different techniques, dried, semi-burnt (P*olypterus,* Dogon plateau), or processed by oil removal (B*rycinusleuciscus,* among the Bozo group). The market for processed fish is national; a small amount is also exported to Côte d'Ivoire (COMTRADE data). Main bottlenecks of the industry include the lack of appropriate technology (fuel-wood saving, quality-enhancing) and insufficient transport facilities from fishing grounds to consumers.

Smoking techniques have recently been ameliorated following the impact of a FAO project in Chorkor, Ghana.[4] The Malian government invites foreign investment to establish production plants for nets suitable for certain species of fish, such as G*ymnarchus niloticus* and H*eterobranchus*, and for the modernization of the various stages of the supply chain (Embassy 2010). However, given the already observable overfishing, technically improved fishing technologies do not seem to be a sustainable solution. Furthermore, as fishing and processing are organized on a family-based division of labour, any industrialization of fishing may be detrimental to social coherence. Given the labour-intensity of the present processes, more efficient techniques in the face of limited resources will mean employment losses even in the short run. As an alternative, the establishment of fish farms is promoted, supported by a training centre in Molodo and seedling stations (L'Essor, 18/04/2006).

Cereal processing

Cereal crops are a major component of Mali's agricultural production: out of a total production of 6,335 tmt of cereals in 2009, rice contributed roughly one third, while maize, millet and sorghum contributed one fifth each (FAOSTAT data). Cereals are also the major component of the Mali diet. In urban areas, rice is the preferred dish (40 per cent of daily food intake), followed by sorghum and millet (together 35 per cent). In rural areas, farmers consider rice as a cash crop rather than as a food crop, whereby millet, sorghum, and *fonio* are the staple foods (Ember, ed. 2001). Despite some progress, Mali is not yet self-sufficient in its cereal supply: in 2008, 10 per cent of rice consumed was imported (FAOSTAT and COMTRADE data).

Cereal processing is done in three stages: the first one includes the husking of rice, millet, sorghum, and of *fonio*, and the milling of maize and wheat. The second stage includes pre-cooking, especially of millet and sorghum. *Dègué* is the most important second stage product (constituting roughly one quarter of all second-stage transformed cereals), followed by *couscous*, *monikuru*, and precooked *fonio* (LTA/IER 2005, p. 10). Third stage transformation includes the preparation of flat bread, *tacoula*, *didègué*, and *mugufara* as well as liquid and semi-liquid porridges (*moni, seri, tô*) as ingredients for domestic cooking. Besides two larger companies, a considerable number of small enterprises operate as contract processors (customers bring grain to be milled) along with a multitude of second and third stage transformers. Nearly three quarters of Mali's agro-alimentary businesses are cereal transformers (LTA/IER 2005, p. 10).

Although wheat is not a major crop, contributing only 2 per cent to the total cereal production, it has gained some relevance due to an increased consumption in the cities. Of a total wheat flour consumption of approximately 70 tmt in 2008, one half was imported in its non-processed form, whereas one third was imported as flour (mainly from Senegal, Côte d'Ivoire, and France). Thus some untapped import substituting market potential exists. With a local producer price for wheat of $219 per mt (FAOSTAT data, 2007), an average import price of $530 per mt of wheat flour imported from Europe and of $750 for wheat flour imported from West Africa (computed from COMTRADE data, 2008), the substitution of imports of flour for locally milled wheat might allow value addition of more than $5 million p.a. and could provide employment for 550 workers. One of the main problems, however, is that due to impurities locally produced flour is considered of lesser quality compared to imported flour. Furthermore, any promotion of wheat should consider the fact that the nutritional value of white wheat flour is lower than that of unmilled indigenous grains (millet, *fonio*). In addition, the production of millet and *fonio* has a more equalizing effect on income distribution among farmers than the production of wheat, which requires relatively larger non-labour inputs.

[4] FAO, Post-harvest processing: the Chorkor oven, Website, http://www.fao.org/bestpractices/content/06/06_02_en.htm; see specific information on the implementation in Mali: IDRC, The International Development Research Centre, Website, http://www.idrc.ca/en/ev-149289-201-1-DO_TOPIC.html.

Sugar refinery

Mali's sugar production is mainly derived from sugar cane farming in the irrigated Office du Niger (ODN) zone. The annual raw sugar production is around 32 tmt, while net imports are around 106 tmt (ICSD and COMTRADE data). With an average sugar consumption of only 11 kg per year (as compared to 34 kg in the EU or even 58 kg in Brazil) there is still a large market potential. It is estimated that a 1 per cent increase in income will result in a 0.9 per cent increase in sugar consumption (Camara 2004).

Presently, sugar is traded under government control, i.e. retail prices are fixed. Its import is licensed to only a few trading companies (although their number has recently been slightly enlarged). Although the UEMOA applies a Common External Tariff (CET) which, following an escalation pattern, should, in principle, be 20 per cent for consumer goods (DITS 2004, p. 12), additional tariffs are applied for sugar. The actual import duties are estimated to be 48 per cent (LQB, 06/10/2009). Given the differences between the CET and the actual tariff, smuggling of sugar is widespread (DITS 2004, p. 12), and in contrast to the government's intention of higher protection actually undermines Mali's sugar production.

In the long run, the Malian government wishes to promote sugar production by attracting foreign investment in sugar cane farming and the construction of new sugar factories both to meet local demand and to export the surplus to regional and European markets (Embassy 2010). However, whether in addition to the 190 tmt Markala project there is that much scope for new investment targeting the national market, and whether sugar production in Mali is competitive on the international market, remains to be proven. On the other hand, it has been possible to export sugar confectionary produced in Mali to neighbouring countries, mainly to Guinea. Considering this fact, processing sugar to confectionary could be an opportunity for further Malian enterprises.

Fruit, vegetables, and tobacco

Fruit and vegetable processing in Mali includes desiccation as well as transformation into juices, syrups, and preserves. Production units in fruit and vegetable processing are mostly family-based and informal.

Traditional open-air desiccation includes onion and shallot, tomato, pepper, and gombo. More advanced techniques of shallot desiccation established under the impact of development projects (Dogon-plateau, Office du Niger area) reduce damages from impurities and vermin.

The practice of mango and vegetable-leaves' desiccation has only recently been introduced in the Sikasso and Koulikoro regions. Various women's groups are involved in the desiccation of mango (LTA/IER 2005, p. 15-16; see also Box 5.1).

Box 5.1: Case Study: Dried mango business

Mme. Diahara Kamissoko Traoré, entrepreneur and president of a cooperative of six female entrepreneurs, started to produce dried mangoes in 2005. With the support from the Swiss Development Assistance (Helvetas) entrepreneurs bought gas driers and received training courses in hygiene, production, and management. Starting with a production of just 380 kg of dried mangoes in the first year, she increased production 20-fold within two years, aiming to serve local consumers in off-harvesting season, and also export markets in the long run. Apart from expanding in the mango business, diversification into the production of dried fruits is also a goal to make use of drying capacities outside of the mango harvesting period. Difficulties for the business are seen on the cost side (gas being more expensive than in Burkina Faso, where there are subsidies) as well as on the output side (due to lack of packing and exporting enterprises). Plastic bags for packing are imported from the Netherlands.

Source: C. Inauen, Helvetas Partnerschaft, August 2007, p. 11.

Indigenous West African food plants which are processed include *jujube* (*Ziziphusmauritiana)* and *néré* (*Parkia-biglobosa*). Jujube is processed to snack foods. Néré seeds are processed by boiling, cleaning, and fermenting to the popular condiment *soumbala* (Anonymous 1993). As néré seeds

have become short in supply, substitutes include *soumbala* made from other kinds of seeds, such as soybeans, as well as imported bouillon cubes, which, however, lack the proteins and essential minerals of néré-based *soumbala*. The processing of néré is considered to be highly profitable, but access to peeling machinery is a bottleneck (LTA/IER 2005, p. 28). In the 1990s, tomatoes were also processed on an industrial level by a parastatal. It produced 3.2 mt double-concentrated tomato puree, but finally failed due to sales prices being lower than production costs, an insufficient production capacity during the time of the tomato harvest, and consumers' demanding imported triple-concentrated tomato puree (L'Essor, 14/04/2003).

Juices, syrups, and preserves are produced with mango, *dah rouge* (*Hibiscus sabdariffa)*, ginger, and tamarind as the main ingredients. Furthermore, *zaban* (*Saba senegalensis*), guava, and *tabacoumba* (*Detarium microcarpum*) are processed, albeit on a much smaller scale. The small transformation units mostly lack the production and quality-control equipment being necessary for an extension of production quantities and for a constant high quality. Only a few enterprises can be considered as producing near or at industry-level. They are reported to produce soft drinks only on the base of *imported* fruits and aromatic extracts. For the majority of the Malians these products are considered to be luxury goods (LTA/IER 2005, p. 18).

Exclusively based on the very few large firms, exports of non-alcoholic beverages increased between 2000 and 2008 by an annual growth rate (CAGR) of 34 per cent to $590,000 in 2008. Export destinations were Guinea (70 per cent) and Côte d'Ivoire (21 per cent; COMTRADE data). So far, processed fruits and vegetables have not been exported on a relevant scale. Food safety standards are a major constraint.

Tobacco consumption is estimated to be 2.5 billion cigarettes per year. The only tobacco-producing company in Mali, privatized in 2002, has a production capacity of 2 billion cigarettes, but is utilized far below its capacity (30 per cent in 2006, 75 per cent in 2008; L'Essor, 26/01/2009) leaving tens of thousands of tons of raw tobacco unused. Illegal imports are a main competitor.

Cashew nut processing

Cashew trees are planted in a number of districts around Sikasso and Bougouni, along Côte d'Ivoire and southern Burkina borders; a secondary production area based on old trees is located around Koulikoro. Besides labour and land, few inputs are used, occasionally some insecticides (ACA 2007). The cashew trees bear the nuts and the apple. The latter ripens earlier than the nut and for this reason and due to its juicy pulp and fragile skin it is unsuitable for transport. However, it can be used for syrups, juice, or marmalades.

Approximately 12,000 small-sized farms produce an average of 3.5 tmt of raw cashew nuts per year (MEIC/DNCC, n.d. a.) along with some 120 tmt of cashew apples (FAOSTAT data). Being harvested from February to April, working-time allocation to cashews does not compete with main crops. The trees also help to stabilize results from other crops, as their tolerance against occasional droughts makes them instrumental in reducing soil erosion. For many farmers, cashew nuts are the only source of cash income.

Raw nuts have to be processed to edible kernels. This is technically not trivial due to the fact that the nutshell contains toxic oil (cardol), which has to be neutralized by way of roasting or water-damping. With the exception of a few micro-operators located in Bamako with a total production capacity of less than 0.1 per cent of the harvest and producing for retail in Bamako (ACA 2007), almost all nuts are exported to India for final processing (UNCTAD 2007).

As cashew nutshell liquid is mostly composed of anacardic acids, processing cashew could provide scope for downstream industries, both pharmacological and cosmetic. The present Malian production, however, may be too small to meet the minimum efficient scale of processing standard qualities for competitive international markets. An alternative is to exploit economies of scale by

cross-border cooperation (Sikasso-Bobo-Ferkessedougou triangle) or to produce only for the premium segment of the final consumer market by applying a suitable processing technique, such as the newly developed, labour-intensive Indonesian cold state cashew shell-opening (Kovacsics 2006; Rütter *et al*. 2009). The international marketing of organically grown cashew kernels could be facilitated by the fact that chemical inputs to production are currently low, even if the present low quality of the bulk of the nuts from Mali constitutes an impediment for this option which cannot be overlooked (MEIC/DNCC n.d. a.). Finally, cashew apples also have still a largely untapped potential to be processed to durable products, both for domestic consumption and for exports.

Shea nut processing

The West African shea (karité) tree grows naturally in the dry savannah belt. Grinding and cooking its fat-rich nuts allows the separation of oil from shea butter. Usage includes a wide variety of fields, such as nutrition, soap, and for cosmetic and pharmaceutical skin care. Shea butter can also be a substitute for cocoa butter in chocolate. Unfortunately, a targeted production of shea nuts is difficult: New plants often only randomly germinate and a tree's full yield capacity is reached only after approximately 50 years.

Mali's production of shea nuts in 2008 was 190 tmt, 24 per cent of the world's production, second only to Nigeria (52 per cent; FAOSTAT database). Estimates are that Mali presently makes use of only two thirds of its production potential (LTA/IER 2005, p. 25). This is even more extreme in exports; in 2003, Mali exported only 4 tmt shea nuts (i.e. 3 per cent of total African exports; COMTRADE-HS data) in addition to 5 tmt of shea butter.

Collecting and processing nuts provides seasonal employment and cash income for about three million Malian women (traditionally men do not engage in the shea nut business). The main constraints for an increased collection are that, as the shea trees are widespread in the area, collection is only small-scale, in a radius of a few kilometres around the village, and that shea nut collection is in time-competition with other work obligations for women during the rainy season (June to September).

Transformation of shea nuts to shea butter is usually organized by groups of women. In addition, there are three industrial enterprises processing karité nuts in Mali. However, all three enterprises have always been far below their production capacity, both due to the insufficient quantity and quality of the raw material (LTA/IER 2005, p. 25). Furthermore, in household-based processing the constraints are the unpredictability of product quality, a low-level processing technology, an excessively long chain from producer to market (that is, the inclusion of various levels of intermediaries) and a lack of market information (MEIC/DNCC n.d., b). Constraints on the domestic consumer side can be seen in the fact that imported substitute products are cheaper and have a higher prestige, reflecting the lack of consumer awareness of the nutritional value and the therapeutic attributes of shea.

In the past, various development projects aimed at increasing quality and quantity of shea butter production in Mali by introducing mechanical presses to small-scale production units, but these efforts were largely unsuccessful, mainly due to the arduousness of the work involved for the women (LTA/IER 2005, p. 25) More recently, a number of initiatives, such as an UNIDO food processing pilot centre, have targeted the marketability of Malian shea butter (UNIDO 2007b).

Given the fact that the shea tree's occurrence is limited to Africa alone, shea provides a unique competitive advantage for Mali. It should be pointed out, however, that due to the botanical specifics, the potential of shea processing is limited and cannot be extended in the short to medium term.

Summary

Box 5.2 attempts a classification of subsectors according to their present position (high versus low) and their potential (medium to high).

Box 5.2: Positioning Mali's agro-industry subsectors

	MEDIUM POTENTIAL	HIGH POTENTIAL
HIGH PRESENT POSITION	cotton processing fish processing	hides and skins (semi processed) leather (processed) shea nuts
LOW PRESENT POSITION	sugar refinery wheat flour	processed indigenous foods, such as néré and jujube dried fruits fruit juices cashew kernels

The following Box 5.3 provides a summary of Mali's agro-industrial subsector's strengths, weaknesses, opportunities, and threats (SWOT).

Box 5.3: SWOT diagram of Mali's agro-industry

STRENGTHS

- low unit labour costs in the textile industry
- large livestock population
- large freshwater fish producer
- large potential market for special cotton fabrics (booboo, pagne)
- quasi-monopolies of (West) African producers (unique selling points): néré, cashew, shea

WEAKNESSES

- low standard of animal health, low quality of leather
- low and/ or unpredictable quality/ quantity of raw material, such as cashew nuts and shea
- difficulties in meeting minimum efficient scale in areas such as standard cashew processing
- low level of bacteriological quality in smaller milk processing units
- low level of technology in the textile industry
- lack of appropriate machinery, such as in néré peeling, leather processing, cashew and shea
- transport impediments, such as for fresh fish and cashews
- lack of adequate packing for processed food
- insufficient domestic purchasing power for soft drinks
- import competition (condiments, wheat flour, oil)

OPPORTUNITIES

- national marketing of fish
- export of hides and skins and tanned leather
- condiments based on néré
- domestic market potential for sugar, confectionery
- processing organically grown cashews with labour-intensive techniques, and marketing kernels internationally
- processing of cashew apples to marmalades and juices
- international marketing of shea butter, shea-based soap, etc.
- upgrading the textile industry by foreign direct investment

THREATS

- environmental damages of cotton production
- comparatively low level of economies of scale to be exploited in textile industry
- upward trend of F.CFA vis-à-vis the $
- dumping of second-hand clothes
- overfishing
- employment reduction by efficiency-enhancing techniques in fishing

Source: C. Inauen, Helvetas Partnerschaft, August 2007, p. 11.

Policies for developing agro-industries

Deepening economic reforms

Policies affecting agro-industrial development in Mali include reforms of the economic system, macroeconomic, sector, and regional policies, as well as the interaction with the private sector, especially industrial policies for specific value chains. The following points should be considered by policymakers:

Continuing privatization policies

After independence, state-owned enterprises hold monopolies in almost all the country's economic activities. Since 1988, the government has carried out a comprehensive privatization programme. By 2000, in the agro-industrial sector the government was still the majority share-holder in the Compagnie Malienne pour le Développement des Textiles (CMDT), the main player of the cotton sector from seed to export, as well as in staple food distribution, slaughterhouses, and tobacco processing, and the government was a minority shareholder in textile companies, oil and soap production, canning, and sugar refinery (Keita 2000). By the beginning of 2010, apart from slaughterhouses, CMDT was the only state-owned enterprise remaining, and it seems that although it is presently difficult for the government to retreat from intervention in this central sector of the Malian economy, authorities are nevertheless still committed to privatizing CMDT (MEF 2009 in IMF 2009 b, p. 29).

Maintaining stable macroeconomic policies

Mali is one of the Heavily Indebted Poor Countries (HIPC) and is a major recipient of foreign aid from many sources, including multilateral organizations. The total debt outstanding was $1.4 billion in 2006, mainly being official bilateral and multilateral debt. The IMF praises Mali for its "sound macroeconomic policies" (IMF 2010). The target figure for the "basic fiscal deficit" for 2010 is 1.6 per cent of GDP. Although still running a huge current account deficit, buoyant gold exports have led to a greater-than-projected improvement. Annual inflation remains at low levels, 2.1 per cent. In 2010 growth is projected to reach 4.5 per cent, with an investment rate of over 20 per cent of GDP (AfDB 2005, p. 13), which will be sustained by a domestic savings rate of around 15 per cent (13.5 per cent of GDP in 2007, which is slightly lower than the Low-income countries/LIC average; World Bank 2008).

Targeting subsidization of productive sectors

To support agriculture, the Malian government has resumed the practice of subsidizing inputs first in the rice sector (under a "Rice Initiative") and then extending it to support wheat, maize, and cotton. The subsidies are meant to be limited in time and volume, and annual budgetary cost shall not exceed an amount equivalent to 0.5 per cent of GDP in 2009 and 2010 (MEF 2009 in IMF 2009 b, p. 35). The Malian government's development programme is laid down in the Poverty Reduction Strategy Paper (PRSP). *Inter alia*, it aims at creating 10,000 new jobs per annum in the formal non-agricultural sector (AfDB 2005). In addition, the Malian government is committed to accelerating the decentralization process within the framework of an institutional development plan, which was adopted in 2004 (AfDB 2005).

Improving investment climate

In 2007, Mali was ranked 74th out of 141 countries in the UNCTAD's Inward FDI Performance Index (which ranks countries by the FDI they receive relative to their economic size), and 123rd out of 141 in the Inward FDI Potential Index (which identifies several factors apart from market size expected to affect an economy's attractiveness to foreign investors) (UNCTAD 2009). A comparison between these two rankings reveals that Mali is above its potential. However, the

figures are distorted as foreign investment is concentrated in mining and trade, while the manufacturing industry is only marginally targeted. Although legal barriers to FDI are small, including the fact that foreign investors may have full ownership of any new business according to the Malian investment code (UNCTAD 2006), the country is ranked only 156th out of 183 countries in the Doing Business 2010 Report (World Bank 2009a), pointing to the fact that there is still a long way to go. However, new figures from the Doing Business Report 2011 (World Bank 2010a) show that Mali is ranked now better at 153th.

According to a number of studies summarized by OECD's and AfDB's AEO (AEO 2009), principal constraints include: a weak legal and regulatory framework (especially also a high level of corruption) and a poor support for business despite the existence of a host of institutions mandated with their development; an inefficient judiciary system with little credibility; a complex tax system; the almost non-existence of business support services, along with the high prices charged by the few existing ones; and the lack of qualified labour. With respect to the labour force it should be mentioned that there is a "missing middle" in the qualifications that are available in the labour market; given a huge amount of unskilled labour and a number of university graduates, especially in non-technical subjects much too large for the country to be absorbed in productive employment, the number of qualified technicians is very limited. Among 85 countries, Mali (along with Afghanistan) had the least equitable distribution of education in the 1990s (World Bank 2000, p. 59). This states the case for a re-organization of the educational system towards enhanced vocational training, which would also promise huge benefits for the agro-industry sector.

Promoting agro-industries and agribusiness more systematically

Promotional activities for the agro-industries include a multitude of organizations, projects, and programs aimed at promoting new processing technologies, improving the technical and organizational infrastructure, the dissemination of market information, and the participation in national and international trade fairs. More research will be needed to assess the sustainability of these endeavours, many of which do not seem to be continued beyond the actual project durations. Given limitations due to the insufficient availability of trained personnel (evident from the extremely high wage premium on employment with international organizations vis-à-vis employment in the private business sector), the absorption capacity for project funds also seems a common problem.

Integrating supply-side and demand-side policy packages

From the point of view of the SWOT analysis (see Box 5.2) of the agro-industry sector, more emphasis seems to be necessary on the following issues:

(a) Supply-side factors:

- improving the quality of raw materials, especially improving animal health, and the purity of storing and processing (milk, cereals, vegetables, fruits and nuts) by setting and enforcing universal health and hygiene standards;
- upgrading the processing technology in compliance with the relative scarcity of factors of production, i.e. targeting the application of devices suitable for a labour-abundant economy (for example, in the cases of fishing and cashew kernel processing, imported machinery is typically labour-saving) by providing targeted microcredits and encouraging the dissemination of appropriate technology via technical training courses; and
- reducing additional production costs which result from the relative backwardness in infrastructure, such as the particularly high costs for electricity, by moderate state subsidies;

(b) Demand-side factors

- promoting national demand by redistributing income to the rural poor (whose demand structure is geared towards products which are less import-intensive and more labour-intensive than the goods demanded by the urban middle class), *inter alia* by decentralizing much faster the government-supported economic development initiatives;
- promoting international marketing by providing credit-based access to quality control devices and to appropriate packing, all supported by a (Korean-style) mechanism linking future export assistance to previous export performance; and
- enhancing the non-price competitiveness of Malian products on international markets by umbrella brand initiatives, especially in niche markets, such as organically grown/ fair trade cotton and processed food, ethnic food including spices and ready-made dishes, ethnic and/or organic cosmetics, and the establishment of a "West African apparel brand" with the help of marketing promotion agencies on the basis of locally produced fabrics to harness the creativity of Malian textile designers.

Overcoming constraints to investors: lessons from enterprise surveys

In recent years, there had been various enterprise surveys in Mali. A survey from 2005 found that among the most important problems facing industrial enterprises in Mali were the costs of electricity (91 per cent of all industrial enterprises) and of access to primary materials (84 per cent), as well as the problems of fraud and unfair competition (67 per cent) and regulatory delays (60 per cent) (multiple responses possible; MIC 2006, p. 92). It is not possible, however, to distinguish problems specific to the agribusiness sector from this source. According to a survey from 2006 (Enterprise Surveys 2007), the foremost constraints for enterprises in Mali are electricity, access to finance, and tax rates. Actually, electricity costs for operating enterprises in Mali compare unfavourably to international competitors. A comparison of 13 African countries (MIGA 2006) showed that electricity costs were among the highest ($0.12 / kWh, third only to Senegal and Nigeria). However, this survey was also not specific to agro-industry. A survey of 2004/2005 (MIGA 2006) had addressed agro-industries in nine African countries, but the number of companies interviewed in Mali seems very small (five per sector).

To gain more detailed insights, an enterprise survey was conducted for the present study among agribusinesses in Bamako in January 2010.[5] Their managers and/or owners were interviewed (semi-standardized) and asked to provide information and to give opinions on a number of issues, including:

- formal qualification of entrepreneur;
- enterprise-level employment and turnover, and their dynamics;
- factors of and impediments to success as perceived by the entrepreneurs; and
- the degree of and perceived impediments to internationalization.

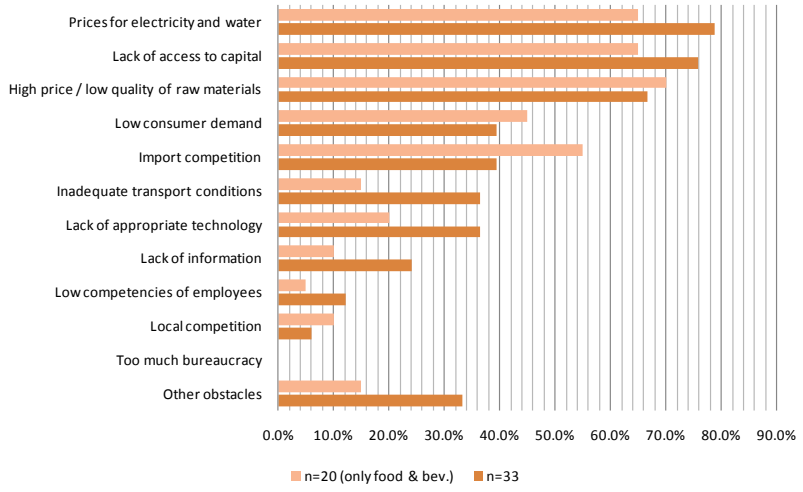
According to this survey, the formal qualification of entrepreneurs or of managing personnel is highest in the formerly predominantly state-run and generally larger cotton-related enterprises, such as spinning. Formal qualification seems to be lowest, including several semi-illiterate entrepreneurs without formal schooling (albeit sometimes with Koranic schooling), in leather work. The artisanal leather processing, including making of sandals and the production of bags, especially for sale to tourists, seems to be the most competitive of all agro-related marketplaces, characterized by low barriers to entry and low profits. In this sector there are many cases of employment decreasing between 2005 and 2010. Furthermore, most of its enterprises claim lack of

[5] Due to time and budget constraints, the survey could not be extended to the informal sector, and only enterprises headquartered in Bamako were covered. It is suggested to carry out a more comprehensive survey on agribusinesses in Mali.

capital to buy machinery as the most important bottleneck, confining some of them to sales only, rather than allowing them to pursue their own production. Food and beverage sector enterprises take a middle position in terms of the number of years of formal schooling of entrepreneurs. Furthermore, a number of entrepreneurs, predominantly women, came to these activities via different, but often commerce-related activities.

Among the perceived impediments, input quality, production costs (electricity costs and access to machinery via access to credit), import competition (especially for the food industry), and a low consumer demand (low spending power) are most often considered to hamper the success of enterprises (Figure 5.2). Lack of information, lack of competencies, and bureaucracy are (possible erroneously) not considered relevant to the same degree. Among the other obstacles, the lack of adequate packing is most often mentioned.

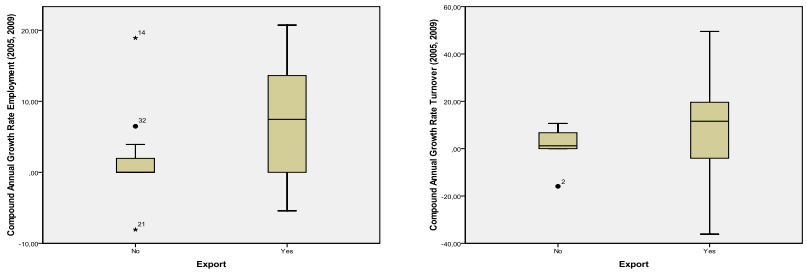
Figure 5.2: Perceived impediments to success in agro-industry, Mali, 2010



Source: Own Survey 2010. The charts provide the percentages of enterprises citing the specific factor as relevant to their success. Multiple answers are possible.

With regard to both employment and turnover, many agro-related enterprises seem to have grown over the past five years (a figure which is obviously biased as enterprises which had to close down in these years cannot be covered). It is not surprising that product quality was mentioned by all enterprises as a factor for success. However, when looking into intelligible differences between enterprises it turns out that export activity seems to be the single most important factor for enterprise success. Exporting firms were able to increase their employment by 3.1 per cent per year, while non-exporting firms on average reduced their employment by -0.5 per cent per year. Exporting firms also increased their turnover by 6.2 per cent per year, while non-exporting firms increased turnover by only 1.3 per cent per year (Figure 5.3). However, these figures should be treated with caution, as considerable differences exist among firms and subsectors.

Figure 5.3: Employment and turnover, exporting/ non-exporting agribusinesses, Mali 2005-2009



Source: Own Survey 2010, n= 33. Numbers indicate outlier cases; for employment t significance is 0.598; for turnover t significance is 0.625.

Policy actors in Mali can use the results of these surveys for policy formation. Understandably, small and large enterprises make different suggestions for government assistance to the agribusiness sector. Larger enterprises suggest more policy-oriented, indirect assistance, such as the establishment of a development bank or the establishment of a guarantee fund, and demand a long-term vision (here with regard to the cotton sector). Smaller enterprises tend to be more specific in their demands, including assistance with regard to access to higher-quality raw materials, machinery, high-quality packing (an issue mentioned particularly often), training to meet standards for export trade, assistance to access trade fairs, and training in labelling and marketing techniques.

More regular enterprise surveys may help government to redesign policies. Specific suggestions made at large government-sponsored meetings include urging people to consume local products (processed food, beverages) rather than imported food, or requesting government to 'improve business conditions' or to 'value more highly local products'.

This information clearly does not go far enough, and an effective policy dialogue of government with the private sector is needed.

Strengthening the sector innovation system

An important area for policy reform is in innovation and technology policies. Innovation systems can be defined as, 'the flows and relationships among industry, government, and academia in the development of science and technology,' (OECD 1996, p. 7). Regarding Mali's agro-industry, the following inputs and actors can be identified:

- Government expenditure for tertiary education is 2 per cent of total government expenditure, and the percentage of tertiary education in total enrolment is 4 per cent in 2007 (UNESCO 2009). The percentage share of R&D in GDP and the percentage share of enrolment or expenditure being specific to agro-industry are not available.
- Public research institutions pertaining in a wider sense to agro-industry include five main institutions: the Centre National de Recherche Scientifique et Technologique (CNRST), the Comité National de la Recherche Agricole (CNRA), the Institut d'Economie Rurale (IER) including a Food Technology Unit, the Laboratoire Central Vétérinaire (LCV), and the Institut Polytechnique Rural /Institut de Formation et de Recherche Appliquée (IPR/IFRA) (see France Diplomatie, 2007).
- Organizations cooperating in the field of agribusiness promotion and technological upgrading include UNIDO (cooperating with a number of enterprises in fruit, vegetable, and cereal processing such as precooked fonio, couscous, wheat, pepper, sesame, gumbo powders, tamarind, ginger, cashew nut etc.; see UNIDO 2004) and various national and NGO-based projects, which also cooperate with the above mentioned public research institutions. An example is a project of USAID in cooperation with Institut d'Economie Rurale (IER) on

sorghum and millet processing technology, equipping entrepreneurs with cereal processing units for the production of flour and grits, agglomerated products (couscous, dègué), and pre-gelatinized 'instant' flours for porridges (Hamaker 2009).

- Apart from a multitude of project evaluations there are no in-depth studies available as to whether the present sector innovation system is conducive to the dissemination of innovation and how knowledge spillovers ('involuntary flows of knowledge between producers and/or users of an innovation', Stoneman 1995, p. 111) could be triggered. With regard to the output of the innovation system, anecdotal evidence points to the fact that while still small in size, Mali's alimentary industry has gained momentum in recent years, not only in terms of quantity, as indicated by the fact that the number of formal enterprises in this subsector probably doubled within the last ten years, but also in terms of increasingly meeting quality standards above the threshold of exportability. This is visible from such events as the 46th Salon International de l'Agriculture (SIA) in Paris in 2009, where along with unprocessed agricultural products such as "organic grown and fair traded" cotton, "organic grown and fair traded" sesame, and mangoes, and also processed food from Mali such as fonio, ginger, cashew nuts, dègué, djouka, tamarind syrup, ginger syrup, mango syrup, bissap, and shea butter were exhibited (L'independent, 2009-02-24).

A further strengthening of the innovation system, as being of obvious importance for agro-industrial development and the promotion of agribusiness, is therefore requested. So far, there is no integrated strategy visible on the side of the government to proceed in this direction, and the institutional machinery to go along this route also has to be created.

Key policy factors for promoting agribusiness

Enhancing agricultural growth for agribusiness

At the time of writing this study, the USAID's Famine Early Warning System (of November 30, 2009, info@fews.net) classifies Northern Mali, that is, the pastoral livestock production zone, as "moderately food insecure": 'some or all households are barely able to meet their basic food requirements on their own. To meet their requirements, they are relying on external assistance and/or on coping strategies that begin to erode their asset base.' In the light of such news it becomes clear that all progress of agro-industry, not only in the northern parts of the country but in the whole country, will crucially depend on an enhancement of agricultural growth. Without substantial agricultural growth, the gap between food production and food consumption will continue to grow, given Mali's high population growth rate (the 12th-highest in the world).

Even now the small agricultural surplus, i.e. the narrow margin between food production and consumption on the side of subsistence-farmer families, poses a severe supply-side constraint for most agro-processing activities beyond the artisanal level. Minimum efficient scale in competitive, export-capable agro-industry can only be achieved if based on a large catchment area, which again would need reasonably fast and reliable means of transportation. Furthermore, any food exports – whether processed or not, now and in the future – have to be weighed against the nutritional needs of the population. These will only be met if benefits from food exports are socially and geographically widely distributed, so that there is sufficient purchasing power available to complement exports of food for which Mali has a comparative advantage (such as groundnuts) by imports of food for which Mali has a comparative disadvantage (such as wheat), and thus to prevent a negative balance of calories trade. A precondition would be to strengthen the functioning of markets for agricultural products to provide farmers with a fair share of the export revenue, allowing them to invest in more advanced production technology, to specialize their production according to their comparative advantages, and in return to buy other foodstuff for their consumption from the market. In others words, in the long run the basis for a large scale agro-industry in Mali will be to turn subsistence producers into market-oriented farmers.

However, in Mali there are narrow limits to this development as the scope for the expansion of agricultural production in Mali is highly limited. When formulating policies to promote agro-processing industry one should be aware of the potential constraints of the limited amounts of arable land. It should also not be overlooked that Mali's hydro-agricultural potential is unevenly distributed; irrigation will always be geographically restricted to the area which is already Mali's most productive. Irrespective of irrigation, agriculture in Mali remains heavily dependent on rainfall and floodwater, and output varies considerably according to the total amount and the temporal distribution of rainfall. Any agro-industry to be developed in Mali will have to take a high degree of volatility on the part of raw material provisions into consideration.

Large-scale investments into irrigation projects (the irrigation zone established around the Lake Manantali, a recent Libyan investment in rice production, or the planned Markala sugar production project) all have their short- to medium-term benefits by way of increased production. However, damages from the salinization of the soil, the potential impacts on the hydro-system, the potential conflicts over land, and social polarization should not be overlooked. The implementation of irrigation systems is not socially neutral, as the mixed agro-pastoral land use system is threatened, and smallholders often cannot afford the necessary irrigation devices (pumps, pipelines), fertilizers, pesticides, and modified seeds. Employment generation in a modernized, large-scale commercial agriculture is often smaller than employment destruction in the subsistence sector, which will exacerbate the rural to urban migration. Therefore, the enhancement of Mali's agricultural growth – definitely a *conditio sine qua non* for a prospering agro-alimentary industry – should be rather built on small-scale and locally adapted activities and on socially non-polarizing improvements, which take the enormous fragility of natural conditions into careful consideration. However, as surplus raw material is produced in small portions and over a large catchment area, given the low area productivity of Malian agriculture and the sparse population density, concomitant developments of means of transportation are essential for the access of agribusiness to raw materials.

Upgrading value chains in Africa's agribusiness

At least for the next decade, the Malian economy cannot be delinked from cotton, its major product. Therefore, policies have to address the issue of upgrading the cotton value chain in addition to simultaneously searching for alternatives such as in food processing. It has to be taken into consideration that the raw material, cotton, is readily available, that unit labour costs are low, and that a local and regional market can be served with specialized garment products. What is needed in order to bring these factors together is moderate state intervention to reduce some costs for producers which result from the relative backwardness in infrastructure (especially the costs of electricity). This would be a correction of historically developed disadvantages rather than a distortion of present fair trade rules. In addition, a concerted action by national governments in the sub-region, both to prevent oversupply of fabrics and to promote consumer demand (especially vis-à-vis second hand clothes), would be needed in order to ensure an upgrading of the West African part of the cotton value chain. However, given the very short, design-intensive and high precision time-driven life cycles of today's global apparel industry, Malian textiles – due to the backward logistics systems and the time-consuming transport systems – will in the foreseeable future not have any chance in core markets. China's and other countries' textile factories are producing for the global marketplace with the help of highly sophisticated logistical systems. However, establishing a specific "West African apparel brand" with the help of marketing promotion agencies may be an alternative. On the basis of locally produced fabrics, there is much room to harness the creativity of Malian and international textile designers with an increasing demand from tourists and in some international markets for artisanal produced apparel.

With regard to the agro-alimentary subsector, the upgrading of the Malian part of the value chain is closely related to the quality of the raw material, the purity of processing, the availability of

packing devices, and the availability of a ready consumer demand for locally produced products. Again, a moderate state intervention seems feasible to overcome these bottlenecks: stronger promotional activities for locally produced food (on the basis of respect of consumer sovereignty, i.e. the general openness to food imports) are possible and helpful, if a governmental agency establishes a medium- to high-quality standard. Such a standard should be closely linked to an active communication campaign promoting Malian food under an umbrella initiative, both nationally and internationally. Such government-backed marketing campaigns, accompanied by a credit-based access to quality control devices and better packing, could help local processors to increase the non-price competitiveness of Malian food and thus to enhance the production of products that are accepted both nationally and locally. In addition, moderate subsidies for electricity or air freight could help to overcome location disadvantages beyond the control of Malian producers.

Targeting commodities and producers for value addition and social inclusion

Apart from textile production, specific commodities to be targeted by policies for value addition and social inclusion can be differentiated according to their import-substituting opportunities and their export potential. Import-substituting commodities are milk powder (with the main import competition coming from European countries under the special provisions of European agrarian policies), the milling of wheat (where the main import competition is from neighbouring countries), the production of pasta (where the main import competition is from Côte d'Ivoire and Italy), sweet biscuits (also with main import competition from Côte d'Ivoire and Italy), and sugar. However, all domestic market opportunities for Mali's agro-industry depend on consumption patterns, especially the relation between the income elasticity of demand for imported products vs. domestically produced items. Therefore, the implementation and control of health standards, an array of credit-based technical upgrading measures, accelerated transport between producers and consumers, a state-backed, active communication strategy to promote the consumption of locally produced agro-alimentary commodities, and a state-backed market success of these commodities on international markets contributing to their image-building are mutually reinforcing factors.

In addition, from what is already domestically produced, a number of diversification opportunities arise, such as adding value to exports by converting the disadvantage of transport impediments into an advantage. Most mangoes being sold in Europe are picked while still unripe, shipped by sea or land-bound-transport, and are ripened in ripening houses, resulting in relatively low qualities and low prices of the fruit. "Flown-in" mangoes – for landlocked Mali a necessity rather than a voluntary choice – can usually earn mark-ups. Marketing can stress this important fact for Malian products to producers, traders and consumers. Also, adding value by targeting niche markets, such as the growing "organically grown / fair trade food" market segment, and processing mangoes not only by drying but also by pressing for juice, is possible. Canning can be considered a profitable business, and there is no argument apart from ideology why the Malian government should not engage in providing canning as a public utility. Finally, the production of cotton oil and shea butter can be exploited to develop cosmetic products either for the regional markets or for international niche markets ("ethnic cosmetics" among Afro-Americans and for a growing African Diaspora in Europe, and "organic cosmetics").

Strengthening technological effort, innovation capacity, and capability building

For the majority of Malian agro-industries, one of the main impediments is technological backwardness. As has been pointed out above, this is especially true for the textile industry, but also for the processing of cashew and shea nuts, juices, fruit drying, tanning and leather work, all of which lack appropriate technologies. Strengthening the technological capacities, however, will not be possible without concomitant improvements in human capital; literacy, providing girls with a fair share in education (as women are over-proportionally represented in agro-alimentary

businesses), formal and informal vocational training, and advanced training are the areas to be supported. On the other hand, there is an oversupply in Mali of academically educated administrative personnel, often incapacitated for most practical purposes, and so contributing to an overstaffing of the public sector and of the formal sector enterprises leading to the phenomenon that has been called the "hyper-cephalisation" (OEF 1997, p. 19) of small Malian enterprises. This means that even small enterprises in the formal sector have at the top a considerable number of academically educated staff. It is absolutely necessary to reverse the bipolarization of the Malian labour market (highly educated administrative personnel on the one side, and a non-alphabetized rural population on the other side), by strengthening the still widely "missing middle" of technicians and skilled workers, who, according to all historical experience, are the basis of catching-up innovation processes.

Strengthening innovation systems in Mali is very important, as the interplay of actors (enterprises, research and extension institutions, intellectual property offices, business support and technology development institutions, finance institutions, and education and training institutions) is very weak. Furthermore, capacity building is closely related to the availability of reliable data on consumer demand and producer capacities. In the past there have been numerous attempts to collect data, but most of these attempts had been unsuccessful due to funds running out or for other reasons. Unfortunately, numerous studies, policies and programs had to be formulated on the basis of assumptions and conjectures, and not on the basis of data and facts. However, any reliable economic policies and policies towards agro-industrial development cannot be built without reliable data to be generated on a sustainable surveys basis.

Government funds for innovations, human development and research for agricultural and agro-industrial development are concentrated on the Institut d'Economie Rurale (IER) and the Institut Polytechnique Rural de Formation et de Recherche Appliqué. The Institut Polytechnique Rural de Formation et de Recherche Appliqué (IPR-FRA), located in Katibougou near Koulikoro, has 30 professors and 500 students, and, founded in 1897, is one of the oldest agricultural training centres in Africa. Its mission includes the education of agricultural engineers and of senior technicians, training staff involved in rural development, providing training to rural communities and promoting scientific and technological research (IPR-FRA 2010). The IER was founded in 1960 and is headquartered in Bamako. It covers the whole country with six regional centres and 22 research stations, conducting all aspects of agricultural-related research, including socio-economic research. The total budget assigned for agricultural research was 4.3 bn F-CFA ($ million 8.6) in 2006 (down from billion 6.5 F-CFA in 2004) (BMCF 2007, p. 46). To improve agricultural and agribusiness related training, the promotion of vocational training in the country's most important industries was declared a target in the donor-supported Programme d'Investissement Sectoriel de L'Education (PISE, 2001-2012), but the realization of this programme so far lags behind expectations. To improve agricultural and agribusiness related research, a National Innovation Platform (NIP), including representatives from public research and extension services, an NGO, farmer organizations, and a processor, was established in 2005 with the assistance of a multinational NGO (ICRA 2010).

There are obviously severe gaps in research and development, education and vocational training, and with regards to coordination between the major actors in the National Innovation System (NIS).

Stimulating private enterprise development and investment

In its 2005 *Lettre de Politique de Développement du Secteur Privé (LPDSP)*, the government of Mali provided a policy orientation for the private sector, setting as targets amongst others the improvement of the investment climate, the development of infrastructure (especially by establishing industrial parks and further facilitating air transport), the enhancement of the access of enterprises (especially SMEs) to financing, and the promotion of those industries which are

considered to be of strategic value for the growth of the Malian economy. Policy instruments should include the improvement of the legal framework for business, for instance by strengthening the functioning of commercial courts and by simplifying export procedures. The creation of an Exports Development Agency (EDA) shall facilitate greater access to external markets, while the implementation of an SME Charter in combination with a strategy for their promotion shall facilitate the creation of new businesses (RoM 2008, p. 11). In addition, the 2006 Agriculture Law (LOA) sets the target of a sustainable, modern, and competitive agricultural sector based on family-owned farms.

Mali's business climate has improved in recent years, though not in all respects. Over the past five years, Mali has been among the most active reformers worldwide in making the regulatory environment more favourable to business (World Bank 2010b). Major improvements in Mali were accomplished in the fields of starting a business, dealing with construction permits, trading across borders, and enforcing contracts (World Bank 2010a). On the other hand, the country's rating for the World Bank's "Control of Corruption Indicator" was -0.5 in 2008 (on a -2.5 to +2.5 scale), virtually unchanged since 2003 (World Bank 2010a).

Associations of the private sector in Mali include the Chamber of Commerce and Industry (CCIM), the Chambers of Agriculture and the Chambers of Crafts, organized at the district and/or regional level as well as in umbrella organizations, for example, the Assemblée permanente des chambres d'agriculture (APCAM) and the Assemblée permanente des chambres de métiers du Mali (APCMM). Furthermore, there is a multitude of professional organizations, including cooperatives (often NGO-supported), as well as guilds and traders' organizations such as the Groupement des Professionnels de la Transformation des Produit Agro-alimentaires and the Association Malienne des Exportateurs de Produits Agricoles et de Cueillette, and the guilds' umbrella organization Fédération Nationale des Artisans du Mali (FNAM). While the CCIM represents the interests of the larger enterprises across all sectors (including a small number of firms from the food processing subsector), the Chambers of Crafts represent small enterprises (with up to ten employees). The Chambers of Agriculture represent the interests of the agricultural sector as a whole, also including the processors of raw materials. All chambers are established by law as consultative bodies to speak on behalf of the interests of their respective sectors, and also serve to support vocational training, organize trade fairs, settle disputes, and provide technical and commercial advice. Activities by the Chamber of Agriculture comprise exhibitions, such as the Salon International de l'Agriculture de Bamako, intended to popularize modernized food production and processing techniques, as well as events such as the Journée du Paysan, a forum for 'direct dialogue between the president of the Republic and the agricultural producers' (APCAM). Major limitations of both the agriculture and crafts chambers have been identified in the bottom-up and lateral flow of information, insufficient technical capacities, insufficient commitment of personnel seconded from the state administration, and the lack of mechanisms for systematically identifying the interests of the business community (Bingen 2003, p. 10).

Public-Private Partnerships (PPPs) are considered by the Malian government to be a key instrument for private sector development (RoM 2008, p. 11). Plans have been made to involve representative stakeholders from the private sector in the preparation and implementation of strategies for solving some of the country's structural problems. Relevant areas are considered to be the insufficient infrastructure development, the insufficient development of formal enterprises in priority sectors (including the agro-industry), and 'fraud, unfair competition by the informal sector that is constantly growing, [and] illegal imports,' (RoM 2008, p. 11). One has to point out, however, that the informal sector is and will continue to be by far the most important segment of Mali's agribusiness in terms of employment and income generation and satisfying consumers' needs (it is estimated that the informal sector accounts for up to 90 per cent of private sector activity; AEO 2009). Any policies designed to develop the agro-industry in Mali should not fail to include the thousands of informal businesses and to support the extension of their productive capacities,

the upgrading of their technologies, their compliance with minimum quality standards (especially for hygiene), and thereby enable them to better market their products. A first step to transforming the informal sector businesses to formal sector business standards has to be the recognition of the existence of informal enterprises and their substantial contribution to employment-based income generation and to the satisfaction of consumers' needs. Further steps could include providing these enterprises with access to skills training, machinery pools, quality testing and certification, and market information in exchange for stronger compliance with tax laws, employment legislation, and safety and hygiene standards.

A much neglected aspect of private sector activity and of infrastructure in Mali is packing. This has always been identified as one of the significant constraints of Mali's agro-industries targeting local and export markets. Therefore it is worth mentioning that at least one packaging enterprise (Embalmali in Bamako), producing polypropylene bags for packaging and transport of goods, has now been set up and is provided with financial support by the Aga Khan Foundation (AKDN 2010).

Facilitating financing for agribusiness and agro-industrial development

One of the thirteen Malian banks specializes in serving the agricultural sector, the Banque Nationale pour le Développement Agricole, and Crédit Initiative SA specifically targets SMEs. Nevertheless, access to finance is an important bottleneck in the development of agribusiness in Mali; for the majority of the small and informal entrepreneurs in Mali's agro-industry, bank finance for investment purposes – to expand their capacities or to upgrade their technology – is far beyond their possibilities. A 2007 survey (World Bank, Enterprise Surveys Database) indicates that only 3 per cent of the small enterprises in the Malian survey, 16 per cent of the medium-sized firms, and 42 per cent of the large ones, use banks to finance investments. The value of collateral needed for a loan is 173 per cent on average (compared to 138 per cent on average in SSA).

Of late there has been some easing of financing for the micro and small enterprises, as microcredit institutions have begun to play an important role in Mali. There are around 100 institutions with more than 1,000 grassroots units (RdM/MEIC 2008, p. 8), providing for at least 170,000 borrowers in 2009 (mix Market 2010). With a median of 5 per cent of the portfolio at risk (payment delay > 30 days), the performance of Malian MFIs is slightly better than the SSA average. The Malian microfinance institutions – the Systèmes Financiers Décentralisés (SFD) – include 62 "Mutualiste" (with 584 grassroots units), 22 "Crédit solidaire" (with 97 grassroots units), and 9 "Caisses Villageoises d'Epargne et de Crédit Autogérées" (with 424 grassroots units) (RdM/MEIC 2008, p. 8; different figures: RoM/MEF 2009, p. 33). On average, approximately 2,000 households are served by one MFI basic unit. Their distribution, however, is not uniform across the country, and the northern part of Mali is much less involved than the other parts (RdM/MEIC 2008, p. 9). The Decentralized Financial Systems (DFSs) involve a national average of 41 per cent of the households in Mali (2006 data), but while in Bamako 91 per cent and in the region of Ségou 70 per cent of the households are involved, the figures are low as 5.9 per cent for the households in the region of Tomboctou, 2.7 per cent in Kidal, and 0.2 per cent in Gao. Constraints of the MFIs include the proliferation of institutions without effective exchange mechanisms at the horizontal level, high administrative costs due to the large share of microfinance schemes not being affiliated to any network, and insufficient links to the formal banking sector (RdM/ MEIC 2008, p. 9).

The Malian government aims to improve the private sector's access to financing by developing new financial products (especially financial leases), the creation of a venture capital company and/or an equity capital investment company, as well as through the development of mechanisms specially geared to the SMEs (RoM 2008, p. 11 f.).

Given the monetary resources and the sizeable extent of the Malian Diaspora (4 million out of a population of roughly 12 million; although 3.5 million of its expatriates live in other equally poor

African countries), remittances can also be an important source for the financing of agribusiness. Remittances from the Malian Diaspora in France reached $ 430 million, in addition to $ 120 million from Africa, $ 70 million from Spain, and $ 30 million from the US (AfDB 2008a, p. 16; own conversion with exchange rates of 31/12/2007). Due to the high remittance costs, 60 per cent of remittances to Mali are informally transferred (i.e. in cash) (AfDB 2008a, p. 26). Presently, only 18 per cent of the remittances are used by their beneficiaries for productive investment (AfDB 2008a, p. 42). Remittances have also financed some infrastructure projects, such as health centres, schools, and water supply (Marouani and Raffinot 2003, p. 36). However, the channelling of remittances to productive investment and building infrastructure could be improved if more suitable financial services became available.

In 2009, Mali received $611 million as Official Development Assistance (ODA), o/w $200 million for economic infrastructure and services, and $138 million for production sectors, including $126 million for agriculture, forestry, and fishing (OECD stat Database). In terms of sector interventions, 18 donors have intervened in the agricultural and rural sector, 8 in the food security sector, and 12 in SME development (AfDB 2008a, p. 36). Financial aid to Mali is likely to increase in the future as Mali has been selected as a focus country for aid by traditional partners (Belgium, Canada, Denmark, the Netherlands, and Sweden) and also by non-traditional partners (China and India) (World Bank 2009b). A major challenge for donor support to Mali, however, is the lack of coordination, leading to a multitude of small, unconnected projects (40,000 [!] different international NGOs being present in Mali; Plate 2009) with relatively high overhead costs. There is over-aiding as certain activities are simultaneously identified by various donors as promising (such as the mango export business, which attracts 12 donors, while the livestock sector receives little donor support; see Matsumoto-Izadifar 2008, p. 24); there is an insufficient sustainability of projects once external financing has ceased and/or new focus areas arise.

Improving agro-industrial infrastructure and access to sustainable energy sources

Transport is both a precondition for and a result of the division of labour and hence of economic growth. In Mali, the most important mode of transportation for agro-industry products is the road network, providing more than 80 per cent of transportation services (RoM 2002, p.29). However, the road system is characterized by a weak density and poor conditions, by insufficiently defined responsibilities for network maintenance, low budget allocation for maintenance and an inefficient use of these resources, as well as by the limited capacities of the local private sector to carry out maintenance work (BMCF 2007, p. 46). In view of the resulting extraordinarily high transport costs, some roads have recently been maintained either by companies with a direct interest in them or by local government agencies (partly with the support of international donors, including NGOs).

Mali's main transport link to the coast used to be the paved road between Bamako and Abidjan (Côte d'Ivoire), the most important seaport for Mali, attracting about 80 per cent of Mali's international trade in goods (RoM 2002, p.29). To become more independent from the political vicissitudes in any of the neighbouring countries, such as the recent crisis in Côte d'Ivoire, Mali clearly needed – and has wished (see AfDB 2005, p. 7) – to develop alternative international road transport links, the most obvious option being through Senegal. This would also have a positive impact on regional development in the less privileged south-western part of Mali. Most recently (data of 2008), Dakar in fact has become the leading transit port for Mali (accounting for roughly half of its sea bound freight (RoM/MEF 2009, p. 26). Additional marine warehouses exist in Nouakchott, Conakry, Tema, Lomé, and Cotonou.

Using the railway to Dakar rather than road transport to Abidjan reduces transport costs to a seaport by one to two thirds (RoM 2002, p. 29). However, difficulties of management and the lack of investment have led to a degradation of the infrastructure and subsequent delays. Following the railway company being taken in concession by a Canadian company in 2003, rail transport from

Mali to the port of Dakar was reported to have improved (MIGA 2006), an obviously somewhat premature assessment, as the company was sold in 2007 after 'catastrophic results' (Vecturis 2010) to Belgian Vecturis SA, a company specialized in operating railways in developing countries. Nevertheless, it still takes days to travel from Bamako to Dakar by train (Financial Times, 17/01/2009). After a future rehabilitation of the railway, which may be supported by the African Development Bank (AfDB 2008b, p. 15), Vecturis wishes to focus on freight rather than on passenger transport. Presently, railway transport accounts only for 10 per cent of national freight (RoM/MEF 2009, p. 25).

Navigating the Niger River with larger boats is possible from Koulikoro (60 km downstream of the capital Bamako) to Lokoja in Nigeria, only however during high water season between October and January. The Compagnie Malienne de Navigation (Comanav) presently operates only three ships on the river, while others were reportedly shipwrecked (Le 26 Mars, 03/02/2009). To repair and build new ships there are four wharfs operating. Reports are that navigation has been hampered recently by sand silting due to progressing dune formation (RoM/MEF 2009, p. 25), especially near the Niger Bend. Acknowledging the weaknesses of infrastructure as a main bottleneck for the economic development of the country, both its government and donors have made improvement of the infrastructure a key target (attracting one third of the annual ODA, see above). The AfDB even argues that, 'under-development of the transport sector is the main cause of the low circulation of agricultural products and the private sector production within the country and in the sub-region,' (AfDB 2008b, p. 5). As the country's landlocked position is considered a major challenge by the authorities, the government is also, 'attaching the greatest importance to the integration of its economy with sub-regional groupings, namely WAEMU and ECOWAS,' (RoM 2002, p. 32f.; see also AfDB 2008a, p. 11).

Traditional energy sources such as fire wood and agricultural waste still account for 90 per cent of the total energy that is consumed in Mali, leading to a progressive depletion of the country's forestry resources (RoM 2002, p. 30). The country does not have any economically exploitable petroleum deposits, and large-scale hydro-power projects have so far yielded only questionable outcomes (Bosshard 1999). As a consequence, Mali is one of the countries in Africa with the highest costs of electricity for productive purposes. On the other hand, Mali receives a high solar radiation (5 to 7 kWh/sqm/day). Therefore – apart from energy conservation and increasing energy efficiency – photovoltaic energy technology is an obvious option to meet energy demand. However, acquisition costs of this technology are far beyond the financial means of nearly all potential users in agribusinesses. An insufficient interest and understanding among the potential users had been identified as a further constraint (Diarra and Akuffo 2002, Maiga *et al*. 2008). As the government is aware of the potential of de-centrally producing energy from renewable sources, especially for the majority of rural dwellers not situated on the grid of the electricity network (RoM 2002, p. 30), there has been some recent promotion of renewable energy based on projects such as the Regional Solar Programme (PRS 2003-2008). Constraints limiting the implementation exist in areas such as poor technical know-how and limited financing (AfDB 2010).

Developing and exploiting local, regional and international demand

Mali's rapid urbanization (Farvacque-Vitkovic *et al*. 2007), especially the urban sprawl in the country's capital and a few other major cities (Sikasso, Mopti), will increasingly disconnect the majority of Malian consumers from purchasing directly from food producers and will extend the length of the food supply chains ("from farm to fork"). In addition, social changes will contribute to the emergence of new dietary habits, such as an increasing demand for ready-made food, for instance for office workers not going home at lunch time. The Malian food processing industry will therefore find an increasingly large local market, if consumers begin or continue to accept national products rather than imported food. The food producers' compliance with hygiene and other quality standards, however, will play a crucial role in this development.

This can be shown with the example of the local consumption of cashew. Cashew kernels are processed by small cottage processors and distributed in supermarkets in Bamako and in many *alimentations* (small stores). Most of the kernels are sold unlabeled. Cashews are also widely available as a free snack in the top-end hotels in Bamako, but less in the mid-range hotels more common in tourist regions. In Mali, cashews are considered a luxury snack food, even if they are much cheaper than competing imported snacks. Four out of ten Malians interviewed in a consumer survey had never eaten cashews (WATH 2007b). Improving packaging material, "Africa"-themed labeling, and the development of cashew-based products, such as cookies, could increase consumer demand, also among the many tourists coming to Mali (WATH 2007a), and could eventually trigger supply of processed kernels. There are various other examples like this one.

Quality Management is of even greater importance for access to the world food market, implying the training in and application of Hazard Analysis and Critical Control Points (HACCP) systems. Since 2006, for instance, the European Union (EU) allows food imports only if the HACCP principles are met. The virtual absence of this system in Mali will be one of the most important impediments to upgrading non-cotton agricultural exports. When targeting low- to middle-income markets, apart from meeting basic hygiene standards, price is the major determinant of competitiveness – and here, Mali does not have a unique selling point. When targeting Western European and North American markets, however, new consumer demand trends will have to be addressed. With textiles, "ethical production" has become a matter of concern (avoiding child labour, harm to the environment, and critical animal welfare issues), as well as high levels of artisanal quality. With food, both the need for convenience (ready-to-eat products) and for health concerns will have to be met as well as the flavor of exotics. Recent activities have shown that West African umbrella brands can successfully build up a reputation; a USAID-sponsored project, the "West Africa Trade Hub" initiative has been launched, with a number of Malian enterprises actively participating in the five umbrella brands which have been established, including *Africa Now!* (for accessories, including textiles and leather products) and *Taste of Africa* (for specialty food such as pre-cooked *fonio*). The main challenge for the Malian agro-industry is to marry "Maliness" – flavor and creativity – and quality.

Visions, plans of action, and way forward

A vision for Mali's development over the next generation is formulated in the "Mali 2025: National Perspective Study" (ENP 2005), adopted by the Malian Government in 2000 – *'a statement of the desired future for Malians and the economic and social development necessary to achieve it,'* (RoM 2002, p. 34). The ENP expresses the desire, *'to combine wisdom, authenticity and dynamism in order to make Mali a prosperous, powerful and modern nation whose people will have been the masters of their own destiny in order to remain a people united in its rich diversity and with a common purpose, and having an unshakeable faith in its future,'* (RoM 2002, p. 34). On a more specific level, the ENP describes the desired future as a strong, diversified and open economy, with an improved infrastructure and an improved natural environment, as well as a certain level of social progress. This includes high quality human resources with job opportunities, the expansion of agricultural production, as well as strong and sustainable economic growth. As determining factors, the ENP identifies amongst others the consolidation and strengthening of good governance through a re-definition of the role of the State, the modernization of the administration, the strengthening of economic management capability (state, communities, and the private sector), a successful decentralization and promoting the ability of the national media to inform citizens fully and objectively. According to this vision, challenges to be met are the realization of major investments, consistent town planning and urbanization policy, the development of means of communication and trade between social groups, and raising the educational level of the people and the improvement of their health (RoM 2002, p. 35). As a medium-term strategy, the Malian

government adopted the Poverty Reduction Strategy Framework/Cadre stratégique de lutte contre la pauvreté (CSLP) in 2002. The CSLP incorporates the main aspects of the ENP; furthermore, it defines macroeconomic objectives as well as three additional pillars of development: institutional development, human development, and the development of infrastructure and support for key economic sectors. Continuous steps to convert long-term strategies into action are being undertaken (RoM/MEF 2009).

Along these lines, the preferable future of Mali's agro-industry is to be understood as based on the expansion of agriculture, substantial investment in physical and human capital, an enhanced infrastructure and an improved natural environment, providing higher quality jobs, generating substantial incomes, and proudly serving its customers, both nationally and internationally. Is this also a possible future, even a probable one?

In a best case scenario, Mali's agro-industry will develop along the lines shown in the previous sections – using its opportunities, overcoming the bottlenecks. Even then, however, under the (bold!) assumption of constant growth rates of GDP and population, Mali will have a GDP *per capita* of $912 in the year 2050 (own computation with World Bank data[6]), still classifying Mali as a low-income country according to today's scale (< $995 *p.c.*).

In another scenario, the international markets will not absorb Malian products while the Malian consumers will not be prepared to substitute import goods with locally produced products. In this case, agro-industry will miss its function in Mali's economic catch-up process; agro-industry will not be a leading sector (Hirschman), will not show above-average growth rates and will not provide strong backward and forward linkages to other industries. Furthermore, the crisis in the Malian cotton industry may shape the course of the economy for a long time to come and will absorb all that which is needed to support an emerging agro-industry sector, a sector that is targeting national, regional, and international markets.

The worst case scenario, albeit extreme, is that the impact of climatic change and climate shocks will destroy all of Mali's accomplishments. While this is largely beyond Mali's control, the country does have a role to play in mitigating climate change problems, such as fighting desertification, preventing over-use of fragile land and soil erosion by shifting from firewood collection to more sustainable energy uses.

What is needed to turn the preferable future into a probable one? Mali is a country where economic and political power is highly concentrated in the capital city, whereas the other regions are often left behind. Mali is an economy where many of its policies are predetermined elsewhere, outside of the country; as a member of the F-CFA-zone, monetary policy is beyond its control. As a highly-indebted country and as one of the world's poorest countries, many decisions, such as those concerning the degree of government participation in the economy, are too often beyond the control of its government. Mali is a place where NGOs and international assistance actors work largely in an uncoordinated way, leading to unnecessary duplication of donors' projects. Nevertheless, there is scope for action; building on a fairly stable democracy, low rates of ethnic and socially related conflict, at least in the southern and central parts of the country, and a unique diversity of culture, Mali has started to develop into a tourist destination and generally has a positive image in the world, making it easier to market its products. Building on a population rightly proud of its rich cultural heritage, Mali should find a way to target national and international markets, especially with products to which a strong emotional value can be attached, such as food and clothing.

[6] Present GDP: US$9 billion, population 13million, GDP per capita $691. The assumed growth rate of GDP is 4.3 per cent, and the assumed growth rate of population is 2.4 per cent per year.

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Abbreviations and Acronyms

ACA	African Cashew Alliance
AEO	African Economic Outlook (of OECD and AfDB)
AfDB	African Development Bank
AGOA	Africa Growth Opportunity Act
AKDN	Aga Khan Development Network
ANPE	Agence nationale pour l'emploi
APCAM	Assemblée Permanente des Chambres d'Agriculture du Mali
APCMM	Assemblée Permanente des Chambres de Métiers du Mali
APROFA	Agence pour la Promotion des Filières Agricoles
CAGR	Compound Annual Growth Rate
CCIM	Chambre de Commerce et d'Industrie du Mali
CDE	Centre for the Development of Enterprise
CET	Common External Tariff
CdS	Club du Sahel
CGE	Computerized General Equilibrium (model)
Comanav	Compagnie Malienne de Navigation
COMTRADE	Commodity Trade Statistics database
CMDT	Compagnie Malienne pour le Développement des Textiles
CNRST	Centre National de Recherche Scientifique et Technologique
CNRA	National de la Recherche Agricole
CSA/PROMISAM	Présidence de la République Commissariat à la Sécurité Alimentaire/ Projet de Mobilisation des Initiatives en Matière de Sécurité Alimentaire au Mali.
CSLP	Cadre Stratégique de Lutte contre la Pauvreté
CSOs	Civil Society Organizations
DNCC	Direction Nationale du Commerce et de la Concurrence
DNSI	National Office of Statistics, now: INSTAT
DTIS	Diagnostic Trade Integration Study, for Integrated Framework (IF) for
ECF	Extended Credit Facility (of IMF)
EDA	Exports Development Agency (of Mali)
EU/ACP	European Union/Africa, Caribbean/Pacific Countries Partnership
ENP	Etude Nationale Prospective Mali 2025
FAO	Food and Agriculture Organization
FAOSTAT	FAO Statistics
F.CFA	Franc de la Communauté Financière d'Afrique, XOF
FDI	Foreign Direct Investment
FNAM	Fédération Nationale des Artisans du Mali
FPPCs	Food Processing Pilot Centres (of UNIDO)
Gn	Grubel-Lloyd Coefficient
GDP	Gross Domestic Product

GPRSSP	Growth and Poverty Reduction Strategy Support Programme
GPRSF	Growth and Poverty Reduction Strategy Framework
GVA	Gross Value Added
HICs	High-income Countries
HIPC	Heavily Indebted Poor Countries
HS	Harmonized System
ICRA	International Centre for development-oriented Research in Agriculture
ICSD	Industrial Commodity Statistics Database
IER	Institut d'Economie Rurale
IPR-FRA	Institut Polytechnique Rural de Formation et de Recherche Appliqué
IPR/IFRA	Institut Polytechnique Rural/Institut de Formation et de Recherche Appliquée
IMF	International Monetary Fund
INSTAT	Institut National de la Statistique
INTSORMILCRSP	Sorghum, Millet and Other Grains Collaborative Research Support Programme
ITC	International Trade Centre
ITC TPI	ITC trade performance index
ITDG	Intermediate Technology Development Group (now renamed: Practical Action)
LCV	Laboratoire Central Vétérinaire
LIC	Low-income countries
LOA	Loi d'Orientation Agricole
LQB	Le Quotidien de Bamako
LoC	Library of Congress
LPDSP	Lettre de Politique de Développement du Secteur Privé
LTA	Laboratoire de Technologie Alimentaire
MEF	Minister of Economy and Finance
MEFP	Ministère de l'Emploi et de la Formation Professionnelle
MEIC	Ministére de L'Économie, de l'Industrie et du Commerce
MEIC/DNCC	Ministère de l'Economie, de l'industrie et du Commerce/ Direction Nationale du Commerce et de la Concurrence
MFI	Microfinance Institution
MHPI	Multidimensional human poverty index (of UNDP's Human Development Report)
MIC	Ministère de L'industrie et du Commerce
MIGA	Multilateral Investment Guarantee Agency
MNCs	Multinational corporations
MT	Metric Tons
n.d	no date
n.e.s.	not elsewhere specified
NIP	National Innovation Platform
ODA	Official Development Assistance
OdN	Office du Niger (Authority in charge of irrigation and extension services in the Niger river inland delta)
OECD	Organization for Economic Cooperation and Development

OEF	Observatoire de l'emploi et de la formation
OHVN	Office de la Haute Vallée du Fleuve Niger
OPA	Observatoire des PratiquesAnormales
PACCEM	Projet d'Appui à la Commercialisation des Céréales au Mali
PAFA	Projet d'Appui aux Filières Agricoles (Agricultural Supply Chain Support Project)
PASAOP	Programme d'Appui aux Services Agricoles et aux Organizations Paysannes
PASE	Programme d'Amélioration des Systèmes d'Exploitation en Zone Cotonnière
PAVCOPA	Projet d'Appui à la Valorisation et Commercialisation des Produits Agricoles (Agricultural Products Value-Adding and Marketing Project)
PCDA	Programme de Compétitivité et Diversification Agricoles
PISE	Programme d'Investissement Sectoriel de L'Education
PNIR	Programme National d'Infrastructures Rurales
PNRA	Projet National de Recherche Agricole
PREPAO	West Africa Regional Programme (of UNIDO)
PRSP	Poverty Reduction Strategy Paper
PRODEPAMM	Programme de Développement de la Production Agricole au Mali
RASAMT	Rapport d'analyse situationnelle annuelle du marche du travail
RCA	Revealed Comparative Advantage
REPA	Réseau d'Expertise des Politiques Agricoles
RoM	Republic of Mali
SFD	Systèmes Financiers Décentralisés
SIA	Salon International de l'Agriculture
SITC	Standard International Trade Classification
SME	Small and Medium Enterprises
SSA	sub-Saharan Africa
SWOT	strengths, weaknesses, opportunities, and threats
THL	Thousand Hectolitres
TMT	Thousand Metric Tons
TSqM	Thousand Square Meters
UEMOA	Union Économique et Monétaire Ouest Africaine (West African Economic and Monetary Union)
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Education and Science Cooperation Organization
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
UIS	Statistics (of UNESCO)
USAID	United States Agency for International Development
WDI	World Development Indicators (of World Bank)
WID	World Investment Directory
WATH	West Africa Trade Hub
WTO	World Trade Organization

Chapter 6 | Nigeria

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Introduction: the case for agro-industrial development

Recognizing the centrality of a functional agro-industry sector to national development and growth in emerging economies of Africa, it is important to see how the agro-industry sector can be more effectively utilized as an engine of growth of the Nigerian economy and development, making it a sustainable source of food, generator of national and household income, provider of employment, and promoter of domestic and cross-border trade. The task is to analyze for Nigeria the structure of the agro-industry sector and of the subsectors, the dynamics of the agribusiness enterprises, the trade relations in the production chain from agriculture to agro-industry, and the institutions critical to the functioning of the agro-industry. The key issues raised in the study include the following:

- The extent or size of the potential in agro-industry subsectors for value addition through industrial processing and the accompanying social inclusion effects of higher stages of industrial processing, such as employment generation, income generation, poverty reduction, and improvements in nutrition and health conditions.
- The existing nature of public-private sector cooperation in the task of developing, exploiting, and reforming agro-industry and the workings of the institutional set-up.
- The impact of economic and sectoral policies on agro-industrial development as a whole and its subsectors in particular, especially the degree of policy coherence, for instance, between macro policies, agricultural policies, trade and industry policies, competition policies, technology and structural and regional policies.

In addition, the significance of Value Addition (VA) through processing raises the need to examine the following:

- the chances and possibilities to upgrade agro-industrial value chains in Nigeria;
- identifying the commodities and specific groups of producers that should be targeted for value addition and for social inclusion in the country;
- ascertaining the prospects for increasing the technological base, innovation capacity, and the human capacities for agro-industrial development;
- determining how private enterprises and private foreign and domestic investments can be stimulated in agro-industry sector;
- examining how traditional and new innovative financing mechanisms (including finance from the Diaspora) can be developed and employed for agro-industrial development;
- investigating how agro-industrial infrastructure can be developed and improved, as well as securing access of agribusiness to sustainable energy sources; and
- exploring how local, regional and international demand for agro-industrial products of Nigeria can be developed to effectively serve the promotion of a thriving agribusiness sector.

Nigeria's agro-industry is not homogenous. Rather, it is made up of several activity areas, which encompass the following:

- Production/manufacturing of agricultural inputs like fertilizers, herbicides, pesticides, etc.; farm tools and equipment (tractors, ploughs, harrows, hoes, cutlasses, wheelbarrow, watering cans, harvesters, storage bins and silos), etc.;
- Distribution and marketing of agro-inputs, such as seeds, fertilizer, pesticides, etc.;
- Production of agricultural commodities – crops, livestock, fish, forest products (including wildlife), each accompanied with primary processing;
- Packaging and transportation of farm produce;
- Farm output marketing and distribution;
- Services subsectors focusing on agriculture-support activities (finance and credit; advertising and promotion; packaging; warehousing, etc.); and
- Agricultural waste disposal activities (fumigation, veterinary services, etc.).

It is obvious that agro-industry in Nigeria is encompassing, systemic in operation, and multi-dimensional in function. This requires a coherent approach towards agro-industrial development and the promotion of agribusiness.

However, despite the strong case for agro-industry, the reality is different. The boom-bust cycle of the Nigerian economy is not well managed by public policy; the whole political and economic machinery of the country is still highly dependent on the oil economy. This is the case despite agriculture having been the main sector in 2009, with 36.5 per cent of the GDP, because of a good harvest, while the oil and gas sector was second with a share in GDP of 32.3 per cent (OECD/AfDB 2010).

Structure and dynamics of agro-industries

Linking agro-industry to economic development

The Federal Republic of Nigeria is a sprawling country of some 924,000 sq. km of land mass. It is essentially an agrarian economy, on account of the labour force in agriculture and the huge varieties of produce (crops, livestock, fish, and forestry products). Nigeria is home to some 150 million people. Being the second largest economy in sub-Saharan Africa with a Gross National Product of about 300 billion dollars per annum, Nigeria's natural endowments are substantial. From a tropical zone, dominated by tree and tuber crops, to the savannah grasslands and wooded lands of the Middle Belt, which produces tubers and grains, and the sparsely populated zones bordering the Sahara desert to the north, with its grains and livestock, Nigeria offers one of the most unique and intriguing production sceneries in Africa. Its rivers and water bodies as well as coastal areas have abundant fish and marine resources. Although the timber endowments are depleted as a result of unguarded exploitation in the past, forest products still abound in fruits, nuts and wildlife.

This is the resource base for agro-industrial development which, in turn, forms a significant aspect of economic development in Nigeria. However, a most bewildering reality of Nigerian development is the largely unexplored agricultural potentials of the country to promote agro-industrial development. How to effectively harness agro-industrial resources to power overall economic development of Nigeria has remained a pained debate as efforts to exploit these potentials have largely been unsuccessful. The reality today is that Nigeria's agro-industry is grossly underdeveloped and agribusiness is still in its infancy when compared with countries like

Malaysia and a host of other Asian countries that have accorded agriculture the attention it rightly deserves.

It is incontestable that for economic development to occur in a country like Nigeria, which possesses abundant agricultural resources and whose population is largely in agriculture, the development of agriculture is imperative. The secondary and tertiary value-addition activities which agro-industry represents must also be promoted in order to achieve growth and national economic development. While it is known that the economy is dominated by oil, which accounts for nearly 90 per cent of foreign earnings and about 80 per cent of public revenue, it is clear that the long-term development of Nigeria cannot be anchored in a resource, crude petroleum, which is finite and subject to the fluctuations of international demand and price conditions. What is being proposed is the diversification of the economic base of the country, with the purpose of securing regular and sustainable inflows of revenues for economic development. The diversification of the economy is expected to come largely from agriculture, in particular from a well-developed agro-industry and agribusiness activities.

Agriculture has been the main axis of growth of the economy in recent years, recording a respectable 5 to 7 per cent in most of the first decade of the new millennium. The great potential of agriculture to drive and to power the economy finds meaning only in the adoption of agro-industrial processing and transformation. The value addition derivable from effective agro-processing constitutes the main ingredient for growth and development of the economy. Unfortunately the necessary socio-economic infrastructure for an expansive and inclusive agro-industrial processing is missing and the government seems insufficiently inclined to make the necessary policy decisions to make this happen.

Agro-industrial development and trade

Before the advent of petroleum in national development, Nigeria had relied on exports of agricultural products. In the 1960s and 1970s, most exports were in raw, unprocessed forms. Agro-industrial production and secondary-level processing was not emphasized. Lack of substantial value addition assured that the agricultural export earnings were far below the potentials of trading in processed products. Over time and in more recent years in particular, substantial agro-industrial firms have sprung up in considerable number, a resurgence that emphasizes the role and promise of agro-industrial production in national development.

Non-oil exports accounted for less than 3 per cent of total exports in the 1990s (CBN, 2007). Nigeria's non-oil exports (excluding the mineral sector) can be divided into agricultural and manufactured products. Agricultural products accounted for about 80 per cent of total annual non-oil exports from about 1990 to 2010, but covered only 2 to 3 per cent of total annual exports during the same period. Although in the first decade of the new millennium, the contribution of agricultural export earnings increased in value terms it did not in proportional terms in comparison with petroleum export earnings, which also increased substantially during the same period as a result of record increases in international crude oil prices. Nigeria's agricultural exports are in two forms: agricultural commodities and processed products (manufactures and semi-manufactures of agricultural products). Raw agricultural commodity exports reported by the Central Bank of Nigeria (CBN) statistics include cocoa seed, palm produce, rubber, coffee, fish and shrimps, cashew nuts, spices (ginger, vanilla, etc.), cotton and yarn, shea-butter, gum Arabic, cow horn, sesame, and sundry other products. Processed agricultural products (manufactures and semi-manufactures of agricultural products) include cocoa butter, cocoa powder, cocoa cake, cocoa paste, groundnut cake, processed skins, wood and furniture.

Statistics from the Central Bank of Nigeria show that, from 1992-96, raw agricultural commodities accounted for an annual average of 90.7 per cent of total agricultural exports, with the remaining 10 per cent being processed agricultural products. Cocoa products include raw forms, that is, cocoa

beans, and semi-processed and processed forms include cocoa butter, cocoa powder, cocoa paste, and cocoa cake. These products accounted for, on the average, about 50 per cent of the annual agricultural exports during 1992-1996, while rubber had a share of 21.6 per cent, fish/shrimps 6.3 per cent, cotton/yarn 5.4 per cent, palm produce 2.1 per cent and Gum Arabic 0.7 per cent. In terms of export intensity, cocoa retained the lead as the major agricultural export – about 40 per cent of the total annual output of cocoa beans was sold in export markets during 1992-2000. In recent years, 2004-2007, agricultural exports retained their dominance in the non-oil exports to the tune of about 80 per cent in each of the years (CBN 2008a). The major exports this time were cocoa, rubber, fish/shrimps, and cotton. The semi-manufactured agricultural exports included processed skins, cocoa products, processed yam, and furniture/processed wood.

The aggregate profile of agricultural exports and imports for the period 1980-2006 is shown in Tables 6.1 and 6.2 for food, beverages, and for animal and vegetable oils. It is obvious that the value of imports of the three categories of agricultural commodities far exceeded the value of exports of the commodities during the period.

Table 6.1: Agricultural Exports, 1980 – 2006 (Million Naira, in 1985 Prices)

Tobacco	Food and Live Animals	Beverages and Tobacco	Animal and Vegetable Oils & Fats	Total
1980 – 1982	417.3		16.8	434.1
1983 – 1985	286.3		4.6	290.9
1986 - 1988	92.3	0.6	0.3	93.2
1989 – 1991	500.7	2.0	0,.4	503.1
1992 – 1994	366.8	3.2	1.7	371.7
1995 – 1997	215.5	130.3	15.6	361.4
1998 – 2000	317.8	192.5	22.9	533.3
2001 - 2006	75.9	3,805.1	83.7	3,964.7

Source: CBN (2006): Statistical Bulletin, Vol. 17; December, 2006

Table 6.3 shows the top ten destinations of Nigeria's non-oil exports and the corresponding values of such exports. Italy leads, and so it is the most important importer of Nigeria's non-oil exports. The Netherlands, Spain, Germany and France are also important markets. The regional distribution of where the country's non-oil exports go is shown in Table 6.4.Europe, the United States, and Other Countries account for about 66.57 per cent in the period 2006-2008. In terms of regional trade, with specific reference to Economic Community of West African States (ECOWAS), the value of non-oil exports of Nigeria going to this region in 2007 and 2008 is as shown in Table 6.5.

Table 6.2: Agricultural Imports, 1980 – 2006 (Million Naira, in 1985 Prices)

	Food and Live Animals	Beverages and Tobacco	Animal and Vegetable Oils & Fats	Total
1980 – 1982	2,847.5	55.8	223.8	3,127.1
1983 – 1985	1,171.8	8.4	99.5	1,279.8
1986 - 1988	1,085.5	32.6	63.3	1,181.4
1989 – 1991	962.3	69.8	62.4	1,094.6
1992 – 1994	1,806.6	84.7	183.1	2074.5
1995 – 1997	3,505.5	136.9	363.3	4,005.7
1998 – 2000	3,140.6	182.7	353.6	3,676.8
2001 - 2006	182,166.8	18,829.7	37,314.26	238,310.8

Source: CBN (2006): Statistical Bulletin, Vol. 17; December, 2006

Table 6.3: Non-Oil Export Value to Top 10 Destinations (2007 – 2009 May)

S/N	Destination	2007 FOB in US$	Destination	2008 FOB in US$	Country	Value (US$m) (May, 2009)	Percentage Contribution (May 2009)
1	Italy	217,671,453	Italy	234,602,558.56	Italy	15.204	13.43
2	Netherlands	145,532,214	Netherlands	225,674,545.14	Vietnam	12.505	11.05
3	Spain	86,683,859	Germany	114,043,756.19	Netherlands	12.299	10.87
4	India	83,724,090	Spain	100,962,516.03	Germany	6.842	6.05
5	France	71,708,098	France	97,739,385.26	Spain	6.730	5.95
6	United Kingdom	68,908,312	Ghana	88,890,045.54	China	6.704	5.92
7	Belgium	63,494,448	USA	86,949,771.74	Pakistan	6.114	5.40
8	Vietnam	58,669,104	Japan	79,839,506.37	Ghana	4.990	4.41
9	China	54,989,487	United Kingdom	77,294,802.82	Japan	4.683	4.14
10	Germany	50,523,526	China&Taiwan	75,894,071.38	India	3.898	3.44
11	ECOWAS	162,569,694	ECOWAS	139,705,818.23			
12	Others	334,348,912	Others	584,399,354.27			
	TOTAL	1,398,823,198	TOTAL	1,828,700,328.71			

Source: Ibadan Chambers of Commerce and Industry: Destinations of Nigeria's Non-oil Exports. Business Voice, Vol. 2 No. 06, p.15

Table 6.4: Destination of Nigeria's Non-Oil Exports (2006 – 2008)

Director of Trade	per cent of Non-oil Export 2006	per cent of Non-oil Export 2007	per cent of Non-oil Export 2008
Asia	20.7	14.0	21.93
ECOWAS	11.4	12.0	12.50
Europe, USA and Others	67.9	74.0	66.57
Total	100	100	100

Source: Ibadan Chambers of Commerce and Industry: Destinations of Nigeria's Non-oil Exports. Business Voice, Vol. 2 N. 06, p.16

Table 6.5: Value of Non-oil Exports to ECOWAS (2007 – 2008)

ECOWAS	2007 FOB (US$)	2008 FOB (US$)	2007/2008 Increase
Ghana	75,266,217	88,890,045.54	18.1 per cent
Togo	20,873,875	30,009,511.73	43.77 per cent
Niger	15,495,812	31,693,350.19	104.5 per cent
Benin	15,124,302	32,183,788.73	107.69 per cent
Burkina Faso	10,540,806	15,010,806.80	42.4 per cent
Cote d'Ivoire	6,653,524	8,974,146.62	34.87 per cent
Guinea	5,838,663	8,172,829.06	34.88 per cent
Liberia	4,372,579	3,109,339.87	-28.89 per cent
Gambia	3,658,193	4,849,425.47	32.56 per cent
Mali	2,119,984	2,444,391.55	15.3 per cent

Senegal	1,564,587	977,712.76	-60.9 per cent
Sierra Leone	1,061,153	2,081,584.93	96.16 per cent
Total	**162,569,694**	**228,595,863.77**	**49 per cent**

Source: Ibadan Chambers of Commerce and Industry: Destinations of Nigeria's Non-oil Exports, Business Voice, Vol. 2, No. 06, p.18.

Importance of the Sector

As already emphasized above, for most Nigerians agriculture is the means of livelihood. Nearly two thirds of Nigeria's labour force has agriculture as the primary occupation. They work as crop producers, livestock keepers, fishermen, and gatherers of forest products. Because of the pre-eminence of agriculture in the life of the ordinary Nigerian the sector determines the standard of living of the people and, therefore, the poverty configuration of the society. This is especially so because, as the sector is the income generator at the household level, agro-industrial production is crucial for access to other goods and services needed by the household. Determining the contribution of agro-industry to the national economy is blurred by lack of data on key areas of processing and on value addition but, nonetheless, the significance of agro-industry to the economy can be ascertained in the following way.

Contribution to GDP

If the definition of agro-industry includes not only agro-processing but also distribution and trading activities, it would roughly account for a share between 20 and 25 per cent of GDP in sub-Saharan countries, including Nigeria. The entire food system, including the production of primary goods and commodities, marketing and retailing, would account for more than 50 per cent of GDP (World Bank 2008a and FAO 2008b). In a low-income country like Nigeria, the agro-processing sector contributes more than 10 per cent of total manufacturing value added. In other words, agro-industry contributes a share of 61 per cent to total manufacturing (World Bank 2008a).

As a matter of fact, many experiences in Latin America, Asia and Africa have demonstrated the potential of agro-based small and medium enterprises (SMEs) for value-adding, employment generation, and the improvement of farm and rural non-farm income, food security, and rural living standards. In Nigeria, particularly where a weakening and even collapsing of public services has resulted in dysfunctional input and output markets and a breakdown in the delivery of agricultural services to small scale farmers, local agro-enterprises have been found to be increasingly filling crucial institutional gaps, particularly for commercial crops. The agro-processing sector therefore occupies a significant position in overall turnover and value added in developing countries within manufacturing, though huge heterogeneity may exist among them. On average, productivity levels in food processing are above the manufacturing average, making it one of the most efficient economic sectors in developing countries (UNIDO 2005). As such, incremental investment here could benefit the overall competitive position of Nigeria.

Contribution to employment and income generation

According to the International Standard Industrial Classification (ISIC), agro-industry consists of: i) food and beverages; ii) tobacco products; iii) paper and wood products; iv) textiles, footwear and apparel; v) leather products; and vi) rubber products. Agro-industrial activities include processing, preservation and preparation of agricultural production for intermediate and final consumption. The sector performs a number of crucial functions that support development and poverty reduction in Nigeria. Given the importance of this sector, agriculture in connection with industry needs to be recognized by policymakers and industry leaders as a competitive, value-adding business sector that has a positive development impact and contributes to economic growth. Thus, instead of focusing on agricultural productivity only, policymakers must consider the competitiveness of the entire agro-industry value chain.

Agro-industry plays a fundamental role in employment creation and income generation. The food and beverages processing sector is important in this respect (Wilkinson & Rocha 2008). In Nigeria, like in any other developing country, an estimated average of 60 per cent of workers in food and beverages are employed in the informal economy. In addition to the direct employment effects, vibrant agro-industry is found to generate employment in downstream and upstream sectors, such as agriculture, commerce and services. In Nigeria where the majority of the poor lives in rural areas, agro-industry plays a strategic role in pro-poor growth strategies. In terms of employment composition, rural industries (manufacturing) account for approximately one fifth of rural non-farm employment, consisting mostly of occupations in agro-industries. Indirectly, however, other activities such as commerce and retailing, construction, equipment manufacture, transport, logistics, and trade in agricultural products are typically associated with agro-related manufactures and agribusiness. The importance of agro-industry for employment generation is further emphasized by high and increasing levels of female involvement, especially in the non-traditional, high-value agro-chains (i.e. horticulture, fruits and fish products). Female employment in such sectors in a developing country like Nigeria has been found to range between 50 and 90 per cent (Wilkinson & Rocha 2008). However, strong gender segmentation in production and processing tends to consign women to more vulnerable forms of work (casual, temporary, and seasonal), with lower pay and in fields such as more labour-intensive preparation and/or processing.

Rural non-farm earnings from trading, agro-processing, manufacturing, commercial and service activities constitute a significant part of household income. In Nigeria, non-farm earnings account for 30 to 45 per cent of rural household income. These earnings complement agricultural wages, serve as household risk diversification and aid a normalization or spread of consumption patterns over time. With low capital requirements and less demanding local marketing channels, the rural non-farm economy offers opportunities for poor households (particularly households headed by women), small-scale farmers, and for other smallholders. This is important for rural poverty reduction. The development of agro-industry in Nigeria, therefore, will have an important impact on the local agricultural sector as well as on the livelihoods of small holder farmers, provided they can produce on a stable basis, supplying regular quantities and qualities of products which are in demand.

Regional importance

There is no section of the Nigerian society that is not linked with agriculture and its related activities. The demand for food and fibre makes reliance on agriculture and agro-industrial products inevitable. Nigeria is very strong in regional trade within the West African and Central African regions. The interregional trade is mainly in food commodities as these are moved across the Nigerian borders to neighbouring countries in West and Central Africa. Most of this trade operates in an informal way and is, therefore, unrecorded. Manufactured products in baby foods, food seasonings, breakfast cereals, canned juices and beverages also move across the borders to surrounding countries. Detergents, soaps, plastics, textiles, and a host of other products are similarly traded across the borders.

Major agro-industry subsectors: structure and dynamics

The Nigerian agro-industry is dominated by cocoa, vegetable oil, cassava, breakfast cereals, fish, sugar manufacturing, and livestock industries. The raw material base for these industries is considerable, diverse and widespread across Nigeria's land mass. The diversity of agricultural output in the crop sector, which constitutes the major raw materials for agro-processing industries, is as shown in Table 6.6.

Table 6.6: Production of Major Agricultural Commodities, 1980 – 2006 (1000 Tons)

	1980-82	1983-85	1986-88	1989-91	1992-94	1995-97	1998-00	2001-06
Cereals: Maize	699	947	1252	3118	6513	6478	6312	5243
Millet	2551	3275	3912	3759	4531	5788	6043	6308
Sorghum	3483	4297	4645	3904	5562	7488	7956	8077
Rice	158	166	1057	2987	2764	3185	3379	3139
Tubers: Cassava	5718	8604	13935	18929	24936	32621	33517	36580
Yam	5448	4462	6409	13250	21364	23820	24581	29923
Cocoyam	253	217	473	736	1045	1286	1375	-
Plantain	1048	1089	1100	1322	1568	1693	1752	2280
Vegetables	1002	1094	1296	1755	2527	3310	3780	4563
Pulses: Beans	562	557	769	1313	1511	1852	1953	2478
Groundnuts	554	536	866	1181	1389	1919	2308	3061
Groundnuts oil	-	-	176	368	390	429	502	502
Fibre: Cotton	54	88	163	257	252	287	351	250
Tree: Palm Kernel	294	360	699	1111	1091	547	600	1021
Palm Oil	560	588	700	761	783	753	826	1030
Cocoa Beans	161	150	167	256	307	284	227	388
Rubber	52	110	194	165	225	250	265	-
Shea-nut	116	99	105	289	340	375	422	-
Sugar Cane	899	831	879	903	811	608	691	804
Coffee	32	47	184	320	280	160	194	439

Source: FAO (2006)

The structure and dynamics of important agro-industrial sectors are illustrated by the following selected industries.

The Cassava Industry

Nigeria is the largest cassava producing country in the world. FAO reported that Nigeria produced 46 million tons of cassava in 2006, accounting for more than 20 per cent of total world production, 37.5 per cent of total production in Africa, and more than 72 per cent of total production in West Africa (FAO 2008a). Nigerian cassava production has been on the increase in the last ten years, with an annual mean of 37.2 million tons, following the introduction of the Presidential Initiative on Cassava (PIC). Total harvested area had also increased over the same period, with the country accounting for 20.5 per cent of total world harvested area and 68.92 per cent of total harvested area in West Africa for 2006. Though the country has maintained an increasing lead in world cassava production over the years, production and processing still remain largely traditional, essentially dominated by small farmers and processors who depend on local traditional methods, utilizing local implements that require heavy input of manual labour. Productivity is low, and about 90 per cent of cassava utilization in Nigeria is in the form of locally prepared food, especially *gari* (FMARD, 2005). Besides its direct uses as food, cassava can be processed into industrial raw materials, such as chips, flour, starch, crude alcohol (ethanol), glucose syrup, adhesives used in food and beverages, textiles, distilleries, and has uses in the pharmaceutical sector. The strategies for realizing the above targets include the establishment of farm gate processing centres, importation of relevant prototype machines/equipment for processing, promotion of local utilization of cassava

flour and starch through legislation and tariffs, and improved credit facilities to farmers and processors.

Local fabrication, adaptation and manufacture of affordable cassava processing equipment is crucial to the objective of ensuring that small-scale operators get affordable and efficient processing equipment for making cassava roots into useable industrial inputs. There are in Nigeria major players identified in the fabrication of needed equipment. These are expected to produce and initiate innovations in technical needs of handling cassava tubers so as to promote a cassava revolution in Nigeria.

In order to boost industrial production of cassava the government has directed for the incorporation of 10 per cent cassava flour into wheat flour for bread and confectionaries. However, flour millers complain that cassava flour has a high fibre content, high levels of iron, and also microbiological problems associated with poor sanitary conditions in processing (FMINO 2006a). With the current drive at promoting the industrial utilization of cassava products as intermediate raw materials, some processing of cassava into high quality cassava flour, industrial starch, and ethanol is now taking place.

The Rice Industry

In Nigeria, rice is produced by smallholder farmers with holdings ranging from 0.5 to 1.5 hectares. There is no state in Nigeria where rice is not cultivated, though the intensity of production varies from state to state. Production is concentrated in the North, which accounts for more than 80 per cent of the total national output. The North Central states account for 42 per cent of the national output. The South-Eastern states produce about 9 per cent of the national output, the highest within the southern region (FMAWR 2008). Rice production in Nigeria is a market oriented enterprise, with income as the main motivation for rice farmers, even in areas where rice is a traditional component of the diet (WARDA 2003). On average, 80 per cent of total production is for market and is considered as the prime source of income for the farmers. To boost local production and processing of rice, the Presidential Initiative on Rice (PIR) was introduced in 2003 (FMINO 2006b). The goal was to attain self-sufficiency in rice production by 2005 and to export by 2007.

The post-harvest measures include the promotion of improved processing and storage techniques and of effective supply chain management systems. By December 2005, rice processing equipment, including rice mills, de-stoners, reapers, and pre-cleaners received under the Japanese assistance for rice production, had been distributed to support better quality rice. In addition, improved rice seedlings (New Rice for Africa/NERICA) were acquired from WARDA (now the ARC/Africa Rice Centre) and distributed to farmers at a 50 per cent subsidy. The government also implemented the R-Box scheme to deliver total packages of rice seeds and production inputs to farmers at subsidized rates.

Despite increased production and a rapidly growing domestic market, the processing of rice is still poorly developed across the country. Processing activities are dominated by small operators with limited capacities and low levels of technology. Rice milling is essentially a cottage industry, and there are few industrial mills. Besides milled rice, there is little or no diversification into other rice products like rice flour. This is in spite of the fact that rice can be processed into by-products for industrial use, forms such as pulp and paper, roofing material, fuel energy, fibre boards, organic fertilizer, bedding, ethyl/alcohol, acetic acid, and animal feeds (Ogundele 2003). Efforts have been made to promote modern rice processing facilities through research and development activities with regards to rice processing machines.

The Sugar Industry

The sugar industry is in dire need of development, considering the rising demand occasioned by a growing population and industrial uses in food, beverages, and pharmaceutical products. The scope for development is underscored by the wide gap between the potentials and the actual performance of sugar cane production and processing in the country. It is estimated that Nigeria produces about 120,000 tons of sugar per annum while it consumes 1.2 million tons per annum (FAO 2008a). The country offsets domestic supply shortfalls through the importation of sugar, so much that Nigeria is the 16th largest importer of refined sugar in the world (FAO 2008a). Sugar development in the country is carried out under the institutional framework of the National Sugar Development Council (NSDC) established in 1993 and reinforced by the National Sugar Policy (NSP), enunciated in May 2003. The NSDC was charged with several roles, as follows: revival and promotion of private sector participation in the development of sugar cane production and processing; capacity building in sugar cane production and processing; provision of infrastructure for sugar production and processing; and formulating policies and measures for sustained growth and the development of the sugar industry. The Council is funded through a levy – of 10 per cent on the C.I.F. value – on imported sugar. The vision is to achieve 70 per cent self-sufficiency in sugar by the year 2010 (NSDC 2003). Until the reforms in the sugar industry, the situation was plagued by lack of policy coordination, heavy distortions as a result of government involvement, and very low private investments. Nigeria's sugar requirements are met through sugar imported raw and refined locally, while Brazil is the dominant supplier of brown and refined sugar to Nigeria (USAID 2006).

Despite reforms and privatization production by the companies remains low due to several infrastructural, technological, operational, and institutional factors. Among the critical challenges are the rehabilitation of sugar estates, the modernization of plants, the state of equipment and facilities, and ensuring a regular supply of raw sugar for processing (Usman Bello 2008a, b). As a result, the companies operate only at 30 per cent of capacity presently.

The Livestock Industry

The livestock subsector plays crucial role in the nation's economy, not only through its direct effect on overall economic growth, but also its indirect impacts on the productivity of the population through nutritional outcomes. Nigeria is a major player in livestock production in Africa, producing a total of 1.067 million tons of livestock meat in 2004, representing 0.41 per cent of total world production, and being the third largest producer in Africa, coming closely behind South Africa's 1.887mmt and Egypt's 1.437mmt (FAO 2008a). Though Nigeria has a key position in the African livestock subsector, production over the years is yet to match the national demand for livestock products. To compensate for the shortfall in domestic supply, the country resorts to high levels of importation. In contrast, total exports of livestock products accounted for only 2 per cent of total export of agricultural products. Livestock production in Nigeria is largely traditional and subsistence, with limited commercial and modern orientation. The production system is nomadic and roams the northern and central parts of the country until the herd is brought to market for slaughter at the abattoir. In 2007, reports by the Federal Ministry of Agriculture and Water Resources (FMAWR) show that for all the key livestock enterprises, the proportion of commercial holdings ranged from 0.03 per cent for goats to 13.83 per cent for chicken, with a mean of 3.55 per cent. This affects productivity and the total supply for both domestic and industrial consumption. There is a large scope for harnessing the livestock industry to provide raw materials (hides from cattle and skin from goat or sheep) for the leather industry worldwide.

The Fish Industry

Nigeria is endowed with extensive and diverse aquatic resources, covering an area of 14 million hectares, which favours the proliferation of numerous fish species. Over a million hectares of mangrove swamps exist in the coastal areas, of which a large proportion could be developed for fish farming. Potential aquaculture production is at least 2.5 million tons of fish annually, but currently only about half a million metric tons are produced (FAO 2008a). With a national deficit in fish production of about 1.2 million tons, the country incurs a very high foreign exchange bill on frozen fish importation. Average annual fish production from all sources from 2001-2005 was 0.53 million tons which is chiefly derived from 'catch' fish from the coast, rivers/streams and lakes. Production from fish farming averaged only 54,000 tons annually over the period, constituting only 10.33 per cent of the country's annual fish production. At present, value addition in the fisheries subsector is very low for both fresh and dried products. However, some ambitious plans to speed up domestic production do exist.

Policies for developing agro-industries

Agro-industry policy within economic development policies

Efforts aimed at developing agriculture can be traced to post-colonial national agricultural commodity marketing and pricing policies. Dating back to 1954, regional multi-commodity boards were established by the colonial authorities. By 1977, the regional arrangement gave way to the six national commodity boards which exercised monopoly powers in the marketing, pricing and development of scheduled crops, including cocoa, groundnut, palm produce, cotton, rubber, and grains. Though the commodity boards brought some benefits to farmers and the nation in the post-independence post-war years, they were soon subjected to severe criticisms as being inefficient public monopolies and passive inflexible commodity traders. They implemented terms that were not equitable to commodity producers and applied business models that were not sufficiently responsive to changing global trade trends. For example, the commodity boards merely exported agricultural produce to overseas markets with little regard to developing sustainable local capabilities for post-harvest agro-processing and value addition. Extant conditions do not show that the commodity boards produced any lasting impact in terms of technological growth in commodity value addition.

This is not surprising considering that the National Development Plans (1962-1968 and 1970-1974) were mainly oriented to use marketing board taxation to finance development of the overall economy (Idachaba 2000). Besides the problem of commodity boards, the period from the 1970s to 1980s was characterized by heavy and direct government involvement in agricultural production, processing and marketing, occasioned by the so-called oil boom. Some of the interventionist agencies include the Nigerian Agricultural Cooperative Bank (NACB), Farm Settlement Schemes (FSS), Agricultural Development Projects (ADPs), and the River Basin Development Authorities (RBDAs). Meanwhile, the dramatic surge in foreign exchange earnings instigated a boom of imported finished goods (including food) and large investments in agro-based manufacturing, including textiles, leather, breweries, and so on. There was, however, a predominant reliance on imported raw materials under the import substitution strategy. With the benefit of hindsight, it is apparent that the country's agricultural processing systems lacked the capacity and responsiveness to meet the demands of industrialization. These reinforcing factors were to become the defective foundation for Nigeria's agro-industrialization policies.

Policy consistency (macropolicies, agriculture, trade)

Consequent upon the slump in oil revenues and the concomitant shortage of foreign exchange in the early 1980s, the government enunciated policies for reduced food imports and increased local

production of basic agricultural produce for food and processing into industrial raw materials. The policies included the rationing of foreign exchange in favour of industries with import substitution value, concessionary tax terms for investments in agro-processing and restricted importation of agricultural products, such as cotton, vegetable oil, rice, sugar, wheat, and malting barley. The motive was to preserve the domestic food markets for local agricultural producers and to encourage domestic industries to integrate backwards for the upstream processing of agricultural produce into industrial raw materials.

As a result, there was increased investment in agro-industrial processing by large and medium-scale establishments. For example, textile, brewery, beverages, confectionary, and sugar industries took advantage of the policy to set up agro-processing facilities, based on nucleus crop plantations and/or out-grower schemes. Agro-based industries also became more active in the marketing chain as they entered into various procurement arrangements with farmers. However, the backward integration policies did not produce a lasting impact due to a wide range of institutional, infrastructural, and logistical problems. Post-harvest facilities and value addition capabilities were poorly prepared and not sufficiently developed to efficiently produce adequate amounts and required qualities of products on a sustainable basis. As the policy on concessionary foreign exchange was weakened by declining foreign earnings in the mid-1980s, the viability of the agro-processing investments were compromised, given their heavy dependence on imported technology, equipments, and machinery. The problem was compounded by the fact that many companies displayed poor knowledge and experience in backward integration activities. In addition, there was no adequate synergy between the agro-industrialization and agricultural production strategies, for example, agro-processing was not adequately linked with farm research for more suitable crop and animal varieties.

The agricultural production programmes (National Accelerated Food Production Programme/ NAFPP in 1975, Operation Feed the Nation/ OFN in 1977, and the Green Revolution Programme/ GRP in 1980) lacked complementary efforts in post-harvest development (Idachaba 2000). Till date, the lack of synergy between agricultural production and post-harvest development remains a major drawback in Nigeria's value chain development. With the adoption of Structural Adjustment Programme (SAP) in 1986, Nigeria implemented wide-ranging demand management policies which de-emphasized direct government participation in agricultural production, processing and marketing. The commodity boards were dissolved, to free the market to private operators. Import and other trade restrictions were relaxed in line with the economic adjustment policies of devaluation of the local currency. The River Basin Development Authorities (RBDAs) were stripped of direct production activities. Government established the Nigerian Export and Import Bank (NEXIM) and Export Processing Zones (EPZs)/ Free Trade Zones (FTZs) to promote industrial growth and non-oil exports. Efforts to develop agricultural-industry linkages were channelled through the Directorate of Food, Roads and Rural Infrastructure (DFFRI), which implemented a national programme of development of roads, water, storage, and processing (post-harvest) facilities. Furthermore, the government established a policy framework to organize agricultural development, through the Agricultural Policy for Nigeria (APN) in 1987, designed to guide the country's agricultural development until the year 2000. But, by 1994, the SAP was terminated.

The government then reinforced development planning through the subsisting rolling-plan framework. Economic policy reverted to fixed exchange rates, administratively-fixed interest rates, tariff measures, and self-imposed fiscal controls. While the SAP period witnessed increased incomes to producers of traded commodities, such as cocoa, post-harvest development did not show a corresponding progress as exports were predominantly done in unprocessed forms. The blame was put on poor infrastructure, low technological capabilities, heavy logistics, and high risks of post-harvest losses. This was the situation inherited by the democratic government in 1999. The wholesale approach to development planning based on rolling-plans was considered inappropriate

for the broader national objective of catalyzing a private sector role in economic growth, wealth creation, and poverty reduction. Since then, government has redirected the strategy to creating the enabling environment for private sector agribusinesses, including post-harvest (processing) enterprises. In addition, a number of fiscal incentives are being implemented to promote local industries and to stimulate their linkages to agricultural raw materials. Some of them are the Export Expansion Grant (EEG), duty waivers on imported machinery for agro-processing, tax relief for agro-processing enterprises, an Export Development Fund (EDF), Export Processing Zones (EPZs), and a five-year tax credit of 20 per cent to industries that attain the prescribed minimum level of local raw material utilization. Others are the seven-year 100 per cent tax holiday to pioneer industries sited in an economically disadvantaged local government area, and an additional 5 per cent capital depreciation allowance over and above the initial capital depreciation allowance.

The commodity development efforts received a boost in 2004 with the establishment of the six Presidential Initiatives on Rice, Vegetable Oil, Sugar, Cassava, Fisheries, and Livestock, respectively. The Initiatives addressed a full-stream development of commodities from production, processing and handling to marketing and utilization (FMINO 2006a, b). Attempts were made to expand domestic markets (for example, for cassava flour) and to explore export markets (for example, regarding cassava chips). Trade and industrial policies were directed to preserve local industrial markets for agricultural products, such as cassava flour, cotton, and so on.

Currently, government responsibilities in the development of agricultural processing and post-harvest activities are shared between several government agencies with complementary mandates. They include the Raw Materials Research and Development Council (RMRDC), Small and Medium Enterprises Development Agency (SMEDAN), National Office for Technology Acquisition and Promotion (NOTAP), National Agency for Science and Engineering Infrastructure (NASENI), Federal Institute for Industrial Research, Oshodi (FIIRO), and the Bank of Industry (BOI). Moreover, there is a wide range of supportive sub-national (state and local government) measures and programmes aimed at alleviating the technological, financing, management, and marketing constraints and problems in agricultural processing. The problems of overlapping functions and of inefficiencies in implementing policies and programmes have to be seen.

Despite the past and current policies and programmes, agricultural processing and post-harvest activities remain underdeveloped. Evidence of poor post-harvest performance is the generally low quality and consequently the poor international competitiveness of post-harvest products. In spite of these, the emerging market opportunities are quite significant, particularly in the food and beverage industry in Nigeria. Nigerian households so far spend a large share of total expenditures on food, most of which is on non-processed products. For example in 2002, *per capita* retail sales of packaged food in high-income countries were more than 15 times the value found for low-income countries (Regmi & Gehlhar, 2005). However, growth in consumption of packaged food is fast gaining ground in Nigeria.

Public-private sector cooperation and dialogue on agro-industry

The organized private sector as represented, for instance, by the Nigerian Association of Chambers of Commerce, Industries, Mines and Agriculture (NACCIMA) has always canvassed for government support in the areas of infrastructure, tariff matters, and policies in general. The mode of interaction between the public and private sectors in the development of the agro-industry in Nigeria takes three main forms: the nucleus estate initiative; the public-private sector agro-industry investments; and the integrated commodity marketing system.

The Nucleus Estate Initiative

The Nucleus Estate Initiative (NEI) was canvassed at the deliberations of the Agriculture and Food Security Commission (AFSC) at the 10th Nigerian Economic Summit in 2003. The Summit emphasized the adoption of the concept of the Nucleus Estate Initiative as a strategy for accelerating the growth of competitive agricultural production, processing and marketing. The implementation approach is analogous to the out-grower model. It involves identifying and developing an operational hub (that is, big-impact players in production, processing, storage, etc.) known as "Nucleus Estates" which connect several smaller operators (farmers, processors, warehouse operators, etc.). The Nucleus Estate links the smaller farmers or producers or processors in a contractual relationship based on mutually complementary and reinforcing mechanisms (NESG/Nigerian Economic Summit Group 2004). The mutually beneficial contractual pact envisages that while the Nucleus Estate gains from ready and steady supply of products from the small operators, the small operators in return gain from easier access to production inputs, such as credit, technology and knowledge through facilitation by the Nucleus Estate. Typically, the contractual incentive-based relationship connects an array of small operators to a common hub operating at a higher level of the commodity value chain. The role of government in the arrangement is that of a promoter, enabler and a regulator. Agro-processing firms, such as Fumman Juice Company, Pamol, Okomu Oil, and Presco Plc, are front runners in this arrangement. Ccompanies like Best Foods Global Nigeria Ltd., Olam Nigeria Ltd., and Stanmark Cocoa Processing Ltd have also emerged and recorded remarkable success in implementing the Nucleus Estate Initiative.

The Public-Private Sector Agro-industry Investments

In this model, the local or state government initiates commodity agro-industrial/ marketing investment by providing basic structures and connecting infrastructure, supervising the setting up of the various facilities, and test-running the investment before handing it over to the private sector (Manyong *et al*. 2005). Examples of this model include the Akamkpa Model Agro-industrial Village through which investment the Cross River State Government has successfully established a modern agro-processing facility to serve as a model in processing pineapples into pineapple chunks and pineapple juice, and cassava into cassava chips and pellets for domestic consumption and for export. Another example is the Maigatari Model Commodity Free Trade Zone and the Export Free Zone created by the Jigawa State Government in the Maigatari international border town (to Niger). In the Commodity Free Trade Zone various marketing facilities (sheds, watering holes for livestock, public utilities, etc.) have been provided by the government for use by traders who come from Jigawa and other diverse places, including Bauchi, Taraba, Kano, and the Niger Republic. The Jigawa State Government provided initial investment, maintenance and oversight in preparation for a hand-over to private sector stakeholders.

The Integrated Commodity Marketing System

This is an arrangement between two parties dealing in one particular commodity or product. It is a link or connection between large operators (producers and/or processors of a given product or commodity) and small or medium-sized production units in the same commodity line. The large scale operators provide marketing infrastructure, financial resources, and management skills which are not available to the small production units. The arrangement provides a mechanism that tends to enhance marketing in particular, which has constituted one of the main constraints to agricultural production in the country. In the five-point Agenda designed by the Federal Ministry of Agriculture and Water Resources (FMAWR) two points are targeted towards the integrated commodity marketing system module. These are as follows:

- Agricultural Commodity Exchange Market (ACOMEX) Project in which Nigeria will attempt to establish an agricultural commodity exchange market with the objective of achieving more

efficient marketing and price information systems. There are also other market-supporting components and entrepreneurship development components in the project.

- Raising Agricultural Income with Sustainable Environment (RAISE) Project. RAISE focuses on addressing the challenges of small and medium-scale agribusiness development in the area of value chain infrastructure development and sustainability of the environment (rural energy, rural markets, schools, communication, water and sanitation, transport and health). The RAISE small-scale initiative targets rural agribusiness enterprise development on a district by district basis. The RAISE medium-scale initiative aims to encourage and to train young educated, unemployed persons in out-grower based agriculture (FMAWR, 2009).

A major policy of the government is now to encourage Public-Private Partnerships (PPPs) in areas adjudged suitable for such partnership. Public-Private initiative makes investment capital, management skills and business practices much more readily available, while expanding the scope for risk control. It enhances the capacity to produce and to capture a segment of the market much more profitably than it would have been without instituting the partnership. For these reasons, PPP will be suitable for promoting agro-industry and agribusiness development. A few of the arrangements described earlier lend credence to the advantages of PPP in agricultural enterprises. PPP may likely contribute to overcome the infrastructural deficit in rural areas and to open up opportunities for young and educated school leavers to go into farming. Land acquisition by private entrepreneurs which has largely been quite difficult and often not transparent may now with the PPPs become more easily handled since landowners would see government participation as an assurance of genuine enterprise.

Key policy factors for promoting agribusiness

Agro-industry upgrading and modernization

For agribusiness to make the desired impact in the national economy, agro-processing activities would need to move away from primary, farm-based processing activities to a stage of secondary and tertiary levels of processing. This will require that agricultural growth must first be stimulated to provide ready raw materials sufficient for sustainable operations of processing firms which will operate during and out of season of the agricultural cycle. The traditional practices would need to be upgraded or to give way to modern processing techniques in order for the products to gain a substantial segment of the market and to maintain upward demand by various levels and degrees of consumers. Local, regional and international markets can only grow if the products of agro-processing are competitive and possess qualities demanded by the discriminating markets in and outside Nigeria.

Sustainable growth and productivity increases in the agricultural sector will require substantial capital input, both financial and physical. Public investment in infrastructure and promotional activities are essential, and so are stable and progressive policies to send the right signals to production agents in order to influence correctly their investment decisions. Overall, upgrading and modernizing agro-industry in Nigeria should be based on the following cardinal points and processes:

- Modernization, intensification and development of appropriate production systems and farm organizations;
- Support for and assurance of producers that public policies will be consistent, durable and progressive;
- Deliberate promotion of commodity chains and agribusiness development; and
- Institutional development.

The Nigerian Government has embarked on some of these measures in recent years, initiating credit and trade policy measures to support modern farming and agribusiness development. About Naira 30 billion have been set aside to provide soft loans to farmers, while export trade has been largely liberalized to expand the market for efficient farmer groups and cooperatives.

Identifying the commodities and the groups of producers to be targeted is important. With an array of crops in Nigeria's production profile, each with a substantial output in terms of commodities, careful selection based upon the feasibility of their making a substantial contribution to value addition matters. Front runners in the crop subsector are cassava, rice, maize, fruits and vegetables, soybeans, and palm produce which is important for vegetable oil production. Cocoa belongs to a unique class, because it is the dominant crop in the non-oil products of Nigeria and accounts for nearly 80 per cent of all non-oil contribution to agricultural earnings. The products of cocoa are adequately exploited since the country consumes less than 10 per cent of its cocoa output.

In the livestock group, poultry production (meat and eggs) shows a commanding opportunity for expansion and trade in both the domestic and regional markets. Much of this has not been adequately exploited since imports of dressed chicken and other poultry meat products pervade the West African subregion. Fish production through aquaculture is rising and the market is equally expanding, offering opportunities for producers to scale up production and output.

As a strategy of poverty eradication and social inclusion, the groups of producers to target in crop and livestock subsectors of agriculture are the small-scale producers. Nigeria has always been a country of small-scale farmers, who account for more than 90 per cent of total agricultural output. They have been found to be efficient within the production environment that they operate, but lack sufficient capacity and support to expand beyond their resource endowment. Access to physical inputs and credit is limited and constraints scale expansion.

Value chains with comparative advantage

The prospects of a thriving and virile agribusiness in Nigeria are anchored in identifying value chains that have comparative advantage and in which the country can excel in production and processing in the short, medium and long-term. Over the years stakeholders and policymakers in particular have attempted to identify commodities and regions of production where comparative advantage exists and in which the country can profitably invest. The data in Table 6.7 indicate various commodities and production areas where self-sufficiency may be achieved in production. The capacity to produce for processing plants also exists in these commodities. Cassava and rice are being touted as the most important commodities wherein Nigeria can establish its comparative advantage.

Rice, as discussed earlier, is produced across the country. Although it was never a visible food crop for Nigerians at independence in 1960, today it is arguably the most loved food grain in many homes. While Nigeria exhibits comparative advantage in the crop, this advantage has not been exploited because of cheap foreign rice that dominates the domestic market. It is also known that the draw back in the demand for local rice arises from impurities that abound in local rice as a result of poor processing, packaging and presentation.

Cassava is rather a ubiquitous crop, grown virtually everywhere in Nigeria. The various products of cassava make it a most preferred crop in the more humid zone of the southern parts of the country. Cassava flour finds use in bakery and confectionery business; cassava chips/pellets are used in the production of livestock feeds; cassava starch finds application in paper, wood, oil, textile, and in pharmaceutical industries; sweeteners from cassava are used in the food industry; and ethanol from cassava is used in the refinery, in distilleries and in pharmaceuticals.

Table 6.7: States with Comparative Advantages in Crop Production

S/No	Commodity	State	Estimated Ha Required for Self Sufficiency ('000)
1	Rice	Anamabra, Bayelsa, Benue, Delta, Ebonyi, Edo, Kebbi, Kogi, Kwara, Niger, Ogun, Rivers, Taraba, Kano, Kaduna.	To be determined at state level for all commodities. Minimum of twenty thousand (20,000) ha is expected to be brought under cultivation in each state of the Federation and in the Federal Capital Territory (FCT) in the first phase.
2	Wheat	Bauchi, Borno, Jigawa, Kano, Katsina, Kebbi, Yobe, Zamfara.	
3	Sugarcane	Adamawa, Kano, Kogi, Kwara, Niger, Taraba, Zamfara.	
4	Tomato	Adamawa, Kano, Katsina, Kogi, Kwara, Niger, Taraba, Zamfara.	
5	Cotton	Gombe, Kano, Jigawa, Katsina, Ogun, Oyo, Zamfara.	
6	Soybeans	Benue, Kaduna, Taraba, Niger, Kano.	
7	Maize	Plateau, Kaduna, Niger, Taraba, Borno, Ogun.	
8	Cowpea	Zamfara, Kaduna, Borno, Niger, Kano.	
9	Cocoa	Ondo, Edo, Osun, Ogun, Oyo, Kogi, Ekiti, CrossRiver.	
10	Jatropha	Katsina, Jigawa, Kebbi, Sokoto, Borno, Yobe, Kano.	
11	Rubber	Edo, Delta, Ondo, Ogun, Abia, Imo, Cross River.	
12	Oil Palm	Kogi, Ebonyi, Edo, Abia, Imo, Anambra, Rivers, CrossRiver, Akwa Ibom.	
13	Groundnuts	Kano, Katsina, Sokoto, Jigawa, Kaduna.	
14	Cassava	Benue, Ogun, Imo, Oyo, Taraba, Kogi, Kaduna, Ondo, Cross River, Enugu.	

Source: Federal Ministry of Agriculture (2004): National Medium-Term Investment Programme of the Government of the Federal Republic of Nigeria, Abuja

Prospects for STI and human capacity for agro-industrial development

Industrial development is unarguably the engine of sustained long-term economic development, and technological innovations have powered this engine. The economic argument for embarking on industrial development is that rising productivity in the economy can be obtained through technological innovations, which result from improved factor input combinations in the industrial sector. The higher wage rate, associated with the modern industrial sector, attracts the surplus labour from the subsistence traditional sectors. In countries where technological innovations in both the secondary and primary sectors have developed, industrial development has produced synergy between the two sectors, and net economic welfare has improved considerably for every strata of the population.

Industrial development represents a deliberate and sustained application and combination of sustainable technology, human capacity, management techniques, and of other resources to move an economy from a traditional low level of production to a more efficient system of production. Over the years, Nigeria has attempted this combination through import substitution industrialization (ISI) in the 1960s to 1970s which gave way to the export promotion initiatives and deregulation of the economy in the 1980s and 1990s because of the apparent inability of the ISI to stimulate structural transformation.

It is pertinent that industrial development in Nigeria shows an imbalance in the national capacity to produce and to consume technology. On the production side, the economy is predominantly agricultural or mining-based; it has a relatively small manufacturing sector and a trade structure that is dominated by exports of primary products and the importation of manufactured goods. The

country has a low level of literacy and a deficiency in skilled personnel. On the consumption side, the domestic market, though large, has a relatively weak purchasing power; the country has a low *per capita* income. The majority of the population relies on subsistence production, and the consumption patterns are skewed towards the urban consumer whose tastes are fashioned after imported goods. In these circumstances, agro-industry remains highly constrained, and policy mechanisms that promote an effective national system of innovation would be required to build an innovation capacity in agro-industry (Adeoti & Olubamiwa 2009; Adeoti *et al*. 2010).

A National Innovation System (NIS) could be developed in Nigeria on the basis of established institutions and major actors to the benefit of agro-industrial development and of the agribusiness sector, by linking the major pillars (enterprises; R&D institutions; institutions for financing technical innovations; regulatory institutions, standards setting institutions, and intellectual property offices; technological development institutions and business support systems; and education and training infrastructure). So far, the relation among these pillars of the NIS is very weak. Indigenous technologies could also be more intensively used for agro-industry and should be integrated into the work of technology development institutions; specific technological capabilities for agro-industry and specific technologies for agro-industry subsectors could also be developed.

The role of indigenous technology in agro-industry

The importance of indigenous technologies in any country cannot be over-emphasized as they are a necessary precondition for building technological capabilities and for sustaining domestic efforts aimed at effectively adapting the imported technology. Okigbo (1996) and Maduemezia (1996) have advocated that indigenous technologies and modern technologies should complement one another, and this is often achieved through a process of technological upgrading. Technological upgrading is an effort that is premised on technological learning and provides an opportunity for gaining experience to subsequently develop in-house technologies and firm specific know-how.

Specific examples of indigenous technologies on which modern industries could be based in Nigeria exist in agriculture, medicine, and in capital goods sectors of the economy. It is particularly noteworthy that agro-industry could be an important feature of virtually every sector of the economy through value addition and inter-linkages of critical value chains in chemicals and pharmaceuticals, consumer food products, industrial intermediate goods, textiles, post-harvest technology hardware, and so on.

SMEs, particularly those in the manufacturing sector, have a significant role to play in the utilization of indigenous technologies and in the technological upgrading in agro-industrial subsectors. Rapid growth of SMEs should therefore be accorded important significance for the development of local agro-industry, the generation of employment and income, as well as the extension of industrial production over a greatly diversified base. In this context, the promotion of SMEs in the area of agro-industrial development in Nigeria should accord more priority to projects that can create forward and backward linkages with the rest of the economy, that will promote exports, and that can support the use of indigenous technologies as a base for further technological development.

Prospects for improving the technological base and innovation capacity in agro-industry

As observed (by NEPAD 2003), the transformation of African agriculture requires a shift from the highly diversified, subsistence-oriented farming activity towards a more commercially-oriented agriculture with improved access to markets and agro-industry. It is rightly stressed that the transformation would involve a greater reliance on input and output markets and an increased integration of agriculture with other sectors of the domestic and international economies. In addition, it entails a more efficient and balanced use of indigenous knowledge and of "modern" scientific knowledge. For Nigeria, the prospects of achieving the required structural transformation

that would result in increasing the technological base, the innovation capacity, and the human capacities for agro-industrial development are quite bright, given the human capacity available in various disciplines and fields of enquiry.

The major challenge to economic development in Nigeria in recent years is how to stimulate pro-poor growth. Building a dynamic agro-industry that is innovation-driven is a potent instrument for achieving pro-poor growth. In spite of the prospects, the development of technological capability in the Nigerian agro-industry is still at its infancy. Generally speaking, the agro-industry is part of the industrial innovation system, which is notably weak and unequipped to respond to the technological challenges facing the Nigerian industrial sector. This is acutely pronounced in the SMEs and has been illustrated by case studies of the state of technological capability in the agro-industrial sector. The technological trajectory in industrial innovation is still very much at the initial conditions of articulating the frameworks for technological learning, building infrastructure for R&D, and providing adequate and appropriate incentives for industrial innovation. Consequently, the existence of technological innovation in the Nigerian agro-industry has been limited to anecdotal incidents of industrial innovation.

To increase the technological base and to engender innovation capacity, the following improvements in the Nigerian agro-industry have been suggested (Adeoti 2007):

- The industrial and technology policies should be reviewed with the active participation of stakeholders, with the objective of making them innovation-focused. The review should principally aim at integrating industrial and technology policies into an innovation policy that details specific sectoral strategies for stimulating a dynamic industrial innovation system with a focus on agro-industry as a major component.
- Strong networking and interactions among various actors (industrial stakeholders) should be encouraged and promoted. Expenditures on networking activities, especially involving SMEs, should be tax-deductible.
- R&D institutions should be rehabilitated and provided with infrastructure that will make them attractive for skilled experts at home (and in the Diaspora). A major boost in R&D spending is required, and the managers of R&D institutions should be re-orientated to adopt a system view of innovation capacity development as the main rationale for R&D, rather than research just for the sake of adding to knowledge and publishing. This will facilitate joint initiation and execution of R&D with firms, who should be provided with generous incentives for private sector R&D, especially to address local needs. This will also greatly enhance the development of human capacity required for R&D in the public and private sectors, with good prospects for significant improvements in public-private sector interactions on demand-driven R&D projects that address societal needs.
- There should be increased investment in knowledge and skills development by public and private sectors, and for this purpose human resources development plans are requested for the economy and for particular sectors.
- Strong export-orientation of firms is crucial for competitiveness, especially in the medium to long term. Learning by exporting is of great relevance for fast increases of agro-industry firms' competitiveness.
- Nigeria's industrial policy should specifically targeted to:
  - SME development;
  - Agro-industry promotion;
  - Promoting industrial clustering;
  - Improving infrastructure; and

- Technological upgrading and human capacity development.

Innovation capacity and human capabilities for technological development can be enhanced by all these proposed measures. However, it is necessary to link all these measures to the enterprises, especially also in agro-industry.

Prospects for private enterprise and foreign direct investment (FDI) in agro-industries

Nigeria has made the private sector the driver of economic development and growth, and the role of Government has essentially become that of a regulator. Nigeria is in the 99th position among 133 countries on the Global Competitiveness Index and in the 125th position out of 183 countries on the Ease of Doing Business Index. Simply put, this means that Nigeria is a difficult area for investment. To attract local and foreign investments, the business climate must be made attractive. The first area of attention should be ensuring macroeconomic stability. Fiscal management measures that are appropriate must be instituted to support economic activities, to promote sustainable growth rates, and to keep inflation rates, prices, exchange rates, and interest rates at levels that are not injurious to investment and production.

Local and foreign direct investment (FDI) will flow in if the business environment is enabling. The rules must be respected and regulatory measures obeyed. Security of investment and of life and personal properties must be guaranteed. The justice system must operate to resolve disputes and to ensure safety of investment and ownership. A fair regime of business environment and security of life and property will attract private investments into the agro-processing sector from local and foreign interests.

The Nigerian government's policy of economic deregulation and liberalization has opened up new windows of opportunity for investors wishing to participate in the country's economy. The government's priority is to support the real sector of the economy, in order to diversify the economic base away from a heavy reliance on oil. Specifically, the Nigerian Investment Promotion Council (NIPC) has been strengthened to enable it to serve as a one-stop office for clearing all the requirements for investment in the country. The tariff structure is being reformed with a view to boosting production. Government has introduced a new visa policy to enable prospective and actual foreign investors to procure entry visa to Nigeria within a few weeks.

The tax system is being reformed to establish a regime of fairness and to encourage investments. The reform comes in various forms, including deduction allowances in the determination of taxable income of manufacturing enterprises, granting pioneer status (a concession to pioneer companies located in economically disadvantaged areas), and providing tax holiday periods of five to seven years. Research and Development (R&D) expenditure is tax-deductible. There is a 30 per cent tax concession for five years to industries that attain minimum local raw materials utilization, and in order to boost employment opportunities for job seekers, labour-intensive production practices can enjoy an up to 15 per cent tax concession for five years. The rate is graduated in such way that an industry employing one thousand people or more will enjoy the full 15 per cent tax concession rate, while an industry employing about one hundred workers will receive 6 per cent, and those employing two hundred a rate of 7 per cent.

With specific reference to FDI and foreign enterprises wishing to invest in Nigeria, any company incorporated in Nigeria is allowed to have a right to land for the purpose of its activity in any state of the country. It is, however, a requirement that the investor should comply with regulations on the use of land for industrial purposes and with the environmental regulations. Land lease is usually a term of 99 years unless the company stipulates a shorter duration.

As a means of encouraging industrial technology, company and other organizations that engage in research and development (R&D) activities for commercialization are to enjoy a 20 per cent investment tax credit on their qualifying expenditure. In the same vein, all companies engaged

wholly in the fabrication of tool parts and simple machinery for local consumption and exports are to enjoy a 25 per cent investment tax credit on their qualifying capital expenditure, while any tax payer who purchases manufactured plants and machinery will be similarly entitled to a 15 per cent investment tax credit on such fixed assets bought.

Export Incentives for the Non-Oil Sector also exist. Export proceeds can be retained in foreign currency in a domiciliary account with any authorized bank in Nigeria. A special Export Development Fund (EDF) has been set up by the government to provide financial assistance to private sector exporting companies to cover a part of their initial expenses, such as export promotion activities, including training courses, symposia, seminars and workshops, export market research, advertising and publicity campaigns in foreign markets, trade missions, and so on.

Financing agro-industry by traditional and innovative mechanisms

A most important problem confronting agribusiness development in Nigeria is finance. Scarce financial resources have retarded activities along the value chain. Insufficient access to, and inadequate forms of, finance constitute a major problem for agribusiness development in Nigeria, and continue to limit activities along the value chain. All value chain actors require investment capital and working capital in order to operate and expand their businesses, both of which are difficult to obtain. For smaller enterprises, and particularly for women, access to finance is even more constrained. This has significant implications for gender equality, as women make up the majority of small-scale farmers and primary processors.

The traditional sources of funds have been equity capital, family borrowers, money lenders, development banks, commercial banks, and microfinance institutions. However, these do not operate optimally because the cost of such funds is high. The interest rates in the commercial banks since 2009 have ranged between 18 per cent and 28 per cent, and this interest rate regime cannot make farming and cottage industries profitable. Lenders perceive agriculture as being highly risky and so they are reluctant to give substantial loans to the sector. Although government introduced an Agricultural Guarantees Scheme (AGS) several years ago to provide some form of collateral to farmers to be able to access loans from commercial banks, the banks remain reluctant to fund agriculture. Most of the banks preferred to pay penalties attached to non-compliance with the credit minimum they should have made available to farming. Microfinance banks are much more forthcoming in lending to rural-based enterprises, including local agro-processing ventures. However, there are few microfinance banks in rural areas where they are mostly needed, and they also lack funds in a quantum required to fund a complex agro-processing centre or to initiate a production process. Because of the amount of initial capital required to establish agro-processing centres, which rural entrepreneurs cannot afford, local government authorities often establish relatively big agro-processing centres for food crops. These, like *gari*-processing centres, are later given out to groups of processors, particularly women, to manage.

The problem of finance for agro-processing industries transcends local limitations of insufficient funds, lack of capacity of local institutions, and inadequate government policy measures. While these constraints are recognized, government should institute policies that promote financial flows into agriculture and agro-industrial value chains. Specifically, government should consider harnessing the practice of establishing capital funds for agriculture and agro-processing and to take advantage of the existing facilities. A number of capital funds have raised or are raising capital for agriculture and agro-industry investments in Africa (Financial Nigeria 2010, September 2010). Some of these are as follows:

- Phatisa Group: This is a South African private equity and corporate finance advisory firm overseeing the African Agricultural Fund (AAF). By mid-July 2010 the Group had raised 200 million Euros and is hoping to achieve a target of 500 million Euros. Founding sponsors are the International Fund for Agricultural Development (IFAD), the African Development Bank

(AfDB), Agence Français de Development/AFD (the French development agency), the African Green Revolution Agency (AGRA), and the West African Development Bank (WADB). It is expected that AFF will support private-sector companies that implement strategies to increase and diversify food production and distribution in Africa. It plans to invest in agro-industrial companies and agricultural cooperatives that support small-scale farmers under sustainable environmental management practices.

- African Agricultural Capital (AAC): AAC, an East African agricultural investment fund, began its capital-raising effort in 2010. The Uganda-based venture capital firm was set up by the Rockefeller Foundation and is focused on providing capital to small businesses operating in the agriculture value chain, to the tune of between $200,000 and $2 million to each business.
- Global Environment Fund (GEF): This is an US-based private equity firm focusing on forestry, and it has raised about $84 million for the GEF Africa Sustainable Forestry Fund (GASFF). The amount of funds targeted is put at $150 million, to be focused exclusively on sustainable forestry in sub-Saharan Africa. Funds are to be used for establishing forestry businesses which will grow, process and market timber products to meet the growing global demand of industries, including construction, energy, furniture and bio-fuel.
- Advanced Finance and Investment Group (AFIG): This is a Senegal-based private equity group which has established the Atlantic Coast Regional Fund (ACRF) of $84million and aiming at $150million. The main investors in the fund are AfDB, CDC, EIB, Finn Fund, IFC, and Africa Re. ACRF is focusing on medium-size companies with a regional scope. The businesses to be supported are agribusiness, natural resources, manufacturing, and transport, among others. The size of investment per business is put at $3 million to $15 million.

However, there is a lack of information on the impact of these capital funds and of other new forms of finance for making agro-industry in Nigeria more dynamic. In particular, the role of the private finance institutions should be strengthened in Nigeria.

Agro-industry infrastructure and access to sustainable energy

What agro-industry infrastructure does Nigeria need? How much of this is currently available? How could appropriate agro-industry infrastructure be provided? How do we guarantee access of agribusiness to this infrastructure and particularly to sustainable energy sources? These are critical questions one may ask. Infrastructure for agro-industrial development is not totally different from the general infrastructure required for industrial development and expansion. The differentiation arises from the critical need of agro-industry for raw materials that are highly perishable, bulky, varying in state of quality and ripeness, for instance, and because of the scattered nature of sources of supply. Thus, the need for a network of roads to link agricultural production areas to agro-processing centres in ways that facilitates trade and commerce is required. The need for water, packaging structures, good transportation means, and electricity is equally established. There is a need for communication systems that facilitate an easy flow of information on prices and the availability of various categories of produce. Provision of needed infrastructure will not only reduce losses, but will also raise the efficiency of adding value to produce. The perishable nature of most agricultural products at harvesting level calls for effective infrastructural means to quickly transmit produce to agro-industry centres where they can be quickly processed into high value and more storable products.

While Nigeria is credited for having one of the most elaborated road systems in sub-Saharan Africa, its rural roads are bad and poorly maintained. Transportation costs are invariably high and make farm products less competitive in urban markets in comparison with imported products. Since processing centres are also often located far away from producing centres, the costs of sourcing for raw materials are also quite high, thus reducing the advantage of a local sourcing of raw materials. The assembly of products from scattered producers is also done at a high cost.

However, the real bane of industrial expansion and manufacturing in Nigeria today is electricity. It is not only erratic but has made it impossible for manufacturing plants to function at installed capacity. While Nigeria requires about 32,000 megawatts (MW) of electricity to function effectively, current electricity generation is hardly beyond a mere 3,000 MW.

This shows the enormity of the constraints posed by insufficient electricity for agro-processing establishments. Most manufacturing companies have to depend on generators with the attendant high costs of maintenance and severe environmental effects. Early this month, the Nigerian President unfolded a Master Plan to impact significantly on electricity generation, transmission, and distribution. The Plan admits that the desired impact may only be felt from 2013. In the short term, it seems, Nigerians and businesses may not expect significant improvements in availability of electricity. Meanwhile, the new approach to electricity provision relies more on the private sector, with the government focusing on the regulatory framework.

Promoting trade at regional and international levels

The need to stimulate trade at regional and international levels is underscored by the desire to expand the market for the products of industrial production, including agro-industrial products. Retaining, expanding or creating new markets calls for strategic planning and improvement in the terms of trade through cost-minimizing procedures.

Export market development

For regional trade, Nigeria should identify commodities and products in which the country can benefit from the comparative advantage position and the capacity to produce in the ECOWAS and Central African regions. The same processed commodities may be traded with more advanced countries of Europe and North America, if such commodities are processed to conform to the standards required there. Agricultural produce identified as capable of promoting high value added exports is shown in Table 6.8. These are in the beverage, food, and leather products.

The idea of preferential trade programmes and schemes should be exploited to stimulate export trade. The major challenge for an export strategy is the degree of market access. To address this problem, Nigeria should take advantage of the World Trade Organization (WTO)'s Generalised System of Preferences (GSPs) in which developed countries offer non-reciprocal preferential treatment to products originating in developing countries. The country should also take advantage of other preferential trade programmes, such as the Cotonou Agreement and the Africa Growth and Opportunity Act (AGOA). However, there are limits to benefits accruing from such preferential trade agreements.

Table 6.8: Identified Subsectors, Products, and Potential Markets

	High Priority Subsector	Products	Potential Markets
A.	Food, Beverages and Tobacco Sector		
	1. Food	Barboiled rice Processed Cocoa beans Sesame oil	ECOWAS Countries EU, US, Canada Asia
		Shrimps and Prawns Cashew (i) Processed nuts (ii) Cashew kernels	ECOWAS Countries US, EU, Japan India, Brazil, Vietnam US, UK
	2. Beverages	Fruit juice	ECOWAS Countries
B.	Textiles, Wearing Apparel	Ready-to-wear garments	ECOWAS

		Processed cotton	ECOWAS, EU, US
C.	Leather/Leather Footwear	Leather Products	Italy, China.

Source: Adapted from Nigeria Vision 20: 2020, p. 60.

Nigeria should enter negotiations with its trading partners to see how preferential agreements could be better implemented to allow the country to benefit more than it is presently doing in trade. Other non-tariff restrictions that hinder trade in value added exports should equally be examined and addressed. Proposed industrial parks, clusters and enterprise zones should specialize in competitive products and ensure regular supplies of their products. Such products must be branded and properly packaged to attract consumers in importing countries. Products that attain Global ISO Quality Standards (GIQSs) are likely to have a ready market.

There must be capacity building programmes within the structure of clusters, parks, and enterprise zones to equip and make available appropriate skills among managers and technicians to drive the agro-processing activities. Well-trained personnel would be able to understand the requirements and standards of the export market and to comply with them in order to sustain trade.

Taking advantage of regional integration

The predominance of Nigeria in sub-Saharan Africa in general and in the ECOWAS subregion in particular offers tremendous opportunities and possibilities for the country. In 2005, Nigeria adopted the ECOWAS Common External Tariff (CET). Since Nigeria has more than 50 per cent of firms involved in the ECOWAS Trade Liberalization Scheme, adoption of the CET opens up an opportunity for Nigerian firms to explore the market in the region. Presently, the regional market accounts for just a fraction of Nigeria's total trade. Since most of the countries in the region produce commodities similar to those of Nigeria, it is necessary for Nigeria to specialize and to produce quality products which no other country in the region is capable of producing at a competitive level.

Exploring trade opportunities in the emerging markets of the South

Nigeria can benefit from the newly emerging economies of the South, namely India, China, and Brazil. The market of the Russian Federation should also be explored for trade in non-oil exports. Already, there are considerable trade flows between Nigeria and Asian countries, notably with India and China. While the trade is currently dominated by crude oil exports, there are opportunities for non-oil commodities, particularly processed agricultural commodities. There is a ready market for Nigeria's cassava pellets and chips in China, and trade is booming in other commodity categories between the two countries. Chinese, Indians, and other nationals are being encouraged through trade missions and exhibitions to patronize Nigerian products and to invest in Nigeria.

Export-enhancing promotional activities

Export promotion is an important aspect of strategic planning to boost Nigeria's trade. There is need for export and investment promotion agencies and organizations that monitor and ensure standards and technological innovators. The existing Chambers of Commerce, particularly the Nigerian Association of Chambers of Commerce, Industries, Mines and Agriculture (NACCIMA), should put Nigeria on the international trade map through the organization of regular trade expositions and trade fairs. It is also necessary to scale up the activities of the Nigerian Export Promotion Council (NEPC), especially in generating and disseminating pertinent information to other countries through Nigeria's foreign missions. Similar action by the Trade and Investment Department (TID) of the Federal Ministry of Foreign Affairs (FMFA) should also be directed at educating and informing the private sector on trade and export opportunities.

Other considerations to bring up export promotion activities should involve activities of the Nigerian Export Import Bank (NEXIM) and participation in South-South interaction arrangements, such as the China-Africa Summit and the Forum on Asia-Africa Cooperation in Export Promotion. These interactions can open up market opportunities for specific commodities outside the crude-oil domain.

Improved administration and conduct at the various land border, airports, and sea ports will go a long way in facilitating trade and commerce, as port congestions obstruct the orderly conduct of trade. Similarly, corrupt practices by border officials can hamper trade. Retraining, capacity building, re-orientation, and supply of needed administrative equipment and documentation facilities should be encouraged. Processors and manufacturers complain loudly of multiple taxation systems and an unfavourable regime of levies, all of which raise the cost of production and limit competitiveness. There is urgent need to review and to streamline the entire tax system.

Visions, plans of action, and way forward

Nigeria recognizes the central place of agriculture in its economic growth and in national, development and has, therefore, accorded agriculture and agro-industry sectors in particular a clear role in the quest to make the country one of the 20 largest economies of the world in 2020. The Vision for agriculture is to transform the sector into a profitable and sustainable sector through modern production practices, anchored in technology and industrial processing and manufacturing.

Nigeria in 2009 launched an ambitious economic transformation strategy called "Nigeria: Vision 20: 2020," (NV/Nigeria Vision 20: 2020) which aims to make Nigeria one of the twenty leading economies of the world by 2020. It is a ten-year plan for stimulating Nigeria's economic growth and directing the country on a path of sustained and rapid socio-economic development. The principle is to develop appropriate policies, strategies, and programmes which can elicit competitiveness and market development. Economic policies are planned to support a private-sector driven economy in which the role of government would be that of an enabler. The place of agro-industry in the entire plan is predicated on three main objectives:

- economic diversification of the economy away from petroleum;
- transformation of primary commodities to processed and manufactured goods (value addition); and
- increasing efficiency in production processes and raising productivity in order to become globally competitive.

From the above perspectives, Nigeria's agro-industrial development strategy will take into consideration three principal concerns. First is to ensure that the cost of input materials required in the secondary sector is moderate and affordable such that producers at the primary and secondary levels receive remunerative income from their businesses. Second, Nigeria would have to concentrate on specific processed or manufactured commodities in which the country has clear comparative advantage and in which it could be internationally competitive. Third, it is necessary to stimulate domestic, regional and international trade in value-adding products in order to establish appropriate linkages with all sectors of the economy. Overall, a renewed emphasis is expected to be placed on producing the required agricultural raw materials for agro-allied and agro-based manufacturing and processing enterprises, particularly those in the modern sector.

There are several ways of achieving the goal of raising the tone of agro-industrial development in Nigeria. Given that the basic factor in production is land, there is an urgent need for land reform. The existing legislation (Land Use Act) governing the use and ownership of land tends to impede the emergence of medium and large-scale farming operations. Insecurity of tenure as well as

inability to obtain credit to work on the land limits accessibility to land and willingness on the part of investors to go into farming. The current practice where most farmers cultivate less than two hectares of farmland cannot support the agro-industrial need. The scattered nature of these smallholder farmers complicates the ease of supply of raw materials to processing centers, in a structure of bad rural roads and inadequate transportation means. No entrepreneur would be willing to invest on land development in the absence of a secure tenure.

An Action Plan is requested for Nigeria's agro-industry and promotion of agribusiness[1]:

A first stage agro-industrial development programme (basic requirements provision stage) requests considerable and broad-based investment. For agricultural production expansion to occur, it is inevitable that investments on a large scale and mechanized production and processing of farm produce must occur. Attention here would be on crops in which Nigeria has a clear comparative advantage: tubers, cereals and tree crops, notably cocoa and oil palm. Considerable attention would also need to be focused on citrus fruits, pineapples, and other horticultural products.

Action on irrigation agriculture would also be required. Presently, irrigation agriculture is less than 1 per cent of Nigeria's potentials for irrigation agriculture. The River Basin Development Strategy (RBDS) adopted in the mid-1970s has been badly operated and managed. There is need for an improved operational revival of these basins and harnessing of other small scale irrigation facilities which small and medium scale farmers can operate to boost agricultural production. Agricultural output-enhancing measures will also embrace application of biotechnology, use of improved machinery suitable for small, medium and large farms, use of high-yielding varieties of crops, livestock breeds, fish species, and fast-growing trees.

A second stage of the output expansion to generate raw materials for processing industries and to stimulate these processing industries (efficiency improvement stage) is minimization of post-harvest losses. Available statistics indicate that producers lose as much as 40 per cent of vegetable output, 25 per cent of cassava/tuber output, and 15 per cent of grains and legumes output. What would be required here is to encourage especially agribusinesses that specialize in providing storage and primary processing of farm produce. This could also be coordinated with new financing schemes (like warehouse receipt systems).

At the third stage of agro-industrial expansion (export development stage), the strategy would be to increase production of processed and manufactured agricultural-based products that are of high quality and standard. The products must be competitive so as to sell in the international market to earn foreign exchange. This is the crux of Nigeria's desire to diversify its economy, but diversification will also engender expansion of employment opportunities for the army of the unemployed the country had to contend with in recent years. It will also help in reducing poverty as growth translates into employment and higher income, and to stem rural-urban migration if export-processing centres are located in producing, i.e. rural areas. In addition, exporting high-value manufactured products will enable Nigeria to tap into new market segments and to earn more money than in markets dominated by primary products. With considerable innovation activity, it could be possible for Nigerian exporters of processed and manufactured agricultural products to expand their markets and to make their products much more acceptable and competitive in regional and international markets.

In order to boost agro-industrial development, specific policy approaches should be considered. Cluster development policy, involving agro-processing enterprises being located in specified areas and supported with shared infrastructure and facilities, so promoting increased output and efficiency, is requested. Clusters also reduce overhead costs and unit costs of production. When

[1] Nigeria has set very detailed production targets for crops, livestock, and for fishery, and there is also a phased programme of interventions existing for the short-term(May-December 2008), for the medium-term(2009 to 2011), and for the long-term (2011-2020), also detailed for crops, livestock and fishery. However, there is severe lack of information about monitoring and implementation.

located close to production centres, agricultural processing centres reduce waste which may occur when agricultural commodities are transported over long distances. Cluster strategy could be promoted entirely by the private sector or through private-public partnerships for the processing and manufacturing of those commodities predominant in an area, and focusing in clusters on producing for the export markets is recommended.

Cluster development may take four main forms: industrial parks, industrial clusters, enterprise zones, and incubators. These agribusinesses are distributed between the modern and informal sectors of the economy with the latter accounting for more than two thirds of the total agribusiness firms in Nigeria. The modern agribusinesses are fast increasing in number and are registered with the Corporate Affairs Commission (CAC). They also belong to the Small and Medium Enterprises (SMEs) sector, producing a variety of products in the food and beverages category.

The concentration of agribusiness firms is in three industrial clusters, namely the Lagos-Otta-Ibadan axis, the Onitsha-Aba-Nnewi-Port Harcourt axis, and the Kano-Kaduna-Jos axis. Outlier clusters are Calabar-Uyo, Borno-Yola, Abuja-Nassarawa, Ilorin-Ogbomoso-Offa, and Sokoto-Gusau-Kebbi. In all, Lagos accounts for nearly 45 per cent of all registered agribusiness firms, and the bulk of annual total output comes from there. Measures to create new agro-industry zones and new agribusiness clusters in other areas of the country would be helpful so as to exploit the comparative advantages that they have with respect to agricultural produce in other states (see Table 6.7). Such de-concentration policies have just to be planned and then to emerge at local level by giving specific incentives.

There are two principal actors involved in evolving a sustainable agro-industrial development in Nigeria – the government and the private sector – while the consumers are also important in creating effective demand. The role of government is obvious and dominant, and it is important in creating an enabling environment suitable for the evolution of a virile agro-industrial sector. The role of the private sector is simply to take advantage of the existing system of incentives and to engage in agro-industrial ventures and agribusinesses in an innovative way.

It is of foremost importance that the government establishes a clear road map and agenda for agro-industrial development in the country. The first step is to promote increased productivity and availability of food and fibre products supplied by farmers. Action from the side of the government and from the private sector is requested. This will involve structural change in the production practices and in the system of incentives for agricultural production. The capability of agriculture to grow at an anticipated annual rate of 10-15 per cent has been laid at the foot of agro-industrial enterprises through value chain growth and expansion. Government is conscious of the enormous responsibility it has to shoulder in order to create an appropriate environment for increased agricultural output. In this respect, the government has decided to promote an increased production of selected commodities, those in high demand by agro-processing industries. Besides, these are "growth commodities" with a very high potential for increased productivity if necessary actions are taken for production expansion. The real challenge in this plan is to sustain the output levels in the long-run and ensure a continuous flow of raw materials to agro-processing plants, particularly the SMEs. The following strategic initiatives must constitute significant aspects of sustained public intervention:

- Expansion of farmland through facilitation of land acquisition and title holdings for agricultural production. There is a felt need for a review of the Land Use Act in order to promote commercial agriculture and to encourage new farmers to enter the production space. More importantly, a Private-Public Partnership (PPP) initiative may well consolidate farmland and promote modern production practices as being observed on Zimbabwe farmers' fields in Kwara State.

- Public-sector promotion of availability of wide ranging inputs to farm producers. Availability of fertilizers, herbicides and other agrochemical products serves as an impetus for farmers in that what they need for increased productivity is available locally. The added incentive is that availability may greatly reduce transaction costs and make the farmers use the inputs at competitive rates while realizing profitable returns.
- Developing a virile and supportive financial market for credit and investment financing of agribusinesses should be the duty of the government. Unless investors have seamless access to credit and long-term loans, it may be difficult to develop an agribusiness sector that can contribute to national economic growth and development. Government would need to revitalize the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB), the Bank of Industry (BOI), the Microfinance banks, the Commercial banks, and other financial institutions to focus on funding agribusinesses and agro-processing as well as manufacturing firms.
- There should be a programme of functional mechanization for all categories of producers – small, medium, and large-scale farmers. The hoe and cutlass technology must begin to give way to more comfortable tools which should not only be gender neutral but also gender friendly.
- Rehabilitation, completion, and resurgence of irrigation facilities and projects has to be managed by farmers themselves through community organizations, cooperatives, and farm groups. Establishment of private, small-scale irrigation facilities should also be encouraged and supported by a battery of incentives, including land clearing, irrigation extension services, pipe laying, etc.
- Identifying and supporting indigenous technologies and practices that raise productivity, ensure effective commodity storage, and guarantee on and off farm pest control. Sometimes indigenous pest control practices whether on the field or in storage conditions can be very effective and much cheaper to apply by farmers. There should be a way to harness such practices and to promote them to reduce the costs of crop production and to enhance competitiveness.
- Application and promotion of biotechnology tools in the selection, breeding, and regeneration of crops, livestock, fisheries and forestry. These areas are quite new to local farmers and they are reluctant to adopt the output of these hi-tech practices because of the supposed damage they think would happen to indigenous varieties and breeds. It is agribusiness enterprises that could engage in these new ways of producing bumper harvests, and what this means in effect is that these should not be made compulsory for the ordinary farmers to adopt unless the sponsors are ready to buy off the produce from farmers at harvest or maturity.
- Ensuring that production practices incorporate environmental protection actions that ensure a safe and clean environment, practices that protect the natural course and the flow of rivers and streams, as well as the use of solar and wind to generate electricity and thus provide power for farm operations. Sustainable production depends on the maintenance of the integrity of the environment, and it is necessary to mitigate against climate change effects as well as retain the fertility and good use of farmland.
- Provision of critical infrastructure should occupy government attention. Already government has initiated a comprehensive overhaul and reform of the electricity sector allowing the private sector to assume full responsibility for generation, transmission, and distribution of power. The transport sector reform would also need to be expedited to facilitate an easy movement of goods and people.
- To drive the new agricultural production revolution and modern production orientation, there is the need to create and cultivate a new generation of farmers. The fact is that the farming population is now dominated by aging and largely uneducated farmers. The series of technological practices now available appear to be beyond the comprehension of older farmers

who still dominate the production space. The reluctance of older farmers to take substantial risks in their farming practices may be well founded, against the backdrop of the challenges of pests, frequent policy changes on the part of government, and uncertain markets in the face of foreign imports of locally available commodities. However, adoption of innovation and of improved management practice could be better accepted by young, educated, and energetic farmers. The new generation of farmers would be able to incorporate modern technology, especially ICT (e.g. information dissemination and experience sharing on planting and marketing concerns), to take advantage of available incentives (soft loans, grants, scholarships, etc.), and to understand as well as that agriculture may be a business rather than simply a subsistence occupation. The entire agricultural value chain would be better managed by professionalizing the industry and making youths and new graduates the focus of support and assistance in this respect.

The second component of the plan of action has to do mainly with the private sector, including participation in agribusiness by foreign firms and Nigerians in the Diaspora. However, the public sector has a role in this component too, especially by providing an enabling environment. Private sector investment decisions are personal to individual enterprises; it becomes difficult to draw up specific plans for would-be interests in the Nigerian agribusiness sector. However, some general advice and comments may be made as follows:

- The private sector should engage in the total value chain process, with the aim not only of taking advantage of immense business opportunities in the Nigerian agriculture, but also to help inject technology and finance into the sector. The first challenge to business enterprises would likely be deciding the type of agribusiness organization and structure to be set up and in what particular area of production and processing. Prospective agribusiness investors would benefit from information garnered from feasibility studies to provide the necessary guidance and to indicate lucrative investment opportunities. Appropriate information should also be sourced from government institutions, such as the Raw Materials Research and Development Council (RMRDC), the Federal Ministry of Commerce (FMC), the Federal Ministry of Agriculture (FMA), the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN), and a host of others.
- The agribusiness sector should proceed to develop national, regional and international trade in high value added agricultural products. Nigeria is committed to diversifying its economy with agriculture as the centre of achieving sustainable development. This is necessarily so because agriculture and natural resource sectors are areas where the country has comparative advantage.

At the industrial level, the Nigerian agribusiness sector is intricately bound with the manufacturing sector of the economy. The fundamental role of agriculture as the supplier of agro-industrial raw materials to the manufacturing sector provides the linkage effects expected of agriculture and industry. The other roles of agriculture as supplier of food, provider of employment, generator of household income, and earner of foreign exchange through exports are rooted in the agriculture-industry continuum. Government, private sector, and public-private partnerships may cooperate to herald a rising and profitable agribusiness sector in Nigeria which is required to prosecute the development and growth plans embedded in Nigeria's 20:2020 Vision. It is now time to implement these new plans fully at all levels of the state.

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Abbreviations and Acronyms

AAC	African Agricultural Capital
AAF	African Agricultural Fund
ACOMEX	Agricultural Commodity Exchange Market
ACRF	Atlantic Coast Regional Fund
ADPs	Agricultural Development Projects
AFD	Agence Française de Développement
AFIG	Advanced Finance and Investment Group
AfDB	African Development Bank
AGOA	Africa Growth and Opportunity Act
AGRA	African Green Revolution Agency
AGS	Agricultural Guarantees Scheme
AFSC	Agriculture and Food Security Commission
APN	Agricultural Policy for Nigeria
ARC	Africa Rice Centre
ARCEDEM	African Regional Centre for Engineering Development
BOI	Bank of Industry
CAADP	Comprehensive Africa Agricultural Development Programme
CAC	Corporate Affairs Commission
CBN	Central Bank of Nigeria
CCAA	Competitive Commercial Agriculture in Africa (World Bank Programme)
CET	Common External Tariff
CSD	Commission on Sustainable Development (of the UN)
DFRRI	Directorate of Food, Roads and Rural Infrastructure
ECOWAS	Economic Community of West African States
EDF	Export Development Fund
EEG	Export Expansion Grant
EPZs	Export Processing Zones
EU	European Union
FAO	Food and Agriculture Organization
FAOSTAT	FAO Statistics
FCT	Federal Capital Territory
FDI	Foreign Direct Investment
FIIRO	Federal Institute of Industrial Research, Oshodi
FMA	Federal Ministry of Agriculture
FMC	Federal Ministry of Commerce
FMFA	Federal Ministry of Foreign Affairs
FMAWR	Federal Ministry of Agriculture and Water Resources
FMARD	Federal Ministry of Agriculture and Rural Development
FMINO	Federal Ministry of Information and National Orientation

FOB	"free on board" clause
FSS	Farm Settlement Schemes
FTZs	Free Trade Zones
GAIF	Global Agro-Industries Forum
GAIN	Global Agriculture Information Network
GASFF	GEF Africa Sustainable Forestry Fund
GDP	Gross Domestic Product
GEF	Global Environment Fund
GIQSs	Global ISO Quality Standards
GNP	Gross National Product
GRP	Green Revolution Programme
GSP	Generalised System of Preferences
HDI	Human Development Index
ICCI	Ibadan Chambers of Commerce and Industry
IFAD	International Fund for Agricultural Development
IITA	International Institute for Tropical Agriculture, Ibadan, Nigeria
ISI	import substitution industrialization
ISIC	International Standard Industrial Classification
MW	megawatt
N	Naira
NACB	Nigerian Agricultural Cooperative Bank
NACRDB	Nigeria Agricultural Cooperative and Rural Development Bank
NACCIMA	Nigerian Association of Chambers of Commerce, Industries, Mines and Agriculture
NAFPP	National Accelerated Food Production Programme
NASENI	National Agency for Science and Engineering Infrastructure
NCAM	National Centre for Agricultural Mechanisation
NCRI	National Cereals Research Institute
NDP	National Development Plan
NEPAD	New Partnership for Africa's Development
NEI	Nucleus Estate Initiative
NEPC	Nigerian Export Promotion Council
NESG	Nigerian Economic Summit Group
NERICA	New Rice for Africa (a technology from Africa for Africa)
NEXIM	Nigerian Export and Import Bank
NIS	National Innovation System
NIPC	Nigerian Investment Promotion Council
NISER	Nigerian Institute of Social and Economic Research
NISUCO	Nigeria Sugar Company
NMT	Nigerian Machine Tools
NOTAP	National Office for Technology Acquisition and Promotion
NSDC	National Sugar Development Council

NSP	National Sugar Policy
NV	Nigeria Vision
OAU/STRC	Organization for African Unity/Scientific, Technical and Research Commission
OECD	Organization for Economic cooperation and Development
OFN	Operation Feed the Nation
PI	Presidential Initiative
PIC	Presidential Initiative on Cassava
PIR	Presidential Initiative on Rice
PPP	Public-Private Partnership
RAISE	Raising Agricultural Income with Sustainable Environment
RBDAs	River Basin Development Authorities
RBDS	River Basin Development Strategy
R&D	Research and Development
RMRDC	Raw Materials Research and Development Council
SAP	Structural Adjustment Programme
SMEDAN	Small and Medium Enterprises Development Agency of Nigeria
SMEs	Small and Medium Enterprises
SSA	sub-Saharan Africa
TID	Trade and Investment Department (TID) of the FMFA
UNIDO	United Nations Industrial Development Organization
USA	United States of America
USDA	United States Department of Agriculture
USAID	United States Agency for International Development
VA	Value Addition
WADB	West African Development Bank
WARDA	West Africa Rice Development Association (Africa Rice Centre)
WDR	World Development Report
WTO	World Trade Organization

Chapter 7 | Senegal[1]

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Introduction: the case for agro-industrial development

Over the 50 years that span their age of political independence, African countries have struggled to attain economic and social development, most of them without much success. In fact, developing countries in other regions have made significantly more progress and are nowadays the yardstick by which Africa's underdevelopment is measured. Senegal is a typical African country that held considerable promise at the time of its independence but failed to implement appropriate developmental policies.

Its policy reform episodes include implementation of five-year plans (FYPs) and import substitution industrialization (ISI) policies in the 1960s through to the 1980s, Structural Adjustment Programmes (SAPs) in the 1990s and Poverty Reduction Strategies (PRSs) in the 2000s. In spite of all these efforts that were widely supported by the international financial community and many bilateral development partners, the economic and social development achieved fell well short of aspirations. Consequently, the Senegalese government adopted recently a new approach that is focused more on domestic resource mobilization using homemade policies. Achieving economic growth through agribusiness and agro-industry is at the heart of this strategy.

This new approach recognizes that in a predominantly agricultural economy there is much to gain from the promotion of value chains that add value to agricultural output. Agro-industrial development is advantageous because it creates jobs, adds value to locally produced raw materials inputs, and allows for the development and adoption of more advanced technologies to replace uncompetitive, traditional processing methods. This chapter examines the record of agro-industries and agribusiness in Senegal, assesses its strengths, weaknesses, opportunities and threats, and proposes a course of action that would contribute to a successful agro-industry-based development strategy. In order to improve international competitiveness, such strategic reorientations and new policy measures are highly necessary, and these reversals can also contribute to solve the twin problems of severe budget and current account imbalances (OECD/AfDB 2010).

Structure and dynamics of agro-industries

Agro-industrial development in the national context

Senegal is an interesting case of agro-industrial development.[2] Senegal is a low-income developing country with a population of 12.2 million people (as of 2008), a surface area of 193,000 square kilometres, and a population density of 64 inhabitants per square km. In 2008, its average life expectancy was 55.6 years, its adult illiteracy rate was 57 per cent, and its *per capita* GDP (at

[1] This chapter was largely revised and extended by the reviewer and editor of the case studies and an extension of the sector
studies in the chapter was provided by a commentator.

[2] The data presented in this section are provided by the "African Economic Outlook 2009" and the CD ROM Annex, published by OECD and the African Development Bank.

Purchasing Power Parity) was $1,666. In 2007, Senegal ranked 166 out of 182 countries on UNDP's Human Development Index (HDI). Between the years 2000 and 2008, GDP growth averaged 4.2 per cent but is expected to slow to around 3.5 per cent annually in 2009/10. With the exception of consumer price inflation, Senegal's macroeconomic performance has been mixed when compared with the average for Africa (Table 7.1).

Senegal saves less, invests less, and has a larger current account deficit than the average African country. This economic record and the need to improve it give added impetus to the drive to achieve faster economic growth and to accelerate poverty reduction through the expansion of agribusiness in general and the development of agro-industry in particular.

Table 7.1: Selected Economic Indicators of Senegal and Africa

	Area	2006	2007	1980-1990	1991-2007
Consumer Price Index/ Inflation Rate, in %	Senegal	1.9	5.9	6.1	3.5
	Africa	6.5	8.2	13.4	11.9
Gross National Savings/ GDP, in %	Senegal	19.5	23.6	6.4	13.5
	Africa	24.6	24.3	18.8	20.1
Gross Fixed Capital Formation/GDP, in %	Senegal	25.2	28.1	15.8	16.7
	Africa	21.8	23.1	23.0	20.2
Terms of trade (2000=100), a)	Senegal	99.7	105.0	1.9	-1.0
	Africa	131.4	129.2	-2.8	2.3
Current Account Balance/ GDP, in %	Senegal	-9.5	-8.3	-9.4	-6.4
	Africa	5.4	3.0	-2.7	0.0

Source: African Development Bank, African Development Report, 2008-2009, Statistical Annex, CD ROM.

Note: a) For the Terms of trade, the figures for 1980-1990 and 1991-2007 are average annual growth rates. Annual growth rates are computed by calculating the rate of variation between the Terms of Trade indices of two subsequent years. While during the decade 1980-1990 the ratio of Senegal export prices relative to its import prices grew annually by 1.9 per cent, the trend was reversed from 1991 to 2007 when it declined by 1 per cent annually. In other words, over this period the country had to export each year 1per cent more in volume to secure the same volume of imports.

Table 7.2 displays the sectoral distribution of Senegal's Gross Domestic Product (GDP). It shows the rather modest weight of the secondary sector which is around 20 per cent but could be markedly improved to make better use of the non-mining output of the primary sector. In other words, there is scope for a significant expansion of agro-industry in Senegal based on the supply of local inputs, this being a key ingredient for stronger value chains. In the absence of direct data pertaining to it, we can combine the data of Tables 7.1 and 7.2 and so estimate the share of agro-industry to be about 45.7 per cent of all industries and around 9 per cent of Senegal's GDP in 2008.

Structure of agro-industries

In 2008, the Food Industry subsector alone accounted for 40.8 per cent of the country's manufacturing value added (MVA), while the combined output of all other agro-industry subsectors amounted only to 3.4 per cent, a very low share indeed. This gives an indication of the untapped potential of agro-industry and its potential contribution to wealth creation, employment creation, and poverty reduction. The food industry branches with the biggest weights (sugar, grains and animal feed, fats, fish) source their main raw materials from the country's primary sector which means that there is considerable scope for building or strengthening domestic value chains that will keep increased value added in the country while facilitating an export-induced growth dynamics.

Table 7.2: Sectoral Distribution of Senegal's Gross Domestic Product in %

Sector	2006	2007	2008
PRIMARY SECTOR	14.0	12.9	14.7
Agriculture	6.6	5.2	7.4
Livestock	4.0	4.0	3.9
Forestry	0.8	0.9	0.9
Fishing	1.6	1.7	1.6
Mining	1.1	1.0	0.8
SECONDARY SECTOR	19.6	20.1	19.8
Edible oils	0.1	0.1	0.1
Chemical products	1.1	1.2	1.6
Energy	2.4	2.5	2.5
Construction	4.8	4.9	4.6
Other industry	11.2	11.3	11.1
TERTIARY SECTOR	52.9	53.3	53.2
Trade	16.3	16.4	16.4
Transport, mail & telecommunication	10.7	10.9	11.1
Social services	4.8	4.7	4.9
Other services	15.0	15.1	14.7
Public sector	6.1	6.1	6.1
NET TAX ON PRODUCTS	13.5	13.7	12.3

Source: Agence Nationale de la Statistique et de la Démographie, Situation économique et sociale du Sénégal en 2008, Table 17.1. ; www.ansd.sn/publications/annuelles/SES_2008.pdf, page 214.

Table 7.3 shows that the opportunities for agro-industry exports are as yet relatively untapped. However, there is a considerable potential when looking at the agricultural exports of the country. Tables 7.4, 7.5 and 7.6 give an account of the foreign trade situation of the country.

Table 7.3 Relative Production Weights of Industrial Subsectors in Senegal's Economy

Industry	Percentage share
FOOD INDUSTRIES	**40.8**
Processing and preserving of fish, crustaceans and molluscs	4.1
Manufacturing of cereal-based food products	3.0
Candies, chocolates	1.2
Manufacturing of sugar	11.1
Processing and preserving of fruits and vegetables	1.5
Manufacturing of condiments and seasonings	3.5
Manufacturing of dairy products and ice	1.8
Manufacturing of beverages	3.6
Manufacturing of tobacco-based products	1.8
Manufacturing of fats	4.8
Processing of grains & Manufacturing of animal feed	7.1
TEXTILE AND LEATHER INDUSTRIES	**1.6**
PAPER AND PAPERBOARD INDUSTRIES	**1.7**

WOOD AND TIMBER INDUSTRIES	**0.1**
OTHER	**55.8**
Extractive industries	4.3
Chemicals	17.1
Construction Materials	16.2
Energy	14.1
Machinery & Mechanical industry	2.8
Miscellaneous	1.4

Source: Agence Nationale de la Statistique et de la Démographie, Situation économique et sociale du Sénégal en 2008, Table 14.1

Table 7.4: Total Exports by Product Groups, in metric tons, for the years 2004 to 2008

Product	2004	2005	2006	2007	2008
Groundnut products	36,481	37,467	113,530	134,723	20,224
Fish products	120,686	118,712	112,886	111,062	78,344
Petroleum products	638,488	507,139	628,094	448,226	746,482
Phosphates	62,297	10,359	10,798	14,959	164,862
Fertilizers	233,089	121,238	43,723	105,219	143,042
Cotton and cotton-based fabric	19,177	17,033	19,598	21,639	14,104
Phosphoric acid	494,057	435,180	184,062	219,648	182,746
Cement	348,487	698,576	851,494	849,216	935,246
Leather and hides	3,877	4,111	4,647	5,541	4,589
Salt	142,657	185,337	265,303	310,875	275,032
Other products	562,501	875,745	811,154	735,938	704,976
Total exports	2,661,797	3,010,897	3,045,289	2,957,046	3,269,647

Source: Agence Nationale de la Statistique et de la Démographie, Situation économique du Sénégal en 2008, Table 16.2.

There are opportunities for the establishment of new agro-industrial value chains based on Senegal's traditional exports of unprocessed fruits and vegetables (see Table 7.5 for the exports of agricultural commodities). Tomatoes, beans, mangoes, and watermelons are produced competitively and are exported in unprocessed form to Europe, Asia, and Latin America where they are manufactured into processed foodstuffs. Senegal's geographical proximity to its traditional agricultural export markets has favoured the continued export of fresh fruits and vegetables rather than investment in processing units that could generate higher value added.

Table 7.5: Top 20 Agricultural Export Commodities of Senegal in 2007

Commodity	Quantity, in metric tons	Value, in US $1000
Groundnut oil	68,675	67,617
Food prep. nes.	11,627	32,189
Cotton lint	21,415	28,522
Rice broken	73,139	24,729
Tobacco products nes.	1,337	16,972
Tobacco, unmanufactured	1,758	15,984
Cigarettes	1,783	13,710
Tomatoes	8,858	8,639
Beans	6,685	6,512
Pastry	6,581	6,069

Milk, whole dried	1,853	6,048
Cake of groundnuts	29,816	5,937
Mangoes, mangosteens, guavas	8,846	5,169
Flour of wheat	9,331	4,222
Hides, wet salted cattle	4,207	3,992
Food prep., Flour, Malt extract	852	3,820
Molasses	44,023	3,416
Wheat	6,048	2,631
Malt extract	622	2,226
Watermelons	2,314	2,173

Source: FAOSTAT

Table 7.6 present the considerable potential for import substitution in agriculture products and agro-related industries.

Table 7.6: Top 20 Agricultural Import Commodities of Senegal in 2007

Commodity	Quantity, in metric tons	Value, in US $1000
Rice broken	1,018,729	350,397
Wheat	395,742	133,974
Soybean oil	101,776	93,160
Milk whole dried	21,444	79,722
Malt extract	17,455	54,255
Food prep. nes.	20,204	53,684
Sugar refined	69,387	41,377
Palm oil	34,885	30,454
Tobacco, unmanufactured	3,276	28,481
Maize	97,272	24,421
Cigarettes	1,190	23,661
Rice milled	52,950	17,750
Goats	210,000	16,800
Tallow	23,808	15,690
Sheep	260,000	15,500
Onions, dry	95,608	14,414
Meat, cattle boneless (beef & veal)	10,337	14,038
Beverages non-alcoholic	18,720	12,485
Flour of wheat	20,505	10,773
Fat prep. nes.	3,890	9,977

Source: FAOSTAT

Between 2002 and 2008, the number of companies has more than doubled in every sector other than in industry, where the number of units has increased only by 60 per cent (Table 7.7). In its new growth strategy, the government has recognized that investment in manufacturing is less attractive than in other sectors and so it is trying to address this problem. There is, however, a positive side to this; the low level of automation in Senegal's Food and Textile industries means that production techniques are labour-intensive, providing employment opportunities for low-skilled personnel which could contribute to poverty reduction. However, all this is an expression

of a non-dynamic and a non-competitive subsector which is unconnected to value chains that have linkages with the global economy.

Food industry is an important employer as about half of the people working in Senegalese industries and two thirds of the seasonal workers are employed there (Matsumoto-Izadifar, Yoshiko, 2008, p.15).

Table 7.7: Number of Registered Companies in Various Sectors

Sector	2002	2003	2004	2005	2006	2007	2008
INDUSTRY	506	559	657	705	761	802	814
Food industry	215	232	292	310	344	367	378
Textile industry	34	37	42	43	44	44	44
Other industry	257	290	323	352	373	391	392
CONSTRUCTION	222	266	337	370	425	444	453
TRADE	871	1027	1340	1473	1667	1773	1800
SERVICES	1242	1450	1846	1996	2221	2422	2480
TOTAL	2841	3302	4180	4544	5074	5441	5547

Source: Agence Nationale de la Statistique et de la Démographie

As around eighty per cent out of the total number of agro-industrial firms working in the formal sector are located in the Dakar area, there is a great need to develop plans for an industrial de-concentration. These firms benefit from infrastructure, knowledge transfers (as they are often related to foreign firms), and from credit. Most of the other firms in the country do not have these advantages, and so government support is requested for them. The food processing industry is highly dualistic (with export-oriented part large firms producing groundnut oils and canned fish, and smaller firms producing tomato concentrates, refining sugar, flour milling, producing soda water, beer, and other beverages, and milk powder for the domestic market), and there is no strategy to overcome this dualism (Matsumoto-Izadifar, Yoshiko, 2008, p.15). The food processing industry is highly dependent on imported inputs, and there is no strategy to overcome this problem. Both parts of the food processing industry (the export-oriented part and the part serving the domestic market) have specific problems of competitiveness (in marketing, in raw materials supply, in logistics, etc.). Production of tomato concentrates and sugar refining are examples of an industrial use of domestic agricultural products (Matsumoto-Izadifar, Yoshiko, 2008, p.15), but there is no consistent programme to widen the sourcing of raw materials for the food processing industry. In order to cut production costs, tomatoes are even imported from China and Iran, which trend may harm the local tomato producers in the Senegal River Valley. Local small and medium-sized food industries rely on outdated technology and have only a limited production output (Matsumoto-Izadifar, Yoshiko 2008, p.15). Domestic agricultural production is so far not synchronized with the local food processing industry in terms of conservation of product, quality control, transport and logistics, and regular supply of production output. New business models and an upgrading of value chains could help to better coordinate agricultural production and food processing activities.

Because of the crisis with traditional export products (groundnuts and fish), there are high expectations of the potential of new export products, such as horticulture products. The emerging horticulture sector has on the one side an endowment of favourable factors to produce, but on the other side there are severe supply-constraints. Production and marketing assets are quite unevenly distributed, so that the majority of firms lack access to these important assets (Matsumoto-Izadifar, Yoshiko 2008, p.14). A few large commercial firms with connections to foreign firms control the

assets and resources, while the majority of firms and farmers is small-scale and does not have adequate access to these assets.

The fact that the abundant resources in agriculture, forestry, fisheries, and livestock are not exploited in Senegal gave however a signal to policymakers to think about new growth and development initiatives based on agro-industrial development and the promotion of agribusiness. Some new approaches are forthcoming.

Policies for developing agro-industries

Economic reform and agro-industrial development

In common with many developing countries, Senegal's primary sector is characterized by abundant natural resources, a large supply of low-skilled and semi-skilled workers, and the relative scarcity of advanced technological know-how. For many years the country's post-independence macroeconomic policy was based on import substitution through the industrial processing of locally produced primary commodities. This is illustrated by the large number of state-owned agro-industry and mining companies that operated from the 1960s to the 1990s.

Following the Structural Adjustment Programmes (SAPs) of the 1990s, coupled with a stronger market-orientation of the economy, the parastatal agro-industrial sector companies were privatized, but without a clear industrial strategy to accompany the policy reversal. The Senegalese agro-industry was neglected by the Government for many years, which helps to explain the depressed levels of investment in the sector. Moreover, increased competition from Asian producers in the global agribusiness market has undermined agricultural growth and output in Senegal; profitability and employment did not increase in the sector for over a decade. However, the basic issue is how to transform the sector so that value addition can be stimulated, by producing on a competitive basis for local, regional and global markets.

However, this unfavourable situation may improve in the wake of recent policy changes. Two programmes illustrate this change in the policy stance. In 2007, after years of implementing unsatisfactory Strategies for Poverty Reduction (see MdlEF/Ministère de l'Economie et des Finances, 2003a, 2003b), the government has launched its export-driven Strategy for Accelerated Growth (SAG) (PdS/Primature du Sénégal, 2007) that seeks to achieve faster economic growth by scaling-up output in agro-industry. In July 2009, AllAFrica.com reported that the Minister of Industry had announced bold new reforms in the agro-industry sector, including new laws for agriculture, livestock, and forestry. If implemented efficiently, these measures are likely to stimulate investment and to revitalize agro-industry; however the scope of policies is not always made clear and the concreteness of policy measures has to be questioned and clarified.

There are, however, in Senegal severe implementation problems as government machinery is not well coordinated; agriculture development and agro-industrial development could be synchronized and supported in a more cohesive and integrated fashion (see on the coordination problems Matsumoto-Izadifar, Yoshiko, 2008, p. 16). Public agencies play an increasing role, but have limited institutional capacity. The National Council for Rural Cooperation (CNCR) has a coordinating role from the side of the private sector and is linking up with government and donors in policy design and formation. However, too many gaps still exist between government strategies and the needs of the private sector (Matsumoto-Izadifar, Yoshiko, 2008, p. 16). Some limited decentralization of functions for the development of productive sectors is undertaken, through the semi-private National Agricultural and Rural Advisory Agency (ANCAR), in an attempt to involve rural development agencies and local communities (Matsumoto-Izadifar, Yoshiko, 2008, p. 16). It is, however, too early to evaluate the result of these changes.

Policies are also affected by historical processes and impediments resulting from more long-term structural factors. Four factors combine to delineate the market potential of the Senegalese agro-industry. First, Senegal has a long history of urbanization as a consequence of the French colonization which had demonstrable effects on food consumption patterns as well as on the demand for non-food manufactures such as clothing, furniture, and paper products. Second, the country has a large and fast-growing urban population whose consumption basket contains more (high value added) agro-industry products than is the case in rural areas. Third, there is an emerging middle-class with high incomes, Westernized consumption habits, and a capacity to store food for long periods without quality deterioration. Furthermore, consumption of some agro-industry products constitutes a status symbol in some segments of the society. Finally, demand has been fuelled by innovations in tastes and by new preferences encouraged by the global agro-industry corporations through advertising and other forms of product promotion. The market potential for the poorer segments in the Senegalese society has also to be assessed carefully, as there is a trend to look at the urban middle classes when proposing strategies for agro-industry revitalization.

Policy scope and policy coherence are not considered adequately in the context of the new growth strategy. However, the trade and investment policies, the industry and technology policies, the competition and market incentive policies, the policy approach towards regions and rural development, and the long-term fiscal management policies are also important for the realization of agro-industry revitalization. Also important is a better coordination with donors in terms of budget, resource mobilization, programme and project implementation, and realizing sustainable development achievements. Similarly, an improvement in the dialogue between the private and the public sectors should also be an aim.

Public-private sector interaction for agro-industrial development

Senegal does not have a strong record of public-private interaction in agro-industry because the Government has historically favoured production and export of fresh agricultural commodities and, when primary sector commodities were processed locally, it was also the main producer. The private sector's presence in Senegal's agro-industry was significantly enhanced a few years ago with the privatization of many state-owned agro-industry companies. For example, in November 2003, the parastatal company in charge of developing production of cotton and textile products, Société de développement des Fibres Textiles (SODEFITEX), was partly privatized to the Groupe Géocoton, a foreign company, that owns 51 per cent of the capital, while the Government has retained 46.5 per cent, and the remaining capital was allocated to local private investors. In April 2005, the Government also has sold a 67 per cent stake in the company that extracts oil from groundnuts, the Société Nationale de Commercialisation des Oléagineux du Sénégal (SONACOS), to a foreign company, the Groupe Avens.

Agro-industry trade associations are weak and disorganized and have not taken the lead in debates on policy formulation. Furthermore, they are faced with a strong and well-organized food importers' lobby that wields influence through its contribution to customs revenues. Agro-industrial development has to face these political constraints from the side of importers (see Table 7.6 on the agricultural imports of Senegal). However, it is still an open question how the interests of the importers could be successfully balanced by the economic interests of the producers in the country.

This pattern of interests should change, and a strong partnership between Government and the private sector must be one of the foundations of Senegal's current export-led economic growth strategy. Fortunately, the government's new policy package in the Strategy for Accelerated Growth (SAG) should facilitate a dialogue between the public and private sectors, given the central role envisaged for agro-industry in the future. However, although the strategy was launched in 2007, the results so far towards an effective dialogue and a dynamic process of policy change are

not yet encouraging. Dialogue forums are extremely important to discuss all the major issues of the new strategy.

Coordination with donors for agro-industrial development

Coordination with donors is a major policy problem in Senegal. It is reported that (apart from the infrastructure component of aid) the agribusiness component of aid is four times greater than the agricultural production component of aid (Matsumoto-Izadifar, Yoshiko, 2008, p. 19). Although agribusiness support is highly important, the base for a dynamic agribusiness activity is a steady flow of agricultural raw materials. Infrastructure development is of great relevance for agriculture production, but there seems to be much need for direct donor support to agricultural production itself. Also tremendously neglected by donors is the support of local food processing firms in Senegal. The Canadian International Development Agency (CIDA) is assisting the Ministry of Industry in promoting local food-processing, but the coordination failures within the government machinery reduce the probability of an impact on real industrialization processes. The Ministry of Industry seems not to be well placed in the government machinery.

Donor support is highly segmented in Senegal (Matsumoto-Izadifar, Yoshiko, 2008, p. 20). The consequence is that only some functions and areas are served by donor programmes, but not the whole agro-industrial value chain. Coordination problems arise over the whole range of functions and stages of value chains. This leads to curious results, such as overinvestment in some areas and underinvestment in others. Donor support is also suffering from the fact that in Senegal only a co-ordination among donors on an ad hoc basis takes place (Matsumoto-Izadifar, Yoshiko, 2008, p. 20). Programme de Développement des Marchés Agricoles du Sénégal (PDMAS) is however an example for a new trend occurring recently, an improving coordination of donor programmes.

The issues of the timeframe of projects and of their sustainability also give rise to pessimism. It is not well planned how projects and programmes started by donors will continue. This is very important, especially for the larger agricultural and agro-industry projects, as they need also to coordinate with various stakeholders (see on these problems for the larger projects Matsumoto-Izadifar, Yoshiko 2008, pp. 21- 26). Besides the PDMAS and Mise A Niveau projects all the other large agriculture/agro-industry projects have been terminated. This situation should give room for a more continuous evaluation of such programmes and for a revised planning process beyond the original timeframe of the donors; this would allow it the discussion of some alternatives (prolongation of programmes and continuation of project components), and a new portfolio of agricultural and agro-industry programmes could be developed.

Mise à Niveau (Levelling up of Senegalese Enterprises Programme) is, as well as PDMAS, supporting the implementation of the SCA. Mise à Niveau intends to give technical, financial and advisory support to eligible private enterprises, especially also agri-food processors. Support is also made conditional on the firm's commitment to operate in the context of the formal sector. The approach of Mise à Niveau is to support "soft" assets like human resources development and business capacity building rather than supporting mainly "hard" assets like equipment, materials, and inputs (Matsumoto-Izadifar, Yoshiko, 2008, p. 26). It targets especially SMEs, and it is under the direct support of the Ministry of Economy and Finance (and not directed by the Ministry of Industry, again showing the limits of the government machinery in terms of allocating development functions to competent partners). Developing a local packaging industry is a main objective of the programme, and it seems to deliver in this respect. Mise à Niveau is part of the UNIDO-funded UEMOA's regional programme in private sector development for West Africa. Internally the programme implementation unit (PIU) is placed in the frame of the semi-independent SME Development Agency ADEPME. It is not clear how important these donor programmes are in terms of coverage (of firms, farmers, local institutions) and in terms of sales, value added, and employment.

Key policy factors for promoting agribusiness

Enhancing agricultural growth for agribusiness (Policy Factor 1)

In 2005, after decades of unsatisfactory growth in agricultural production, Senegal launched two main initiatives designed to boost agricultural production and to enhance competitiveness in the sector. The Grande Offensive Agricole pour la Nourriture et l'Abondance (GOANA) is designed to achieve food security[3] while the Programme de Développement des Marchés Agricoles du Sénégal (PDMAS) seeks to expand supply for domestic and export markets.

The government hopes firstly that larger production of crops will increase the supply of inputs to agro-industry, which will then be able to exploit economies of scale, thereby lowering the unit costs of production. Secondly, increased agricultural output will enhance the reliability of locally-sourced inputs for agro-industry, while reducing transport costs and procurement delays. Thirdly, increased agricultural production should lead to the more efficient use of land, making it more valuable and attracting greater investment outlays that will make the sector more competitive. Strong agricultural growth would provide the export volume needed to penetrate the larger foreign markets, while simultaneously fostering the adoption of more advanced production and distribution processes.

GOANA includes an investment programme totalling 344bn CFA Francs (US $690 million) with the stated production targets as indicated in Table 7.8.

Table 7.8: Objectives of GOANA (in metric tons)

Crop	Objectives for 2008-2009	Harvests in 2007-2008
Rice	500,000	195,000
Maize	2,000,000	160,000
Millet	1,000,000	320,000
Sorghum	500,000	100,000
Wheat	25,000	0
Fonio	25,000	1,000
Cassava	3,000,000	310,000
Groundnuts for oil	1,000,000	330,000
Cotton	60,000	45,000
Horticulture	720,000	570,000

Source: www.au-senegal.com/grande offensive pour la nourriture et l'abondance (GOANA), Online.

After a few years of implementation, GOANA is deemed to have helped increase the country's agricultural output, but it has also been found lacking in some respects. The first criticism is that not enough attention was paid to the creation of a warehousing capacity that could accommodate increased output, and not enough consideration was given to the characteristics of the end market. Second, while farmers were able to increase their production, their incomes did not rise commensurately. The reason is that their crops did not meet the quality and preference standards of urban consumers, so that the scope for the substitution of agricultural imports was limited, and the output increase has just depressed the prices of local produce. Such was the case for the Senegal River rice in 2008-2009. An effective import substitution was not then achieved, mainly because of quality problems and storage constraints, prompting the creation of new strategies.

PDMAS is a five-year programme of the Ministry of Agriculture (MoA) that is co-funded by the World Bank and other donors, and is designed to develop agricultural markets through the

[3] Press release 30th May 2008, CNCCR/Conseil National de Concertation et de Coopération des Ruraux.

expansion of production. Its aim is to facilitate development of commercial agriculture in Senegal through the diversification of products and markets, the enhancement of the competitiveness of value chains in agriculture and livestock, and through the promotion of value addition (Geomar International, 2004). Specific objectives include:

- Increasing productive capacity through diversification with regards to ecological zones and production systems, and through enhancement of the value of supply of agricultural and livestock products.
- Helping economic agents and smallholders to penetrate high value added market segments at home, in the subregion, and internationally.
- Facilitating a sustainable improvement in the incomes of small rural producers.
- Promoting the emergence of private-public partnerships for the management of innovation processes.

Its geographical coverage includes the Niayes strip, the groundnut-producing region, the Tambacounda region, the Senegal River Valley and the Casamance. The first stage of the programme focuses on the production of fruit, vegetables and meat under irrigation conditions in the Senegal River Delta, covering 2,500 hectares to be farmed by local households and small and medium-sized firms as well as large agribusiness concerns (Geomar International 2004).

The government's assistance is in the form of road construction, irrigation infrastructure, and the provision of storage facilities. PDMAS also seeks to encourage innovation and to support product quality enhancement initiatives. As part of the programme to attract private investors to help modernize agriculture, the government has earmarked land for distribution to different participants. A total of 1,400 hectares will be allocated to family farms, ranging from 4 to 28 hectares each, while small agricultural businesses will be given a total of 600 hectares for individual plots varying in size from 10 to 20 hectares. Domestic and foreign agribusiness firms whose activities are expected to cover the entire value chain will be allocated from 20 to 100 hectares from a total of 500 hectares (Geomar International 2004).

Another more recent programme, initiated in July 2006, is the Plan REVA (Retour vers l'Agriculture, http://www.ipar.sn/IMG/pdf/2006_reva.pdf), aimed at providing livelihoods for unemployed or under-employed people, especially the youth. Because of the high youth unemployment in the country (see OECD/AfDB 2010), this programme is of great social importance. However, the real impact has to be assessed. The government has also developed irrigation programs in support of broader agricultural programs, such as PDMAS, to help secure better and more reliable access to water as a means of boosting of agricultural production. In some of these initiatives heavily subsidized agricultural equipment was distributed to individual farmers or farmers' cooperatives and, in some cases, given away for free.

Upgrading value chains in Senegal's agribusiness (Policy Factor 2)

Senegal's Strategy for Accelerated Growth (SAG) (Source: http://www.sca.sn/) is the main medium-term economic programme, organized around five clusters: Agriculture and Agribusiness, Information and Communication Technologies, Tourism, Cultural Industries and Art Handicrafts, and Sea Fishing, Seafood, and Aquaculture. Under this initiative, value chain studies have been completed for a wide range of crop and livestock products: fruits and nuts, mangoes, bissap, cashew nuts, bananas, millet, sorghum, maize, rice, and cattle (dairy and red meat). There are value chain studies also for handicrafts and for textile weaving. On the basis of these studies three subsectors of potential comparative advantage have been identified, either for export or import substitution:

mangoes, dairy products, and fish products. Some information on these three value chains is presented below.[4]

The value chain for mangoes

In 2007, Senegal produced 84,000 tons of mangoes worth $20.5 million. Steady growth in mango production and the geographical proximity to major markets in Western Europe and North America provided a strong opportunity to develop a value chain but this has proved difficult because some 80 per cent of the crop is produced by small village and family orchards where post-harvest losses are as high as 15 per cent due to improper handling and transport or inadequate storage conditions. Virtually the entire crop is consumed locally or exported fresh without any industrial processing, though a small portion is transformed into juice, syrup or jam by small units with limited capacity to purchase the inputs or to process them on a large scale.

As a result, the "natural comparative advantage" that Senegal could derive from processed mangoes, particularly in the lucrative market for boxed cereals with fruit content, healthy snacks, or purée, is not exploited. In spite of the widespread availability and abundant domestic supply of mangoes in season, little diversification of mango products is practiced and the highly perishable nature of the fresh product forces its prices down and gives little incentive for investing in large-scale mango farms. Even large mango farms that can rely on their own supply of fresh fruits for industrial processing are mostly confined to exporting their crop in a fresh form thus limiting the potential for value addition.

Unfortunately, the Senegalese Government has not yet pursued a policy aimed at increasing value addition from mangoes and has rather engaged in expanding the volume of exports of fresh fruits through the increase in crops production and better conditioning and compliance with international phyto-sanitary standards.

Several factors that should enhance the international competitiveness of the sector are absent from current policies. They include training of producers and operators of processing units, availability of cold storage facilities, international branding of the "Mangoes of Senegal", international marketing campaigns, and affordable and reliable credit facilities for the sector's agro-industrialists.

The value chain for dairy products

The steady demographic growth of Senegal and the emergence of a growing middle class have spurred increasing demand for processed dairy products. In 2007, the country produced 102,343 tons of milk and imported 21,444 tons of dried whole milk valued at $79.7 million, excluding imports of fresh milk and of dairy products. This underscores the large demand for dairy goods and the untapped agro-industrial potential that arises from it. Several private firms have invested in this sector and distribute a variety of products locally that compete favourably with imports mainly from Europe and the Middle East. However, the range of locally produced goods is limited and lacks differentiation, focusing mainly on the most popular and basic items, while shelf lives are short. Despite the significant potential for value addition and repeated lobbying from market operators for state assistance, there are virtually no government policy initiatives to help develop the sector.

A key challenge is the existence of significant entry barriers in the form of the long tradition of reliance on imported dairy products along with strong brand loyalty on the part of the consumers. Because of frequent power outages consumers prefer the longer lasting imported dairy products to local brands, while processors often find it difficult to secure reliable and timely available inputs,

[4] The figures in this section on value chains are published in FAOSTAT/FAOStats.fao.org unless stated otherwise.

including fresh milk. Furthermore, they enjoy little or no protection from imported products that are sometimes marketed locally at "dumped" prices.

Dairy products have historically been an integral part of the Senegalese consumer's diet, especially in the form of sour milk, but with many consumers being reliant on homemade preparations and purchases from informal sector suppliers the demand for agro-industrial produce is limited. However, this is expected to change over time as formal processors take a growing market share without any serious disruption of supplies. Supply growth will depend on the success of breeding programmes to increase milk production, while local processors are constantly seeking to innovate by offering new products such as cheese and margarine, which are very popular among low-income households.

There is considerable scope for developing the dairy industry, given Senegal's vast and thinly-populated hinterland that is suitable for grazing, some excellent government-sponsored research institutes, and a positive approach to public-private partnerships in agribusiness. Again, quality improvements, marketing advances, and branding initiatives directed at local products are key issues that have to be tackled now.

The value chain for fish products

Over the ten-year period from 1998 to 2007, Senegal produced an annual average of 420,000 tons of fish, crustaceans and molluscs, while also granting fishing licenses to a number of fishing nations that exploit its waters. This combined activity illustrates the country's impressive potential for fishing and fish processing.

While world population has been increasing steadily, global fish capture has been constant. As a result, world demand for fish is rising, especially given the growing trend towards healthy eating in developed countries. Given its "natural comparative advantages", such as a long coastline and good fishing grounds, a large number of daily flights to the main cities of Western Europe and the USA, and low labour costs in the fish processing industry, Senegal stands to reap handsome gains from developing its value chain for fish products.

Recently, however, fish stocks near the coastline have started to decline leading to higher costs for fishing vessels that must travel further outside and exploit deeper waters. The higher prices of key inputs, especially oil and electricity, the difficulties of collecting adequate volumes of capture from large numbers of small and unorganized fishermen, and the scarcity of cold storage facilities at landing sites have increased operating costs.

Although fish lends itself to a wide variety of processed products, most of the captures are sold locally or exported fresh without any local processing. Accordingly, there are many opportunities for value addition: fillets, canned fish, sardines, and prepared fish-based foods. More training should be provided to market operators to improve the compliance with health standards in export markets.

Other value chains of national importance

The case study of rice as a strategic crop for agribusiness development in Senegal is of particular interest, especially because of the import substitution potential, the considerable level of agro-processing involved, and because of the human development implications of accelerating the production and consumption of rice in Senegal. Rice is the number one import commodity of Senegal (see Table 7.6) and thus was included in several value chain studies. These studies on the rice value chain development highlight major issues of development and upgrading (Fall *et al*. 2007; Fall and Diagne 2008; USAID 2009a; USAID 2009b; USAID 2009c; Rizzotto and Demont 2010; Demont *et al*. 2010; Rutsaert *et al*. 2010; Ndour, Rizzotto and Demont, 2010; Zotoglo 2010), and Senegal is often included as an example case study. As rice is not included in the Programme de Développement des Marchés Agricoles du Sénégal (PDMAS), there are views to recommend the

inclusion of rice. Obviously the strategic crop rice has to be viewed carefully as it is a crop that is of particular interest to mighty groups of import lobbies in Senegal. Recently, there is more interest in looking at the business opportunities and business prospects that are available all over in the rice value chain.

Targeting commodities and producers for value addition and social inclusion (Policy Factor 3)

Senegal has adopted a two-pronged approach to value addition and social inclusion. On the one hand, through its main agricultural sector programmes, namely GOANA, PDMAS and REVA, it seeks to create employment and to boost income levels for under-privileged groups through increased land-use and provision of other inputs as well as measures at enhanced quality of the produce. Targeted commodities include most of the traditional fruits and vegetable crops and the livestock products (like milk, red meat, etc.). On the other hand, the government is promoting innovation and value addition by expanding its main research centre that specializes in food technology, the Institut de Technologie Alimentaire (ITA), which focuses on five priority areas (source: http://www.ita.sn):

- Cereals and starchy vegetable processing: baking, pastry, food recipes.
- Fruit and vegetables: harvesting, conditioning and processing into jam, syrup, dried fruit, purée and concentrates.
- Processing of meat products: sausages, salami, paté, smoked meats, etc.
- Transformation of fish products: fish paté, canned sardines, smoked fish, dried fish.
- Biotechnology: manufacturing of fermenting agents, vinegar, etc.

These priorities were selected on the basis of either the crops that are traditionally processed locally or their potential for value addition in serving local consumer demand. In either case they are attractive to manufacturers and processors because domestic demand is substantial so that firms can exploit scale economies.

New highly profitable and socially-inclusive value chains are emerging, such as the production of bio-fuel from jathropha. Oil extractors buy the harvest from a large number of small-scale growers to whom they provide seed receiving payment in the form of a share of the crop. Tobacco is another industry that follows the same out-grower business model mainly to secure closer and more reliable sources of input. So there are more potential value chains with a profitable business, but systematic implementation is needed. More information is needed to assess the potential of the domestic market and of the global demand, as well as the potential for value addition and for employment creation.

Strengthening technological effort, innovation capacity, and capability building (Policy Factor 4)

There are three main channels providing technological innovation and human capacity building in Senegal; the Institut de Technologie Alimentaire (ITA), the system of national universities, and the local branches and franchisees of food-processing multinationals.

Institut de Technologie Alimentaire

ITA is engaged in four main areas of technological innovation and capacity building.

- It seeks to develop modern techniques to replace traditional methods of agro- processing. This has contributed to a widening of the range of final products from crop processing. It is currently partnering with the Université Cheikh Anta Diop of Dakar and two Belgian research centres associated with a company, Société de Développement Biologique (SODEBIO), to expand and to market its products.

- ITA offers expert services for quality control of processed crops by assessing the nutritional value of foods, verifying the degree of effectiveness of some industrial products, and ensuring compliance with health and safety standards.
- Drawing on relatively low-level technologies, the Institute has developed a wide array of productivity-enhancing and energy-saving machines for use by small firms and village-level processing units. The purpose of this type of equipment is to increase profitability by replacing tasks that, in their traditional forms, were too cumbersome or costly.
- ITA organizes a number of short courses for food technicians, community-based and private sector agro-industry operators, as well as on-the-job training seminars for targeted groups. It also hosts post-graduate students from local universities and other countries who complete their theses on its premises.

Senegalese universities and institutes

The faculties and departments of Senegalese universities that are most active in agro-industry are the Ecole Supérieure Polytechnique, the Faculté de Médecine et Pharmacie, the Faculté des Sciences, and the Ecole Vétérinaire. Through their curriculum and research activities they contribute to technological innovation and capacity building while in their libraries they also hold technological knowledge that has been accumulated at home and overseas.

A key challenge that they face is that of information dissemination to ensure that research is readily made available to industry practitioners. In this respect a lot has to be done. It is not visible how the interaction between universities and enterprises is working, and how knowledge transfers take place. As universities and research institutions are part of the National Innovation System (NSI), the focus on such a systemic view is important for the future of agro-industries in Senegal.

Local subsidiaries and franchisees of multinational enterprises

Multinational agribusiness firms engage in continuous marketing efforts to introduce the new and better-quality products that consumers are demanding. Activities of this kind in African economies, such as Senegal, are usually supplemented from foreign headquarters whose considerable resources can foster innovation and technological progress in the countries where they operate. It would be important to know more about how R&D activities of these companies are pursued in Senegal, how they do applied research and technological adaptation in their affiliates in Senegal, and how they cooperate with local companies.

In spite of all these efforts, more technological innovation and capacity building is necessary to help Senegal exploit its agro-industry potential. A plan for human resources development related to agro-industries should be worked out. Such a plan should also include the requirements for R&D staff needed for the major research institutions and for the universities in this field of economic activity. To that end the government should increase its expenditures on R&D (research and development), should give tax incentives for private firms that carry out research and development, and should step up efforts to attract foreign direct investment in the industry. So far, Senegal is weak on all these issues.

Stimulating private enterprise development and investment (Policy Factor 5)

In 2007, the Government of Senegal started implementation of the Stratégie de Croissance Accélérée (SCA)/Strategy of Accelerated Growth (SAG) that was organized around five clusters, three of them from the agro-industrial sector (Table 7.9). The five clusters are:

- Agriculture-agribusiness;
- Information and Communication Technologies;

- Tourism, cultural industries, and art handicrafts;
- Textiles and apparel; and
- Fish products and fish farming.

The three agro-industry clusters (agriculture and agribusiness; textiles and apparel; fish products and fish farming) are of great relevance for the new development strategy of the country. The main focus of the strategy is to attract private investment to the agro-industry sector with special emphasis on value addition rather than simply realizing increased production levels. This is particularly the case for fish products and fish farming given the long-term downward trend in fish stocks. The mission of the Agence de Promotion des Investissements et des Grands Travaux (APIX), a public sector agency that was recently privatized, is to attract foreign investment and provide information and support to prospective investors.

Priority is given also to contributing to commercializing informal producers by bringing them into the formal sector and helping them to participate in the value chains that are expected to be the drivers of growth. This point has to be outlined in much more detail in operational plans for the SAG.

Table 7.9: Statistics of Senegal's Strategy of Accelerated Growth related to Agro-industry sectors, 2007-2010

Outcome	Agriculture and agribusiness	Fish products and fish farming	Textile and apparel
Public investment in Billion CFA Francs	34.4	32.0	14.4
Private investment in Billion CFA Francs	55.7	24.4	13.0
Number of jobs created	75,000	n.a.	130,000
Exports (in metric tons)	55,000	35,000	40 Billion CFA

Source: Comité de Pilotage de la Stratégie de Croissance Accélérée, Primature.

In the Africa Competitiveness Report (WB/World Bank *et al.* 2009), Senegal was ranked 100th out of 131 countries on the Global Competitiveness Index (GCI) in 2007, and 96th out of 134 countries in 2008.

The country's five highest scores are for:

- Business costs of terrorism,
- Soundness of banks,
- Degree of customer orientation,
- Firm-level technology absorption, and
- Organized crime.

Senegal scores worst for:

- Public trust of politicians,
- Brain drain,
- Venture capital availability,
- Ease of access to loans, and
- Quality of railroad infrastructure.

Private sector development policies in Senegal should react to these findings in a more constructive and pro-active manner. This includes the proposal to hold discussions on a regular basis at forums between government authorities and private sector associations. Such dialogue forums are – when institutionalized – of great relevance for policy formation, policy reform, and policy implementation.

Facilitating financing for agribusiness and agro-industrial development (Policy Factor 6)

In addition to the traditional banking system that provides loans for agribusiness operators, there are at least five additional channels though which funding can be obtained.

Fonds de Promotion Economique (FPE)

Since its inception in November 1991, the Fonds de Promotion Economique (FPE) has actively supported agriculture and agro-industry by depositing funds in domestic commercial banks for on-lending to small and medium-sized firms and individuals for productive purposes. FPE also provides loan guarantees for potential borrowers without loan guarantees. It offers several special lines of credit for groups such as women, youth, and operators in food agribusiness. Projet d'Appui aux Opérateurs de l'Agroalimentaire (PAOA, a component of FPE) provides loans and grants (through shared costs) as well as technical support to private sector investors in the agribusiness sector. FPE also operates the Private Enterprise Partnership – Africa (PEPAfrica), in collabouration with the International Finance Corporation (IFC), and through PEP funding is provided to small and medium-size firms in various sectors including agribusiness.

Caisse Nationale de Credit Agricole (CNCA)

The Caisse Nationale de Credit Agricole (CNCA) was created in 1984 to provide funding for the agribusiness sector to which it contributes about 30bn CFA Francs annually. To bring it closer to its target clients in rural areas, Caisse Nationale de Credit Agricole (CNCA) operates a network of branches across Senegal offering modern banking services, including Internet banking, money transfers and Automatic Teller Machines (ATMs). CNCA collects deposits from the general public in the normal way but while this has enabled it to build up its deposit-base, there is a risk that a large proportion of its loan portfolio may finance sectors other than agribusiness.

Programme de Développement des Marchés Agricoles du Sénégal (PDMAS)

The Programme de Développement des Marchés Agricoles du Sénégal (PDMAS) was established in 2007 to attract private investors to the agribusiness sector. One of its incentives is to provide grants in the form of shared costs through its "Fonds de promotion à frais partagés" that gives the investor a subsidy equal to 50 per cent of its assumed costs. The "Fonds" seeks to encourage technical innovation by lowering perceived risks in three areas: in commercial partnerships, for private irrigation, and in the red meat value chains.

Agence de Promotion des Investissements et des Grands Travaux (APIX)

The Agence de Promotion des Investissements et des Grands Travaux (APIX) has the dual mission of attracting private investors and promoting Senegalese exports with support for agribusiness at the heart of its endeavours. It actively encourages Senegalese in the Diaspora to invest at home, not solely in real estate. To that end, it highlights the growth clusters in the SAG, three of which are agro-based, as possible avenues for investments. It also serves as a clearinghouse for investors who seek potential partners for joint ventures and other types of collaboration, while maintaining a database of funding sources that can be accessed by the private sector in general and agro-industry in particular.

Decentralized Financial Systems (DFS)

Decentralized Financial Systems (DFS) offer financial services to groups that do not have access to the traditional banking system or firms wishing to offer savings and loan facilities in their community. They can be active in a formal way and can operate as quasi-banks or they can serve informally as rotating savings and credit associations (ROSCAS). Their proximity to members makes it ideal for agro-industry participants, many of whom live in small towns or villages. Three types of DFSs operate legally in Senegal. In 2008, they included 556 Mutuelles d'Epargne et de Crédit (MEC) that had a license issued by the Ministry of Finance (MoF), 373 Groupements d'Epargne et de Crédit (GEC) that are allowed to operate without licenses, and eight Structures Signataires de Convention Cadre (SSCC) that had signed a five-year operating contract with the Ministry of Finance (MoF).

These funding facilities notwithstanding, Senegal still has the reputation of a country where access to credit is restricted, and therefore a greater effort is needed to broaden and to deepen the sources of finance that are available, especially for SMEs.

Improving agro-industrial infrastructure and access of agribusiness to sustainable energy sources (Policy Factor 7)

Although Senegal ranks seventh out of 25 African countries in terms of the availability of transport and communication services (WB/World Bank *et al.* 2009), the transport and communication infrastructure is poor even by African standards. The Strategy for Accelerated Growth (SAG) recognizes this and sets out an ambitious infrastructure-building programme with massive investment in roads, bridges, airports, and port facilities that will primarily benefit agribusiness.

A pervasive weakness is electricity supply for which Senegal is ranked 112th out of 134 countries in the Africa Competitiveness Report (WB/World Bank *et al.* 2009), underlining the degree to which inadequate energy supplies constrain economic development. Furthermore, electricity tariffs have increased sharply in recent years contributing significantly to the already-high cost of doing business in Senegal. More action is needed to reverse this trend. There are however some entries to this topic in the SAG (see RdS/Primature 2007).

Public-private partnerships in the provision of infrastructure could be a partial remedy and to that end the government has initiated BOT (Build Operate Transfer) infrastructure schemes and toll roads, while also awarding licenses to private operators for rural electrification. However, these schemes need to be scaled up so that they can be a significant improvement in power supply.

Developing and exploiting local, regional and international demand (Policy Factor 8)

The SAG is the single largest economic package in the history of Senegal whose main objective is to increase the quantity and quality of agro-industrial production. In seeking to expand agricultural output, Senegal is positioning itself to capture an increasing proportion of domestic demand while winning a larger share of subregional and global markets. This supply-driven strategy will succeed only if the agribusiness sector improves its competitiveness, meets international standards in respect of health and hygiene, and overcomes non-tariff barriers that still restrict foreign trade.

Factors favourable for rapid export expansion include the country's membership of two relatively well-integrated Regional Economic Communities (RECs): the Economic Community of West African States (ECOWAS) and the Union Economique et Monétaire Ouest Africaine (UEMOA). Senegal is also a beneficiary of the US Africa Growth and Opportunity Act (AGOA), the European Union's EBA/ "Everything But Arms" trade preference programme and the Economic Partnership Agreements (EPAs) initiative. Senegalese firms have the capability to absorb transferred technology, thereby enhancing their competitiveness both at home and abroad. Tradepoint, Senegal was established in February 1996 to disseminate trade-related information to promote exports and to facilitate partnerships among trade operators. It operates under the

Ministry of Trade (MoT) and also aims to build the capacity of business operators to enhance their efficiency. It serves the private sector, with special emphasis on small and medium enterprises, and the government in its efforts to communicate with the business community.

Constraints that the Senegalese agro-industry must overcome for expansion to become export-led include: the lack of product sophistication, the limited capacity of storage facilities at export outlets (airports and border towns), the high domestic taxation, the excessive bureaucracy, and the costly air transport system. Being one of the industrially most advanced countries of the subregion Senegal stands to benefit from UEMOA's Common External Tariff (CET) by exporting its agro-industry output to the region, but the private sector's attempts to set up subsidiaries and sales outlets in neighboring countries have fallen foul of bureaucratic obstacles in host countries and racketeering by customs officials and security forces. Furthermore, the creation of cross-border value chains is underdeveloped due to poor coordination and lack of effective partnerships with businesspeople in UEMOA member states.

Senegal's export promotion strategy (EPS) is supported by the Association Sénégalaise de Normalization (ASN) whose mission is to develop and to disseminate norms and standards that help operators to improve their competitiveness and to improve local consumers' appreciation of domestic products. In the same vein, the Institut de Technologie Alimentaire (ITA) helps local agro-industries to comply with international standards and to improve the quality of their products. Unfortunately, at this juncture, these facilities are insufficient in scope and in geographical coverage for a country with the strong ambition to achieve export-led economic growth. Reviewing these eight key policy factors, it is becoming quite clear that awareness of necessary policy and implementation measures has increased in recent years in Senegal, but the level of implementation of proposed strategies and programmes is still limited. Even data coverage and availability of information on the implementation, results and effectiveness of policies, programmes and strategies are quite scarce.

The policies proposed in the context of the SAG are more inclusive and also more interventionist than the policies that have so far been pursued in Senegal, including subsidization of programs and inputs, selective trade protection measures, a more active involvement in finance sector development, government support of infrastructure and investment promotion measures, and an array of facilitating policies towards the promotion of the private sector. The main policy actions are summarized in a synopsis in Table 7.10 below:

Table 7.10: List of recommended policy actions for promoting agribusiness and supporting agro-industry-based economic growth

Key Policy Factor No.	Policy action	Current policy	Policy recommendation
1	Enhance agricultural growth for agribusiness	Government's Strategy of Accelerated Growth Implementation of programmes to increase agriculture output (GOANA, PDMAS, REVA)	Secure land ownership, and new land tenure law Enhance irrigation programme Revitalize farm extension policy Expand farm training in regular curriculum, and increase number and quality of agricultural colleges
2	Upgrade value chains	Value chains are encouraged in fruits, vegetables, and meat but with limited processing component	Increase fiscal incentives for value chains Expand producer training for processing Encourage and support cooperatives Generalize quality control and compliance with international standards
3	Targeting commodities and producers	Commodities: traditional output in agriculture, livestock, and fishing Producers: farmers, village cooperatives, small firms, and large agribusiness companies	Provide some protection from main rival imports Identify and promote exports for target value chain products Expand new industrial products (Jathropha, Tobacco, etc.) Attract agro-industry multinationals
4	Strengthen technological effort, innovation, and capacity building	Research and training activities of ITA, universities, and subsidiaries of MNEs	Multiply rural extension training centres, and expand their curriculum Augment research on agro-industry Increase number of quality certification centres Better dissemination of new techniques requested
5	Stimulate private enterprise development and investment	Strategy of Accelerated Growth (SAG) encourages and supports private investment Government's efforts to create friendly business climate APIX promotes private investment	Remove main obstacles to private sector development (red tape, corruption, ensure reliable access to water, energy, etc.) Secure input supply lines (customs clearance, local feeder roads) Liberalize lease of large tracts of land to large firms Public-private partnerships in joint ventures Initiate special fiscal incentives for agro-industry Increase public investment in infrastructure
6	Facilitate financing for agribusiness and agro-industrial development	Creation of various financing facilities (FPE, CNCA, PDMAS, DFS)	Increase subsidized lending to agro-industry Provide title deeds on land to farmers and investors Expand number and coverage of Decentralized Financing Systems (DFSs)
7	Improve agro-industrial infrastructure and access to sustainable energy sources	Infrastructure development component of the Strategy of Accelerated Growth (SAG) Programmes of BOT, licenses for rural electrification	Expand granting of rural electrification licenses Subsidize use of renewable energy Speed up creation of industrial parks with tax incentives
8	Develop and exploit local, regional and international demand	GOANA, PDMAS and REVA are mainly focused on local markets	Strengthen input subsidization policies Integrate local producers with large foreign distribution chains Senegalese embassies to assist trade missions and to provide trade information

Visions, Plans of Action and Way Forward

Rather than recommending a whole new set of policies, the Plan of Action aims to strengthen areas of weakness, enhance winning strategies, and exploit existing or potential opportunities. The Plan of Action details the key policy elements that are related to the eight policy factors that were examined above, and, when these are properly integrated into the existing framework of policies in Senegal, will constitute a new and enlarged policy framework.

The Government of Senegal has identified agribusiness and agro-industry as the key pillars of its economic and social strategies and has taken bold steps to revitalize them in order to spur growth, create employment, and reduce poverty. Although agro-industry is the largest component of the country's industrial sector and has the potential to increase considerably the share of Manufacturing Value Added (MVA) in national output, it is so far not growing as fast as other sectors, in part reflecting the absence of decisive government action in the past in the field of industrial policy. A number of initiatives, such as GOANA, PDMAS and REVA, seek to enhance agricultural production but do not yet include industrial processing. Therefore, they may help to improve food security or to win new export markets for unprocessed produce but, without constructive action to foster agro-processing, value addition effects will remain minimal.

When compared with agriculture, agro-industry has been relatively neglected, and targeted policies are needed to help unleash its potential. The case study on Senegal contains more than thirty recommendations that would supplement and broaden the frame of current policies and would provide a more comprehensive framework for action. The resulting Plan of Action is largely consistent with current policies, but complements them in areas where policy is either absent altogether or is ineffective. The timing is opportune because the Government of Senegal has recently announced a major overhaul of agro-industry policy, designed to enhance value addition for locally produced crops, to find an industrial outlet for the higher volumes of agricultural production, and to strengthen the country's value chains.

The case study on Senegal highlights the crucial role of Government in the design and implementation of successful agro-industry strategies, while underscoring the importance of public-private partnerships in achieving the ambitious goal of turning the sector into a reliable and sustainable tool for long-term development. These public-private partnerships, combined with determined actions on the development of human resources, on infrastructure building, and on providing for an enabling legal, fiscal, and administrative environment, would significantly increase the likelihood of raising the country's economic profile and lifting large segments of the population out of poverty.

The ten years ahead will be decisive for success as implementation of policies and programmes have to be scaled up vigorously so as to use fully and effectively the window of domestic, regional and global opportunities that is now becoming visible.

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Abbreviations and Acronyms

AfDB	African Development Bank
ADEPME	semi-independent SME Development Agency
AGOA	Africa Growth and Opportunity Act (trade preference initiative of USA)
ANCAR	National Agricultural and Rural Advisory Agency
APIX	Agence de Promotion des Investissements et des Grands Travaux
ARC	Africa Rice Center (AfricaRice)
ASN	Association Sénégalaise de Normalization
ATMs	Automatic Teller Machines
APT	Agribusiness and Trade Promotion (ATP) Project
BOT	Build Operate Transfer (PPPs)
CET	Common External Tariff (UEMOA's CET)
CNCA	Caisse Nationale de Credit Agricole
CNCCR	Conseil National de Concertation et de Coopération des Ruraux
CNCR	National Council for Rural Cooperation
DFS	Decentralized Financial Systems
DSRP	Document de Stratégie de Réduction de la Pauvreté
EBA	"Everything But Arms" (trade preference initiative of the European Union)
ECOWAS	Economic Community of West African States
EPAs	Economic Partnership Agreements
EPS	Export Promotion Strategy
FAO	Food and Agriculture Organization
FCFA	Francs Communauté Financière Africain
FNRAA	Fonds National de Recherches Agricoles et Agro-alimentaires, Dakar, Senegal
FPE	Fonds de Promotion Economique
FYPs	Five-Year Plans
GEC	Groupements d'Epargne et de Crédit
GDP	Gross Domestic Product
GOANA	Grande Offensive Agricole pour la Nourriture et l'Abondance
HDI	Human Development Index
IFC	International Finance Corporation
ISI	Import Substitution Industrialization
ITA	Institut de Technologie Alimentaire
Mt	metric tons
MdlA	Ministère de l'Agriculture
MdlEF	Ministère de l'Economie et des Finances
MdlAHRSA	Ministère de l'Agriculture, de l'Hydraulique Rurale et de la Sécurité Alimentaire
MdMITPAPMEs	Ministère des Mines, de l'Industrie, de la Transformation des Produits Alimentaires et des PMEs
MoA	Ministry of Agriculture
MoT	Ministry of Trade

MEC	Mutuelles d'Epargne et de Crédit
MoF	Ministry of Finance
MVA	manufacturing value added
OECD	Organization for Economic Cooperation and Development
SAPs	Structural Adjustment Programmes
PDMAS	Programme de Développement des Marchés Agricoles du Sénégal
PAOA	Projet d'Appui aux Opérateurs de l'Agroalimentaire
PEP-Africa	Private Entreprise Partnership – Africa
PMEs	Petites et Moyennes Entreprises
PPPs	Public Private Partnerships
PRSs	Poverty Reduction Strategies (PRSs)
PdS	Primature du Sénégal
R&D	research and development
RECs	Regional Economic Communities
Reva	Retour vers l'Agriculture
ROSCAs	rotating savings and credit associations
SCA	Stratégie de Croissance Accélérée
SAG	Strategy for Accelerated Growth
SODEBIO	Société de Développement Biologique
SODEFITEX	Société de développement des Fibres Textiles
SONACOS	Société Nationale de Commercialisation des Oléagineux du Sénégal
SSCC	Structures Signataires de Convention Cadre
UEMOA	Union Economique et Monétaire Ouest Africaine
UNIDO	United Nations Industrial Development Organization
UNDP	United National Development Programme
USAID	United States Agency for International Development
WB	World Bank
WEF	World Economic Forum

Chapter 8 | South Africa

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Introduction: the case for agro-industrial development

South Africa has a well-developed, sophisticated agro-processing sector that competes in world markets. This is a function of the level of economic development in South Africa, and in this sense the South African situation differs markedly from that of less developed African countries. One of the best recorded features of economic growth and development, also reflected in South African economic development experience, is the structural change characterized by an increase in the share of manufacturing in economic activity, accompanied by a fall in the share of primary production in agriculture and mining. But changes in sector contributions do not only apply to the contribution of the main sectors (A to Q of ISIC Rev 3) to gross domestic product (GDP), but also to the main groups that represent manufacturing (ISIC 15 to 37). As countries proceed along the route of industrialization, a substantial change in the contributions of the main groups to manufacturing value added (MVA) occurs. During the early stages of industrial growth light industries that produce predominantly consumer goods experience the fastest growth in net output (value added) and employment. These industries are noted for their lower levels of capital intensity, their greater labour intensity and the lower level of skill requirements. In the process of industrialization, heavy industry tends to overtake light industry in its contribution to GDP.

Developing countries are encouraged to focus their industrial development policy on the development of the light industry during the initial phases of development. In the dynamic interpretation of comparative advantage these industries, with their greater labour absorbing capacity and lower skill and capital requirements, are considered to be a better fit to the comparative cost advantage of the typical developing country, also those in Africa. It should be noted that the definition of 'light industry' applies in general (on average), and that many exceptions with regard to production characteristics can occur. In the food industry, for example, tinned milk is produced in a capital-intensive fashion, and a paper mill is also capital-intensive.

The South African economy, although part of sub-Saharan Africa (SSA), in fundamental respects differs from the typical SSA economy. Although relatively small in the world economy, the South African economy is the "giant" of Africa. The country is home to 6 per cent of the SSA population, but in 2008 has produced 28 per cent of the sub-continent's GDP (World Bank, 2009). Furthermore, South Africa's *per capita* income (Gross National Income/GNI) of $5,730, which places it in the category of higher middle-income countries, does not provide a proper reflection of the level of industrial and infrastructure development. The country has a manufacturing industry that is relatively sophisticated and an agricultural sector that is dominated by modern, large-scale farming that uses relatively capital-intensive and advanced technology in production and distribution. The development of agriculture and down-stream agro-industry presents challenges that are significantly different from the "typical" SSA economy where the challenge is to develop a commercial farming sector and down-stream processing industries.

The South African economy has over time gone through the conventional structural change associated with economic development, namely a change in the relative contribution of different economic sectors with the share of industry (notably manufacturing) in economic activity increasing at the cost of the primary sectors, especially agriculture. The contribution of agriculture to gross value added has consistently declined from 21 per cent at the start of the 1920s to the

current share of between 3 and 4 per cent. The contribution of mining has also declined, but less dramatically so. The contribution of manufacturing has increased to a high of 23 per cent in 1980-82, but has since fallen to below 20 per cent (UoSA/Union of South Africa 1960, and SARB/South African Reserve Bank website).

Development of agro-industries and promotion of agribusiness have occupied for decades an important position in the South African economy and society and in the economic and social policy context. The inputs and services sectors that are related to agriculture and agro-industries are also highly developed in South Africa.

Structure and dynamics of agro-industries

Structural changes and development of agro-industries

Within manufacturing substantial transformation has also taken place, with the contribution of light industry falling and that of heavy industry increasing. Light industries are typically agro-industries, that is, industries that add value to primary agricultural inputs. These industries are listed in Table 8.1.

Table 8.1: ISIC Classifications

ISIC Code	Product
15	Food and beverages
16	Tobacco products
17	Textiles
18	Wearing apparel
19	Leather products
20	Wood and products
21	Paper and products

In 1925 light industry contributed 63 per cent of Manufacturing Value Added (MVA) and 60 per cent of job opportunities in manufacturing. Food, beverages and tobacco was the most prominent subsector, contributing 32 per cent of MVA and 28 per cent of employment, followed by paper and printing with 11 per cent, and textiles, clothing, leather and footwear with 10 per cent of MVA (McCarthy 1988, Table 1). Protectionist policies served textiles, clothing, leather and footwear well, allowing these industries to increase their share of MVA to 16.7 per cent by 1946. However, aggregate light industry, which by and large is responsible for adding value to agricultural produce, has experienced a fairly consistent decline in relative importance. In 2008 it contributed about 30 per cent to MVA (Quantec Research). What is noticeable, however, is that food, beverages and tobacco sectors declined consistently until the 1980s but then recovered their relative importance by growing their share in MVA to 18 per cent in 2008 (Quantec Research). The textiles and clothing group did not experience a similar turnaround, but continued its decline. This sector has faced increasing difficulty to prosper or even to survive in a trading environment characterized by increasing foreign competition, especially from Asia and China in particular. It currently contributes about 4 per cent to MVA, which is less than a quarter of the share it enjoyed in 1946, and shows all the signs of being a sunset industry (McCarthy 1988: Table 1; Quantec Research).

The decline in the relative position of light industry was accompanied by a commensurate increase in the contribution of heavy industry, characterized by fast growth in base metals and metal products and chemicals. However, during the period after World War II transport equipment received special encouragement from the government that aimed to grow the automotive and

components industry. This industry currently is the major employer and income generator in the manufacturing sector.

The South African experience reveals a very clear pattern of sector transformation in manufacturing, namely a distinct shift from adding value to agricultural products (including fishing and forestry as minor subsectors) to adding value to mining output. The latter is reflected in the strong growth in motor vehicle assembly and components production (the latter absorbing a substantial proportion of platinum output in the production of catalytic converters), production of metals and metal products, and even chemicals which in South Africa had been boosted by a major player, SASOL, using coal in the production of petroleum and a range of chemical products.

The question is: what do these structural transformations mean for agro-industrial development in South Africa? Can changes in favour of these more labour-intensive industries, which will be more attuned to the needs of an economy facing severe problems of unemployment and poverty, be expected? Two possible routes to analyze the prospects of agro-industries can be identified: the first is to discuss the benefits that a change in government policy might hold, specifically those contained in a new direction of trade policy, which has still to be published, and a new direction in industrial policy as contained in the recently published second Industrial Policy Action Plan (IPAP 2: DTI, 2010). These policies have a greater emphasis on government intervention and favour an active industrial policy, in contrast to the more market-oriented policies and trade liberalization measures of the post-1994 years. The current mantra of government is that trade policy must inform industrial policy, with the latter aiming to encourage selected economic sectors and employment clusters.

The new Industrial Policy Action Plan (IPAP 2: DTI, 2010) provides some indication of whether agro-industry will benefit from government policy. The Action Plan earmarks 12 sectors for support: agro-processing; automotive products and components; capital equipment and machinery; mineral beneficiation; plastics, pharmaceuticals and chemicals; clothing and textiles; bio fuels; forestry, paper, pulp and furniture; cultural industries and tourism; and advanced manufacturing (which include the nuclear and aerospace industries). Agro-processing, clothing and textiles, bio-fuels, and the forestry-related value addition products range fall within the category of agro-industry, but these may be countered by the development of the other subsectors that will add value to mineral products. What is disconcerting, if taken as a sign of what can be expected in terms of policy initiatives, is the earmarking of the financial support contained in the plan. The financial support will go disproportionately to the automotive and clothing and textile industries. These two sectors will be given more than half of the support of R (Rand) 8.2 billion, with R2.6 billion to be allocated to automotive products and components and R1.7 billion to clothing and textiles (DoNT/Department of National Treasury, 2010).

The second route to discussing the prospects of agro-industry is to focus on the role of direct expenditure programmes from government for the growth of agro-industry rather than focusing on specific industrial policy initiatives. It is virtually inevitable that the development of the economy and specifically the much needed poverty-reducing growth and policy programmes – in the form of social grants, infrastructure spending and public works programmes – will result in the growth of the purchasing power of the poor. A consideration of elementary income elasticities of demand will suffice to raise the prospect that such developments will benefit agro-industries in particular, since the poor have a higher average and marginal propensity to spend money on the products of agro-industries (ranging from food to clothing and furniture) than the higher-income echelons of society. In other words, as the poor tend to spend a higher percentage of their income on agro-industry products, an increase in the purchasing power of these individuals could be to the benefit of agro-industry to the extent that these products remain an important part of their consumption basket.

However, these are policy discussions from the point of view of agro-industrial development; the macroeconomic policy of the country nonetheless remains cautious with regard to financial support for industrial policy initiatives and with regard to financing poverty reduction programmes.

A further issue that could have an important impact on agro-industry is the state and development of the primary sector that produces the output that is to be processed. A growing agro-industry will benefit the farming sector, but equally growth in farm output will serve to encourage and facilitate the growth of agro-industry and of agribusiness. In this regard, the challenge of land reform is important.

In a country noted for a highly unequal distribution of land, land reform is an imperative, but from the perspective of developing agribusiness the process of land reform must be of such a nature that the capacity to produce agricultural products must at least be maintained but preferably expanded.

Supporting agro-industry and agribusiness will also have important implications for the improvement of developmental indicators, such as the Human Development Index (HDI). While South Africa is ranked 78th in the world in terms of GDP *per capita*, it is only ranked 129th when considering the wider ranging HDI measure. In such an important indicator as life expectancy at birth, South Africa is only ranked 158th in the world[1]. Many of the poorest members of the country's population are either directly or indirectly dependent on agro-industry and agribusiness, and the expansion of these industries would greatly benefit these individuals. This, in turn, would contribute to the achievement of the Millennium Development Goals (MDGs), specifically Goal 1 of eradicating extreme poverty and hunger.

Recent developments in agriculture and agro-industries

Agro-industry is defined in the UNIDO Industrial Development Report (UNIDO 2009, p. 58) as '...post-harvest activities involved in the transformation, preservation and preparation of agricultural products for intermediate or final consumption'[2]. Local agro-industrial advances are vital for the profitability, sustainability, and the ultimate development of the primary sector in South Africa. South Africa has over the years developed a competitive agro-processing sector. However, there are some factors which have retarded this growth, such as shortage of skills, a harsh and often unpredictable climate, the property laws that favoured the minority, and a greatly skewed land ownership. In addition to these factors, poor and uncoordinated agriculture policies had unintended effects on the development of the rural community and have hindered growth and investment in this crucial sector. Commercial farming and the corresponding agro-processing industry in South Africa have a long history of statutory intervention that included laws and regulations that strongly affected the pricing, financing, and foreign trade of primary products and value added goods[3].

During the 1980s and the early 1990s, the South African government began to move away from the aggressive interventionist policies that were created to protect domestic farmers and agro-industrial producers from highly competitive foreign imports. Such protective measures were, in time, perceived as slowing progress and hindering productivity growth, with local farmers and international institutions (most notably through the GATT negotiations) demanding a more market-based approach to agricultural policy making. The strongly inward-oriented policies subsequently made way for a market-based pricing system, as strong liberalization measures

[1] Refer to the UNDP Human Development Report (UNDP, 2010) for a full discussion on these figures.

[2] The importance of agro-industry is reflected by the fact that its contribution to total manufacturing is estimated at 61 per cent in agriculture-based countries, 42 per cent in countries in the process of structural transformation, and 37 per cent in urbanised developing countries (UNIDO, 2009:58).

[3] For a more detailed discussion on this topic the reader is referred to Vink and Kirsten (2000).

followed on all trade fronts throughout the 1990s in the domestic market.[4] Most barriers to entry were significantly lowered and tariffs reduced, while government's role in subsidizing the primary sector and its ensuing value addition process was greatly curtailed. Following the country's move to full democracy in 1994, emphasis was also placed on correcting past injustices through land reform and empowerment programmes for the benefit of the previously disadvantaged rural poor.

It is, however, also argued that the speed of deregulation and of reform activity may have left many local farmers and consequently the entire agro-industry vulnerable to the floating Rand exchange rate, the international shocks, and the competition from highly productive foreign producers. Vink and Kirsten (2000, p. 43), in contrast, found out that the strong deregulatory process that had liberated the agricultural sector, on balance, led to increased productivity and competitiveness amongst local primary producers, ultimately resulting in a net welfare gain to the South African economy.

It is clear that the current global environment poses both threats and opportunities for the domestic agricultural sector, so that constructive public policies still need to be in place to facilitate domestic funding and foreign investment, while meeting growing infrastructural needs remains imperative. South Africa has traditionally had a large primary export market[5], but the challenge remains for the local producers to add value to such raw produce, thereby contributing to economic development at a rural and national level. The relatively low cost of power and labour, coupled with the high diversity of potential production[6] and incentive schedules that were created to stimulate agro-industrial development, should in principle make South Africa an attractive investment destination for agro-processing activities. In reality there are, however, many challenges that the domestic agro-processing sector faces, and these may hinder its development if they are not aptly addressed. Such challenges include the lack of skills and the low productivity of the workforce, high transport costs and an often unreliable transport system. Furthermore, non-tariff barriers (NTBs) from developed regions hamper domestic development as local producers have difficulty in complying with strict foreign standards in order to facilitate export-led growth. These challenges need to be addressed, while keeping in mind that in many agricultural sectors increases in income and actions with regard to supporting public intervention are slow to filter through to employment creation and fixed investment in capital.

[4] This was contemporaneous with an unprecedented worldwide move towards deregulation and liberalization of agricultural markets.

[5] South Africa is the world's top exporter of avocados, tangerines, and ostrich products, second largest exporter of grapefruits, third largest exporter of plums and pears, and fourth largest exporter of table grapes (Mkhabela and Vink, 2006: 2).

[6] South Africa covers 1.2 million square kilometres of land and has seven highly distinct climatic regions, ranging from Mediterranean climate to warm tropic andsemi-desert climates (Saungweme, 2009: 6).

Box 8.1: The South African Textile and Clothing Industry

The importance of the textile, footwear and apparel industry to South Africa traditionally stemmed from the contribution made to unskilled and semi-skilled employment, especially for women. In 1988 the estimate for formal and informal employment in this industry was close to 300,000 workers, representing 2.8 per cent of formal and informal manufacturing employment, while the industry only contributed 1.1 per cent to total goods production. In 2008, the employment contribution was down to 1.23 per cent, while the contribution to output came to 0.8 per cent.

The persistent inefficiencies of the industry came to the fore from 2003 onwards, when the Rand appreciated significantly and the improved export performance of the preceding few years disappeared rapidly. Apart from the depreciation of the Rand, another factor that undoubtedly played a major part in the changing fortunes of the industry was the rapid rise in imports, in particular from China, over this period; imports of wearing apparel from China have soared between 2003 and 2006.

This rapid rise prompted the government to negotiate a quota regime on selected lines of wearing apparel and textiles with their Chinese counterparts for a two-year period between 2007 and 2008. While these measures were relatively effective in reversing the trend in apparel imports from China, aggregate imports of wearing apparel were not affected to the same extent as importers found alternative, low-cost markets from which to source. Production of textiles, wearing apparel, and footwear managed to return to (and even to exceed) the 2003 production levels after the drop in production between 2004 and 2006.

The quota regime provided the South African manufacturing industry with some breathing space from Chinese imports for the two-year period, but the aggregate effect was not as pronounced. While production and export performance certainly improved under the quota regime, the same cannot be said for employment statistics. The number of people employed in the textile, footwear and wearing apparel manufacturing industries continued to decline throughout 2007 and 2008. Given that the significance of the clothing and textile manufacturing industry for the South African economy has traditionally been the number of unskilled and semi-skilled jobs that it provides, as opposed to its rather negligible contribution to output, this is a major concern.

Source: Van Eeden 2009

The domestic agricultural sector reflects a lack of cohesion and an inability to specialize so as to produce a clear comparative advantage. This implies that the benefits accrued often do not translate into industry specialization or social uplifting through job creation. An example of this is the South African clothing and textile industry (see Box 8.1 above).

Another feature of the South African agricultural sector over the last few decades has been the decline in the relative importance of its contribution to gross value added (GVA) in the economy. The relative contribution of agriculture to annual GDP has consistently declined over the last few decades from an average of 9.1 per cent in the mid-1960s to below 3 per cent in the mid-2000s[7], compared to other sectors such as the mining and manufacturing industries. This figure may, however, downplay the importance of the domestic agricultural industry. It should be noted that the decline in industry importance is only *relative* and also does not take account of the indirect impact it has on backward and forward linkages in the manufacturing industry. In future, agro-processing could play an increasingly important role in the economy. This will depend on domestic policymakers ensuring that agricultural resources are fully utilized and that the value addition process in the primary sector reaches its full potential. This may be sought through the identification of industries that have sound growth prospects, ensuring ease of market entry, support for small agro-producers, and the initiation of strong supportive institutions.

Government's involvement in the agricultural sector should at best be limited to correcting market imperfections and the skewed distribution of incomes, land, and social and economic opportunities. The impetus should, however, remain on ensuring that private enterprises and investments are the main drivers of industry development. It is therefore a delicate balance between the state and the private sector in agro-industrial development that is requested.

[7] This constitutes a relative decline in sector contribution of 67 per cent.

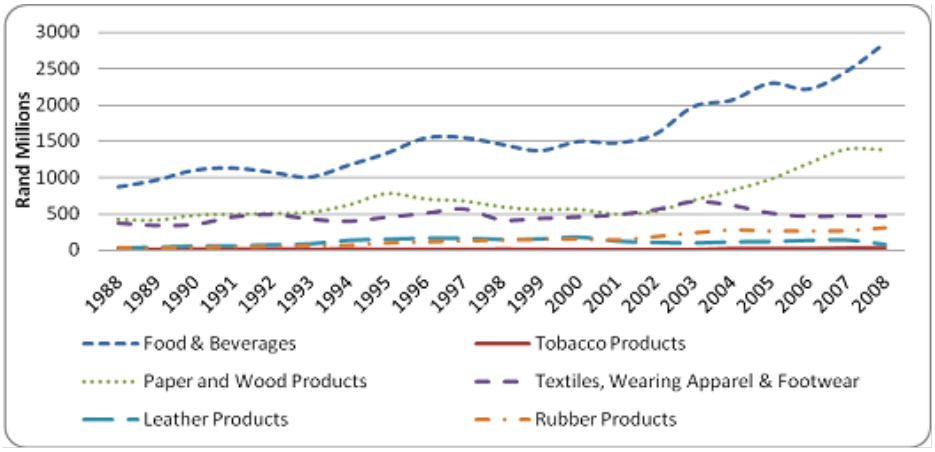
Contribution of agro-industry to foreign trade, production and employment

According to the Industrial Policy Action Plan (IPAP) (DTI, 2007a), the agro-processing sector in South Africa contributes around 10 per cent annually to GDP. In 2005, the sector employed 183,000 people. IPAP (DTI, 2007a, p. 24) reported that: "The sector can generate relatively low-skilled job opportunities and can contribute to more geographically balanced economic development. It has strong backward linkages with the primary agricultural sector, which employs 10 per cent of the country's labour force for which a large number are women, particularly in rural areas. The sector is endowed with some of the world's sought-after delicacies such as Rooibos, ostrich and honey bush products." Looking closely at developments within subsectors, potential can be better assessed. The contribution of various subsectors of agro-industry to the economy is different, in terms of employment, value added, etc.

The period under review is from 1988 to 2008 as dictated by the availability of data on South African international trade flows, production, and employment in agro-industries. These indicators will be discussed both in terms of absolute values and their contribution to total trade, production, and employment in South Africa. In each case, the six different subsectors of agro-industry are shown in separate time series on the same graph so as to identify not only the trends in the respective agro-industries, but also to compare these to movements in other South African agro-industries. Data for the period 1988 to 2008 (Figure 8.1) indicate that food and beverage products contribute most to agro-industry exports, followed by paper and wood products, and textiles, wearing apparel and footwear. Tobacco products, leather products, and rubber products made only a minimal contribution to South African export earnings.

An encouraging development on the export side is the upward trend of both food and beverage and paper and wood products in the exports between 1988 and 2008. The upward trend over the period does indicate an increased presence in export markets for South African food and beverage and paper and wood products. The export trend of tobacco products and of rubber products has also been positive, although at a much lower level than that of food and beverage and paper and wood products.

Figure 8.1: South African Agro-Industry Exports in Nominal Rand Millions, 1988 to 2008

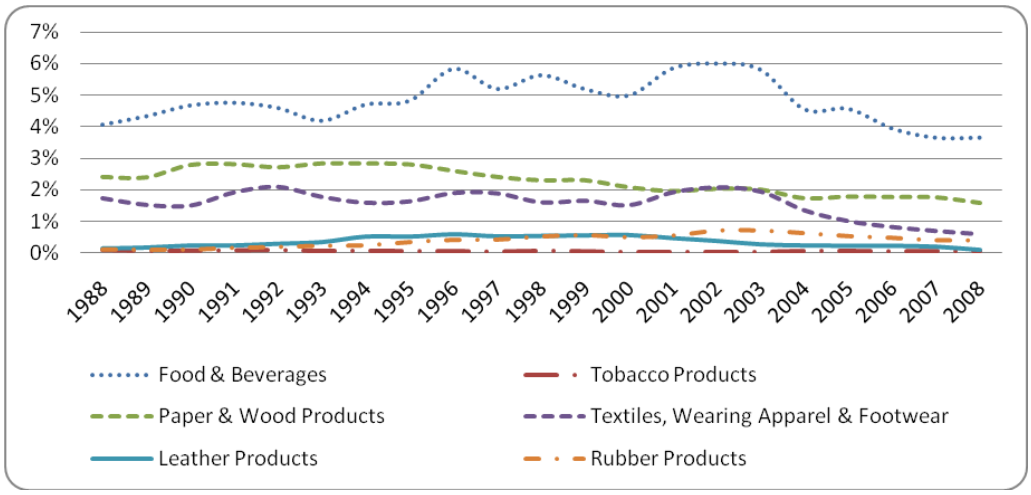


Source: SARS[8]

Figure 8.2 however indicates that, for most of the major groups, the contribution to total exports has declined over the period.

[8] Data used was made available by the South African Revenue Service (SARS, various years).

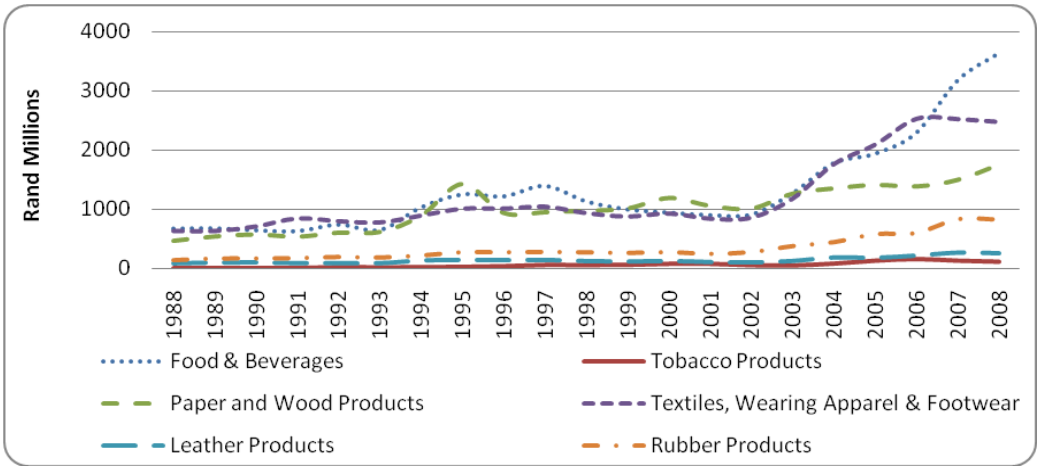
Figure 8.2: South African Agro-Industry Exports as a Percentage of Total Goods Exports, 1988 to 2008



Source: SARS

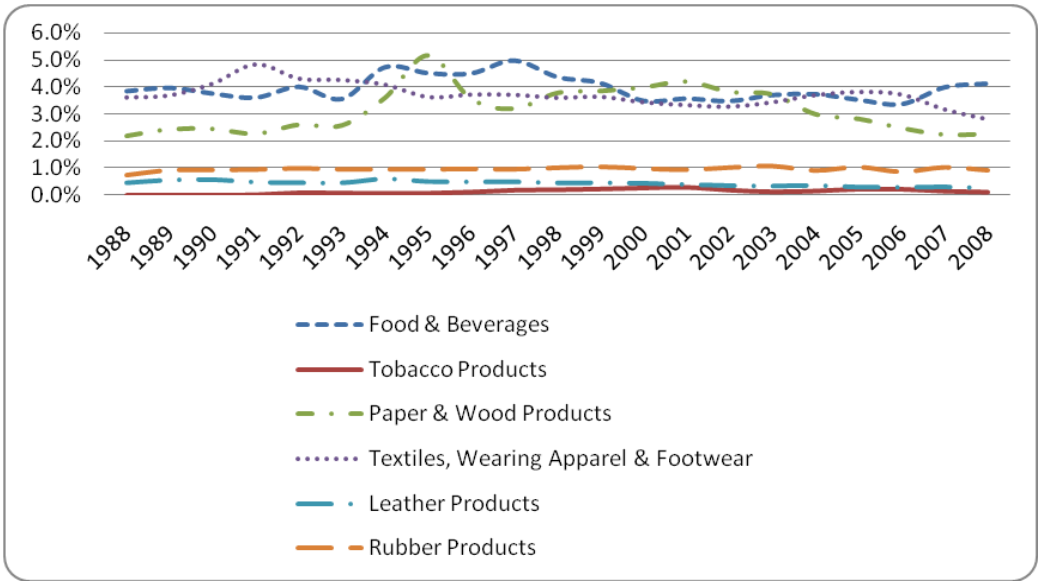
On the import side (see Figures 8.3 and 8.4) it can be seen that the subsectors such as "food and beverages" as well as "paper and wood products" were prominent, representing 4.1 per cent and 2.3 per cent of total goods imports in 2008. Another prominent agro-industry import category has been textiles, wearing apparel and footwear.

Figure 8.3: South African Agro-Industry Imports in Nominal Rand Millions, 1988 to 2008



Source: SARS

Figure 8.4: South African Agro-Industry Imports as a Percentage of Total South African Goods Imports



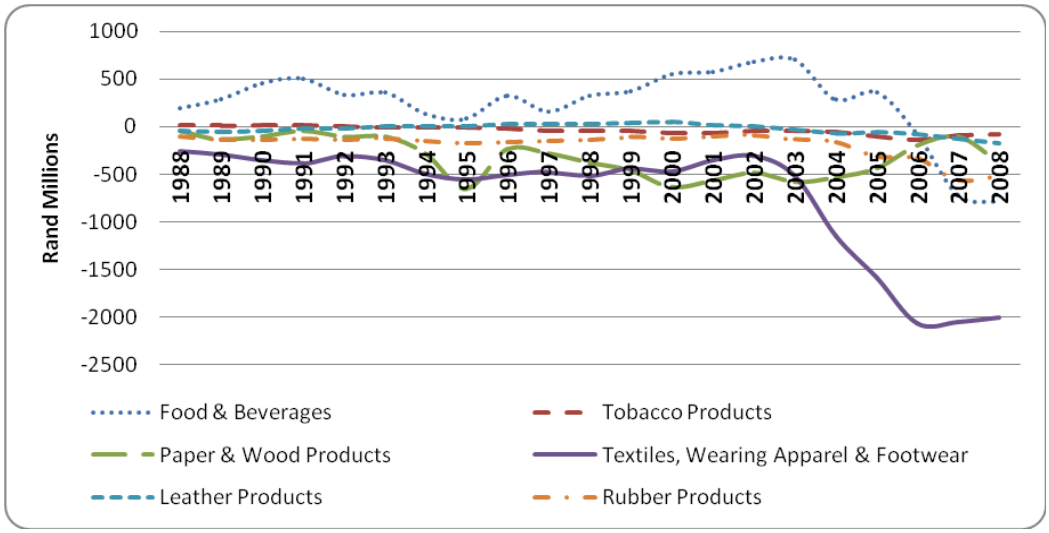
Source: SARS

Imports of these items came to about 2,500 million rand ($321 million[9]) in 2008. This value represents a decline in both real and nominal terms compared to the figures for 2006, and this is a direct result of the quotas imposed on Chinese clothing and textiles being in force in 2007 and 2008. Consequently, the contribution of textiles, wearing apparel and footwear imports to total goods imports decreased from 3.7 per cent in 2006 to 2.8 per cent in 2008 (Figure 8.4). Another trend worth noting is the relatively large increase in imports of rubber products between 2002 and 2008, which can be linked to the growth in motor vehicle assembly and exports.

Figure 8.5 below summarizes the South African net trade figures of agro-industry products by way of net trade figures. What is striking about this graph is that South Africa has become a net importer of all agro-industrial products in recent years. Even food and beverages, a net exporting sector up until 2005, has become a net importing sector in recent years. Another important trend has been the substantial trade deficit in the category textiles, wearing apparel and footwear from 2004 onwards. The sharp downward trend in net exports was abated to some extent by the quotas on Chinese clothing and textiles in 2007 and 2008, but nonetheless, the position of net imports remained in 2008.

[9] Rand/US$exchange rates used throughout are as at 2 July 2010 (1 US$= 7.77 South African Rand)

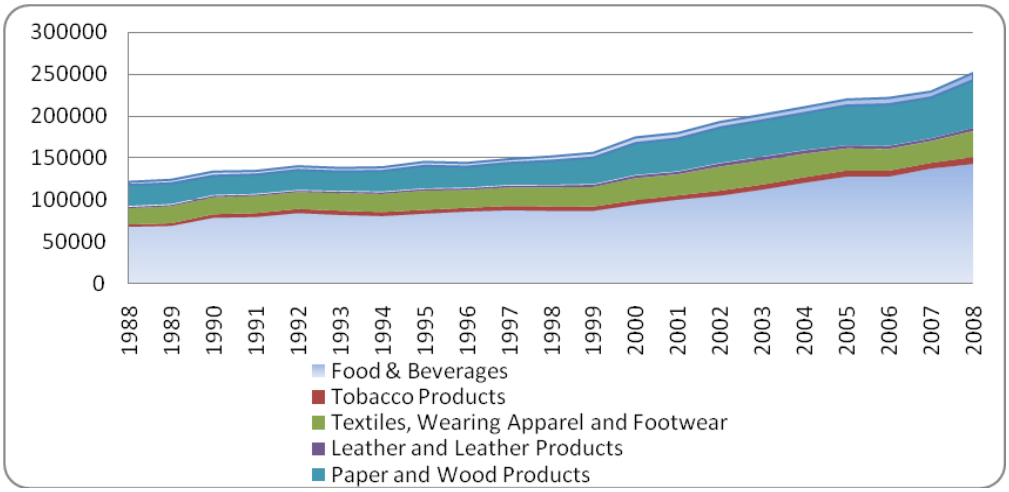
Figure 8.5: South African Agro-Industry Trade Balance (Exports minus Imports) in Nominal Rand Millions, 1988 to 2008



Source: SARS

The biggest agro-industry contributor to the South African economy in absolute terms was the food and beverages industry, and this sector also showed the highest growth (in absolute terms) over the period, doubling its production in absolute terms between 1988 and 2008 (see Figure 8.6). The other two most significant South African agro-industries over the period have been paper and wood products as well as textiles, wearing apparel and footwear. Production of paper and wood products showed an upward trend especially from 1997 onwards, with the result that output in this agro-industry came to just over 57,000 million Rand in 2008, up from just under 27,000 million Rand in 1997 (year 2005 prices). Leather products, tobacco products, and rubber products made only a minimal contribution to total South African production.

Figure 8.6: South African Agro-Industry Production (constant 2005 prices), 1988 to 2008

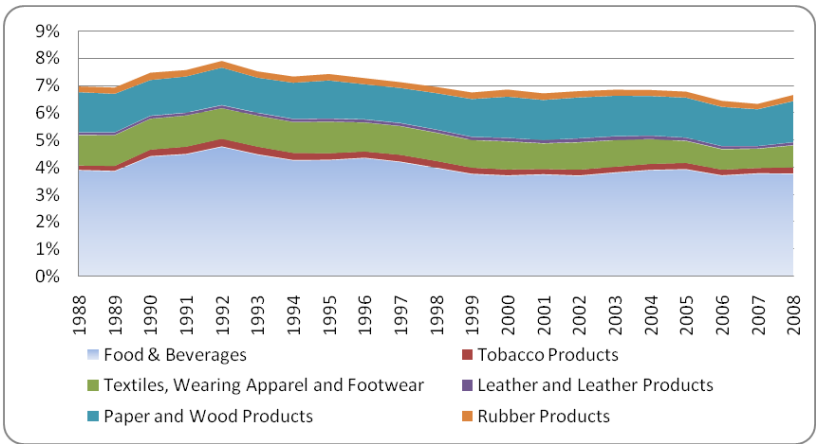


Source: SARS

This is clear from Figure 8.7, which shows that these three industries on average made only a contribution of between 0.1 per cent and 0.2 per cent per industry to total South African

production between 1988 and 2008. In contrast, while food & beverages contributed up to 5 per cent to total output in the early 1990s, this sector was down to just over 4 per cent in 2008. Textiles and wearing apparel at one stage contributed 1.2 per cent to total output, but this share fell to 0.8 per cent by 2008. This was primarily the result of the South African clothing and textile industry coming under increased pressure from low cost imports.

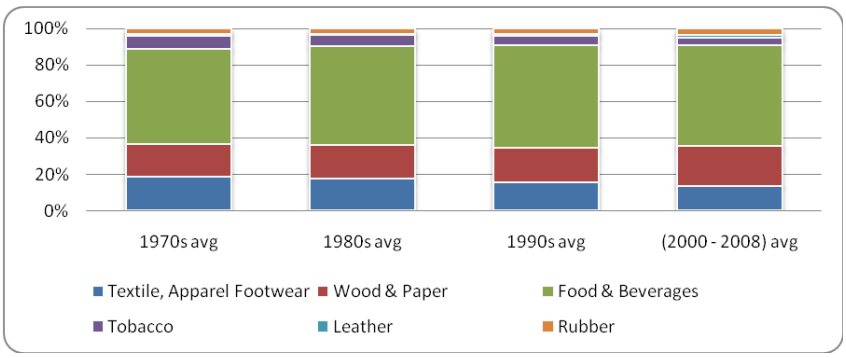
Figure 8.7: South African Agro-Industry Production as Percentage of Total Real South African Production (2005 prices), 1988 to 2008



Source: SARS

The following Figure 8.8 shows which sectors were contributing the most to agro-processing activity during the past four decades. Again, the predominant role of the food and beverage sector is clear.

Figure 8.8: Sector Distribution of average Agro-Industry Production (Percentage)



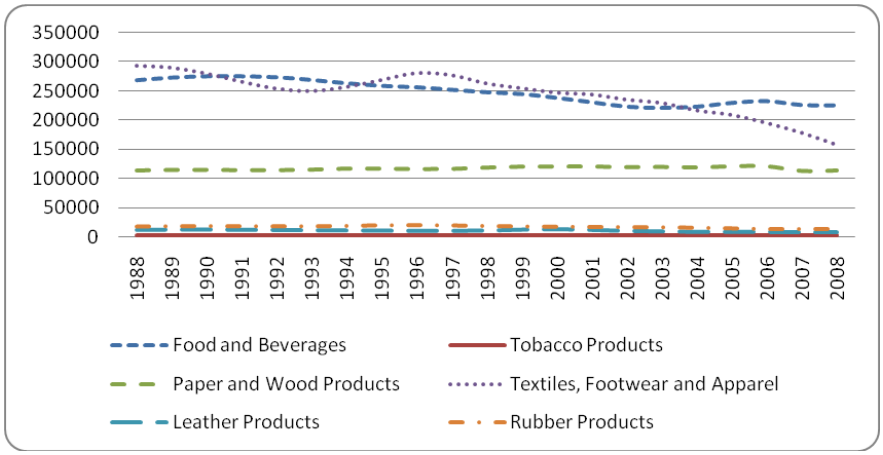
Source: SARS

Trends in employment have followed broadly similar patterns to that of agro-industry output from 1988 to 2008. This is shown in Figure 8.9. The most important trend again has been the diminishing importance of the category textiles, wearing apparel and footwear. According to the employment data at hand, employment in this industry has almost halved between 1988 and 2008. In 2008, just over 150,000 workers were employed in the production of textiles, wearing apparel and footwear, down from an estimate of almost 300,000 workers in 1988. Despite this trend, textiles, wearing apparel and footwear production remain the second biggest employer of all the agro-industries in South Africa, with only food and beverages production employing more people

in 2008. The only other substantial employer in agro-industry has been production of paper and wood products, with an estimated employment of more than 100,000 workers in 2008.

Agro-industry has been shedding jobs in absolute and in relative terms as shown in both Figure 8.9 and Figure 8.10.

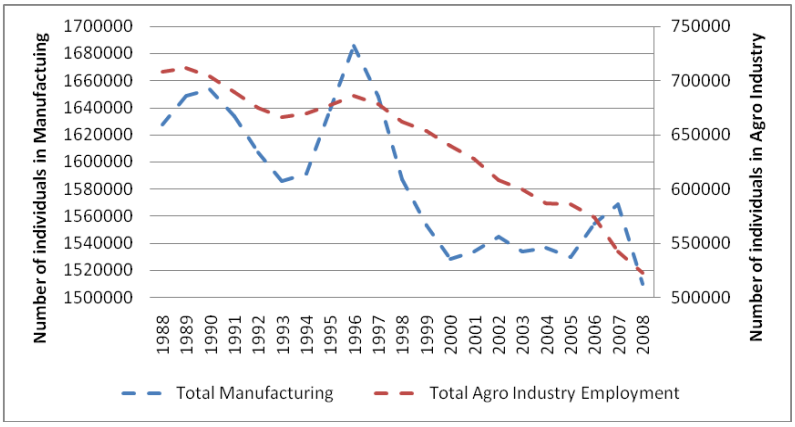
Figure 8.9: South African Agro-Industry Employment Estimates (formal and informal), 1988 to 2008



Source: SARS

This may be attributed to the industrialization process of the local market, as total employment figures rose steadily over the same period, by 23 per cent (SARS data). It does, however, strongly indicate that both the manufacturing and the agro-industrial sectors have not capitalised on their potential for job creation over the last two decades, although the manufacturing sector's contribution to real GDP remains the largest for all sectors and has shown persistent growth over the last two decades (DTI, 2010, p. 5). Whether this is due to more productive means in other sectors or just poor labour absorption has to be clarified, but considering the large problem of high and persistent unemployment in the country, generating sustainable employment in the manufacturing sector – and in particular the agro-industry sector – remains a key goal.

Figure 8.10: South African Agro-Industry Total Employment Estimate versus Manufacturing Total Employment Estimates (Both Formal and Informal), 1988 to 2008



Source: SARS

Policies for developing agro-industries

New industrial policies

South African industrial policy finds its strategic direction predominantly from the National Industrial Policy Framework (NIPF) of 2007 (DTI 2007b). The first Industrial Policy Action Plan (IPAP) (DTI 2007a) was built on this strategic direction by providing practical steps to the concerns and policy measures identified in the NIPF. In the first IPAP (DTI 2007a), specific mention is made of a number of agro-industries. For example, forestry, pulp, paper and furniture are seen as one of the four lead sectors that form the central focus of the NIPF.[10] This sector is believed to have the potential to provide both jobs and income, especially to rural communities in South Africa. As such, increased plantations and the promotion of further processing activities in the Kwazulu-Natal and Eastern Cape provinces are seen as key interventions over the next ten years. In the second IPAP (DTI 2010) agro-processing takes an even more prominent place.

A number of specific challenges in the forestry, pulp, paper and furniture sector have been identified which policy aims at remedying. For example, at present the small players in the forestry value chain do not participate in value added activities. Continued growth in this sector will depend to a large extent on how successful the efforts are in encouraging processing and attracting further investment in those areas that are close to plantations. Such a trend will definitely have a beneficial impact on the rural communities that reside in and around these plantations. Actions already taken by government in this sector include the expedition of the afforestation licensing process and the confirmation of land rights for land holding communities. Furthermore, technical and financial support is provided to emerging small growers and transport infrastructure is being improved.

Bio-fuels is another subsector of the South African economy that has received specific attention in the revised IPAP (DTI 2010, p. 68) and is also closely related to agro-industry in South Africa in general.[11] A Bio-fuels Draft Strategy (BDS) has been approved which aims to achieve an average rate of bio-fuels market penetration of 4.5 per cent in liquid road transport fuels (petrol and diesel) by 2013 (GRSA/DME 2007). The IPAP suggests that the development of a bio-fuels industry will stimulate small-scale and cooperative farming practices in rural areas, eventually creating up to 55,000 jobs. Macroeconomic benefits could also follow as the dependence on oil imports is reduced.[12]

The agro-industry sector that has received the most attention– both in terms of policy measures and publicity– has been textiles, footwear and apparel, especially the manufacture of textiles and apparel. Much of the recent effort has been aimed at stemming the demise of the industry. While there has been some success in this regard, the industry has nonetheless lessened in its importance to the South African economy. From a maximum contribution of 1.7 per cent to total output, the sector contribution fell to only 0.6 per cent in 2008. Most important, however, have been the job losses that have accompanied the decline of the sector: from 1988 to 2008, the estimated number of formally and informally employed workers in the South African textile, footwear and apparel industry has almost halved, and currently stands at around 150,000 jobs (based on SARS data).

Some of the challenges identified in the textile, footwear and wearing apparel industry include the inability to compete against low-cost imports because of low levels of productivity and innovation

[10] The other lead sectors identified are (1) Capital/Transport equipment and Metals; (2) Automotive assembly and Components, and (3) Chemicals, Plastic fabrication and Pharmaceuticals.

[11] The majority of bio-fuel projects are led by agribusiness and use staple food crops as feed stock for large industrial production units, linked to petrochemicals, as blenders.

[12] Another development in the sector has been the formation of SAOSO (South African Organic Sectors Organization), a joint venture between the Department of Trade and Industry (DTI) and the Department of Agriculture, Forestry and Fisheries (DAFF).

stemming from a lack of investment in both skills and production processes. Some of the key policy interventions over the past few years have been the Duty Credit Certificate Scheme (DCCS), the quantitative restrictions (QR) on Chinese clothing and textile imports, and a general support scheme (GSS) for clothing and textile manufacturers in South Africa.

More broadly, agro-processing is seen as a key sector in the South African economy, especially because it can generate relatively low-skilled job opportunities as well as contributing to a more geographically diverse industrial economy. However, the sector also faces a number of challenges requiring serious policy considerations. South African manufacturers have found entry into international markets quite difficult due to heavily subsidized competing exports from more developed countries as well as a host of tariff and non-tariff barriers in destination markets. They have also found it difficult to compete in the South African market due to increased volumes of competing imports. Insufficient expenditure on research and development (R&D) has also been identified as an important impediment to the development of the domestic agro-processing industry. This lack of investment in R&D has meant that producers have been unable to move up the value chain and to take advantage of the benefits associated with greater value addition. Other concerns identified in the IPAP document (DTI 2007a) include the saturation in existing export markets, increasing input costs, and insufficient infrastructure. Some of the measures already undertaken to assist the agro-processing sector include the following: the establishment of a National Food Control Agency (NFCA) to assist producers with compliance to international food quality standards, as well as a review of tariff policy for agricultural products to address distortions in trade. There is also a specific focus on exports of beneficiated Rooibos and Honeybush teas.

Agro-processing takes a more prominent position in the second IPAP (DTI 2010), and is identified as one of the three 'qualitatively new areas of focus', along with metal fabrication, capital and transport equipment sectors and the 'green' and energy-saving industries. The inclusion of agro-processing as a new area of focus in the latest version of the IPAP relates to concerns surrounding food security and the pricing of food.

In the revised IPAP, a number of constraints are identified that could hamper the development of the sector in the foreseeable future. Specific 'Key Action Programmes' (KAPs) are then suggested, aimed at remedying the identified constraints.

In terms of constraints, "high quality, high value, competitive subsectors", such as fresh fruit, wine, and fish products are seen to face constraints mainly related to developed country trade policies, such as subsidies, tariffs, and sanitary and phyto-sanitary standards (SPS). It is felt that there is a need to assist exporters to better position their products in fast-growing developing country destinations.

So-called "moderately competitive and uncompetitive, mature subsectors", such as tea, canning, food processing, and cotton, do face constraints both in the domestic and in the export markets. In the export market, EU and USA agricultural subsidies are seen as a major impediment to the competitive trading of South African products. Furthermore, the fact that the high value, high margin market, for tea especially, is dominated by a number of multinational corporations (MNCs) is seen as a major impediment to South African products entering this portion of the market. In most cases, South African producers sell their products wholesale to these MNCs, who then package them and supply products higher up the value chain.

Lastly, "new subsectors with a niche market potential but with a small-scale production scale", such as ostrich meat, indigenous flowers, bio-fuels, essential and olive oils, and medicinal extracts, are seen to face significant regulatory barriers. This is viewed as a direct result of South-Africa's 'positive' list approach to regulation, whereby those sectors listed (and regulated) are seen to be sectors with considerable potential, while all others are assumed to be undesirable. This implies that 'new' sectors often face considerable regulatory barriers when they are first introduced.

Specific industrial policy action programmes

Based on the potential identified in a number of agro-processing subsectors as well as the constraints faced by the industry, the following Key Action Programmes (KAPs) will be introduced between 2010 and 2013 (refer to IPAP 2, DTI, 2010, pp. 48-54).

Establishment of a National Food Control Agency (NFCA)

A National Food Control Agency (NFCA) will be established to address the currently fragmented (and duplicated) nature of the food safety regulatory environment in South Africa. In addition, fragmented legislation will also be consolidated into a single Food Safety Act (FSA). The rationale behind these interventions relates both to the need to ensure food safety in a national context, but also to the increasing requirements placed when exporting to both developed and developing countries.

Development of the aquaculture sector to supplement dwindling wild fish stocks

A national strategy and implementation plan will be finalized for the development of the aquaculture sector. The positive outlook of the global aquaculture market, related to the continued decline in wild catch fisheries, is the main motivation for encouraging growth in this sector. In addition, the South African aquaculture sector is seen to have the potential to grow substantially in future. More specifically, it is envisaged that up to 20,000 jobs can be created in the sector over a ten-year period.

Development of marine aquaculture zones

Purpose-built aquaculture development zones (ADZs) are envisaged. These zones will be based on land and in the sea and will entail designated areas for the exclusive use of aquaculture activities.

The global aquaculture sector has grown on average by 9 per cent since 1973, compared to 3 per cent per annum in South Africa, and it is believed that targeted interventions will assist the country in tapping into the global industry growth (IPAP 2, DTI 2010, p. 49). Also, obtaining blanket approval for an entire zone is seen as more cost-effective than the current case by case method of approval.

The same holds for the provision of bulk infrastructure and services that are also associated with these designated zones.

Establishment of aquaculture hatcheries

Two aquaculture hatcheries (AHs) will be established to provide a reliable and continuous supply of high quality juveniles to the aquaculture sector, as the sector is dependent on reliable supplies of 'seed'.

Development of the organic food sector

An organic food strategy (OFS) will be implemented to meet (at least in part) the demand of South African consumers for these products, currently provided predominantly by imports. It is believed that this strategy could also help to leverage the organic sector for export production. Another important development in the organic food sector in South Africa is the formation of SAOSO (South African Organic Sectors Organization) as a joint venture between the DTI, DAFF and the other major sector stakeholders.

Following on this development, a study was conducted by NEDLAC through the FRIDGE, which saw the publication of a major study into the state of organic agriculture in South Africa. It includes an overview of the local and international organic sectors and suggests strategies to

encourage further development within the local sector (see NEDLAC 2008). It is believed that this strategy could also help to leverage the organic sector for export production.

Development of high-value agriculture niche markets – organic cotton

The main elements of this plan will be a marketing plan and a programme of financial assistance to South Africa's cotton sector. This will assist cotton farmers in making the transition to large-scale organic cotton production.

The South African cotton sector has been in long-term decline and it is believed that positioning the sector in the organic cotton market could be a way to reverse this trend. Organic cotton trades at a 20-50 per cent premium compared to other cotton (IPAP 2, DTI, 2010, p. 51).

Development of a small-scale milling industry

This intervention will consist predominantly of standardized maize mill machinery packages embedded in a franchising business model. The idea is to facilitate the entry of small-scale maize millers into the South African market.

The economic rationale behind this intervention relates to the currently concentrated nature of the domestic maize milling sector.

The introduction of a number of additional small-scale millers could alter this situation and could lead to lower prices and to an improved service delivery in rural areas.

Competitiveness enhancement in the fruit and vegetable canning industry

A Public Private Partnership (PPP) fruit canning initiative will be implemented. This initiative is designed to improve the competitiveness and the long-term sustainability of the fruit canning industry.

Promotion of exports of beneficiated Rooibos and Honeybush products

A domestic packaging capacity for Rooibos and Honeybush products will be developed. South Africa is the exclusive producer of both Rooibos and Honeybush teas, yet it is estimated that only 5 per cent of Rooibos exports and 10 per cent of Honeybush exports are packaged in South Africa (IPAP 2, DTI 2010, p. 53).

Improving the value added to these products before export could create both increased export earnings and employment for the sector.

Further policy issues

Economic activity and its outcomes are known to be distributed unequally. In geographic space industrial production grew asymmetrically, largely influenced by the impact of the mining revolution and the subsequent concentration of an urban population of wage earners. The outcome has been that industrial activity is dominated by four metropolitan areas, of which the Pretoria-Witwatersrand-Vereeniging complex (predominantly the Gauteng province) is by far the largest concentration. Agro-industrial development has the potential to change this spatial distribution of industry at least slightly.

But inequality also applies to the ethnic distribution of resources and income, with the white minority population being in a far better position than the black majority. Post-apartheid economic transformation aims to address these inequalities. The policies aimed at this transformation, and in particular the change in focus of these policies following the Polekwane Conference of the African National Congress (ANC) and the subsequent appointment of Jacob Zuma as the State President, will in time have a far-reaching impact. From the perspective of agro-industrial development two important changes can be envisaged:

- A land reform process has been implemented to increase black ownership of agricultural land. The process is proving to be contentious and politically sensitive but remains a clear priority of the Government. For agro-industry the outcome of the process is important because it can impact on the stability and the growth of the industry's supply of primary inputs. Land reform has the potential to have either a negative or a positive impact on the productive use of farm land and it stands to reason that, from an economic point of view, the reform process must occur in a way that will expand agricultural production as well as contribute to social and political stability.
- A more pro-active industrial policy is envisaged. The implementation of the new industrial policy can have an important influence on the structure of industry, especially in view of the emphasis placed on the development of agro-processing and the intention to sustain the clothing and textile industry. However, the important point is how implementation will proceed in the next few years, and how government and the private sector will interact in this process. Despite many ideas and many key action plans for a new industrial policy, the number of constraints in this process is large and the prospects for real change are rather limited.

How these developments will evolve, and how deep their impact on agro-industry will be, cannot be predicted with a high degree of confidence. But a significant impact can nonetheless be expected.

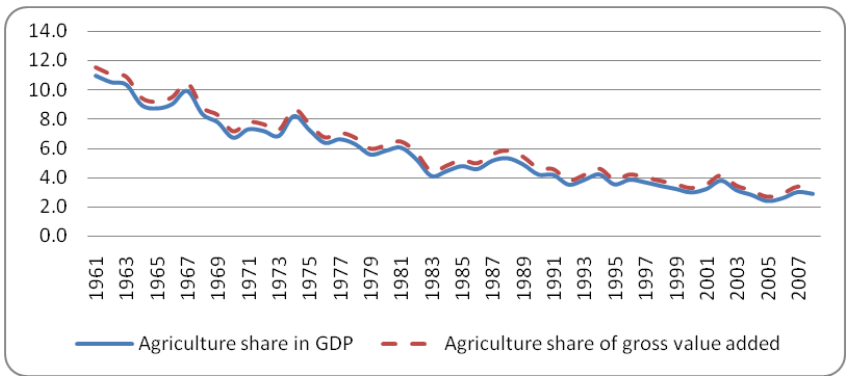
Key policy factors for promoting agribusiness

Enhancing agricultural growth in Africa for agribusiness

It was already mentioned that agricultural production as a share of gross value added (GVA) has been declining. Figure 8.11 shows the large relative decline between 1961 and 2008.

This is a reflection of the changing structure of the South African economy. However, in real terms (constant 2005 prices), agricultural output has increased over the same period.

Figure 8.11: Share of Agriculture, Forestry and Fishing in GDP and Gross Value Added

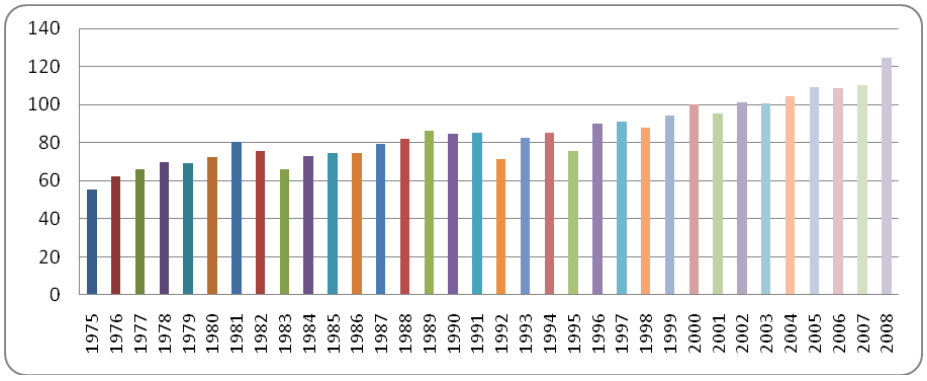


Source: SARB[13]

This shows that although other sectors, such as financial services and manufacturing, have become more important for the development of the South African economy, the output of the primary sector has been steadily increasing. Figure 8.12 below shows how food production (in real terms) has increased between 1975 and 2008.

[13] Figure is based on data compiled by the South African Reserve Bank (SARB, various years).

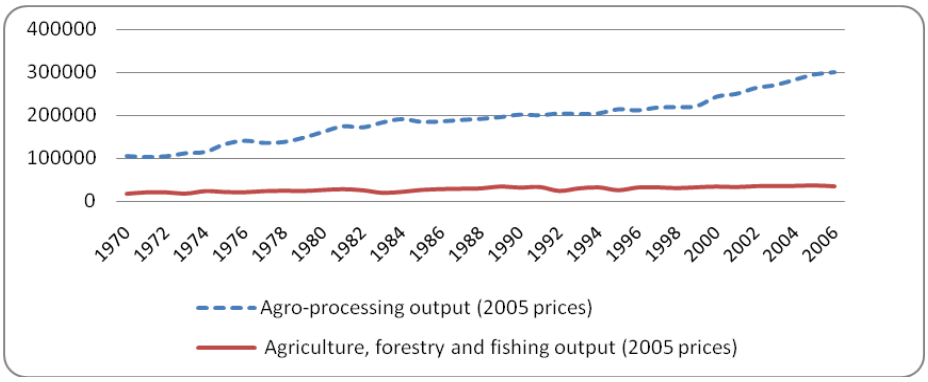
Figure 8.12: Volume of Agricultural Production (calendar year): Food production (for the year 2000 = 100)



Source: SARB

The question that needs to be asked is about the relationship between agricultural growth and growth in agro-processing; Figure 8.13 shows that there has been a growth trend in both, although the growth in agricultural production seems to have stabilized during the past few years, while the growth in agro-processed goods has been increasing more steeply.

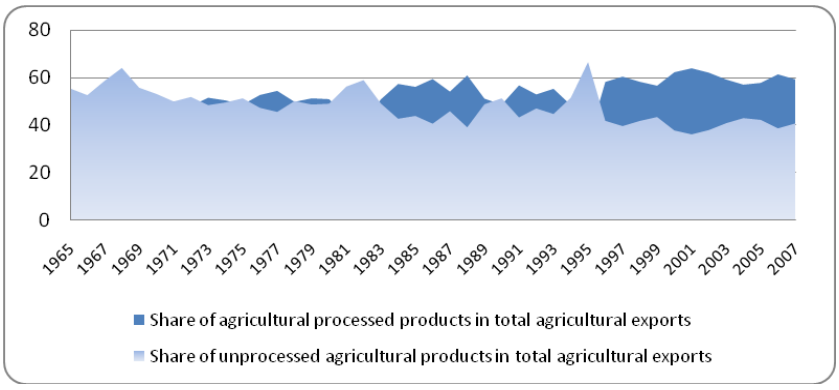
Figure 8.13: Growth in Agricultural Output and Agro-Processing Output (Rand Thousands)



Source: Abstract of Agricultural Statistics/DAFF 2009

So there is a relationship between agricultural production and agro-processing, but the latter sector has grown more rapidly during recent years. This might be due to the focus on some specific products in which South Africa has a comparative advantage. Figure 8.14 below shows that the share of processed agricultural products has been increasing in total agricultural exports, relative to the share of unprocessed products.

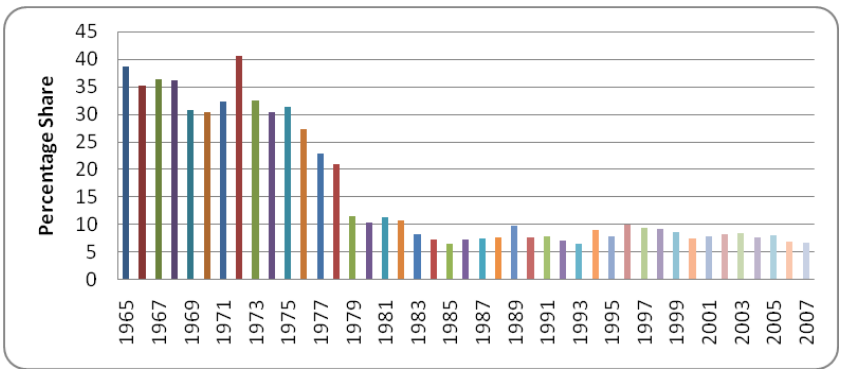
Figure 8.14: Agriculture Processed/Unprocessed Products in Total Agriculture Exports



Source: Abstract of Agricultural Statistics/DAFF 2009

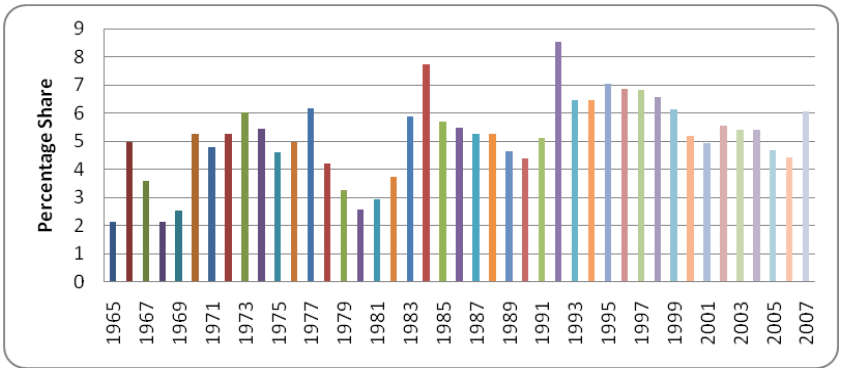
This seems to be evidence of the exports in the agricultural sector moving more towards processed products, which is good news from a development perspective. The following two Figures 8.15 and 8.16, however, indicate that the share of agricultural exports has declined (as a share of total exports), while the share of agricultural imports (as a share of total imports) has increased.

Figure 8.15: Share of Agricultural Exports in Total Exports



Source: Abstract of Agricultural Statistics/DAFF 2009

Figure 8.16: Share of Agricultural Imports in Total Imports



Source: Abstract of Agricultural Statistics/DAFF 2009

These changes are to be expected, against the background of the changing structure of the South African economy (as explained above). Nevertheless, from a food security perspective, it is quite disconcerting to note the increase in relative imports. Also, from the point of view of human development (employment creation, regional development, and poverty reduction) this is a negative trend. Opportunities for effective import substitutions are not realized.

Upgrading value chains in Africa's agribusiness

Agribusiness in South Africa is characterized by integrated and highly advanced value chains. This trend has been driven to a certain degree by the demand from the large retail chains, which in some instances are actively involved in managing the chains from farm to table. This trend has resulted in highly efficient, technologically advanced value chains, such as for milk (see Box 8.2).

Box 8.2: Milk Value Chain

The dairy industry tells a story of an increasing integration between the primary and the processing sectors and about a positive industry response to rapid market deregulation.

The dairy industry in South Africa represents an integration of primary production and secondary activities of processing and manufacturing, and in this sense production covers both the agricultural and the manufacturing sectors of the economy. The value chain processes raw milk into a variety of final products that are sold to consumers through the retail sector. Production and consumption of milk have increased substantially during the past four decades. But more importantly, the situation with regard to large fluctuations in the surplus/ deficit situation has improved. This is a direct result of technological advances and of investments in processing facilities. In the past – under the controlled environment of the dairy board (DB) – government was responsible for maintaining price stability by 'removing' excess milk from the market during surplus periods. Exports have also changed towards a higher share of value added products. Exports of dairy products are driven primarily by exchange rate movements, similar to imports. Exports increased dramatically during/after periods of Rand depreciation and contracted during periods of appreciation.

The picture that emerges is one of a vibrant sector that has managed to adapt to changing market conditions with great success. Despite rapid deregulation, milk production has increased and processors have invested in capital-intensive production processes, focusing more on products with a higher value added component. This has guaranteed that the sector remains competitive, both domestically and internationally.

Source: For more information on this issue, the reader is referred to NAMC 2001

Integrated value chains enable firms to compete in the highly competitive environment of today. The process of upgrading value chains is no longer a matter of merely improving sector efficiency, but of survival in a globalized world of freely flowing capital and resources, liberalized markets, and improved transport and communications systems. In addition to the economic benefits, delegating the production process to the most productive sources may provide the small players with an opportunity to specialize in a value-addition branch, so that they will profit from the overall chain.

The following Table 8.2 provides detailed information on the value chains of various products and associated trends in comparative advantage for South Africa. Competitiveness is measured by the Relative Trade Advantage (RTA) as defined in footnote 12.

According to Esterhuizen (2006, pp. 155-159), the whole milk chain in South Africa is marginally competitive internationally, with a slight decreasing trend in competitiveness when moving from the primary to the processed product in the value chain. Milk (the primary product) has a positive trend in competitiveness in the short as well as in the long run. Skimmed milk and dry whole milk have positive trends in competitiveness, except for the last five years. Dry skimmed milk has a positive long-term trend in competitiveness, but negative trends in competitiveness during the last twenty years. The production of butter from cow's milk in South Africa has a negative trend in competitiveness over both the long and the short run. The production of cheese shows an increase in competitiveness for the last ten and five years, respectively.

Fresh cream and chocolate products have negative trends in competitiveness during the last five years but demonstrate positive long-term trends in competitiveness. Ice cream and yoghurt production is marginally competitive internationally. Ice cream production, however, shows positive trends in competitiveness for the last ten and five years. Yoghurt production shows negative trends in competitiveness for the last ten and five years.

According to Esterhuizen (2006, p. 173), the whole South Africa wool chain is highly competitive internationally. There is a decrease in competitiveness when moving from greasy wool to the clean product in the chain. Wool scoured, however, shows a positive trend in competitiveness from 1980 onwards. Greasy wool has negative short-term trends in competitiveness.

The tobaccochain in South Africa is marginally competitive internationally. All the products in the chain have positive trends in competitiveness from 1961 to 2002, from 1980 to 2002, from 1993 to 2002, and from 1998 to 2002. There is an increase in competitiveness when moving from the primary to the processed product in the chain.

The cotton chain in South Africa is not very competitive internationally. Cottonseed, cake of cotton seed, and cotton lint are highly uncompetitive internationally. Only cotton carded combed and cotton linter is marginally competitive. The whole cotton chain demonstrates negative trends in competitiveness from 1961 to 2002, except for cotton carded combed and cotton linter. Cotton seed, cake of cotton seed, and cotton linter indicate positive trends in competitiveness for the past five years. The cotton chain, however, has a positive trend in competitiveness when moving from the primary to the processed product in the value chain.

Table 8.2: Summary of RTA[14] and Trends[15] in Comparative Advantage over time for selected Value Chains

Chain	Product	RTA 2002	RTA 2001	RTA 2000	Trends 1961-02	Trends 1980-02	Trends 1993-02	Trends 1998-02
Milk Chain	Cow milk (whole, fresh)	0.47	0.25	0.45	+	+	+	+
	Skim milk	0.39	0.20	0.27	+	+	+	-
	Dry whole cow milk	0.94	0.34	0.66	+	+	+	-
	Dry skim cow milk	(0.77)	(0.18)	(0.66)	+	-	-	-
	Butter of cow milk	(0.01)	(0.18)	(0.48)	-	-	-	-
	Cheese	0.02	(0.16)	(0.14)	+	-	+	+
	Cream, fresh	0.26	0.16	0.26	+	+	+	-
	Chocolate products	0.32	0.29	0.22	+	+	-	-
	Ice cream	0.26	0.24	0.29			+	+
Leather Chain	Hides and skins	1.91	1.08	0.80	-	-	-	+
	Hides wet salted	(0.08)	(0.60)	(0.90)	-	-	-	+
	Hides dry-salted	0.03	3.59	3.47	+	-	-	-
	Leather	0.49	0.19	0.07	-	+	-	+

[14] The Relative Trade Advantage (RTA) is an index that measures the relative competitiveness of an industry by classifying it as *competitive* (if RTA >1), *marginally competitive* (1 > RTA > -1) and *not competitive* (RTA < -1). It should, however, be mentioned that using RTA as a measure of relative competitiveness has a serious limitation in that it does not explain how a country has come to have a competitive edge (Esterhuizen, 2006: 154). If a country enjoys a competitive advantage in an industry, acquired through protective measures or subsidies, the index may be misleading as a proxy for true industry potential.

[15] The table lists recent industry trends as positive (+) or negative (-), with respect to the abovementioned period.

Tobacco Chain	Tobacco	0.25	0.83	0.57	+	+	+	+
	Cigrettes	0.83	1.28	1.20	+	+	+	+
	Cigars cheroot	(0.35)	(0.44)	(0.57)	+	+	+	+
Cotton Chain	Cotton seed	(1.76)	(5.96)	(5.52)	-	-	+	+
	Oil of cotton seed	(53.52)	(48.99)	0.50	-	-	-	-
	Cake of cotton seed	(16.46)	(17.09)	(12.45)	-	-	-	+
	Cotton lint	(2.22)	(1.26)	(0.78)	-	-	-	-
	Cotton carded combed	(0.30)	(0.18)	0.09	+	-	+	-
	Cotton linter	0.47	0.88	0.62	+	+	+	+
Wool Chain	Wool, greasy	6.73	4.17	4.56	-	-	+	-
	Wool. scoured	3.56	3.75	3.27	-	+	+	+

Source: Esterhuizen (2006, p.158)

The leather chain also shows differences of subsector components. Hides and skins, the primary products in the leather chain, are relatively competitive. The rest of the leather chain is, however, only marginally competitive. Hides and skins and hide wet salted have negative long-term trends in competitiveness, but positive trends for the last five years. Hides dry salted have an increasing long-term competitive trend, but a decreasing trend in competitiveness over the last twenty years. The production of leather in South Africa has negative trends in competitiveness from 1961 to 2002 and also from 1993 to 2002. However the trend in competitiveness from 1980 to 2002 is positive, as is the trend from 1998 to 2002.

The competitiveness of some of these chains may be the result of natural factors, but in others it might be due to a variety of historical factors, albeit through traditional comparative advantages/disadvantages or the political climate. The question that arises is whether there is scope for targeting specific value chains in order to reach certain goals, such as stimulating employment and reducing poverty in certain areas. It is not clear how South Africa can use more fully the relatively great potential it has in international logistics and chain management to gain in terms of international competitiveness. It is also a problem that industry policy initiatives in South Africa are not directed towards these sector value chains. Although South Africa is the exclusive producer of both Rooibos and Honeybush teas, only 5 per cent of Rooibos exports and 10 per cent of Honeybush exports are packaged in South Africa. It is quite astonishing that measures to make companies benefit along the whole value chain and to increase further the international competitiveness of South Africa producers in these local teas are not related to a programme for a tea sector value chain.

Targeting commodities and producers for value addition and social inclusion

Agro-industrial processing is a vital catalyst for the development of rural communities and for broad economic growth through its employment creation and income generating capacity. The importance of stimulating value-addition cannot be overemphasized in developing countries, where it is estimated that apart from the great formal sector employment contribution, approximately 60 per cent of workers in the food and beverage industry (the largest of all South African agro-industrial sectors) are informally employed (SARS data)[16]. Agro-industry constitutes a vital part of the income to farmers and farm workers, promotes entrepreneurship and job creation, and facilitates the processing, marketing and distribution of agricultural products.

[16] Therefore we can safely deduce that the figures presented above underestimate the true importance of the agro-processing sector in South Africa.

Clearly, as illustrated above, some industries are more competitive, and creating the right environment (financial, regulatory, etc.) can aid such industries in becoming globally competitive. Examples of such direct targeting through policy initiatives are aquaculture, Rooibos, and Honeybush teas. These have been specifically mentioned in the IPAP (as discussed above). Although there is a role for stimulating industrial growth through such a direct targeting of certain sectors, care should be taken in micro-managing the economy. The case of the textile industry is a good example of an industry that has been in decline for at least the past decade, despite a variety of stimulus measures from government.

However, the advantages of identifying and targeting sectors, value chains, producers and commodities are on the other hand potentially very big. A well-functioning value chain ensures that sector- and economy-wide benefits are accrued through growth and job creation, but the relevant identified industry must display a potential to grow and to expand. Successful identification and subsequent targeting of an agro-processing industry with true growth potential can allow producers to disperse production risk along a wider chain, which is vital in the volatile domestic agricultural environment. Furthermore, it reduces individual vulnerability and income uncertainty, which in turn further encourages industry investment. Specialization also produces innovation and differentiation of activities, allows efficient exchanges of information, and ensures a strengthening of the market position for all farmers and producers involved.

Non-farming activities[17] in agro-processing also constitute an important part of small-scale farmers' and low-skilled rural workers' remuneration, allowing the evening out of consumption expenditures and creating valuable job opportunities.[18] It is therefore important to understand which industries have the potential to grow into globally competitive industries in order to have an effect on employment and poverty reduction. Table 8.3 gives an indication of long-term trends in competitiveness of value added products.

Table 8.3: Trends in the Competitiveness of Value added Products

		LONG-TERM TREND (1961-2002) IN COMPETITIVENESS	
		Positive (+)	**Negative (-)**
SHORT-TERM TREND (1993-2002) IN COMPETITIVENESS	**Positive (+)**	STARS: Bread; Flour of maize; Flour of potatoes; Sugar refined; Margarine; Cotton carded combed; Cotton linter; Cigarettes; Cigars cheroots; Essential oils; Orange juice; Grape Juice; Raisins; Wine; Dried mushrooms; Fresh cream; Cheese; Dry whole milk; Hair coarse	RECOVERING: Bran of wheat; Macaroni; Breakfast cereals; Bran of maize;Oil of maize; Sugar confectionery; Groundnuts shelled; Cake of groundnuts; Oil of sunflower; Malt of barley; Coffee extracts; Onions, dry; Peas, dry; Pineapples, canned; Eggs Liquid; Canned chicken; Wool scoured; Prepared pork

[17] These activities constitute both direct and indirect job opportunities (e.g. in marketing, retailing, transporting, constructing, and logistics) associated with the agro-industrial process.

[18] Job opportunities are increasingly created for women in the agro-processing industry, especially that of non-traditional, high-value agro-chains, including horticulture, fruits, fish and organic products.

	Negative (-)	STRUGGLING: Flour of wheat, Oil of groundnuts; Beer of barley; Apple juice; Dried apricots; Plums, dried; Eggs dry whole yolk; Dry skimmed milk: Hides dry salted	CRISES: Pastry; Oil of soybeans; Cake of soybeans; Cake of sunflower; Oil of cotton seed; Cake of cotton seed; Cotton lint; Coffee roasted; Canned mushroom; Oil of olives; Pineapple juice; Butter; Hides wet salted; Leather

Source: Esterhuizen 2006, p. 184, based on RTA indexes

Targeting commodities and producers for value addition and social inclusion can only make sense if such actions are based on proper research. It is not obvious that enough research has been done to prepare such a targeting effort. The advantages of targeting certain value chains should be taken but in a way so as not to interfere too much with the "normal" market mechanisms.

Strengthening technological effort, innovation capacity and capability building

South Africa already has technologically advanced value chains, and the useful research previously conducted by the individual marketing boards under the old dispensation of protecting various industries should also be mentioned in this context. Valuable work done by, for example, the wheat board, has been continued within a liberalized environment by privatized industry bodies. South African universities also produce world-class research on agricultural and related topics. An example of a public body that contributes to local research efforts is the Agricultural Research Council (ARC). The ARC was established in terms of Section 2 of the Agricultural Research Act of 1990, and its functions are as follows:

- It establishes and controls facilities in the fields of research, development, and the transfer of technology, which the Council may determine from time to time.
- It promotes cooperation between the Republic of South Africa and other countries with regard to research, development, and the transfer of technology to other countries.

Local-level capacity to provide agro-producers with technologies and innovation capacity has to be supported, promoted and systematically developed (see Box 8.3).

The domestic agro-processing industry has been able to absorb and to apply contemporary technologies and to develop innovative new ways, specifically tailored to address domestic challenges, in order to extract the most from local resources. Such technological advances include packaging and pre-processing measures applied to primary output that ensure fresh and consistent inputs, being vital to the value-adding process. Furthermore, technological advances in machinery, transport, communication, inter-chain logistics, and planning strategies should be utilized by local agro-producers to ensure competitiveness in a rapidly advancing world market.

Through research and development, coupled with sufficient public and private investment, it is hoped that the ensuing expansion of innovative capacity can improve the harvesting and value-adding process in the local agricultural sector. This is important to ensure that products reach the often extremely high levels of safety and quality required by foreign markets, particularly those of European nations, to allow sufficient export growth. This will, in turn, ensure a foreign capital inflow that could be used to further enhance the domestic production capacity. Much more could be done for Science, Technology and Innovation (STI) to reach the ambitious targets set in plans and action programmes and to meet the expectations of the producers and entrepreneurs.

Box 8.3: Onderstepoort biological products

A local example of a public initiative aimed at providing agro-producers with technologies and innovation capacity being relevant to the processing industry is Onderstepoort Biological Products (OBP).

It was established in 1999 to ensure R&D was done within the field of livestock bio-related technologies, allowing the manufacturing and distribution of vaccines, pesticides, and various products that may aid livestock farming.

Such initiatives are vital to ensure that local farmers can consistently supply agro-producers with primary products, serving ultimately to ensure the sustainable development of a potentially volatile livestock industry.

Similar initiatives should be implemented in other agro-industries to ensure their respective sustainability through the absorption of relevant contemporary technologies.

Source: For more information on this initiative, visit http://www.obpvaccines.co.za/vacc_about.htm

The application of new eco-friendly and bio-related technologies may also play a crucial role in the development of an efficient, effective, consistent, and green domestic agro-processing industry in South Africa. Such technological advances include bio-chemicals, enzymes, vaccines, drugs and pesticides, whose introduction and application into the domestic process may be vital in keeping up with global trends, both in competition and in lessening the environmental impact.[19] This latter goal will, in turn however, require larger international cooperation in terms of intellectual property laws and sharing of information, in order to facilitate the spread of innovative ideas. This will ensure that developing countries have the technological capacity to meet strict international environment protocols. This should be emphasized when discussing environmental issues, as it may be only fair to provide developing countries access to technology that allows cleaner development.

In this regard, public provision of capital and expertise are sorely needed to ensure that such innovative developments are absorbed into the domestic economy, enabling local producers to make use of existing technologies.

Finally, in the face of surging oil prices, bio-fuel production has emerged as a future prospect for agro-industry. The conversion of crops into energy and industrial materials, derived from biomass (replacing traditional plastic and synthetic materials), may offer serious future investment prospects in a lucrative market, although yet being still in its relative infancy. Technological advances and innovation may entail large future profits, but policymakers should take heed of the possible impacts on the domestic food security should such investments accumulate. With many households in South Africa living below the "breadline", it is vital to first ensure that food products meet human demand prior to expanding primary product processing for secondary uses.

The dilemma between food security objectives and utilizing technological and economic opportunities of bio-fuel production is obvious, and policy decisions are therefore needed.

Stimulating private enterprise development and investment

The South African agricultural community is characterized by very uneven income levels and by a very uneven distribution of opportunities. It is necessary to address this problem effectively by broadening access to income, land, other resources, and opportunities through reform efforts and by providing financial assistance to small-scale farmers. In order to enable them to make a greater contribution to the agro-processing industry, this task has to be seen as a policy imperative. This, however, requires that rural infrastructural needs be met first, as this will ensure that small-scale farmers and the rural poor have access to the means of self-alleviation from poverty, through the opportunity of providing a service in the value-addition process in a developing agro-industry.

[19] An important future consideration in this regard will also be South Africa's compliance with the various Multilateral Environmental Agreements (MEA's).

In order to ensure sustainable agro-industrial development, private investments and initiatives need to complement and eventually to replace public programmes and initiatives in stimulating processing activities. It is therefore vitally important to consider the factors that influence private investments and to address effectively the issues that cause low investor confidence. It is imperative for policymakers to ensure that an investment-friendly and business-friendly environment exists, which provides sufficient incentives and benefits to potential farmers and producers, without fostering dependence on these support measures. As mentioned earlier, the South African case provides policymakers with pressing social and economic objectives, with the former aimed at correcting past injustices and ensuring that land distribution goals are met. These imperatives should, however, not be seen as competing aims, but rather be pursued in a unified manner. Land distribution and labour policies should therefore be designed to complement agro-industrial development goals and should not be seen as a hindrance for private investment. Such measures should not interfere with the workings of the agricultural markets, so as to harm the local producers by affecting demand schedules and prices of processed goods.

A concrete package of measures to promote private investment in South Africa's agro-industry is regrettably not becoming visible. Detailed and concrete public investment initiatives to complement and to encourage the private sector investments are also not really forthcoming.

Facilitating financing for agribusiness and agro-industrial development

The importance of ensuring financing to local agro-producers has to be emphasized strongly. Considering the unique composition of land, resources, and variety in agricultural produce, coupled with social issues of uneven land ownership and limited private capital of previously neglected farmers and agro-producers, a flexible approach is needed in the provision of resources in agro-industry. Arguably, one of the greatest hindrances to potential small-scale entrants in the agro value chain is the lack of collateral needed to obtain private credit to set up a shop. In such instances, public provision of resources should be extended on the basis of the future ability to repay debt and not solely on current collateral backing. Furthermore, performance clauses should be attached to provide borrowers with sufficient incentive to expand and to repay debt. In particular, future ability to obtain capital should be contingent on such performance clauses being met. Furthermore, repayment schedules should be tailored to specific borrower needs and to circumstances while taking into account, among other things, relevant periods of cash-inflow and the broader economic and social impacts of the private enterprise. Public financing schemes have an important role to play (see Box 8.4).

Box 8.4: Public Financing Structures in Place

Several public financing entities have been established in South Africa to provide financial assistance to aspiring agro-producers along the value chain. Such investment and financing incentive schemes include the Small and Medium Enterprise Development Programme (SMEDP), aimed at facilitating the creation or expansion of economically viable projects, which also includes a Skills Development Cash Grant (SDCG) for workers. Assistance is also provided through Critical Infrastructure Grants (CIGs) and Foreign Investment Grants (FIGs), the Export Marketing and Investment Assistance (EMIA) Scheme, and financial assistance provided by the Land Bank.

It must be mentioned, however, that public loans and financial assistance in isolation cannot suffice, as these instruments must be accompanied by efficient and effective beneficiary support systems to ensure that capital resources are put to productive use. Such financial assistance must further be subject to regular performance tests and auditing, and a clear sunset clause has to be attached to ensure that dependence upon public financial provision is not fostered. Publicly provided financial assistance should, therefore, exclusively be granted to capital-deficient producers, needing repayment flexibility, and be strictly contingent upon a clear and viable business plan presented prior to capital extension.

Going forward, it is imperative that policymakers focus on providing sufficient private investment incentives, meet relevant informational and infrastructural needs, while providing borrower underwriting, in order to facilitate the private provision of credit to agro-producers. This will undoubtedly bring efficiency gains and benefits to the industry and will potentially attract large foreign investments that may drive the growth process of the local agro-industry and ensure its sustainable development.

Table 8.4 below describes major constraints to competitiveness in agribusiness, and it is important to note that the cost of capital has been mentioned as a constraint in the years 2000 and 2002.

Table 8.4: Major Constraints to Competitive Success of Agribusiness in South Africa – 2000, 2002, 2004

2000	2002	2004
1) Crime 2) Labour policy 3) Cost of production 4) Quality of unskilled labour 5) Cost of capital 6) Admin. cost associated with labour matters 7) Cost of technology 8) Cost of unskilled labour 9) Quality of physical infrastructure 10) Land reform policy	1) Crime 2) Cost of capital 3) Recent developments in Zimbabwe 4) AIDS 5) South Africa's Labour policy 6) Growth in the local market 7) Availability of capital 8) The events of 11 September in US of America 9) Cost of technology 10) The tax system	1) Cost of crime 2) Competence of personnel in the public sector 3) Trust in the political system 4) Strong Rand (R6/US$) 5) South Africa's labour policy 6) Administrative regulations 7) AIDS 8) Difficulty to start a new business 9) South Africa's Land reform policy 10) Availability of skilled labour

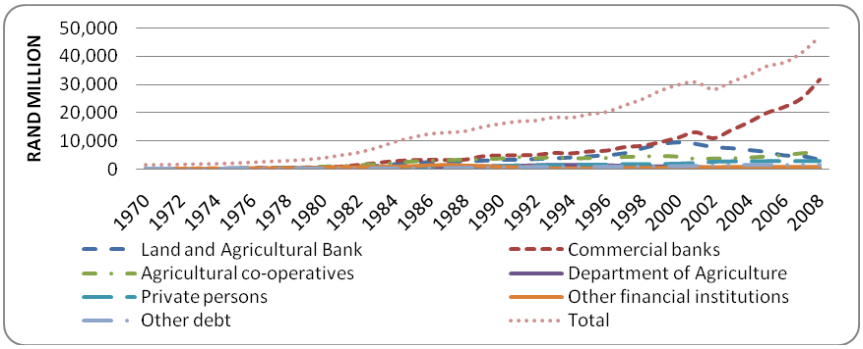
Source: Esterhuizen, Van Rooyen & D' Haese (2001); Esterhuizen & Van Rooyen (2004)

This does not mean however that for the year 2004 cost of capital was not a problem, rather that this problem was overtaken by issues such as the strong Rand, the difficulties of starting a new business, the problems associated with the land reform, etc. However, there are also various other important factors that constrain business, depending on the changing global and domestic environment, and all these other factors have to be looked at in interaction with finance issues.

Although these are simple survey data in Table 8.4 and cannot be regarded as the whole story, they are included to show the reader which factors have been highlighted as important barriers to the development of agribusiness in South Africa. Although further research was not conducted, it should suffice to add that these constraints can still be regarded as important factors today and going forward. What can also be noted in viewing these data is the dynamic nature of constraints to agro-processing. It is clear that there exists a continual need for re-evaluating what needs to be done in order to facilitate the level of development aspired to in the local sector. Similar analyses should be incentivized and updated, while policymakers should take note of contemporary factors that negatively influence the sector.

It is also important to analyze the changes in the composition of agricultural debt in South Africa with regard to the major financiers (see Figure 8.17). As agriculture, agribusiness and agro-industrial development are affected by the finance structure, it is necessary to look at the progression that South Africa has experienced in this regard over the last four decades.

Figure 8.17: Changes in the Composition of Agricultural Debt from 1970 – 2008 (Rand Millions)



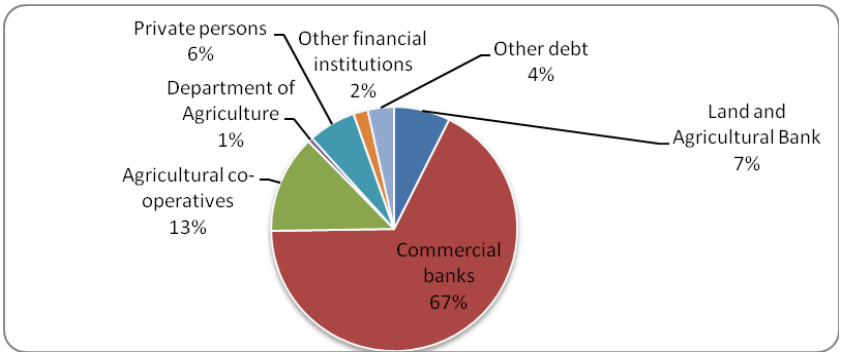
Source: Statistics SA

From the figure above, several trends are clearly visible over the last four decades. Firstly, it is striking to see the scale of the increase of total debt over the period, with growth in commercial bank debt being the largest driver of the enormous agricultural debt growth, with a growth from 1,402million Rand ($180 million) to 47,000 million Rand ($6,049 million) over this period (in nominal terms). It is especially heartening to see the growth in commercial and private capital provision over this period relative to the predominantly Land Bank and Department of Agriculture debt provisions (which contributed respectively 21 per cent and 10 per cent of total debt in 1970, compared to only 7.3 per cent and 0.6 per cent in 2008). Some of the relative decline in the role of the Land Bank in financing may also be due to problems with management and inefficiency within this financial body.

Today, commercial banks provide 67.4 per cent of the total debt (compared to 20 per cent in 1970), while private individuals' capital provision contributes 6.3 per cent of the total farming debt incurred. This is a result of government policy since 2000 to stimulate the private provision of capital, so ensuring productivity gains, reducing pressure on the domestic budget, and ultimately fostering sustainability of agribusiness development.

Below is a pie chart of the distribution of farming debt between the different sources in the domestic economy in 2008 (see Figure 8.18). Note that other financial institutions include discount houses, merchant banks, insurance companies, pension funds, trusts, and the participation of mortgage bond holders.

Figure 8.18: Dispersion of Local Farming Debt between the Different Sources (2008)



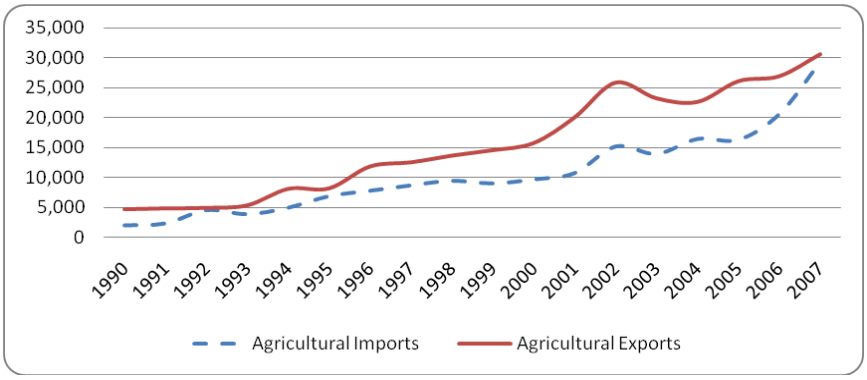
Source: Statistics SA

It is interesting to note from the above chart that the main thrust for financing agribusiness in South Africa still remains commercial banks. We therefore can find no evidence that new innovative financing instruments currently play a significant role in agricultural development and agribusiness promotion. This can largely be attributed to the dualistic structure of South Africa's agriculture and agro-industry subsectors; commercial farming is based on the use of traditional finance instruments, while for small-scale farming innovative new financing structures have yet to be created and introduced. As the private sector cannot, traditionally, be regarded in South Africa as focussed on small and medium-sized agribusiness developments, it is imperative that means be sought to make resources available to small-scale farming activities. In order to achieve this goal, innovative financing means should be sought that address the specific needs of micro and small agribusiness enterprises. For the sake of brevity, a further discussion on innovative means of financing small-scale agribusiness is here omitted, but it should be noted in this regard that the government's role in facilitating the provision of such scarce capital remains imperative.

Developing and exploiting local, regional and international demand

Highlighting the basic structure and the trends of the South African economy's gross ago-processing trade balance is important, as well as distinguishing between the economy's most important trade regions.

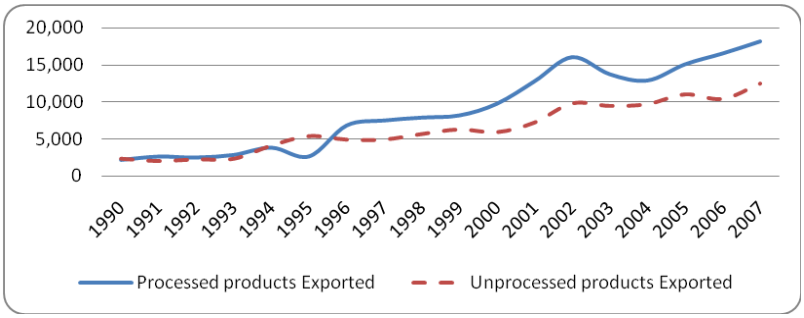
Figure 8.19: Comparison of Agricultural Imports and Exports since 1990 (in Rand Millions)



Source: SARS

From Figure 8.19 above one can see a significant increase in the value of both imports and exports of agricultural products over the last two decades (both values have more than doubled since 2000), with a notable narrowing of the trade surplus. Figure 8.19 displays movements in total imports and exports which include both raw and processed agro-products. It is interesting to contrast this with Figure 8.5, as the latter shows South Africa being a net importer in the main agro-industry subsectors, yet on a whole the agricultural market shows a slight net trade surplus. As no distinction is made between the processed and the non-processed products of agricultural trade, it is necessary to separate the two categories in order to study the change in agro-processing exports relative to raw produce exports (see Figure 8.20 on this separation of categories).

Figure 8.20: Processed and Unprocessed Agricultural Exports (in Rand Millions)



Source: SARS

From the above Figure 8.20 it is quite clear that the recent upward trend in agricultural exports was mainly driven by increased processed agro-exports. This is an encouraging sign for the agro-industrial sector and for the local economy as a whole, and it is clear that the agro-trade liberalization measures since 1994 have resulted in an export-led growth in the value-adding process of primary products. However, it has to be made again quite clear that the net trade balance for all agro-industry subsectors is negative (see Figure 8.5).

The South African economy has greatly benefited from the expanding international market for locally produced agro-processed products. Previously, agro-producers were greatly confined by the limitations of the local market, but recent integration into the international agricultural scene saw domestic producers exploit the lucrative foreign agro-processed markets, which in turn encouraged resurgence in production and exports of value added goods.

Although a thorough in depth analysis into such integration and cooperation trends is omitted for the sake of brevity, it is important to highlight the need for further integration efforts from the side of the South African agricultural sector within the African region. There are various encouraging trends in trade of agro-industry products towards subregions in Africa. The regional trade developments in the SADC area are important for South Africa, as there is certainly room for mutually beneficial trade agreements. Similarly, trade relations with COMESA and EAC countries are becoming increasingly important and can be furthered in the future. Investment flows from South Africa to other African nations also remain an integral part of agribusiness in this underdeveloped region, as such flows allow the exportation of knowledge and services, while simultaneously allowing the domestic sector to source valuable raw materials (see OECD/DC 2008). For a further discussion on the importance and current evaluation of regional integration within the Southern African region, the reader is referred to SAT studies conducted (SAT 2008a & b and 2009). There is also room for a collective food security strategy of the SADC countries (SAT 2008a).

Visions, Plans of Action, and Way Forward

It is difficult to envisage the possibility or likelihood of a reversal from mining to agriculture as providing the main source of inputs for manufacturing and processing. However, the South African economy faces major changes in trade and industrial policy, as well as major social-economic restructuring processes, including a land reform programme, which could have an important and positive impact on agro-industry:

- As noted earlier the National Industrial Policy Framework (NIPF) of July 2009 and in particular the second Industrial Policy Action Plan (IPAP 2), published in February 2010, give expression to the intention of the Government to apply more pro-active policies. These include

efforts to lessen the dependence of the economy on capital-intensive mineral beneficiation and to shift the focus to more labour-intensive industries, including agro-industries. In the IPAP three subsectors have been identified (agro-processing; clothing, textiles, leather and footwear; and forestry, paper, pulp, and furniture) with Key Action Plans (KAPs) for each of them: for agro-processing, for example, nine so-called Key Action Programmes (KAPs) have been identified such as the development of aquaculture, the organic food sector, high value niche markets in organic cotton, competitive enhancement in the fruit and vegetable canning industry, and the promotion of beneficiated Rooibos and Honeybush products.

- It is also part of the Government policy to pay renewed attention to the unequal distribution of income and wealth in South Africa. Creating growth and development opportunities in a more equal society is essentially what the new developmental framework is all about. Greater emphasis on equity and the economic empowerment of the poor majority will be reflected in increased spending on education, health services, and housing, in an improvement in welfare payments, and in a focus on the development of small, medium and micro enterprises, as well as programmes of black economic empowerment. The relevance of these programmes for the development of agro-industry is the inevitable impact that all this will have on the broad spending patterns of society. Lower-income people have a higher average and marginal propensity to spend disposable income on items such as food, clothing and furniture, which means that policies aimed at the redistribution of income have the potential to stimulate the demand for these products.
- While textiles and clothing as agro-industries do not depend on a domestic supply of primary inputs but can be supplemented with imported goods, the growth of food-processing industries depends on a sustainable and growing domestic supply of primary products. South African agriculture is completely dominated by a modern and market-oriented sector of land-owning producers. The challenge facing South Africa is therefore not similar to the one encountered in much of sub-Saharan Africa (SSA) where the reform of subsistence farming on communally-owned land is required to increase production for the market, including inputs for processing industry. But South Africa, nevertheless, faces a serious challenge of land reform. Currently, commercial farming is dominated by white farmers and it is Government policy to change the ethnic profile of land ownership substantially in favour of black farmers. In a country where the security of private property is enshrined in the constitution and where much emotion is attached to land ownership, land reform is a politically sensitive issue and one that has to be confronted with great care so as to avoid any interruption of growth processes in agro-industry.
- Government policies to encourage the development of small business and black economic empowerment were noted as highly important. These policies are applied in an economy noted for its high levels of concentration in manufacturing and trade. This characteristic is also encountered in the food processing industry and in the food retail trade, with four large supermarket groups dominating as retail outlets in southern Africa (South Africa and the neighbouring states) for the products of a few large manufacturers. In recent times the competition authorities, in continuous efforts to improve market competition, have exposed and acted against market collusion in the dairy and bread-baking industries (see NAMC, 2001).

A number of policy positions can be identified that will facilitate a welfare-enhancing development process through the faster growth of South Africa's agro-industry. However, it is important to be aware of the mature nature of this industry. Enterprises that add value to agricultural commodities -whether it is making wine, baking bread, canning fruit and vegetables, making cheese and yoghurt, or making leather car seats for the export market, to name just a few examples- operate as competitive, well capitalized firms that produce products meeting the standards of developed markets. Nevertheless, Government can create a policy environment that will favour agro-industry vis-à-vis the capital-intensive industries active in mineral beneficiation:

- The industrial policy with its Key Action Plans to develop agro-industry is important. But designing policy is relatively easy; the difficulty in a country facing capacity constraints in government lies in the implementation and monitoring of the strategies decided on. Successful implementation demands exemplary commitment on the part of Government, and at all levels of government.
- The processing of agricultural products typically provides room for the profitable participation of small enterprises, often in niche markets. These enterprises can cover the whole range from micro to medium-sized businesses. Focusing current small business development programmes and the efforts to empower black South Africans on the opportunities that exist in agro-processing can make a meaningful contribution to the growth of the sector, to a commensurate growth in employment and income opportunities, and to the encouragement of entrepreneurial development.
- Small business development in agro-industry will also depend on the maintenance of a business environment that does not allow big businesses to maintain, through unfair trade practices, their market position at the cost of small businesses. South Africa has a modern competition law and has effective competition agencies in place that have in the past acted against uncompetitive behaviour of large food enterprises. Vigilance in this regard has to be maintained.
- Poorer people, as noted earlier, have a higher propensity to consume the products of agro-industry. Consequently, policies aimed at a more equal distribution of income by concentrating on poverty reduction programmes, including efforts to increase the number of lower-skilled productive jobs, will have a positive impact on the demand for the products of agro-industry.
- Finally, growth of agro-industry is contingent on the ability of the primary producers to deliver a sustainable supply of commodities. Government faces a delicate situation in its land reform programme, with new policy initiatives to be revealed for discussion in a forthcoming Green Paper. A transfer of a significant portion of agricultural land to black farmers is a political, and in terms of wealth distribution, an economic imperative. But in order to maintain the productive capacity of the farming sector a substantial effort in providing advisory services and finance to new black land owners will be required to avoid a repetition on a large scale of past cases of land transfers which have ended in a loss of production. Also, the policy initiatives must not contribute to uncertainty and act as a constraint on investment and development in commercial agriculture. Investment to a significant extent depends on long-term expectations, and given the experience with land reform in neighbouring Zimbabwe it will be unwise to ignore fears in the South African farming community on the security of property ownership and the impact that all this could have on production, food security, employment, and income generation.

Obviously, the highly dualistic character of South Africa's agriculture creates demand for a more differentiated strategy for agro-industry and agribusiness development. Such a strategy has to be developed in the next years along the whole production chain from agricultural production to production of agro-industry products for all income classes of domestic consumers and for a much more diversified export base. Supplying more agricultural machinery and equipment for agro-industries, inputs for agricultural production and agro-industry production, and production, business and technical services along the agro-industry value chains will give additional employment and export chances.

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Abbreviations and Acronyms

ADZs	aquaculture development zones
AHs	aquaculture hatcheries
ANC	African National Congress
ARC	Agricultural Research Counsel
BDS	Biofuels Draft Strategy
CIG	Critical Infrastructure Grants
COMESA	Common Market for Eastern and Southern Africa
DB	dairy board
DCCS	Duty Credit Certificate Scheme
DME	Department of Minerals and Energy
DTI	Department for Trade and Industry
DAFF	Department for Agriculture, Forestry and Fisheries
EAC	East African Community
EDAMBA	European Doctoral Programmes and Association in Management and Business Administration
EMIA	Export Marketing and Investment Assistance Scheme
FIGs	Foreign Investment Grants
FMF	Free Market Foundation
FSA	Food Safety Act
FRIDGE	Fund for Research into Industrial Development, Growth and Equity, TIC
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GNI	Gross National Income
GRSA	Government of the Republic of South Africa
GSS	general support scheme
GVA	Gross Value Added
HDI	Human Development Index
INR	Institute for Natural Resources
IPAP	Industrial Policy Action Plan
ISIC	International Standard Industrial Classification
KAP	Key Action Plan/Programme
MDGs	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MNC	Multinational Corporation
MVA	Manufacturing Value Added
NFCA	National Food Control Agency
NIPF	National Industrial Policy Action Plan
NTB	Non-tariff barriers
OBP	Onderstepoort Biological Products
OFS	organic food strategy

PPP	Public Private Partnership
QR	quantitative restrictions
R	Rand
R&D	Research and Development
RTA	Relative Trade Advantage
SAOSO	South African Organic Sectors Organization
SARB	South African Reserve Bank
SARS	South African Revenue Service (SARS)
SAT	Southern Africa Trust
SDCG	Skills Development Cash Grant
SMEDP	Small and Medium Enterprise Development Programme
SPS	sanitary and phyto-sanitary standards
SSA	sub-Saharan Africa
STI	Science, Technology and Innovation
TIC	Trade and Industry Chamber
TIPS	Trade and Industrial Policy Strategy
UoSA	Union of South Africa
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization

Chapter 9 | Zambia

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Introduction: the case for agro-industrial development

Agriculture and agro-industry are key priority sectors in attaining broad-based economic growth, food security and poverty reduction, not only because they are more labour-intensive, but also because they tend to have stronger linkages with the rest of the economy. About 60 per cent of the total population and 70 per cent of the poor in Zambia live in rural areas, the majority of whom rely on incomes from agriculture and agriculture-related industries, and/or consume domestically produced food. The agriculture sector alone provides means of livelihood for more than 50 per cent of the population and absorbs about 67 per cent of the labour force (GRZ/MACO 2004). The Government of the Republic of Zambia (GRZ) has recognized the importance of agriculture and agro-industries as key drivers of economic growth. It asserts that these sectors possess the capacity to generate strong backward and forward linkages, to promote demand for, and to add value to primary agricultural products. Agro-processing would reduce post-harvest crop losses which were as high as 30 per cent in 2004 (GRZ/MACO 2004), while agribusiness could create employment and income along the value chain from the primary producer to the ultimate consumer, widen the tax base, and increase foreign exchange earnings (GRZ 2006a).

With a total land area of 75 million hectares of which 58 per cent is classified as medium-to-high potential for agriculture, and more than sufficient rainfall that ranges between 800 and 1400 millimetres annually, Zambia has a huge agro-industrial base (CIA/The World Factbook 2010). However, this vast resource endowment remains largely untapped and only about 14 to 15 per cent of total agricultural land is currently utilized (CIA/The World Factbook 2010). Although the country's irrigation potential is conservatively estimated at 423,000 hectares, only about 50,000 hectares are currently irrigated (GRZ/MACO 2004), underlining the scope for major productivity gains if this potential could be exploited. The country possesses no less than 35 per cent of the fresh water resources in the entire 14-nation SADC region (GRZ/MACO 2004b).

Although Zambia is landlocked and not directly linked to major world markets, it is situated close to good regional markets for many of its products. Full exploitation of these varied export market opportunities would enable the agribusiness sector to make a much greater contribution to foreign exchange earnings and to reduce the high degree of reliance on copper export earnings. The question then remains what needs to be achieved in Zambia by way of changes with regard of policy and the institutional framework to link up with the global value chain in agribusiness.

Structure and dynamics of agro-industries

Agro-industry contribution to Zambia's economy

Agro-industry refers to the establishment of productive linkages between enterprises and supply chains for developing, transforming and distributing specific inputs and products towards value addition in the economy based on the agricultural sector. Agro industries consist of food production sectors (processing staple and export products) and non-food production sectors (leather and leather products, textiles and garments, and furniture and wood products). The

productive base varies in scale from large to small and micro enterprises, falling into two broad categories, formal and informal.

As a share of GDP manufacturing value added in Zambia rose from 7 per cent in 1965 to a peak of 37 per cent in 1992, during which period industrial output increased at an average annual rate of 3.7 per cent (GRZ/MACO 2001). This weak performance was mainly due to the dominance of a stagnant state-owned enterprise sector and the prevalence of large scale state controls during the pseudo-socialist Kaunda regime. Realizing the need for accelerated growth and development, and responding to the demands of the Bretton Woods institutions for economic reforms, conditioned upon financial assistance in 1993, the Government began the privatize the state-owned enterprises and to liberalise external trade. The immediate impact was a further decline in the performance of manufacturing due to the slow pace of the restructuring exercise and weak investment. Gross fixed capital formation declined from a period average of 19 per cent of GDP between 1971 and 1992 to 14 per cent between 1993 and 2001, while the average annual manufacturing value added share fell to 11 per cent of GDP during that period (GRZ 2006c).

However, since 1996 Zambia's manufacturing sector has returned to positive growth, though the recovery has been uneven. Agro-industry has grown fastest, spurred by deliberate efforts of Government to diversify the economy from mining to other sectors. Furthermore, as a result of enhanced competition, agro-producers have been forced to increase their product range through the use of new technology, resulting in considerable cost reductions. Table 9.1 details the percentage changes of agro-industry subsectors between 1999 and 2008. The figures show quite remarkable increases in agro-industry sectors.

Table 9.1: Growth Rates of Agro-industry Subsectors – Current Prices

Sector	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average 1999-2008
Food, Beverages& Tobacco	17.2	23.3	25.2	34.5	35.2	23.6	22.8	14.3	18.8	4.5	21.9
Textile & Leather Industry	21.8	29.8	24.2	26.9	24	27.7	11	26	4.6	-16.7	17.9
Wood & Wood Products	6.7	19.3	40.3	31.8	39	34.9	23.1	18.2	25.4	13.5	25.2
Paper & paper Products	41.1	18.1	37.7	25.3	35	32.7	31.4	17.7	15.7	25.4	28.0
Chemical, Rubber & Plastic products	4.7	69	29.7	28.2	25.5	29.5	21.3	17.8	15.5	6.3	24.8

Source: Central Statistics Office (2009); 2008 GDP Estimates

Table 9.2 illustrates the dominance of agro-industry which accounted for 95.7 per cent of manufacturing GDP in 2008, with food, beverages and tobacco contributing almost 70 per cent. Zambia's processed food and beverage sector produces a wide range of products: sugar, cereals, wheat flour, stock feeds, milk, vegetable oil, beverages, honey and beeswax, corn meal, molasses, mineral water, food concentrates, buns and bread, and dried fruits and vegetables.

Table 9.2: Contribution of Agro-industry to Manufacturing, at Constant 1994 prices, 2006-2008(K' billion)

Sub sector	2006	2007	2008	Contribution to Manufacturing Output in 2008 (%)
Food, Beverages and Tobacco	224.0	241.1	251.9	66.6
Textile and Leather Industries	48.2	38.8	32.3	8.5
Wood and Wood products	26.5	27.5	31.2	8.2
Paper and Paper products	9.8	9.9	12.4	3.3
Chemical, Rubber and Plastic products	30.9	32.2	34.2	9.0
Total agro –industry	**339.4**	**349.5**	**362.0**	**95.7**
Other Manufacturing	15.2	15.7	16.2	4.3
Total Manufacturing	**354.6**	**365.2**	**378.2**	**100.0**

Source: Source: Central Statistics Office (2009); 2008 GDP Estimates.

Note: Exchange Rate of the Kwacha to the US$averaged Zkw 3,746 over the period 2006-2008

Agro-based non-traditional exports (NTEs) more than doubled between 2001 and 2007, driven mostly by expanded production of primary agricultural products – tobacco, cotton lint, coffee, and maize – but with agro- processed products accounting for only 26 per cent of the increase (see Table 9.3). Sugar is the largest agro-processed export product, but wheat flour, stock feeds, and corn meal also remain prominent.

According to the labour force survey report of 2005 (CSO/Ministry of Labour 2005), the agriculture, forestry and fisheries sector was the largest employer of labour, accounting for 73 per cent (2.98 million people) of the employed population (4.13 million), while the manufacturing's share was only 4 per cent (166,143). 69 per cent of males and 78 per cent of females were employed in the agriculture, forestry and fisheries sector, while manufacturing employed 4 per cent of men and 3 per cent of women (CSO/Ministry of Labour 2005). 92.5 per cent of those working in agriculture, forestry and fishing were employed in rural areas, but the bulk of the employed workforce of other sectors was engaged in urban areas. Almost three-quarters (73.2 per cent) of those employed in the manufacturing sector do work in urban areas, which highlights the case for a rural industrialization by expanding non-farm industrial activities (CSO/Ministry of Labour 2005).

Table 9.3: Non-Traditional Export Earnings of Agricultural and Agro-Processed Products by Sector, 2001-2007

Sector	2001 US$'000$	2002 US $'000	2003 US $'000	2004 US $'000	2005 US $'000	2006 US $'000	2007 US $'000	2008 US $'000
Primary Agriculture*	51,359.0	76,510.5	97,911.2	163,748.6	196,975.1	176,913.0	182,702.7	247,637. 7
Floriculture	34,078.2	30,298.1	22,402.1	26,767.6	32,094.1	17,839.1	62,535.5	26,910 .1
Horticulture	36,383.9	44,907.1	45,969.0	35,851.3	20,507.7	23,024.1	37,252.0	36,349 .51
Animal Products	3,062.5	5,192.0	3,593.2	1,992.1	2,130.9	2,305.8	5,177.7	7,861 .6

Sub Total	**124,883.6**	**156,907.7**	**169,875.5**	**228,359.5**	**253,712.8**	**222,088.0**	**289,674.9**	**318,758.9**
Processed & Refined Foods**	43,008.5	43,747.2	43,883.6	49,802.2	66,933.3	103,573.3	114,997.6	108, 419.4
Textiles	34,144.2	25,622.4	25,981.3	24,746.4	26,937.3	19,583.8	15,221.7	18,518. 0
Garments	221.1	219.2	162.7	143.8	445.4	315.3	7,176.9	8,083 .3
Leather & Leather Products	3,916.5	4,140.0	3,354.2	3,532.5	3,959.6	4,854.1	5,828.9	10,143 .3
Wood Products	3,761.7	3,167.1	2,957.2	4,176.6	3,467.7	4,502.6	5,016.9	14,762. 6
Hand Crafts & Curios	227,07	379.0	145.1	41.8	183.9	547.4	588.8	1,248 .3
Total Agro-processed products	**85,051.9**	**77,274.9**	**76,484.0**	**82,443.3**	**101,927.2**	**133,376.4**	**148,830.8**	**153,091.6**

Source: ZDA/Zambia Development Agency (2009)

**Notable products in the primary products subsector: tobacco, coffee, fuzzy cotton seed and tea.*

***Major products: sugar, wheat flour, stock feed and maize meal.*

Emerging agro-industry and market opportunities

In the last two decades, domestic policies, such as policies for foreign exchange and trade liberalisation, policies towards regional integration, and policies to improve the conditions for foreign direct investment (FDI), have enhanced the participation of the private sector in most of the agricultural products' supply chains. Although Zambia has signed a number of regional and international trade agreements with the expectation that these will generate greater market opportunities, important obstacles remain such as the need to meet rising sanitary and phyto-sanitary standards (SPS) in global markets. Some of the prescribed standards that were set are more exacting than those currently set by international regulatory bodies, and failure to adapt to these new conditions could seriously constrain Zambian agro-industries, particularly micro, small, and medium enterprises (MSMEs).

Furthermore, the deregulation of agriculture input and output markets (by decontrolling agricultural commodity and input prices) and the privatization of state-owned agro-companies have significantly changed the structure and the responsibilities of the actors in agribusiness supply chains. Currently, the private sector is expected to play a leading role in input supply, output marketing, agro-processing, and in credit provision. Agribusiness firms and small holder farmers (SHF) have taken over roles previously carried out by government agencies, such as product distribution, quality control and pricing, though their capacity to fulfil these functions on a sustained basis needs to be proven.

Rapid population growth, urbanization, rising incomes, and the growing number of women in wage employment are increasing the demand for high-value commodities, processed products, and pre-prepared foods. For instance, the variety of livestock, fruit and vegetable products demanded by consumers provides major opportunities for farmers and agro-industries to diversify into higher value products for regional and domestic markets. In the late 1990s, trade of this type, especially in fish, processed foods, fruits and vegetables, accounted for more than 40 per cent of the total value of agricultural products exchanged across borders in the Southern African region (Delgado *et al*. 2001).

At the same time, higher food prices that accompanied the rapid growth of bio-fuel industries have opened up opportunities for primary commodity production and associated agro-industries, targeting both the domestic and the export markets. Globally, the prices of agricultural raw materials that declined between 1998 and 2001 have since increased by about 2.5 per cent annually,

boosting the growth in Zambia's non-traditional exports: cotton lint, cotton yarn, flowers, vegetables, tobacco and sugar (Delgado *et al.* 2001).

While changing tastes and rising health and safety standards create new opportunities for agro-industry, they also necessitate major improvements in production processes, technology, and logistics that are often beyond the capability of small and medium enterprises (SMEs) which are operating with outdated technologies and inadequate infrastructure. Hence the adoption of basic technologies for processing, conservation, and extraction that go hand in hand with information and communication technologies remains essential to reduce large post-harvest losses and to enable business and government actors to meet the changing demands of a globalized consumer market.

The increased involvement of retailers and supermarkets in the supply chain has opened up market opportunities for some local agro-processors, resulting in an expansion of their product range. Supermarkets act as a channel for consumer information and tend to lower information costs and risks by clearly communicating quality grades and standards with which suppliers must comply.

However, stringent quality and consistent supply requirements tend to exclude SMEs from participating in these supply chains. This is the case because of their inadequate technological know-how and low output volumes, which make them unreliable suppliers. Consequently, a very large proportion of the packaged and value added foods distributed by supermarket chains within Zambia are still imported. Nevertheless, there remain huge potentials for import substitution, both for fresh and for processed foods. Furthermore, the attitude of SME's towards contractual obligations with large buyers could be addressed with an enhanced used of institutions such as cooperatives.Contract farming, through forms such as outgrower schemes (OGS), is expanding and helping farmers to increase production, raise quality standards, and even enter international commodity chains.

Through such arrangements, agribusiness is able to organize a reliable supply of products of the desired quality and to get access to land that is not otherwise available. Such arrangements give farmers access to production services, credit, and new technology, while pricing arrangements, notably forward contracts, reduce risk and uncertainty, and so giving farmers the opportunity to diversify into new crops.

Policies for developing agro-industries

Public - private sector interaction

With the strengthening of the private sector, as it takes over functions previously in the public sector domain, government's focus has shifted to policy formulation, enforcement of legislation, regulation and inspection, the provision of infrastructure, capacity building within public and private organizations, and monitoring and evaluation of overall sector performance. Interaction of public and private actors is of increasing importance. They jointly develop policies towards agro-industries, along with the donors and NGOs who are also involved in this process.

Key players in agro-industrial development in Zambia include government ministries, especially the Ministry of Commerce, Trade and Industry (MCTI), the Ministry of Agriculture and Cooperatives (MACO), and the Ministry of Livestock and Fisheries Development (MLFD), who are directly responsible for the development of the entire agribusiness sector. Other ministries whose mandates influence the development of agro-industry include the Ministry of Energy and Water Development (MEWD), the Ministry of Science, Technology and Vocational Training (MSTVT), and the Ministry of Local Government and Housing (MLGH).

A number of statutory bodies and institutions also play important roles: the Zambia Development Agency (ZDA) that support business investment and exports; the Zambia Bureau of Standards (ZABS) and the Zambia Weights and Measures Agency (ZWMA) that deal with such related issues

as standardization, standards formulation, quality control, import and export quality inspections, certification, and the removal of technical barriers to trade. The Zambia Competition Commission (ZCC) regulates anti-competitive and restrictive business practices and promotes consumer welfare, while the Patents and Companies Registration Office (PACRO) facilitates company registrations, business names, industrial designs, trademarks, and patents. The Cotton and Tobacco Commodity Boards are responsible for overseeing and monitoring crop production and providing extension services. Training institutions include the Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA), the Technology Development Advisory Unit (TDAU), and the School of Agriculture and the Department of Food Science at the University of Zambia. Agro-related research in food technology, textiles, forestry and underutilized plants, water, and energy is undertaken by the National Institute of Scientific and Industrial Research (NISIR), the Zambia Agricultural Research Institute (ZARI), and the Golden Valley Agricultural Research Trust (GART). Lastly, the National Technology Business Centre (NTBC) promotes research and development (R&D) and facilitates technology transfer.

Business forums act as lobbyists and intermediaries in promoting the dialogue between the public and private sectors. Important non-state actors involved in these include the Agribusiness Forum, the Zambia Chamber of Small and Medium Business Associations (ZCSMBA), the Zambia Agribusiness Technical Assistance Centre (ZATAC), the Zambia Association of Chambers of Commerce and Industry (ZACCI), the Zambia Business Forum (ZBF), the Zambia Association of Manufacturers (ZAM), the Zambian Cooperative Federation (ZCF), the Zambia National Farmers Union (ZNFU), the Zambian Export Growers Association (ZEGA), the Small Scale Industries Association of Zambia (SSIAZ), the Cross Border Trade Association (CBTA), the Women Entrepreneurship Development Association of Zambia (WEDAZ), and the Zambia Federation of Women in Business (ZFWB).

Crop and livestock associations are also active. The Cotton Association of Zambia (CAZ)'s main task is to strengthen farmer groups and their effective participation in the industry, while the Cotton Ginner's Association (CGA) ensures that the rules and regulations of the industry, as laid out in the Cotton Act of 2005, are followed. Others include Timber, Honey, Coffee, Millers, and Grain Traders associations. Various non-governmental organizations (NGOs) – World Vision International (WVI) and the International Development Enterprises (IDE) – do support agriculture and agro-processing. IDE is mobilizing small-scale farmers for outgrowers' schemes while also providing technical services.

Financial Institutions in Zambia whose activities directly or indirectly impact on the sector include: (i) the Lusaka Stock Exchange (LuSE); (ii) Commercial Banks, Development Banks – local and regional such as the Preferential Trade Area (PTA) Bank[20] and African Export Import Bank (Afreximbank)[21] – and Microfinance Institutions; (iii) the Citizens Economic Empowerment Commission (CEEC) that provides funding to indigenous businesses with the aim of empowering Zambians economically; and (iv) Insurance companies, which, apart from providing insurance cover, also grant loans to clients.

Some donors support advocacy activities in the sector. The Agricultural Consultative Forum (ACF) is funded by SIDA and USAID; while the Zambia National Farmers Union (ZNFU) is supported by the Netherlands, Norway, Sweden, and IFAD (International Fund for Agricultural Development). Targeted lines of credit for small-scale farmers are provided by the World Bank's Agriculture Development Support Programme (ADSP) and IFAD's Rural Finance Programmes (RFPs). Other providers include the Zambia Agribusiness Technical Assistance Centre (ZATAC)

[20] The Preferential Trade Area Bank (PTA Bank) is the financial arm of COMESA.

[21] The African Export Import Bank was established in Abuja, Nigeria in October, 1993 by African Governments, African private and institutional investors, as well as non-African financial institutions and private investors for the purpose of financing, promoting and expanding intra-African and extra-African trade. It is headquartered in Cairo, Egypt.

that offers technical advice to smallholders, covering production, marketing and business planning. Several donors – the World Bank (WB), the European Commission (EC), Finland, and the Netherlands – support SMEs to get access to credit schemes and to business development services (BDS).

The AfDB (African Development Bank), the Kuwait Fund, the OPEC (Organization of Petroleum Exporting Countries), the World Bank, Denmark, and Japan are active in developing transport infrastructure; they contribute to sector investment programmes, such as the Road Sector Investment Programme (ROADSIP). Specific interventions to improve rural infrastructure include the ADSP's rehabilitation of rural road networks in high potential agriculture areas of the country and the Road Rehabilitation and Maintenance Project (RRMP), which is part of ROADSIP. The AfDB is currently implementing an $8.3 million Small-scale Irrigation Project (SIP) and is negotiating a new loan for irrigation. The World Bank and IFAD have prepared a joint commercial agricultural project (CAP) with a focus on irrigation (Bonaglia 2008). Production, Finance and Improved Technologies (PROFIT) is an USAID-sponsored programme that ran from 2005 to 2010 with the main objective of improving the competitiveness of selected agro-industries which are populated by large numbers of micro and small enterprises through: (i) better inter-firm cooperation; (ii) more developed support markets; and (iii) building credibility and confidence in market mechanisms.

Public – Private Partnerships (PPPs) in agro-industry

As with many other African countries, Zambia seeks to use public-private partnerships (PPPs) to fund infrastructure development. A PPP is an agreement between the public and private sectors with shared objectives for the delivery of public infrastructure or public services by the private sector, thereby reducing the financial and administrative burden on an often overstretched public sector. Under these arrangements, the government retains the major role in the partnership as the main purchaser of services or main enabler of the project. For its part, the private sector partner benefits financially according to predefined performance criteria that maybe derived entirely from service tariffs, user charges, or directly from the government budget.

PPPs enable the public sector to source private sector providers for the delivery of public infrastructure and related services which the private sector can provide more effectively and efficiently. PPPs are not only designed to attract private sector finance for national capital investment projects, but also bring private sector skills and managerial expertise to public service projects.

Within the agro-industry sector, the government has undertaken several successful PPP initiatives, including the privatization of state-owned agro-processing companies, such as the National Milling Corporation (NMC)[22]. The case of Freshpikt Zambia Ltd is in this context of great interest (see Box 9.1). The Zambia Development Agency (ZDA) is currently promoting a joint venture with Western Cashew Industries Limited to process cashew nuts in the Western Province of Zambia. The region has over 100,000 hectares of suitable land and climate to plant 10 million cashew trees that could produce over 60,000 metric tons of cashew nuts. All these examples show that there is a new wave of launching agro-industrial cooperation projects in Zambia.

[22] According to the Zambia Development Agency (ZDA), privatization (divestiture) is one of the six options of PPPs as currently implemented in Zambia. It can take either of two forms, partial or complete divestiture. A complete divestiture gives the private sector full responsibility for operations, maintenance, and investment. Unlike a concession, divestiture transfers ownership of the assets to the private sector. Other forms of PPPs include: management contract, service contract, lease, concession, build operate and transfer (BOT), and build, own, operate and transfer (BOOT).

Box 9.1: Challenges faced by Agro-Processing firms in Zambia- Freshpikt Zambia Ltd

Freshpikt Zambia, located in Lusaka, operates a world class processing facility consisting of three main production lines. A tomato paste and mango processing line, with a rated capacity of 60 tons of raw tomatoes in 24 hours; a pineapple processing line with a rated capacity of 30 tons of raw pineapples in 24 hours; and a multi-purpose manual packing line with a rated capacity of 60,000 cans in 18 hours. Freshpikt Zambia was established in 2005 to purchase, rehabilitate, and operate a state-owned enterprise – Zamhort. The facility, built in the late 1980s and commissioned in 1992, was refurbished in 2005, and by mid-2006 some products were launched on the local market.

Within a year Freshpikt became the biggest selling brand in the Zambian retail market. The company's product range and market share have grown steadily since then. Processed products include baked beans, mixed beans, tomato paste, tomato sauces, tomato puree, whole peeled tomatoes, tomatoes and onion mix, whole kernel sweet corn, mixed fruit jam, pineapple pieces and rings, guava halves, sundried tomatoes, cherry peppers, gooseberries, packed beans, and groundnuts and peanuts butter. In 2008 Freshpikt began exporting to three countries in the region – Zimbabwe, South Africa, and the DRC (Democratic Republic of Congo).

It also exports sundried tomatoes to Germany. MATEP (Market Access, Trade and Enabling Policies), an USAID funded project, has helped the firm access regional, European and American markets, but despite these developments, the plant's daily capacity utilization is only about 28 per cent. Various factors impede progress in operations (see table below).

The Firm's Plant Capacity, Daily Utilization, and Total Monthly Payments to Farmers

Product	Daily Current capacity (metric tons)	Daily Design Capacity (metric tons)	Source of raw material	Total value paid out monthly to farmers (US $)
Tomatoes	60	300	Own/ Smallholders	660,000
Beans	4	10	Smallholders	220,000
Pineapples	30	60	Smallholders	264,000
Peanut- related	0.5	15	Smallholders	330,000
Other products	40	100	Own/ Smallholders	220,000
Total daily	134.5	485		1,694,000

Source: Freshpikt Zambia Ltd

Operating constraints include:

- Infrastructure, especially the poor road network for sourcing of raw materials;
- Marketing, including inaccessibility to timely and accurate market information about existing market opportunities, storage, and cooling facilities;
- Inadequate infrastructure that not only increases costs but creates disadvantages to smallholders in rural areas, so that firms tend to concentrate activities in relatively easily accessible areas. High fuel and electricity expenses translate into high production, freight, and storage costs. Packaging materials are costly because they have to be sourced from outside Zambia;
- Poor smallholder farm productivity due to inadequate investment, especially in extension services;
- Equipment, machinery and spare parts are expensive;
- Unreliable supply of quality raw materials results in the company having to use close substitutes in the production of its products. Using tomato sauce, for instance, rather than tomato puree affects the quality of the end product.
- Challenges are posed by the inherent nature of agricultural production, e.g. seasonality and perishability, as raw materials are only available at a certain time of the year. Most of Freskpikt's products are seasonal, e.g. mixed fruit (mango, pineapple);
- Inadequate investment in irrigation technology has restricted production to particular seasons which constrains growth and the ability of the sector to exploit local and export market opportunities;
- Very low adoption levels of new crop varieties, e.g. navy beans (a type of bean grown widely in Zambia) that are used in processing. Poor quality of product supply to suit production runs, thereby leading to an underutilization of machinery/equipment capacity;

- Lack of transport by local farmers to deliver produce;
- High rates of loan non-repayment and widespread side-selling from farmers are discouraging agribusiness enterprises;
- Inadequate business linkages, and subsequently low synergies among the agricultural input, farm production, and agriculture processing sectors, affect production. Difficulties in establishing and maintaining reliable and sustainable supply relationships between farmers and processors lead to poor business planning and management;
- Inadequate capital; and
- A limited domestic market.

Source: Freshpikt Zambia Ltd

National policies based on the Vision 2030

The Government of the Republic of Zambia (GRZ) has set out its long-term development objectives in the National Vision 2030 (GRZ 2006a, Vision 2030). The vision for Zambia is 'to become a prosperous middle-income industrial nation by the year 2030' by building diversified, balanced, and strong industrial and modern agricultural sectors, strong and cohesive industrial linkages, strong entrepreneurial capabilities, and the proficiency to exploit modern technology through innovation, adaptation and investment.

The National Vision 2030 encapsulates a number of policies and programmes for agro-industrial development. It is intention to devise and to implement policies and programmes more and more in the frame of the National Vision 2030:

Macroeconomic policy

Notwithstanding the policies that support macroeconomic stability, agribusinesses still face challenges posed by inconsistent and unfavourable economic conditions such as widely fluctuating exchange rates and high interest rates that affect the stability of the export prices and investments in the sector respectively. The broad macroeconomic objectives laid out in the Fifth National Development Plan (2006-2010) (GRZ 2006c) that also derive from the National Vision 2030 are:

- Accelerate pro-poor economic growth through supporting rural development, by encouraging stronger linkages between agriculture and agro-processing and by supporting the expansion of a strong, diversified export base;
- Achieve and sustain single-digit inflation so that real interest rates can be lowered and access to financial services can be enhanced;
- Achieve financial and exchange rate stability;
- Reduce domestic debt to sustainable levels in order to allow for an expansion of credit to the private sector at reduced interest rates; and
- Ensure current account sustainability in the balance-of-payments.

Industrial policy

The Commercial, Trade and Industrial Policy of 2005 has anchored Zambia's industrial policy on trade, and aims at building a competitive and sustainable private sector-led export-oriented manufacturing sector that is competitive both regionally and globally. Policies to achieve this include:

- Fostering increased levels of domestic and foreign investment to stimulate economic growth and to accelerate poverty reduction, mainly through employment creation;
- Creating an enabling environment by improving the country's legal and regulatory framework;
- Investing in infrastructure;

- Implementing policies designed to unlock the growth potential of the MSME sector; and
- Economic empowerment of indigenous citizens by removing obstacles to private sector development.

Commercial and trade policies

Zambia's current commercial and trade policies seek to counter the country's reliance on a narrow foreign exchange earnings base, through trade liberalization and export diversification. The policies are intended to transform the Zambian economy into a diversified and competitive one which is well integrated into the international trading environment. Strategies include:

- Encouraging value-addition activities as a means of increasing foreign currency earnings;
- Stimulating investment flows to export-oriented production areas where Zambia has a competitive advantage; to induce innovation and technology transfer into the economy;
- Formalizing, monitoring and regulating domestic trade activities with a view to promoting a vibrant domestic trading sector; and
- Assisting domestic firms to increase efficiency levels so that they are better able to withstand increased domestic market competition.

Non-traditional exports should be promoted by establishing an accessible and affordable export financing facility and, at the same time, strengthening and improving access to such services as the administration of testing and certifying sanitary and phyto-sanitary standards. Stronger (export-oriented) investment promotion and comprehensive export promotion, and ensuring the protection of industrial and commercial property rights through appropriate legal and regulatory frameworks, are also priorities for policymakers.

Agricultural policy

Since 1992 the main thrust of agricultural policy has been the liberalization of the agricultural sector and the promotion of private sector participation in production, marketing, input supply, processing, and credit provision. Currently, the overall objective is to facilitate and support the development of a sustainable and competitive agricultural sector that assures food security and maximizes the sector's contribution to GDP. Sector-specific priority objectives are:

- To ensure national and household food security, through an all year round production and post-harvest management, of adequate supplies of basic foodstuffs at competitive costs;
- To contribute to sustainable industrial development by providing locally produced agro-based raw materials;
- To increase agricultural exports;
- To generate income and employment through increased agriculture production and productivity; and
- To ensure that the existing agricultural resource is maintained and developed.

Although the focus of agricultural policy is liberalization of the sector, the reality on the ground is an "interventionist liberalized policy", where the government uses price stabilization and trade controls to stabilize food supplies. This is reflected in the currently unpredictable and discretionary government actions in terms of export bans, import quotas, and uncertainty in import tariff policy. The case for public sector supervision of food markets is founded on the fear that, without such regulation, private sector operations would result in unacceptable levels of price instability. The reality of volatile, uncertain official policies leads to a heavy burden on the fiscal status, to a distortion of prices and production regimes, and to a situation where such a government behaviour

is a potential deterrent factor to private sector participation and to the long-term development of efficient markets (Tembo *et al*. 2009; Chapota & Jayne 2009).

At present too, public sector support is increasingly directed at poverty reduction programmes, such as the Food Reserve Agency (FRA) and the Fertilizer Input Support Programme (FSIP), rather than on core sector and infrastructure activities likely to spur agricultural development. For instance, 93 per cent of planned public sector expenditure on agriculture in 2009 was earmarked for the FRA and the FSIP, whilst core activities were allocated only 7 per cent (Tembo *et al*. 2009). However, broad-based investment in public goods – agricultural infrastructure (irrigation and roads), marketing systems, processing, and R & D – would generate high returns, effectively returning two to six times as much as the current expenditure undertaken (Tembo *et al*. 2009).

Land policy

Although in recent years progress has been made in addressing the various constraints affecting land acquisition and use, the land delivery system is still perceived as a constraint on economic diversification and business growth. According to official sources, as reported and cited by the Government of Zambia (GRZ 1995), investment programmes continue to be frustrated by poor land administration, the absence of land-use plans, and the lengthy process of acquiring land, all of which make access to land difficult (GRZ 1995). The policy outlined in the Land Act of 1995 was a marked advance, with its creation of land banks for potential investors from within and outside the country in line with the Citizens Empowerment Act of 2006. However, to date, the Land Administration and Management Policy (GRZ 2006b) remains a draft and is yet to be implemented. This raises the complications of dealing with increasing interest of foreign investors in arable land (Reuters 2009), with questions over the availability of arable land under customary tenure.

Competition policy

Competition policy is designed to encourage competition by prohibiting anti-competitive trade practices, regulating monopolies, and controlling the concentration of economic power so as to protect consumer welfare. It also aims at strengthening the efficiency of production and distribution of goods and services, and securing the best possible conditions for the freedom of trade and expansion of the entrepreneurship base. The country's current national competition policy needs to be supported by the development of a coordinated regional competition policy that would regulate monopolies resulting from the restructuring and integration of multinational corporations being active in the region. The Declaration on Regional Cooperation in Competition Law and Consumer Policy, adopted by SADC Trade Ministers in 2008 and signed by the SADC Heads of State and Government the following year, provides for such a cooperation framework in the application of member States' respective national competition laws. It is currently the instrument to facilitate the investigation and elimination of anti-competitive practices that have cross-border effects (SADC, 2010). Different national models for competition law across member States, in terms of both structure and substantive provisions, and varying levels of development and enforcement, pose challenges for a uniform approach. However, the SADC Secretariat has embarked on a process of harmonizing the national laws, by firstly preparing guidelines for competition authorities, now being used in Member States for case investigation and analysis. The second stage involves preparation of a harmonization framework (SADC 2010). Looking to future developments in regional competition policy, the tripartite arrangements between SADC, the EAC and COMESA will influence the direction of competition policy, such as the proposed establishment of a Tripartite Competition Forum (SADC 2010).

However, the anti-competitive tendencies at the world market also have to be considered by policymakers. Agricultural subsidies in the developed countries need to be addressed through the continuing Doha Development Round of trade negotiations at the subregional (Southern Africa)

and regional Africa levels, as they hinder export growth in developing economies, including Zambia's. At home, the capacity of the Zambian Competition Commission (ZCC) needs to be strengthened to regulate markets for agricultural produce and also to develop a regulatory framework that protects farmers from exploitation.

Privatization of state-owned enterprises (SOEs) forms part of conditions set by the IMF and World Bank for continued financial support to Zambia. While policy is still focused on privatization, there is continued debate over the relative merits of the policy, with the former chief executive of the ZPA (former name; now part of Zambian Development Agency) declaring that corruption was a major problem in the process (Inter Press Service 2010).

Key policy factors for promoting agribusiness

Upgrading and modernization of the agro-industry

Achieving competitiveness through increasing the agro-industrial capacity, productivity, and efficiency (through reduction of production and marketing costs) and adding value to offer quality products at competitive prices are key elements of attempts at penetration of global export markets. Constraints faced by agro-industry, especially by MSMEs in Zambia, include:

- Inadequate market access due to lack of funds; insufficient marketing expertise; the inability to carry out R&D; unattractive packaging and labelling; inefficient promotion and advertising campaigns; lack of information about domestic needs or international market conditions and about administrative procedures involved in exporting, as well as weak demand in the domestic markets in which MSMEs participate.
- Weak technological capability due to: inadequate finance, R&D, and training that constrain innovation. Small firms are at a disadvantage when it comes to upgrading existing processes and products, let alone mastering and implementing new technologies. Neither government nor private agencies (universities, research institutions, and business associations) currently possess the resources and skills needed to overcome these constraints.
- Because they are starved of capital and state-of-the-art technologies, SMEs are forced to rely on often out-dated techniques that preclude their matching the quality and cost standards of larger businesses, especially those tied into global value chains. Furthermore they are unable to recruit specialized managerial and technical staff and they cannot produce appropriate brochures and promotional advertising materials.
- "Smallness": Even if SMEs were to access funds to acquire new machinery and equipment, increased volumes, improved quality and standards could imply higher prices in the domestic market, being beyond the reach of immediate consumers. Moreover, most agricultural production is increasingly integrated in value chains with forward (marketing) and backward (input supply) linkages, which implies that competitiveness is increasingly dependent on collabouration with key players in the value chain rather than relies on the efforts of the individual enterprise. For example, quality improvement is about innovations in production, post-harvest management and processing, as well as transportation and handling. Consequently, efforts targeted at quality improvement may require collabouration between growers, assembly firms, warehouses, processors, exporters, and shipping agents. Such collabouration is even more important when a sector seeks to build a national brand image that requires collabouration among competing exporters. Accordingly, companies need to collabourate to compete, and the government needs to be a nurturing partner in this process.

There are several links from production to the consumer that offer opportunities for agro-industries to upgrade and to modernize either through product, process, functional, or institutional innovations or through training and capacity-building along the agribusiness value chain.

Contract farming and outgrower schemes

Outgrower schemes link agro-industries with farmers via production and marketing contracts. The processors provide an assured market outlet and access to critical productive resources (credit, technical and related assistance, and bulk commodity collection facilities), and in return they are assured of a reliable supply of quality inputs. There are also potential disadvantages where, for instance, a larger proportion of the benefits accrue to the contractor or lead firm. Farmers may find themselves locked into a deteriorating situation of debt or being unable to sell their produce because the contractor fails to meet his or her side of the bargain. The Government has recognized the importance of outgrower schemes as a means of attracting investment, opening up new markets, providing adequate support services, and helping to make agriculture competitive. Zambia's National Agricultural Policy 2004 – 2015 (GRZ/MACO 2004b) encourages the establishment and expansion of outgrower schemes, which have been successful in a number of cases, including Kaleya Small Holders Company Ltd (KASCOL) (Box 9.2) and schemes which are operated by the seed companies, Zambia Breweries and the sorghum outgrower project.

Box 9.2: Kaleya Small Holders Company Limited (KASCOL)

KASCOL is a scheme comprising 161 smallholders that was created by a consortium of Zambia Sugar, the Development Bank of Zambia, Barclays Bank, and the Commonwealth Development Corporation (CDC), each with a 25 per cent share in the company. Zambia Sugar has since sold all its shares to small-scale farmers who are part of the KASCOL scheme, while the other shareholders retain some shares.

Zambia Sugar launched KASCOL when it bought new mills and needed additional supplies of raw sugar cane for crushing. The government provided the land, while the Commonwealth Development Corporation provided the initial funding, and Zambia Sugar has funded the development of infrastructure.

Production of cane started in 1984, and by 1985 there were 8 smallholder farms (SHFs) with the final recruitment taking place in 1994. Having started with an average of 4 hectares, the smallholders have gradually increased the area under cultivation to an average of 6 ha each. KASCOL has 4000 ha of land out of which 2156 ha is arable. Zambia Sugar assists KASCOL with irrigation water, which is supplied at no cost to members, along with procurement and cane extension services.

In 2003, KASCOL produced more than 30 per cent of the 1, 788, 000 tons of cane which are crushed by Zambia Sugar that year. In more recent times (financial year 2008/2009), total cane milled by Zambia Sugar was 1,626,000 tons. Of this, KASCOL contributed 19 per cent (309,382 tons); 101,117 tons (6.2 per cent) were from smallholder farmers under KASCOL.

KASCOL has helped farmers to overcome barriers to entry in a highly competitive industry, to improve their quality of life through enhanced access to health and education, and to improve managerial skills which are being used to diversify into other crop production ventures. Technological progress includes the more efficient use of farm resources, improved methods of chemical and fertilizer application, and greater knowledge of the importance of quality characteristics and requirements.

However, all is not rosy. Farmers say that although they bear the natural or environmental risks involved in the production process they are being exploited since they do not participate in price formulation or in formulating the mechanism for sharing revenue from sugarcane sales. They cannot participate in price setting because sugar prices are determined in the world market. One of the dangers of this farmer disillusionment is that they may use the inputs supplied for sugar cane production for other activities, such as growing maize in order to reduce risk and to improve profitability.

Source: Interview with KASCOL

Other successes include Dunavant Zambia Ltd (Cotton) and the Mpongwe Development Scheme (in which land was allocated to retired employees who are growing and supplying maize and soya beans to the company).

Vendor Development Schemes (Sub-contracting arrangements)

Vendor Development Schemes (VDSs) are designed to foster domestic industrial clusters that will help reduce costs and improve the competitiveness of enterprises by facilitating the manufacture

and the sale of parts and components to agro-industry by MSMEs. Normally, foreign investors that set up operations in developing nations are unaware of the technological competence or availability of manufacturing skills by MSMEs. Accordingly, the government has to take a leading role in identifying the large corporations that need components, parts, or subcontracts with SMEs, and so the government has to "introduce" them to the SMEs. The government must then ensure that proper contracts are drawn up between the purchasing or anchor company and the vendor, so that the anchor company does not abrogate the purchase and technology transfer contract after the vendor has purchased special equipment and invested to meet the buyer's needs.

Small Aggregation Initiatives

Small Aggregation Initiatives (SAIs) are aimed at helping SMEs to overcome the problem of "Smallness" by creating industry groups that have similar machinery needs but produce different end products. An example is the manufacture of different household or office furniture end-products using the same machinery (i.e. sawing, planing, and shaping). Final product refinements and marketing are then undertaken by individual manufacturers. The advantages of such an arrangement are that by collabourating in this way, SMEs are able to exploit scale economies, benefit from discounts from bulk purchasing, share larger industrial premises, and obtain bank credit more readily than it would be the case where they operate in isolation. These aggregation points also act as extension services nodes to fulfil volume, standards and grades requirements and they function as input and output markets.

Cooperatives or Associations

Farmer cooperatives and associations can enhance capacity building (technical and business knowledge and skills), can improve access to input supply and finance, and can strengthen contracting and negotiating muscles.

There are some business opportunities that farmers can exploit only when they are organized in groups such as cooperatives. In the past, farmer cooperatives in Zambia have focused more on production – accessing cheap inputs of fertilizer or seed – but their potential can be exploited far beyond production into such additional areas as marketing and processing.

Capacity building for agro-industrial development

To achieve accelerated agro-industrial development, capacity must be strengthened at three levels: the micro level (enterprises), the meso level (sector and business associations), and the macro level (government agencies and technical institutions).

Targeting specific commodities with a comparative advantage for value addition

Recognizing the imperative of expanding NTEs to diversify the economy and to reduce reliance on the copper industry, in 2005 the government, assisted by the Joint Integrated Technical Assistance Programme (JITAP), undertook a study to identify value chains with comparative advantages (ZDA 2008).

The criteria used for identification comprised: the current industry status and the potential for growth; infrastructure surrounding the industry; availability of requisite labour; contribution to employment creation and to poverty reduction; contribution to rural development; international markets trends; and the concentration of supply. The major subsectors identified within agriculture and agro-processing included: cotton, tobacco; paprika; coffee; leather products; sugar; oil cakes; essential oils; organic soaps; and honey.

Cotton

Cotton is one of the main cash crops grown under the smallholder farmers (SHFs) scheme. About a fifth of the SHFs in Zambia grow cotton and produce 98 per cent of the total annual crop (World Bank 2008). Value chain activities comprise the production of cotton, ginning, spinning cotton yarn, and manufacturing cloth and clothing. Cotton products include lint, yarn, grey cloth, garments, cotton seed inputs for cooking oil, and stock feed.

Strengths and Opportunities

- High quality hand-picked cotton that is not genetically modified;
- Increased smallholder outgrower schemes providing credit, inputs and extension services while guaranteeing a market for cotton;
- Improved loan recovery rates;
- Duty on inputs and implements are zero rated;
- Investment opportunities within the Multi-Facility Economic Zones (MFEZs) for the textile and garment industry;
- Regulatory environment measures to address the perceived undervaluation of imported fabrics and constraints such as input duties;
- Willingness of banks to lend to the sector;
- Availability of ginning, state-of-the-art spinning, weaving, and processing factories as well as warehouses;
- Improving global cotton prices and market opportunities; and
- Market access, both regionally (SADC trade protocol) and internationally: the United States (AGOA), China, Europe and Asia.

Weaknesses and Threats

- Farmers use low quality local seeds with low germination rates;
- Lack of necessary technology for cultivation and weeding;
- Limited access to fertilizers;
- Difficulties in labour supervision;
- Crop piracy – side-marketing of crops financed by other organizations, thereby breeching the farmer's contractual obligation to sell to the contractor;
- Poor quality local fabric from local weavers forcing manufacturers in the value chain to import fabric either from regional suppliers or from the Far East at a very high cost, thereby undermining competitiveness;
- Lack of investment in modern technology in the apparel pipeline industry;
- Susceptibility to pests and diseases;
- High costs of mechanical technology and energy;
- High transaction costs due to poor infrastructure;
- Lack of dedicated government support for other crops beside maize, thus encouraging farmers to switch to maize;
- Emergence of levies charged by councils;

- Decline of the global apparel quotas under the Agreement on Textiles and Clothing (ATC), which has led to stiff competition and to the closure of most textile and garment firms;
- Insufficient domestic demand for the textile and clothing industry's products; and
- Influx of cheap imported second-hand clothes.

Tobacco

Zambia has an enormous potential to grow both flue-cured Virginia tobacco and burley tobacco. Although tobacco requires a greater quantity of costly inputs, it generates more revenue per hectare than most other farm products. About 98 per cent of national production is exported mostly in unprocessed form (ZDA 2009).

Strengths and Opportunities

- Influx of skilled farmers from Zimbabwe with capital;
- Presence of the Tobacco Board of Zambia (TBZ), a statutory organization responsible for overseeing and monitoring tobacco production and providing extension services;
- Good climatic conditions;
- Availability of bank credit to the sector;
- Favourable global prices for tobacco; and
- Great export potential in foreign markets, especially for flue-cured leaf.

Weaknesses or Threats

- Tobacco farming requires a greater quantity of costly inputs;
- Anti-smoking campaigns;
- Inadequate local tobacco primary (curing) and upstream processing plants;
- Lack of an organized marketing system, allied with limited information on export market opportunities;
- Unclear government policy;
- Inadequate extension services;
- Frequent droughts; and
- High cost of capital.

Coffee

Coffee has emerged as one of the most lucrative agricultural subsectors in Zambia. The country is a low cost producer of high quality Arabica coffee. Production is dominated by large commercial growers.

Strengths and Opportunities

- Competitive transport links – Lusaka to Durban by road or rail;
- Supportive institutional framework in the form of the Zambia Coffee Growers Association (ZCGA), which deals with international buyers and promotes the product at international trade fairs. Regulatory functions within the sector are performed both by the ZCGA and by the Coffee Board of Zambia (CBZ), a statutory organization;

- Availability of markets, both regionally (South Africa, Angola, DRC, and Zimbabwe) and internationally (Germany, Switzerland, Netherlands, Great Britain, Denmark, China , Belgium, Japan, and Italy);
- Improved coffee prices in recent years; and
- Abundant land resources and suitable climatic conditions.

Weaknesses and Threats

- Lack of a crop financing facility, especially for new entrants;
- Inadequate irrigation;
- Marketing and payment processes too lengthy for smallholders;
- Insufficient extension support; and
- Poor rural roads and rail services.

Paprika

Paprika is currently the third largest spice commodity in the world. Total world consumption of paprika is around 100-120 thousand tons annually, and Zambia has been supplying about 2 per cent of this.

Production is dominated by commercial farmers under irrigation who produce 75 per cent of the paprika, while SHFs produce the balance from rain-fed crops (World Bank 2008).

Strengths and Opportunities

- High quality varieties;
- Requires relatively low capital inputs compared to coffee and fresh vegetables, thereby suitable for smallholders;
- Well suited for crop rotation with tobacco;
- Premium prices;
- Large international and regional markets: the bulk of processed paprika and paprika derivatives such as oleoresin are exported to Spain and to other members of the EU, the United States, Japan, and South Africa.
- The Zambian Agribusiness Technical Assistance Centre (ZATAC) provides assistance to paprika producers.

Weaknesses and Threats

- Lower returns than for other NTEs;
- High yields require irrigation and intensive use of crop inputs; and
- Taxes and import duties on fertilizers undermine profitability.

Leather

There are five tanneries in the country that produce a variety of leather products: Zamleather, Kembe Estates, King Quality, Kabwe Tannery, and Malar Industries. Most of these companies are also involved in the production of finished goods, while other players in the sector include Bata Shoes, Copperbelt Shoes, Bimzi, and numerous micro and small-scale firms.

Strengths and Opportunities

- Implementation of quality assurance processes in the value chain right from animal husbandry to finished leather; consequently Zambian leather competes very well with regards to quality on the African continent; and
- Available markets in South Africa, Singapore, the DRC, Japan, Hong Kong, Malawi, Britain, Zimbabwe, China, and Turkey.

Weaknesses and Threats

- Inadequate technical skills in product development;
- Power outages by ZESCO (Zambia Electricity Supply Corporation), which affect the consistency in product quality as the tanning process is disturbed;
- Animal diseases (Bovine pleural pneumonia and foot and mouth diseases) that affect animal population growth negatively and reduce the supply of raw material;
- Import duties on chemicals for the tanning process and on components for finished goods production sourced from outside of the SADC and COMESA regions, and VAT, which at 16 per cent is higher than the regional average; and
- Lack of affordable trade finance.

Sugar

Sugar is Zambia's largest processed food export product and is widely used as a major ingredient in other processed foods. Sugar cane outgrowers employ 3,385 people, representing about 0.07 per cent of the total labour force in Zambia (CSO and Ministry of Labour, Labour Force Survey Report 2005).

Strengths and Opportunities

- The country is the fourth lowest-cost sugar producer in the world; and
- Trade arrangements provide markets for processed foods in COMESA, SADC, and the EU.

Weaknesses and Threats

- Strict SPS standards in markets;
- Centralized SPS inspections and export permit issuance add to cost;
- Many food-processing enterprises lack international quality standards certifications;
- Increasing energy prices – petroleum and electricity – that tend to raise production and transportation costs;
- Inadequate local supply of raw materials;
- Outgrowers affected by limited irrigation facilities; and
- Low industry investment levels.

Other agricultural products promoted by ZDA include horticulture, fresh and dried vegetables, wheat flour, and other processed foods, beverages (tea and tea products), production and processing of raw timber into wood products, palm oil and their derivatives, pulp, paper and paper board, rubber products, honey and soya beans.

Strengthening the role of science, technology and innovation (STI) and the capability for agro-industrial development

Science and technology (S&T) is a critical factor; it adds value to raw materials, helps develop skills, knowledge and processes that foster innovation, and enhances the production and processing performance, while creating jobs and improving the quality of life. Competitive advantage in agro-industry depends on the firm's ability to manufacture new products while enhancing the quality of the existing ones; competition is more and more based on quality and delivery rather than just on price. Firms that are quick to respond to changing consumer demand or with their production conditions are better placed to exploit dynamic markets for consumer goods on the one hand and rapidly changing markets for raw materials and business services on the other. To exploit rising food prices and rising urban incomes, farmers and processors need to diversify production while increasing value addition to agricultural products (Bhargouti *et al*. 2004).

Zambian firms have made headway in developing agro-processing technologies, such as with the manufacture of carbonated drinks (Tip-Top), Masuku wine, cassava processing, and improved seed varieties. But despite these successes, the S&T sector in Zambia remains underdeveloped, as reflected in the low ratio of expenditures on S&T to GDP, which averaged 0.02 per cent of GDP between 1990 and 2003 (GRZ 2006c). The relatively backward state of technology is reflected also in the very low ratio of scientists and engineers per million population engaged in R&D – approximately one per 1000 Zambians (GRZ 2006c). Patent applications provide another indicator of a country's technological innovation capacity and performance. Interviews held with PACRO (Patents and Companies Registration Office) revealed that the number of Zambian patents that were registered since 1988 with the Patents Office is only 28.

S&T development in Zambia is constrained by inadequate funding, weak policy implementation, and the misalignment between policy intent and resource allocation. Few efforts have been made to integrate S&T in the curricula of training institutions, while the private sector on its part does not currently encourage an industry-led research agenda, as is the case in many advanced countries. Investment by the private sector in innovation activity is limited, and prevailing attitudes do not support local innovative initiatives, but tend to switch consumers' preferences towards imported products; all these factors explain the country's poor S&T performance.

Enhancing private enterprise and foreign direct investment in agribusiness

Sustainable development of agro-industry in Zambia depends on increasing the levels of domestic and foreign direct investment (FDI). In the globalized economy companies are looking out for opportunities to invest where there are abundant resources, where production costs are competitive, and where there is a business-friendly operating environment. In recent years Zambia has adopted a wide range of policy and institutional reforms aimed at positioning the country as one of the most attractive investment destinations in the region. To this end, the ZDA Act of 2006 offers a range of incentives in the form of allowances, exemptions, and concessions for local and foreign investors.

Whereas other countries, such as India and Botswana, require foreign investors to partner with domestic businesses on a joint ownership basis, the Zambian Government only encourages such arrangements. Examples include: Zambia Sugar that partnered with Illovo (South Africa), Zambian Breweries that partnered with SAB-Miller (South Africa[23]), and China Mulungushi Textiles as a partnership with China. Such joint ventures present opportunities for risk-sharing and for diversifying risk geographically, while they facilitate the transfer of skills and of technology to domestic private enterprises. FDI has enhanced local participation in supply chains, simultaneously boosting agro-processing capacity and paving the way for the exploitation of scale and scope

[23] Although SABMiller has been listed on the London Stock Exchange since 1999, it was founded in South Africa in 1895 and is widely regarded as a South African company, rather than a UK one.

economies. According to the ZDA, over the decade from 2000 to 2009, total pledged FDI was US$320,198,456 in the agricultural sector and US$2,068,129,865 in the manufacturing sector (which also includes the agro-processing sector). During the same period, these investments were to have created employment opportunities of 29,147 and 27,436 for the agricultural and manufacturing sectors respectively (ZDA 2010).

Financing agro-industry by traditional and innovative mechanisms

Agribusiness in Zambia ranks the lack of capital as one of the major constraints on growth and profitability. To attain and to sustain competitiveness, processors and traders need capital, but the very nature of the business–high risk and uncertain returns–militates against their ability to raise sufficient funds at affordable cost. Because the risks associated with the seasonality of production, the perishability of products, and the effects of uncontrollable climatic influences are so great, financial institutions are reluctant as lenders, especially to smallholders, without getting some form of collateral.

Zambia's financial services industry and capital markets are underdeveloped, as a result of which both working and long-term venture capital is either costly or unavailable. Consequently, firms fall back on short-term bank credit which is unsuitable for long-term projects. Interviewed entrepreneurs in agribusiness expressed the shared view that commercial bank loans are expensive (20 per cent interest per annum), while collateral requirements are excessive. After margins and other add-ons, the cost to the client of a Kwacha loan is about 30 per cent per annum, which very few businesses can afford. Furthermore, whereas agribusinesses are required to provide collateral that is about 75 per cent of the value of the loan, SMEs are required to provide collateral that is 3 to 4 times the value of the credit granted (Bonaglia 2008).

Where finance is facilitated by microfinance institutions (MFIs), agribusiness pays relatively higher charges for very small loans. Moreover, there are other stringent conditions, such as membership of a solidarity group (guarantor-ship), the requirement that the borrower saves with or is a member of the lending institution, and that he/she is in a position to make loan repayments weekly. While bigger commercial concerns may be able to meet such conditions, this is not the case for farmers and agro-processors that often face a long gap between production and product sales.

As a response to the growing difficulty of accessing conventional bank credit, innovative techniques are being developed for financing agriculture and agribusiness, including warehouse receipt systems, accounts receivable loans, invoice discounting, trade credit, outgrower loans, and equity and debt instruments through the Lusaka Stock Exchange (LuSE) and the Citizens Economic Empowerment Commission (CEEC) Fund.

The Warehouse Receipt System (WRS) is a network of certified warehouses issuing transferable warehouse receipts (TWRs) as evidence that a specified commodity of stated quality and quantity has been deposited at a particular location by a named depositor who could be a producer or a cooperative, an exporter or a processor. Warehouse receipts can be used as collateral for short-term bank loans or sold to buyers as proxies for the underlying commodities. The bank can advance up to 80 per cent of the market value of the underlying commodities at the time of sealing the deal (Bonagli 2008). During this time the commodities still belong to the depositor and therefore a market price appreciation, if there is any, accrues to him. It is the role of the depositor to negotiate with potential buyers who pay into the loan account with the bank concerned. The bank then deducts the accumulated loan advance, leaving the balance in the depositor's account. Smallholder farmers do benefit by getting a better deal when selling their crops to processors, millers, and large traders. By bulking their produce they secure economies of scale, which, together with the ability of the farmers to defer sales through access to inventory credit and market information, provided by the Zambia Agricultural Commodities Exchange (ZAMACE), strengthens their bargaining position. Besides, SHFs are able to participate in modern agricultural commodity markets (locally

and regionally) since they supply high quality products when they adhere to the commodity standards set by the WRS. Post-harvest losses are reduced since commodities are stored in well-managed warehouses or silos.

Insurance companies who need to invest policy holders' funds usually offer intermediate and long-term loans for investment in fixed assets, such as equipment and real estate. If the owners or the agribusiness firms have an insurance policy with a particular company, they are usually able to negotiate loans at favourable interest rates equal to the cash value of the policy.

The LuSE has expanded the sources of finance for companies through the issuance of equity and debt instruments. Agribusiness can now source cheaper funds from investors by listing their shares on the LuSE instead of borrowing from commercial banks. To date, six agro-industrial firms have been listed on the LuSE while one is a quoted company. Zambia Breweries managed to raise US$8.5 million to refinance a loan in 2008 (Bank of Zambia 2008).

The Citizens' Economic Empowerment Commission (CEEC) Fund was established under the Citizens' Economic Empowerment Commission (CEEC) Act of 2006 to address the challenges faced by Zambian citizens to be fully engaged in economic activities due to lack of capital. The CEEC Fund offers loans for productive investments at lower interest rates (12 per cent per annum) than commercial banks. Loanable amounts range from K 15 million to K 2 billion. The CEEC Fund also offers trade financing, order financing, invoice discounting, and bonds and guarantees. In addition to the CEEC Fund, a Credit Guarantee Scheme (CGS) worth $7 million has been established for SMEs under the Ministry of Commerce, Trade and Industry (MCTI).

The development, maintenance and improvement of agro-industry infrastructure and enhanced access to sustainable energy

An efficient transport infrastructure – roads, railways, bridges, inland water ways, and airports – is a prerequisite for sustained economic growth; as a landlocked country, Zambia is especially reliant on efficient transport links. Access to markets is hindered by poor roads, scanty information with respect to demand opportunities, and inadequate storage and cold chain facilities that constrain the movement of perishable products. Whereas the private sector has been proactive in developing successful market models (for example outgrower schemes), the role of the public sector in providing such infrastructure services is constrained mainly by inadequate financial resources.

Access to land and technological infrastructure have been identified as the key deterrents to investment in agribusiness in Zambia. This is aggravated by poor access to finance for the construction of production facilities. These problems could be overcome also by the countrywide establishment of business incubation centres and of common facility centres in locations with extensive entrepreneurial activities, where SMEs can access machinery and equipment.

Access to sustainable energy

In agro-industrial development there are two main sources of energy demand: for production and for residential consumption. Zambia has a range of indigenous energy resources: wood, hydropower, coal, and renewable energy; all liquid fuels, on the other hand, are imported. Wood fuel accounts for over 70 per cent of total national energy supply with the balance spread across hydropower (10 per cent), petroleum (9 per cent), renewable energy (9 per cent), and coal, whose contribution to energy supply has declined over the years due to production constraints at Mamba collieries, providing only 2 per cent of the national demand (CSO 2008).

Wood fuel consumption is on the rise, reflecting reliance on solid fuels by about 80 per cent of the population, while only 20 per cent have access to electricity (GRZ 2006a). The country experiences acute power shortages as a result of escalating oil prices, frequent breakdowns in the petroleum delivery infrastructure, and growing electricity demand that exceeds the installed power supply capacity from the national and regional grids. In this situation it is essential to increase the supply

of sustainable energy in the light of increasing concern about environmental pollution and global warming. Improved availability of, and access to, clean, reliable and affordable energy would help contain, if not reduce, production costs in industry, thereby facilitating business growth, particularly in rural areas. Accordingly, going forward, policy should target increased exploitation of alternative and green energy resources: solar and wind power generation, geothermal, biomass, and mini- and micro-hydro plants (see Box 9.3).

Box 9.3: Zambia Sugar's Energy Source is Biomass

Zambia Sugar, a unit of South Africa's Illovo Sugar, embarked on an expansion project in 2007 that involved the upgrading of the existing factory and the construction of roads and canals as well as planting sugar cane on over 10,000 hectares of additional land. This expansion has raised the company's annual sugar production from 246,000 to 440,000 tons. Exports to the EU have increased from 30,000 to 100,000 tons a year, and Zambia Sugar expects sugar exports to double to 200,000 tons over the next three years.

At the same time, the company now generates its own power and is self-sufficient in energy derived from sugar cane residue after extraction of the sugar. The installed electrical generation capacity on site is 40 megawatts, of which only 13 to 14 MW are used by the factory with the balance sold to the national grid.

Source: Post Newspaper, December 2009

Irrigation infrastructure development

Given its increased vulnerability to drought, urbanization and population growth, high food prices, and expanding regional and global markets, Zambia must expand the area of land under irrigation. At present, crops grown under irrigation include wheat, rice, maize, soya, paprika, sugar, tea, coffee, and horticultural crops such as cabbage, tomatoes, onions, field beans, citrus, cut flowers, and other high value products. Irrigation technologies in use include simple regulated and unregulated gravity-fed surface water systems; hand-carried buckets; low-tech, but very effective drip systems that are pressurized by means of header tanks, which themselves are filled by treadle pumps; high–tech drip systems that are mechanically pressurized; under and over canopy sprinklers; rain guns; and centre pivots. In most rural areas however, traditional farmers grow their crops in "dambos", for both irrigation and flood recession agriculture.[24] Dambo irrigation commonly involves farmers using open hand dug wells, watering cans and buckets, although in some areas farmers install treadle pumps to lift water from the open dug wells. Conversely, flood recession agriculture makes use of land located close to or in the flood plain or river channel where the soils are moistened by seasonal flooding or the drainage of water in low lying ground, supplemented by rainfall.

Infrastructure demand differs according to the institutional arrangements prevailing in Zambia's agriculture. Existing institutional arrangements include large agribusiness estates, individual commercial farms, contract grower groups / out-grower schemes, and smallholder farmers associations. Contract farming is expanding. There are various types of schemes that exist under "contract farming": Outgrower Schemes which provide production and marketing services to farmers on their own land and Nucleus Estate Outgrower Schemes where a core estate and factory is established and farmers in the surrounding area grow crops on part of their own land, which they sell to the factory for processing (Ellman 1986; Glover & Kusterer 1990). Infrastructural services can be organized by the buyer/factory.

Zambia's farmers fall under three categories: small scale (traditional), emerging, and commercial farmers. "Traditional farmers" depend mostly on rain fed agriculture for production of staple food crops, such as maize, rice, sorghum, groundnuts, roots and tubers (e.g. cassava) for consumption at household level. However, in some cases farming systems do include marketable commodities such as fruits and vegetables as well as surpluses of staples themselves. They use mainly hand tools,

[24] A dambo is a natural ecosystem occupying a shallow, seasonally water logged depression at or near a drainage network.

animal draft power, and limited agricultural inputs (fertilizer and pesticides). Land area varies from 0.5 to 2 ha. Some communities of traditional farmers already benefit from communal dams or pump sets, although such schemes tend to need urgently rehabilitation and upgrading. Their users often remain largely unorganized and untrained as regards operation and maintenance and as well they are unaware of the broader opportunities arising from irrigated farming, thus they need capacity building in both ways: organizationally and technically.

In contrast, the principal objective of "emerging farmers" is to produce a marketable surplus comprising of staple, horticultural, and industrial crops (sugarcane and tobacco). They occupy both state land under long-term leases and land under traditional tenure systems; they use animal-powered ploughs and machinery, hybrid seed and fertilizer, and they rely more on rain rather than irrigation. Although few, if any, of the emerging farmers are direct exporters in their own right, many traders or contractors to which they sell their produce are successful consolidators (those actors who are bringing together suppliers under more formal structures) and exporters. Emerging farmers can enjoy both individual and shared irrigation facilities on their cultivated areas that typically range from 5 to 300 ha; individual plots within the scheme may be approximately 0.2 to 1 ha. Such schemes vary greatly in terms of successful operation (GRZ/MACO 2004a). For instance, some are well organized and result in significant socioeconomic growth, whereas others fail, not because of poor operation and maintenance, but for reasons of inadequate support services. These are, for example, unaffordable and inaccessible credit, inadequate cold chains, inadequate access to markets, and the cynical exploitation by creditors and traders (who could sometimes be one and the same entity). "Commercial farmers" own extensive farms that are located mainly along major transport routes and near population centres. The farms are run as individual enterprises or as private companies with selling and indeed processing being their primary objective. They occupy state land under 99-year leases, use modern technology and machinery (irrigation, fertilizer, and pesticides) and they produce most of the country's agricultural exports (GRZ/MACO 2004a). Production systems include: livestock, fisheries, annual staple crops, sugarcane, coffee, tea, and bananas, etc.

In provision of irrigation to each of these three farmer groups, policymakers face different challenges, opportunities and strategies (GRZ/MACO 2004a). For the full potential of irrigation to be realized, numerous constraints must be tackled such as hydrological limits (base flow recession and water table depth), soil fertility, inadequate finance and investment, the design of an appropriate policy and legal framework, marketing, institutional, and social bottlenecks.

Information Communication Technology (ICT) Infrastructure

The Zambia National Farmers Union (ZNFU) has established an ICT market information system where farmers, even those in remote areas, are able to access updated commodity market and price information, thereby reducing transaction costs and limiting producer vulnerability to exploitation. With the huge investment currently being undertaken by mobile telephone providers and the reduction in price of mobile handsets, ICT can be further exploited by both farmers and by agribusiness. One such opportunity is the development of ICT-based, non-physical incubation centres, which can be exploited by business associations, tertiary institutions, and cooperatives to provide business development services and technical information. Another opportunity provided by mobile telephones includes m-banking, which includes m-payments and other new e-transaction products now offered by banks (balance enquiries, money transfers, remittances, bill payments, etc.) that are linked to the customer's own account or service providers' accounts. All these innovations have reduced the cost of financial transactions. Service providers and customers alike, and even those with no bank accounts, can enjoy some of the services, for instance, receiving and making payments using mobile phones.

The promotion of local, regional and international trade

The small domestic market of some 12 million people with low *per capita* incomes of $440 (in constant 2000 prices) (IMF 2009) means that for Zambia to develop fully its agribusiness potential, exports will have to play a leading role. Through its membership of the 14-country Southern African Development Community (SADC), and the 20-country Common Market for Eastern and Southern Africa (COMESA), Zambia has access to a total market potential of nearly 380 million people. Currently, subject to rules of origin, Zambia's exports enter thirteen COMESA countries on a duty-free basis and the remainder at preferential tariff rates. As a SADC member, the country also enjoys preferential market access to countries that have implemented SADC's regional trade protocol, providing for a full Free Trade Area (FTA) by 2012. Furthermore, Zambia, as a least developed country (LDC) enjoys preferential market access into the Southern African Customs Union (SACU) for textiles and sugar, through the Malawi, Mozambique, Tanzania, Zambia (MMTZ) pact.

Under the "Everything but Arms" (EBA) initiative, Zambia has preferential access to EU markets, the sole exceptions being of arms, sugar and rice, the latter two being subject to a quota. Under the Lomé and Cotonou conventions, Zambia receives non-reciprocal preferential treatment from the EU through its membership of the African, Caribbean, Pacific countries (ACP) group, though this will be phased out and replaced by a reciprocal Regional Economic Partnership Agreement (EPA) with the EU, currently under negotiation.

The country benefits from a number of bilateral trade agreements, including the US Africa Growth and Opportunity Act (AGOA), the Canadian Initiative (CaI), the Chinese Initiative (ChI), and the Japanese Market Access Scheme (JMAS). AGOA seeks to promote trade between the US and sub-Saharan Africa (SSA), while also increasing US investment in the region and strengthening sub-Saharan African participation in global trade. The Canadian Initiative offers improved access to the Canadian market in the form of a duty and quota-free status for all imports originating from LDCs, with the exception of dairy, poultry, and egg products. Zambia also has duty-free and quota-free access for selected products to the Japanese market. China grants special preferential tariff treatment for some Zambian exports to China under the China Special Preferential Tariff (CSPT) agreement of 2005.

Visions, plans of action and way forward

Based on its National Vision and its Plans of Action Zambia is now fast moving ahead in implementing its programmes for agro-industrial development and the promotion of agribusiness. Whereas the bulk of primary agricultural production takes place in rural areas, the majority of agro-processing industries are situated in urban areas. In order to reduce costs of production (e.g. transportation), create wealth, employment, and uplift living standards of the rural population, linkages between farming communities, industrial estates, and outgrower schemes will be enhanced if industries are established close to the source of raw materials. Strategies need therefore to focus on infrastructure development and on the identification of resource-based industrial opportunities in rural areas. These opportunities have to be marketed to potential investors who have to be given special incentives in order to encourage them to invest in rural areas. Cotton, tobacco, coffee, paprika, leather and sugar, horticulture, fresh and dried vegetables, wheat flour and other processed foods, beverages (tea and coffee products), production and processing of raw timber into wood products, palm oil and their derivatives, pulp, paper and paper board, rubber products, honey and soybeans are among the important value chains with a comparative advantage. However, concrete action plans are needed to exploit these opportunities.

While the private sector is expected to play a leading role in input supply, output marketing, agro-processing, and credit provision, its capacity to effectively deliver on these responsibilities is partly constrained by the Government's interventionist tendencies, for instance in input and output

markets. Factors that hinder the meeting of rising sanitary and phyto-sanitary standards (SPS) in global markets need to be addressed for enhanced participation. Therefore, it is necessary to build the capacity of public institutions and for sector and business associations mandated to promote agro-industrial development so that they develop and provide adequate business and technical development services in production, processing, SPS, marketing, negotiation skills, and modern ICT. Furthermore, there is a need to formulate a national quality policy and to strengthen the capacity of quality assurance agencies, such as the Zambia Bureau of Standards (ZABS) and the Zambia Weights and Measures Agency (ZWMA), through the establishment of a national accreditation body, negotiating standards that are not disguised forms of protection, decentralizing and building their capacity (training and infrastructure) to test and to issue certification. The development of private certification agencies should also be encouraged to reduce the current pressure on public institutions. Further, it is important that local agro-processors are exposed to successful foreign agro-processing companies and that their collaboration is facilitated.

The development and implementation of policies affecting agro-industry is the responsibility of a number of ministries and agencies. However, some of the specific mandates and overlapping responsibilities of these institutions have been found to inhibit agribusiness and agro-industrial development. The strengthening of linkages and collaboration among the public agencies is thus critical for progress in the sector. In cases where there is donor support, an exit strategy that will ensure sustainability of services provided post donor assistance has to be developed. Furthermore, intermediaries and NGOs should facilitate the supply of services but should not compete with the private sector or distort the market incentives as this tends to undermine the operations of the private sector. In order to address the concerns and needs of the private sector, a regular consultative dialogue between the private sector, relevant government agencies, donors, and NGOs should be promoted and institutionalized.

To overcome the limitations and consequences of the "smallness" of MSMEs it is important that alternative means of agro-industrial upgrading and modernization are envisaged through the spread of innovations: product, process, functional, and institutional innovations are to be explored for these firms. Government needs to facilitate and to regulate the mechanisms for collabouration of bigger firms (contractors/anchor companies) with smaller firms, and to foster incentives that encourage bigger firms to work more closely with the smaller ones and/or incentives that encourage smaller firms to work together. The capacity of the Zambian Competition Commission (ZCC) needs to be strengthened to regulate agricultural and agro-industrial production and markets; it is necessary to develop a regulatory framework that protects farmers and small firms from exploitation by large buyers and producers. A Micro Small Medium Enterprise Policy (MSMEP) should be developed that will provide guidelines for sectoral issues of importance.

Strengthening science, technology and innovation (STI) and the human capacity for agro-industrial development are also critical. This can be achieved through:

- Facilitating the development of appropriate low-cost technologies in agricultural production, processing, and storage structures, irrigation, on-farm transportation, and of sustainable energy technologies to increase productivity.
- Disseminating, replicating and commercializing results of R&D through: facilitating participation of R&D institutions in trade fairs and exhibitions; organizing public discussions and business forums about R&D results; ensuring publication of results of various R&D activities; and preparation of product promotional materials by R&D institutions.
- Creating or strengthening intermediary organizations that can broker and facilitate linkages between producers, private enterprises, and research organizations. Such linkages may take many forms (two or more organizations could pool knowledge and resources together and jointly develop a product; commercial transactions in which organizations purchase technologies; or buying knowledge services from another organization).

- Establishing management mechanisms for research and training that allow agribusiness to participate in strategy development, priority setting, and funding. An effective innovation system requires a cadre of professionals with appropriate skills and attitudes, where technical expertise needs to be complemented with functional expertise in all agribusiness disciplines;
- Strengthening internship and exchange programmes between industry, universities, and coordinating organizations; and supporting the revision of curricula at tertiary education and vocational training institutions.
- Increasing public resource allocation to research and development (R&D); and
- Developing and rehabilitating science and technology infrastructure.

In order to increase investments in the agro-industry sector, both local and foreign investments should be enhanced. There are incentives in place under the ZDA Act of 2006, but investors need to be made aware of their existence, hence the need to organize the Zambia Development Agency (ZDA) as a one-stop-shop. It is necessary to facilitate the transfer of skills and technology to domestic private enterprises; and to ensure that local investors enjoy most of the incentives provided for under the ZDA Act.[25] There should also be incentives for foreign investors to partner with domestic businesses on a joint ownership basis.

Lack of access to affordable finance due to high interest rates and excessive collateral requirements was ranked as a major constraint to agribusiness growth and profitability. Improving agro-industries' access to finance requires the establishment of a financial institution that understands the unique characteristics and financial requirements of agribusiness firms. There is also a need to hasten the establishment of the Trade and Industrial Development Fund (TIDF) as provided for in the ZDA Act, to be administered by selected institutions through open tender. Commercial and Development banks should be encouraged to develop innovative financial products to support agro-industrial development; the warehouse receipt system is yet to be incorporated in the Agricultural Credit Act (ACA) to make it a legally tradable financial instrument. Expansion of the capacity and the operations of the Citizen Economic Empowerment Commission (CEEC) and of the Citizens Economic Empowerment Fund (CEEF) would go a long away to facilitate local investors' access to affordable loans. Establishment of a second-tier market for SMEs on the Lusaka Stock Exchange (LuSE) would facilitate SMEs' access to cheap capital. Furthermore, to minimize the risks of granting credit, there is a need to strengthen the credit bureau institutions. Venture capital funds for agribusiness entrepreneurs also need to be created. Above all, the financial management skills of the entrepreneurs need to be enhanced in terms of record keeping and development of financial statements if they are to secure loans from financial institutions.

Inadequate infrastructure increases costs and disadvantages smallholders in rural areas so that firms tend to concentrate activities in relatively easily accessible areas. There is need to develop and rehabilitate agro-industry infrastructure through efficient public-private partnerships along conventional lines: build and transfer schemes; build, operate and transfer projects, and build, own and operate arrangements. Particular emphasis needs to be placed on transport, production and marketing (processing, storage, grading, and packaging facilities), on irrigation, physical and ICT business incubation centres, on common production facilities, and so on. To attract investment in irrigation infrastructure, there is a need to review the period of water rights and the resource allocation procedures; for instance, the time period for water rights could be tied to the length of the project life. Besides, to increase funding to irrigation projects, commercial and development banks should be encouraged to accept water rights as collateral, since water rights could be traded in the secondary financial market. There is also a need to strengthen the capacity of the technical

[25] For instance, under the proposed Multi Facility Economic Zones (MFEZ), the minimum investment capital required to qualify for incentives is US$500,000; most local investors do not have such an amount of money.

services branch of the Ministry of Agriculture and Cooperatives (MACO), which is responsible for irrigation by providing adequate funding and by upgrading staff.

Zambian agro-processed products continue to be faced with problems of high production, freight, and storage costs due to high energy and fuel costs. There is a need to increase access to affordable renewable energy through stimulating local and foreign investment in sustainable, renewable energy sources by provision of suitable financial and fiscal incentives (subsidies, low interest loans, loan guarantees, tax incentives, and duty waivers on renewable energy capital equipment) and to ensure that energy prices reflect costs of providing energy while offering a reasonable return on investment. Public awareness of the benefits and use of alternative and affordable sources of energy, such as biomass, should be enhanced. Also the implementation of the rural electrification master plan (REMP), by developing micro and small hydropower schemes in order to improve access to electricity in rural areas, should be hastened.

In order to enhance trade at local and regional levels, the development and implementation of a comprehensive export promotion strategy (CEPS) should be expedited, and mechanisms for an export financing and refinancing facility established. All measures affecting trade, such as subsidies, tax structures, and incentives, should be reviewed. Expansion of markets for Zambian products, through negotiation of bilateral, regional and multilateral trade and investment agreements, should be enhanced; the systems for monitoring and evaluating the impact of agreements on the development of agro-industry should be regularly evaluated. Specifically, domestic trade should be enhanced through promotion of consumption of locally produced goods and services, organization and encouragement of agribusiness participation in domestic trade fairs, and collection and dissemination of domestic commerce and trade data to enable firms to make informed decisions. Agribusiness and agro-industrial development have to play a key role so that Zambia can progress on the growth trajectories and development objectives set out in the national Vision 2030 as well as to meet the MDG (Millennium Development Goal) of halving the 1990 levels of poverty by 2015. The Action Plan for developing agro-industries and promoting agribusiness in Zambia as laid out above is therefore of great importance for the realization of the ambitious Vision 2010 objectives.

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Abbreviations and Acronyms

ACA	Agricultural Credit Act
ACF	Agricultural Consultative Forum
ACP	African, Caribbean and the Pacific
ADSP	Agricultural Development Support Project
AfDB	African Development Bank
AGOA	Africa Growth and Opportunity Act
ATC	Agreement on Textiles and Clothing
AU	African Union
BAT	British American Tobacco
BDS	Business Development Services
BoZ	Bank of Zambia
CaI	Canadian Initiative (for trade)
CAP	Commercial Agricultural Project
CAZ	Cotton Association of Zambia
CBTA	Cross Border Trade Association
CBZ	Coffee Board of Zambia
CGA	Cotton Ginner's Association
CEE	Citizens Economic Empowerment
CEEC	Citizens Economic Empowerment Commission
CEEF	Citizens Economic Empowerment Fund
CEPS	Comprehensive Export Promotion Strategy
CDC	Commonwealth Development Cooperation
CGS	Credit Guarantee Scheme
ChI	Chinese Initiative (for trade)
CIA	Central Intelligence Agency
COMESA	Common Market for Eastern and Southern Africa
CSO	Central Statistical Office
CSPT	China Special Preferential Tariff
DANIDA	Danish International Development Agency
DBZ	Development Bank of Zambia
DC	Development Centre (of OECD)
DRC	Democratic Republic of Congo
EBA	"Everything But Arms" (initiative)
EBZ	Export Board of Zambia
EC	European Commission
ECZ	Environmental Council of Zambia
EDF	European Development Fund
EPA	Economic Partnership Agreement
EU	European Union

FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FNDP	Fifth National Development Plan
FRA	Food Reserve Agency
FISP	Fertilizer Input Support Programme
FTA	Free Trade Area
GART	Golden Valley Agricultural Research Trust
GDP	Gross Domestic Product
GRZ	Government of the Republic of the Zambia
ICT	Information and Communication Technology
IDE	International Development Enterprises
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ISNAR	International Service for National Agricultural Research
ISP	Infrastructure Service Provision
JASZ	Joint Assistance Strategy for Zambia
JITAP	Joint Integrated Technical Assistance Programme (of WTO)
JMAS	Japanese Market Access Scheme
K	Kwacha (currency unit of Zambia)
KASCOL	Kaleya Small Holders Company LTD
LDC	Least Developed Countries
LuSE	Lusaka Stock Exchange
MACO	Ministry of Agriculture and Cooperatives
MATEP	Market Access, Trade and Enabling Policies
MCTI	Ministry of Commerce, Trade and Industry
MDGs	Millennium Development Goals
MEWD	Ministry of Energy and Water Development
MFEZ	Multi Facility Economic Zone
MFI	Microfinance Institution
MFA	Ministry of Foreign Affairs
MLFD	Ministry of Livestock and Fisheries Development
MLGH	Ministry of Local Government and Housing
MMTZ	Malawi, Mozambique, Tanzania, Zambia (pact)
MoFNP	Ministry of Finance and National Planning
MoH	Ministry of Health
MoL	Ministry of Labour
MSMEs	Medium, Small and Micro Enterprises
MSMEP	Micro Small Medium Enterprise Policy
MSTVT	Ministry of Science, Technology and Vocational Training
NAP	National Agricultural Policy
NEP	National Energy Policy

NGO	Non-Governmental Organization
NISIR	National Institute for Scientific and Industrial Research
NIP	National Irrigation Plan
NMC	National Milling Corporation
NORAD	Norwegian Agency for Development Cooperation
NTE	Non-Traditional Exports
NTBC	National Technology Business Center
NSTC	National Science and Technology Council
ODA	Overseas Development Administration (of UK)
OECD	Organization for Economic Cooperation and Development
OGS	Outgrower Scheme
OPEC	Organization of the Petroleum Exporting Countries
PACRO	Patents and Companies Registration Office
PLARD	Programme for Luapula Agricultural and Rural Development
PPP	Private-Public-Partnership
PROFIT	Production, Finance and Improved Technology
PTA	Preferential Trade Area (Bank)
RFPs	Rural Finance Programmes (of IFAD)
ROADSIP	Road Sector Investment Programme
RRMP	Road Rehabilitation and Maintenance Project
R & D	Research and Development
SACU	Southern African Customs Union
SADC	Southern African Development Community
SAI	Small Aggregation Initiatives
SAPMSP	Smallholder Agricultural Production and Marketing Support
SEDB	Small Enterprises Development Board
SHEMP	Smallholder Enterprise and Marketing Programme
SHF	Smallholder Farmers
SIDA	Swedish International Development Cooperation Agency
SIP	Small-scale Irrigation Project
SME	Small Medium Enterprises
SMI	Small Manufacturing Industries
SPS	Sanitary and Phyto-sanitary
SSA	sub-Saharan Africa
SSIAZ	Small Scale Industries Association of Zambia
S&T	Science and technology
STI	Science Technology and Innovation
TBZ	Tobacco Board of Zambia
TDAU	Technology Development Advisory Unit
TEVET	Technical Education, Vocational and Entrepreneurship Training
TEVETA	Technical Education, Vocational and Entrepreneurship Training Authority

TIDF	Trade and Industrial Development Fund
TWRs	Transferable Warehouse Receipts
UN	United Nations
UNCTAD	United Conference on Trade and Development
USAID	United States Agency for International Development
UNZA	University of Zambia
VAT	Value Added Tax
VDSs	Vendor Development Schemes
WB	World Bank
WEDAZ	Women Entrepreneurship Development Association of Zambia
WTO	World Trade Organization
WVI	World Vision International
ZABS	Zambia Bureau of Standards
ZACA	Zambia Agricultural Commodity Agency
ZACCI	Zambia Association of Chambers of Commerce and Industry
ZAM	Zambia Association of Manufacturers
ZAMACE	Zambia Agricultural Commodities Exchange
ZARI	Zambia Agricultural Research Institute
ZATAC	Zambia Agribusiness Technical Assistance Centre
ZBF	Zambia Business Forum
ZCC	Zambia Competition Commission
ZCF	Zambian Cooperative Federation
ZCGA	Zambia Coffee Growers Association
ZCSMBA	Zambia Chamber of Small and Medium Business Association
ZDA	Zambia Development Agency
ZEGA	Zambia Export Growers Association
ZEPZA	Zambia Export Processing Zones Authority
ZESCO	Zambia Electricity Supply Corporation
ZFWB	Zambia Federation of Women in Business
ZIC	Zambia Investment Centre
ZNFU	Zambia National Farmers Union
ZPA	Zambia Privatization Agency
ZWMA	Zambia Weights and Measures Agency
ZESCO	Zambia Electricity Supply Corporation
ZNFU	Zambia National Farmers Union

Chapter 10 | Conclusions

Karl Wohlmuth and Patrick M. Kormawa

Synthesis and Lessons

Case for agro-industrial development

The eight country case studies present new evidence for the case for agro-industrial development and the promotion of agribusiness in Africa, and represent the diversity of agro-industrial production and market conditions across the countries considered. It is clear from the case studies that there is a strong argument for the promotion and support of agro-industry. Most important among the arguments is that agro-industrial development is seen as an important instrument by which to improve the economic situation of rural and urban households, of informal sector and small agribusinesses, and of rural small farmers by extending activities to off-farm production, by way of creating employment, improving the diet and the quality of food, and by enhancing urban and rural livelihood. In this context, agribusiness development is seen as a tool for rural development so as to link small producers to local and regional markets, to increase the range of off-farm activities, and to make the rural households benefit from value addition along the agro-industry value chains. This argument is brought forward most clearly in the case studies for Ethiopia, Mali, and Zambia but is also present in the SANE countries Nigeria and South Africa, although their policies tend to concentrate more on other sectors, like the oil industry in Nigeria and the automotive industry in South Africa. While managing oil revenues in Nigeria is the overriding policy orientation, increasing industrial competitiveness is the dominating policy orientation in South Africa. However, despite this specific policy orientation there is room in both countries for the support of agro-industrial and non-agro-industrial enterprises. From the national economic point of view, the argument most frequently cited in support of agro-industries and agribusiness is the scope that the sector provides for economic diversification of production and exports. Agro-industrial development is seen as a way of exploiting the comparative advantages of Africa and translating these into competitive advantages for agribusiness firms. Agribusiness firms can thus contribute to a structural change whereby countries become less dependent on the same few export products. This argument is proposed as being most relevant in the case studies for Ethiopia, Mali, and Zambia, but in all the case study countries economic diversification is seen to a greater or lesser extent as a new chance for development, especially so for Nigeria with its high oil export dependency. While South Africa and Kenya have a somewhat more diversified export pattern, losses in export shares of traditional export products have led to the search for new ones. Both Senegal and Cameroon express the need for more export diversification on the basis of agro-industrial development in their new planning documents, and some steps have been announced towards the implementation of such policies.

Agro-industrial development is in this context also seen in some countries as a tool with which to accelerate growth and to speed up structural changes in the economy, and in other countries as an instrument to sustain relatively high growth rates and to reach even higher levels of sustainable growth rates. Ethiopia, Mali, and Zambia are trying to sustain their relatively high growth rates by a move to more sustainable agro-industrial development policies and towards a dynamic agribusiness community, while other case study countries use agro-industrial development strategies as an instrument to accelerate growth. Both Senegal and Cameroon are advancing new

growth strategies to overcome long periods of slow growth, while Kenya is arguing for more agro-industrial development in the context of a new growth strategy that is based on a higher international competitiveness of agro-industry products, as the country has over the years lost some positions on the world market. For the oil- and resource-rich Nigeria, Zambia, and Cameroon, agribusiness development is considered as a way to maximize the benefits from resource rents by investing the funds on a long-term basis.

For most if not all of the case study countries, overcoming the high (and in some cases extremely high) import dependence on food is a further argument for agribusiness development and promotion of agribusiness. Urban consumers of the case study countries demand imported higher quality food products; overcoming a high (and even increasing) food import dependence is therefore a target in Senegal, Mali, Zambia, Nigeria, South Africa, but also in Ethiopia, Cameroon, and Kenya. This argument is especially important for countries that have achieved high growth rates over longer periods like Mali, Ethiopia, and Zambia. These countries want to consolidate their growth by pursuing such agro-industry and agribusiness development strategies that also will reach the urban consumers by supplying them with domestic higher quality food products, as otherwise a dangerous spiral of growth and increasing import dependence on food might develop.

It is clear from the case studies that there are a multiple arguments to be brought forward for agro-industrial development; it is encouraging that awareness about these arguments is broadening, and that policymakers and the business community see more clearly the advantages of going in this direction. A particular strength of agro-industrial development is that agro-industrial development strategies can be designed in such a way that multiple objectives can be realized: diversification of exports and production, reducing import dependence, accelerating growth and speeding up structural change, improving international competitiveness, enhancing a stable supply of agricultural raw materials for agro-industries, and improving the livelihood of rural and urban households by supporting small and informal agribusinesses and by securing additional employment and food availability for the poor through rural development.

LESSON 1: Increase awareness about the advantages of agro-industrial development and the promotion of agribusiness

It is important that the national policymakers and business associations make it clear why they support agro-industries and why promotion of agribusiness is of vital importance for growth, competitiveness, and livelihoods; such arguments must be communicated effectively to bureaucracy, businesses, and to consumers. These communication and awareness creation tasks have to be related to the economic experiences and to the potentials of the respective countries; countries with a high growth experience will clearly have different arguments to communicate than countries with a slow **growth** experience. Dialogue forums between government, donors, NGOs, and the private sector can help in further moves towards awareness creation.

Structure and dynamics of agro-industries

For the eight case study countries a diverse and highly complex picture emerges from the analyses, both in terms of long-term changes over two or three decades and medium-term developments over the last five to ten years. While long-term analysis gives information on important structural changes with regards to GDP shares of sectors and subsectors, manufacturing value added and employment shares, medium-term analyses give way to look at more recent developments, some successful new ventures, new agro-industrial products, marketing constraints, and market penetration efforts at local, regional, and global markets. Both types of analysis were used in the eight case studies, although with quite different methodological instruments.

Structural Change: The eight case studies investigate the structural changes that have taken place in agro-industry over the last two to three decades in order to look at how manufacturing value

added composition and employment patterns have evolved. Changes in the number and size of establishments in agro-industry have also been considered, as well the characteristics of formal versus informal enterprises. Due to gaps in information, a comparison of outcomes is difficult. Using various methods of analysis for production of and trade in agro-industry products, the authors of the eight case studies present a picture of the longer term developments in agro-industry. Different definitions, limited data sources, limited coverage of enterprises and so on make it difficult to determine any uniform trends in agro-industry. In agro-industry production analysis we find sector share analyses (in terms of GDP and manufacturing value added), productivity analyses, employment trend analyses, and analyses of establishments. In agro-industry trade analyses we find analyses of export and import intensity of agro-industry sectors, Revealed Comparative Advantage (RCA), Trade Competitiveness (TC) Indices, and Intra-Industry Trade (IIT) analysis. However, although the methodological approaches are quite different in the eight case studies, some trends do emerge. First of all, there is much more information on the food industry than on other agro-industry sectors, like textile and clothing or wood products, and secondly, real changes over a longer period are rare in agro-industry. Finally, both production and trade trends are not encouraging in terms of a modernizing and competitive agro-industry.

The case study countries have seen insufficient change: efforts to overcome the high concentration of exports have largely met with failure, as there is still quite limited production and trade diversification (and in some cases there is even more concentration than in the past); we see virtually no success in terms of reducing the high import dependence on food products, and in some countries even a trend to higher net import balances; there has been limited success in improving the livelihoods of the rural population by agro-industrial off-farm production activities and by integrating them into agro-industrial value chains; and we see no real change in small and informal sector agro-industry producers (although some effects remain unobserved because of data, definition, and conceptual analysis problems). Countries with high growth rates for more than a decade can and should translate this success into structural changes, improvements of the livelihood of households, better production conditions of small and informal producers, and into more favourable market conditions at regional and global markets. The first signs of such changes are visible in Ethiopia, Mali, and Zambia, but for a more far-reaching and stable change to occur a longer growth period and a continuation of pro-agro-industry policies are needed in these countries. Nigeria has planned over decades for such a change in agriculture and agro-industries to overcome the oil dependency, but virtually without success. South Africa has lost in the past two decades competitive positions in various agro-industry subsectors and was not able to advance with broad-based agriculture and agro-industry reforms. Kenya, Cameroon and Senegal are countries where some reforms were undertaken recently, but even if these reforms succeed we cannot expect a quick reversal of the negative trends in agro-industry that have occurred over the past decades; real change is so far limited. It is important to follow up the structural changes in agro-industry production and trade by continuous research work on the basis of unified and more sophisticated methodologies.

Dynamic Developments: The eight country case studies also report on product, firm and market-specific developments over the medium term, covering the past five to ten years. In most of the case study countries some steps were taken to develop niche markets, to exploit opportunities in subsectors, and to use privatization strategies for product innovation. In some cases this was done by starting with prospective studies on value chains, in other cases by focusing on priority crops, while others entrusted new institutions with the task of moving forward. Dynamic developments are related to markets, firms, institutions, value chains, infrastructure, and production processes, but the impact on structure depends on the scale of support, a collaboration of important actors, and the long-term effort towards realizing the agreed upon objectives.

Some changes in this respect are of interest. Mali and Zambia have seen an advance in a number of niche products and non-traditional exports, and Ethiopia too is reporting some successes.

Traditional export products can be taken as the base for developing new products and adding value by a local branding strategy. However, all these small successes are overshadowed by the effects of an increasing import dependency. Dynamic change is requested in the type of food that is imported for urban consumers as there is a tremendous import substitution potential to be exploited. Especially serious is the fact that non-food agro-industries are not advancing, as we can see from the case study countries. In textile and apparel, in leather and shoe production, and in wood and furniture sectors, products are successes only rarely. Some of these subsectors have seen a further decline in the last few years, although it is possible for these countries to benefit from the quality of local raw materials, the artisanship of craftsmen, and the emotional factors and images of African in the production and marketing of textiles, clothing, furniture, and leather goods; Mali and Ethiopia, and also Zambia and Senegal are just starting to exploit the opportunities offered by such a local branding strategy. These countries are already able to reap some benefit, despite the constraints of infrastructure and market conditions; obviously these potentials would be best maximized in the context of a full agro-industrial value chain involving all major stakeholders. South Africa, Nigeria and Kenya have the potential to advance more rapidly, as they have a considerable number of agro-industry firms with marketing and technological capacity. However, in these countries as well successes are rare, especially so with non-food agro-industry products. Although Cameroon is advancing in timber and wood products, exports in unprocessed form dominate in the trade balance, and in South Africa furniture export production has even collapsed.

LESSON 2: Follow up and support of structural change in the long term

It is important to follow up the long-term structural changes in agro-industry using appropriate methodologies that allow a comparative analysis in order to study the trends in food and non-food agro-industries. These trends have to be related to income levels, growth rates, trade patterns, employment structures, size and type of establishments, formality of production units, agricultural production and raw materials sourcing changes, consumption trends, market developments, and livelihood factors. So far, there is only limited evidence available and a small base for comparative analysis. On this basis policymakers can assess the situation and can promote specific agro-industry subsectors and firms.

LESSON 3: Identify dynamic development potentials at product level and firm level over the medium term

It is necessary to identify more systematically specific agro-industry products for export and import substitution, and for local, regional and for global markets. This can be done by developing value chains, by supporting capable large and medium-sized firms, by focusing on specific markets, and by redesigning certain traditional products for new uses and new markets. There is a need to concentrate more on market information and to signal quickly new trends to enterprises and to lead firms of value chains. Agro-industry value chains can emerge as drivers in this process; they can create over the medium term a new culture of customer orientation. Large firms and integrated value chains can become competitive with new products, non-traditional export products, niche products, and a larger variety and diversity of food and non-food agro-industrial products. As successes are often caused by firm specific factors (competencies, capabilities, and knowhow) and by highly integrated and well managed value chains, the business community, the civil service and policymakers are advised to learn from successful cases and from the experiences of the respective stakeholders. Donors and civil society will also play a large role in this effort.

Policies for developing agro-industries

Both the scope and coherence of policies in support of agriculture and agro-industries need to be addressed. The eight case studies give some information on both aspects of policy formation and policy execution in these countries. The scope of policies means that all the relevant policy

branches that affect agro-industrial development and promotion of agribusiness have to be considered by policymakers and by the business community. Policy coherence means that all the envisaged policies have to be implemented in a non-contradictory manner, so that the set objectives and instruments used are mutually consistent for the various policy branches. This is not an easy task in policies for agro-industrial development as we can see from the eight case studies. However, a dialogue forum between government and private business offers the opportunity to achieve both scope and coherence of policies.

Scope of Policies

The macroeconomic, investment and growth policies are of determining importance as the cases of Ethiopia, Mali and Zambia show. All the three countries have a recent history of high growth rates, and macroeconomic policy has played an important role by applying increasingly sound budget and monetary policies. Although these countries were not equally successful against macroeconomic indicators, the main thrust of policies was positive. Other countries with low growth and severe macroeconomic policy problems, like Senegal, Cameroon, and Kenya, did much less in terms of economic reform policies and in improving their macroeconomic policies. Nigeria still needs to revise its macroeconomic policies to address the repercussions of the oil dependence, and South Africa has to overcome by more coherent policies the high degree of vulnerability of the macroeconomic environment. In both countries the policies pursued did not really help in changing the production and trade structure in favour of agribusiness.

The eight case studies show how complex the policy framework is that impacts on agro-industries and on agribusiness. Most importantly, apart from macroeconomic and growth policies, it is the trade and investment policies which affect the conditions of prosperity, the competitiveness factors and the location advantages of agro-industry and agribusiness. The evidence presented for the eight case study countries is that trade and investment policies have affected considerably the development and structure of agro-industries. Countries with reform activity in these areas have the potential to advance, at least in some agro-industry subsectors. However, the credibility and non-reversibility of reforms is important. Some reports on case study countries show that import regimes could have been more selective to allow for import substitution and export regimes could have been more supportive. Mali is an interesting case as government has successfully tried to combine selective public interventions into agro-industry with budgetary restraint and control. Zambia has obviously followed similar policy lines, with selective support associated with privatization measures on the one hand and budgetary restraint on the other. Senegal is now moving in this direction, based on its Growth Acceleration Strategy. Other case study countries, like Ethiopia, also show that agro-industry can be supported by more integrated and by broader framed agriculture and industry development policies, and that budgetary control must not necessarily be sacrificed for this objective. The ADLI (Agricultural Demand Led Industrialization) strategy of Ethiopia should set the frame for productivity increases and an enhanced competitiveness of agriculture and agro-industries. Trade and investment policies should be based on a workable model of ADLI. Kenya is just starting to rework its trade and investment policies (along with other policies) because of the declining competitiveness of its agro-industries in global markets. Regional integration is coming into focus. Zambia is also using its trade, investment and regional integration policies to exploit new markets for agro-industry products. This policy orientation becomes part of a subregion-based development strategy to exploit the huge market chances at SADC level. Cameroon and Nigeria are not very explicit on the type of policy change to be expected, but there is also a trend towards deeper regional integration at ECOWAS and ECCAS levels so as to make agro-industries benefit from growing regional markets. South Africa has severe weaknesses in its agricultural and small-scale industry development policies, and also in its infrastructure and skills development policies, but there are also severe management problems plaguing it regional and global integration policies, and the scope of policies is too limited for a country at this development level.

Coherence of Policies

In some case study countries we observe significant problems in synchronizing agriculture and industry policies, and this seriously affects the development of agro-industries. Raw material shortages and quality problems, along with perishability and transport problems give evidence of weaknesses in the chain from pre-harvest to harvest and then to post-harvest production activities. Senegal suffers from weaknesses in its government machinery to coordinate agriculture and industry agendas, and to integrate donor policies and programmes with agriculture and agro-industrial development policies. Governments not only in Senegal, but also in Nigeria, Zambia, Ethiopia and Mali now try to overcome these deficiencies in government machinery by leaning towards a value chain approach. Ethiopia and Mali tried quite hard to synchronize their agriculture and agro-industrial development policies, but still there are gaps and conflicting policies. Decentralized support is not yet forthcoming and is not yet successfully applied. The same problems are observed in Nigeria, as the comparative advantages of the 36 states with agro-industrial production potential are not yet exploited by supportive measures. Zambia seems to apply now quite successfully more integrated and coherent agricultural and agro-industrial development policies, and this may help to overcome the dependence of the economy on mining, but it will be very important to streamline the many new support institutions towards this goal. Cameroon has yet to implement its programmes for rural development and agriculture competitiveness, especially by supporting the weak infrastructure, and needs to synchronize these policies with the programmes and policies for agro-industrial development, as the applied policies currently lack coherency. Nigeria and South Africa have immense problems in supporting agriculture/communal agriculture at the level of states, provinces, and local communities, and in making these policies coherent with their agro-industrial development policies. Kenya has not only to broaden its agricultural and agro-industrial development policies and other support policies towards the smaller and more informal producers but has also to improve its support for large commercial farmers and industrial producers so that they do not revert to "do it alone" strategies (by avoiding contacts with the government bureaucracy). While Kenya (along with other case study countries) is developing agro-industrial development strategies on the basis of a Vision and Action Plan, implementation at all government levels is the problem.

There are many other policy areas where coherence is needed: competition and technology policies, taxation policies, fiscal management and fiscal decentralization policies, spatial development policies, rural development, poverty reduction and income redistribution policies, and sub-regional trade, investment, integration and development policies. All these policy areas affect agro-industrial development and agribusiness. Evidence from the eight countries shows that some progress is observable in terms of policy coherence, but coherence is still affected by the different levels of implementation of specific policies relevant to agro-industrial development.

LESSON 4: Considering the scope of policies which are affecting agro-industrial development

It is necessary to look at policy formation and execution in the various policy areas that affect agro-industrial development and the promotion of agribusiness. The most important areas are macroeconomic and growth policies, trade and investment policies, taxation policies, agricultural and industry policies, spatial and regional development policies, structural and technology policies, etc. It is necessary to consider all these policies in order to maximize the benefits form a holistic policy approach. It is also necessary to extend the scope of policies affecting agro-industrial development by including also competition and corporate governance policies, but also small enterprise, land development and rural development policies, fiscal management and fiscal decentralization policies, and infrastructure development policies. The highly fragmented view on support policies for agro-industrial development has to be overcome. There is a need for multi-dimensional action programmes based on a broader scope of policies.

LESSON 5: Considering policy coherence in a new institutional framework for supporting agro-industries

Coherence of policies is a huge task for policymakers as it requires a new set of institutions and a new style of coordination. Coherence can best be built on the basis of a dialogue among stakeholders (policymakers, government bureaucracy, private business, NGOs, donors, finance institutions, etc.). New steps are requested and incentives are needed so as to provide for more coherence between the many important policy areas, and especially so between agriculture and industry policies, trade and investment policies, and macroeconomic and growth policies. Other policy areas also have to be looked at if policy coherence is to be reached. National Visions and Action Plans give a framework for future coordination, but incentives have to be installed at the level of institutions to ensure that they coordinate their actions.

Key policy factors for promoting agribusiness

Key policy factors group 1: Dynamic agriculture, upgrading value chains, targeting for social inclusion

The eight country case studies give evidence on some changes in respect of these three key policy factors. Dynamic agriculture provides for agricultural raw materials for agro-industries, and in integrated and upgraded value chains they are transformed for intermediate and final consumption; by targeting specific commodities and small and informal producers social inclusion becomes reality. Some countries have developed action plans for sectors and new frameworks to realize these three policy factors. Changes were introduced to create a more favourable environment for more dynamic agriculture in order to provide for a steady flow of agricultural raw materials to agro-industries. These countries are establishing and upgrading agro-industrial value chains by prospective studies and supporting policies, but also by better integrating the value chains through new management, finance, innovation, and infrastructure systems. Some countries are even targeting small producers and specific commodities with a view to deeper social inclusion. They identify and target those commodities and those producer groups that can benefit most from such support measures. There is visible progress in this regard in Ethiopia, Mali, and Zambia. Some discussion on these issues and on suitable policy action takes place in Nigeria and in South Africa, but there is not systematic and concrete action towards these three policy factors. Policies in Kenya are rather static, as there are not new incentives to support these three policy factors by concrete policy measures. Cameroon has seen some reforms in recent years, and some studies and action plans were released, but there was not enough change with regards to these three important policy factors. Senegal is on the move to work in this direction, but action has yet to follow from the prospective studies and the various action plans.

Key policy factors group 2: Strengthening technical effort, supporting innovative finance, and moving to more private sector-led activity and investment

The eight case studies give some information on new projects, plans and ideas in this regard, and also on perspectives for building frameworks for an increased use of STI (Science, Technology and Innovation) inputs in agro-industry, of innovative financing modalities, and of private sector-led investments. It is obvious from the reports that in most of the case study countries much more has to be done in the future to introduce a modern STI infrastructure that supports agro-industry, improves traditional finance schemes and creates innovative new ones for all types of agro-industry activities, moving towards a coherent private sector development strategy that is conducive to investment promotion, especially so in agro-industry. Most importantly, only South Africa has so far provided for a National Innovation System (NIS) and is developing this instrument further. However, even in South Africa the role of the NIS for an agro-industrialization path is quite limited. Some references to NISs are made also in other country reports, but it is not possible to see

the needed incentives to interlink the pillars of the NISs. Nigeria has some potential in terms of technology, human capabilities and innovation capacity, but it is not used and not related to agro-industries. In both countries there is also a gap in terms of innovative financing for agro-industrial development. Ethiopia, Mali, and Zambia are still very weak in regard of all areas of STI and also in financial infrastructure for modern agro-industry, but these countries are moving towards a more credible private sector policy and are enhancing the dialogue between government and private sector with the aim of improving overall investment conditions. Therefore, in all three countries the investment frameworks have improved. Kenya has potentials and capacities in STI and is also attracting foreign businesses with a large knowledge base and has developed some new innovative financing schemes for agriculture and agro-industries, but it is weak in using these potentials and capacities in enterprises and farms. The country is weak in terms of private sector development and the investment climate, to the extent that Kenyan firms go for "do it yourself strategies" for necessary services in order to escape bureaucracy and public inefficiency. Cameroon and Senegal still suffer from the late start of reforms in their countries, affecting the investment climate and the gaps in STI and financing infrastructure.

Key policy factors group 3: Developing appropriate infrastructure and exploiting local, regional and global markets

For these two further key policy factors the situation is quite different in the eight case study countries. Ethiopia and Mali have recognized the need for an urgent improvement of infrastructure, and especially so for energy, as both countries can pursue their more decentralized agro-industrial development strategies only on this basis. However, more action has to follow in both countries. Mali has experienced some problems with large projects, and is moving now to more decentralized and smaller projects, especially for energy. Zambia has already achieved something in terms of infrastructure development and is moving to speed up implementation as part of its regional economic development strategy, which requests more infrastructure supplies so as to be able to exploit market chances in SADC countries. Nigeria, Cameroon, Kenya, and Senegal are country cases where infrastructure provision is largely limited to the capital cities and to major towns, so that only some few agglomeration zones are served; the energy situation is especially desperate. South Africa has a high level of infrastructure provision in general, but communal farming and related agro-industries are not well served; the energy situation is quite serious, and this is also the case for commercial farming and agro-industries.

With respect to market development, most of the case study countries do not develop and exploit the regional market opportunities, resulting in the unsatisfactory progress towards regional integration and the still omnipresent trade barriers. Only Zambia is now heading for a more active approach towards regional integration in food and agro-markets, and for agro-industrial products. Many, if not all, case study countries do not exploit local markets, and even South Africa is not utilizing the growing markets for food and other agro-industrial products of the higher income segments of the population. The trade balances for food are deteriorating. Most of the case study countries do not exploit global demand by new strategies of branding, developing trade logistics, and improving market and trade information. However, some countries like Mali and Zambia are starting actively to work on these three market levels, and Ethiopia is also showing initial progress in marketing its high quality coffee. Cameroon and Kenya are targeting regional markets but mainly because of a declining global competitiveness for its traditional products and the preference of local urban consumers for imported food. Senegal has yet to look at these three market levels; so far trade in agro-industry products has not been seen as a major source of growth. Nigeria has so far neither developed and exploited demand at local markets, nor the demand at regional and global markets, but there are some discussions and ideas how to develop the huge potentials in future.

LESSON 6: Focusing on dynamic agricultural growth, upgrading of agro-industrial value chains, and targeting producers and commodities for social inclusion

It is important to see these three policy factors in context. Dynamic growth of agriculture provides a secure raw materials base for agro-industrial development. Scarcity of raw materials of acceptable quality has impeded agro-industrial development in some African countries. Upgrading of agro-industrial value chains is only possible if the coordination of all stakeholders is improved and if the value chains are fully integrated. Many value chains did not operate effectively because of weaknesses in the management of the value chain at the higher levels. Targeting of producers and commodities is requested so as to aim for social inclusion, as employment creation, basic needs provision and poverty reduction remain fundamental justifications for an agro-industrial development strategy. For social inclusion purposes the targeting of agricultural and agro-industrial subsectors and of agro-industrial value chains has to be improved.

LESSON 7: Strengthening the STI and finance infrastructure and providing for an investor-friendly private sector development strategy

Agricultural development and agro-industrial development increasingly depend on a systematic development of the STI and the finance infrastructure. Both policy factors have to be considered as important priority issues in all spheres of policy formation and policy execution. Dissemination of such services (technological and financial ones) is requested at all levels of economic activity and also has to be provided in remote areas of the countries, especially so when a decentralization of production activity is envisaged. National Innovation Systems, although mostly in a rudimentary condition, can already be used and can be further developed for the benefit of agro-industrial development; some pillars are in place and linkages can be built among them. The finance systems can be more fully used and can be improved, even at low levels of development; new forms of innovative financing are requested for agricultural and agro-industrial modernization. More coherent frameworks for private sector development will be based on private-public sector dialogue forums and would enhance investment activity also in agriculture and in agro-industry. A dialogue between business and government is needed at central level and for all fields of investment, but also sector associations should be involved in such dialogue forums. This is important for existing and emerging associations of producers in agriculture and agro-industry subsectors.

LESSON 8: Improving infrastructure and developing and exploiting demand at local, regional and global markets

Dynamic agro-industrial development is only possible on the basis of a functioning infrastructure (rods, railways, ports, energy production facilities, and communication systems). Infrastructure development is therefore an urgent priority, and the provision of adequate energy supplies is a prerequisite for all steps in the post-harvest transformation of agricultural raw materials. New instruments have to be developed and used widely for the provision of infrastructural services, and there are new modalities in place for financing infrastructure projects. Most important, infrastructure provision should be coordinated with spatial development policies so as to provide remote areas better access to modern agro-industrial production systems. A more systematic development and exploitation of demand at local, regional and global markets is possible even for countries at low development levels, and the identification of such market opportunities should be the task of joint government and private sector institutions. Local market opportunities are huge when looking at the high and increasing level of imported food; regional market opportunities are huge when focusing on the increasing role of regional economic communities (RECs) in Africa; global market opportunities are huge when exploring the increasing demand for high quality traditional and new agro-industrial products. However, a three-pronged strategy for these markets is needed and has to fit for the conditions of each country; different strategies for different market segments should be developed urgently.

Visions, Plans of Action, and Way Forward

From Visions to Action Plans

Most of the case study countries and many other countries in Africa have now presented national visions up to 2020, 2030 or 2035 to guide the development of their countries. This is a new development, and in some sense the old perspective planning of African countries is revitalized in a new form. Although these visions for development are developed at the highest government level, some trickle down is observed in this planning process towards state, province and local government levels, and hopefully this extends to associations of the business community at these levels of decision-making. Some of the visions also highlight issues of agro-industrial development and of the promotion of agribusiness. Most of these countries also provide for some translation into action plans so as to look more concretely at the sectors and the stakeholders, and at the strategies that are needed to advance the overall objectives of the visions for a more dynamic development process. This process of translation into action plans can be more explicit or more implicit. None of the eight case study countries fails completely to guide their policies on the basis of visions, and all of them have some action plans in place to go for implementation. However, there is in some countries a severe lack of inclusion of donors, of NGOs, of the civil society, and especially so of the business community in national visions and in action plans, although there have been some positive developments this regard in Mali, Zambia, and even partly in Ethiopia. In Senegal and in Cameroon the situation is not favourable, and Kenya, Nigeria, and South Africa could do much more to involve these other stakeholders in the process of long-term planning and development of action plans. These other stakeholders have a major role in designing the visions and in making the action plans more relevant, especially for productive sector and livelihood development. The contribution of donors, the civil society and the business community to formulating national visions and action plans is indispensable for guiding development but is not yet not there. The Visions and action plans remain so far state-centred and also locked in at the higher levels of the government machinery.

From Action Plans to Implementation

Moving from action plans to real implementation is the main problem in most of the country case studies. The specific operational plans and the implementation modalities have key importance for progress in agro-industry and agribusiness development and these are rather weak and restricted. Although there was an institutional build-up in recent years in most of the case study countries which had an impact on agro-industries, the operational plans and the timely execution of projects were not readily forthcoming, neither in spatial dimensions nor in social and economic dimensions, and in some sectors implementation remained very weak. By the way of agro-industrial value chains it was attempted to find out the weak points where implementation was brought to a halt, but the use of agro-industrial value chains for speeding up implementation is also limited. Location problems, infrastructure problems, sourcing problems, finance problems, management problems, and coordination problems etc. have caused delays in implementation, but also inappropriate assumptions and inadequate planning. These deficits are most severe in countries like Nigeria, Cameroon, and Senegal, but in Ethiopia and Kenya there are also problems in translating visions and action plans into reality. In other countries, like in South Africa, implementation is hampered by skills shortages, institutional overlaps, biases in incentives for sectoral support, and lack of political commitment. Mali has implementation problems because of gaps in transport infrastructure and because of coordination failures among development actors, especially in the aid business. Zambia seems to be making good progress in translating its visions and action plans into operational plans and project execution, and this concerted action is based on a new set of institutions.

LESSON 9: Moving from Visions to Action Plans in agro-industrial development

The increasing use of national visions to guide long-term development, with a growing emphasis on agro-industrial development and promotion of agribusiness, is encouraging. It is also good news that these countries increasingly translate their Visions into medium-term action plans by way of public investment programmes, infrastructure development plans, agro-industrial development sub-sector programmes, plans and programmes for the development of strategic crops and key value chains, etc. However, the organizational process behind such Visions and action plans is sometimes limited as not all the relevant stakeholders, actors and interest groups are included, such as the business community, donors and civil society.

This has to be changed to include all the important partners of development. Similarly, not all levels of government are taking part in the planning process, and local government and state government levels are often not represented. This has also to be changed quickly so that visions and action plans gain in relevance and coherence; the translation into operational plans and action towards project execution will then become more satisfactory.

LESSON 10: Moving from Action Plans to Implementation and Progress

It is necessary to translate the action plans into operational plans and steps towards project execution which requires that all stakeholders participate fully in project execution; inputs are needed from institutions at all government levels. This is a weakness in many African countries, and especially so when looking at agricultural subsectors and the agro-industry value chains; development of agro-industry and promotion of agribusiness requires that detailed operational plans and implementation modalities guide the project execution. It is also necessary to monitor actions at the respective levels of project execution, and it is not enough to focus only on basic ideas and guidelines of action plans.

The full project cycle towards implementation has to be looked at. For this purpose, it is also necessary to consider the measures and responses of the various project partners from the government side and to review the actions of the donors and of the business community in this respect.

It is necessary to avoid an imbalance between stakeholders in the process of executing agro-industrial development plans and in promoting agribusiness. Too often government actions dominate the scene, and the result can be that well planned projects are then later not accepted by private sector producers (whether small or large, formal or informal).

Recommendations and Perspectives

The study comes out with a lot of information on country-specific developments, and a transformation index covers the progress in the eight countries. Most important now is to translate the gained information into action. The eight case studies give interesting material for policymakers and those working in agribusiness, but also for donors. If the ten lessons are set in perspective and are used for policy changes, further progress in agro-industry and agribusiness development can be expected. The new evidence has implications for policies and programmes, the design of action plans and operational plans, and will guide institutional developments and necessary changes; the institutionalized dialogue between government and the business community can also be supported by the new information. The eight case studies also suggest how donors can benefit from the new evidence and the suggestions made, by better integrating their projects and programmes into an overall reformed policy for agro-industry and agribusiness development.

It will be necessary to investigate further country by country how the visions, strategies, plans and policies can be improved in such a way that the chances for converting agricultural commodities into agro-industrial products are increased. Emphasis is on highly innovative visions, strategies,

plans and policies that are based on criteria such as environmental sustainability, regionally integrated development policies, accelerating the path towards achievement of the Millennium Development Goals (MDGs), enhancing infrastructure provision in a holistic and integrated way, promoting R&D, STI and NISs for broad-based agro-industrial development and dissemination of the R&D outcomes as quickly as possible by STI inputs and NISs to the agro-industry enterprises, providing for a regular energy supply required by agro-industry increasingly using renewable energy, and exploiting in a more systematic way the demand at local, regional and global markets. The country experiences were consolidated for deriving lessons for policymakers and other stakeholders so that reforms can be started or accelerated at the level of countries, of subregions, and also at the level of the African continent. The lessons learned from the country case studies give the basis for an informed discussion of successful agro-industrial development approaches and of future-oriented strategies for the promotion of agribusiness. A timeframe for concrete action is presented in some case studies, and some case studies also outline indications for a portfolio of proposed investments; this shows what has to be financed by which stakeholders and for which sector and activity in the respective timeframe.

Key stakeholders have a role to play in terms of concrete action towards agro-industrial development. Such stakeholders are present at local, national, regional and continental levels, in continental, sub-regional and national organizations, national governments, technical development, vocational training and R&D institutions, private sector associations and organizations, associations of producers and cooperatives, intellectual property protection offices, public-private partnerships (PPPs), international development organizations, technical and business support organizations, financial institutions, development agencies, and other key stakeholders in the agro-industry sector. The task is to use platforms for the dialogue between these stakeholders and actors about agribusiness development.

There is increasing evidence about the sectors, functions, and pillars being of importance for dynamic agro-industrial development in Africa; also the new policy context, the new policy space, and the programme framework for dynamic agribusiness development are becoming much clearer now (UNIDO 2011). The view is held (see UNIDO 2011) that Africa can even find its way to prosperity if action follows analysis and the programme framework. The eight case studies are representative of what is going on in Africa and what can be achieved by concerted action. Countries that were included in the comparative analysis are large and small ones, resource-rich and resource-poor ones, land-locked and coastal ones, low-income and medium-income countries, countries with a long history of economic reforms and countries with a lack of reforms over decades, etc. Actions towards implementation of the many proposals will have to be presented in operational plans according to sectors, tasks, and activities on the one hand and according to stakeholders, organizations, and institutions on the other, preferably in matrix form. Lead agencies and institutions will have to be nominated for projects and programmes by sector, task and activity, and appropriate reporting, evaluation, and monitoring mechanisms will have to be proposed. Conferences and workshops to advocate the main lessons, recommendations and proposals will have to be proposed by the team that is implementing concrete action.

The Abuja Declaration (itself the result of prior important consideration) gives the frame for further action in Africa to embark on a path of agro-industrialization and agribusiness development, and it is important that various international and regional African organizations join the effort, like UNIDO, FAO, and IFAD and AfDB, UNECA, and AUC. They all have their respective role in the initiative and will contribute to the implementation of the new strategy for agro-industry and agribusiness development. The dissemination of the research results, case studies, lessons and recommendations of the two major UNIDO studies (UNIDO 2011 and this volume with comparative country case studies) is of importance for action in Africa. Both studies will also guide the planned and ongoing projects and programmes of UNIDO in the coming years. While UNIDO 2011 gives the analytical frame and the sector-specific issues and shows the new policy

context and the new policy space, this volume gives criteria for the assessment of projects and programmes that are based on comparative country experience. For all ongoing and future UNIDO projects and programmes related to agro-industry and agribusiness development guiding questions can be used:

- How is the awareness about agro-industrial development in the country, and what are the main arguments in this direction?
- Which structural changes have occurred over the longer term (export diversification, import substitution, value addition, social inclusion and improvement of livelihoods) in the country, and in which direction of agro-industrial development?
- How were the dynamics of development in agribusiness in the country over the medium-term, with regards to new products, new markets, new firms, new locations, and new attitudes of stakeholders and actors?
- Has the policy of the country become more comprehensive in terms of supporting agro-industrial development, and are all important policy fields considered in new policy approaches?
- Is the policy of the country towards agro-industry and agribusiness development coherent, so that all policy proposals and programmes are non-contradictory in design, implementation and execution?
- To what extent are the three key policy factors "supporting dynamic agriculture", "upgrading value chains", and "targeting producers and commodities for social inclusion" really in place in the country for the promotion of agribusiness?
- To what extent are the three key policy factors "strengthening technical effort", "supporting innovative finance", and "stimulating private sector-led investment" really in place in the country for the promotion of agribusiness?
- To what extent are the two final key policy factors "developing infrastructure" and "developing and exploiting demand at local, regional and global markets" really in place in the country for the promotion of agribusiness?
- Is the country translating its national visions into action plans, and what does this mean for agro-industry and agribusiness development?
- Is the country translating the action plans into operational plans and moving towards implementation and execution, and how is the experience so far in agro-industry and agribusiness development?

UNIDO has a huge portfolio of activities in the eight case study countries (see Box 10.1), and it would be useful to review on the basis of these ten questions the experiences with closed and ongoing projects and programmes and to use the insights for newly planned and ongoing UNIDO projects and programmes. Such an exercise could also be valuable for UNIDO projects and programmes in other African countries. The cooperation of UNIDO with so many other international and regional organizations and donor agencies can provide the basis for a quicker dissemination of more holistically designed and executed agro-industrial development projects and programmes. UNIDO has set the direction indicated above with Integrated Programmes (IPs) for countries, with region-wide programmes, and with capacity building and human resource development programmes. Some of the projects and programmes give support to policymaking, and others help to improve the situation in terms of key policy factors. With the exception of the projects and programmes in South Africa, in all other case study countries there is focus on agro-industrial development. The focus on clean technologies and on environmental protection has increasing relevance, as well as the support for micro and small enterprises and for women's entrepreneurship. There are also some very specific projects in the portfolio for giving remote areas access to energy, and various projects for the rehabilitation of factories. Although many of the

projects are obviously a direct response to immediate needs (support for drought affected areas, support for unemployed youth, energy requirements of isolated areas, quality problems with food for domestic markets and for exports, capacity constraints and human resource problems), they were often linked in follow-up actions to medium-term integrated development programmes and to sector development/rehabilitation programmes.

Country-wise there are – despite work being based on Integrated Programmes – differences in intensity and direction of cooperation. Ethiopia is a key country for cooperation with UNIDO, and also in the other Least Developed Countries (Mali, Senegal, and Zambia) there is continuous cooperation and action. Projects and programmes in Nigeria and South Africa are diversified and reflect the economic plans of these countries. Much more is however needed in terms of concerted action from all the national stakeholders and as well from the side of the donors to coordinate projects and programmes so as to create a sustainable environment for agro-industries. UNIDO activities in Cameroon and Kenya are largely related to agro-industrial development and infrastructure problems of these countries.

Box 10.1: Overview of UNIDO Projects and Programmes in the eight Case Study Countries

Cameroon: Improving the Income Generating Potential of the Oil Palm in West and Central Africa Region (an on-going project); Integrated Programme (IP) to Support Industrial Development (with six components: implementation of industrial strategy; strengthening productive capacities for textile, food processing, and leather subsectors; access to markets through investment promotion; supporting small enterprises and handicrafts; access to markets through the creation of support services; and rational management of energy sources).

Ethiopia: Promoting Renewable Energy Systems for Agro-industries (a pipeline project); Catalysing Agribusiness Investment through the Promotion of Agro-industrial Parks (a pipeline project); Edible Oil Value Chain Enhancement (an on-going project); Benchmarking of the Textile Industry (an on-going project); Technical Assistance to Prepare the Agro-Industry/Food Sector Master Plan for Ethiopia, Phase II (an on-going project); Technical Assistance Project for Upgrading of the Leather and Leather Products Industry (an on-going project); Assistance to the Footwear Industry in Shop Floor Management and Machinery Maintenance (an operationally completed project); Urgent Technical Assistance to the Textile and Garment Industry (a closed project); Investment Forum 2007 for the Leather Products Industry(closed/operationally completed project); Revitalization of Agricultural Production Capacities in the Drought Affected Region through Promoting Micro and Small-scale Irrigation Practices and Community Participation to increase Food Security and alleviate Poverty - Preparatory Assistance (closed project); Assistance for the Development of the "Made in Ethiopia" Leather Products Industry (closed project); Support to Food Emergency Situation (completed).

Other programmes and projects in Ethiopia: Assistance inputs to the Industrial Development Strategy of Ethiopia, such as support to MSMEs in leather and leather products, textiles and garment, and metal and wood enterprises; Ethiopia Cleaner Production Centre; Eastern Africa Bamboo Project; Food Safety Assurance System/FSAS; Integrated Programme for Ethiopia (IPE) with six components (agro-based industries; promotion and development of MSME's; quality, standardization, and certification for industrial competitiveness; investment and technology promotion; environmental development; strengthening institutions).

Kenya: Crafting a Green Future - Bamboo in the Curio and Souvenir Industry (project in pipeline); Increasing Private Sector Productivity and Competitiveness through ICT and Business Development Services – Preparatory Assistance (Seed Money for Integrated Programme, Kenya, Phase II) (project in pipeline); Integrated Programme (IP) for Kenya, Phase II - Building Capacities for Competitive Industrial Development in Kenya (on-going project); Implementation of Energy Kiosks Powered by Straight Vegetable Oil (SVO) Generators in nine selected Millennium Districts of Kenya (on-going project); Women Entrepreneurship Capacity Development (operationally completed project); Assistance for the Revitalization of the Leather and Leather Products Industry, Phase I (closed project); Employment and Sustainable Livelihoods Programme: Programme Support Objective Three (closed project); the Kenya Integrated Programme has five components (Trade Capacity Building, Leather and Leather Products, Investment Promotion, Renewable Energy and Energy Efficiency, and Support to the MSME Sector); the "Lighting up Kenya" project with Community Power Centres (CPCs) and "Power Kiosks".

Mali: Support of Value Addition of Agro-Pastoral Products in the regions South (Segou and Sikasso) and North (Kidal) of Mali (on-going project) ; Support of small hydro power stations for value addition of agro-pastoral products; Integrated Programme for Mali (Support to Food Industry); Assistance to establish a Pilot Centre in Cotton Processing; Assistance to Agro-Processing Pilot Centres; Mali Investment Forum 2006; Value Addition to Agro-pastoral Products and Private Sector Development; Pilot Centres for Fruits/Vegetables Processing and Programme Coordination; Support for the Decentralization of Productive Activities; Integrated Programme (IP) for Mali (Strengthening Business Opportunities; Advisory Services for an Action Programme for the Development of Mango Processing); Women Entrepreneurship in Agro-industries; Development of an Action Programme for the Maintenance of Equipment in the Textile Industry; Framework Programme for the Development of the Private Sector; Rehabilitation of Textile Factories.

Nigeria: Improving the Income Generating Potential of the Oil Palm in West and Central Africa Region (an on-going project); Aba Textile Project (an on-going project); UNIDO Regional Centre for Small Hydro Power, Abuja; UNIDO-executed Cassava Project, covering processing and product development aspects (financed by Japan); Phase II of the Country Service Framework (CSF) programme with three separate but linked Integrated Programmes (IPs): Industrial Governance, Trade Facilities, Institutional Support and Public–Private Partnership; Agro-industries, Productive Capacity Enhancement and Support to Presidential Initiatives; Environment and Energy; Support to Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) on a Subcontracting Exchange Programme; Setting up Common Facility Centres (CFCs) for the production of leather and garment products; Small Hydro Plants to develop income generating activities; Industrial Information Statistics Programme; Promoting Industrial Competitiveness and Export of Value Added Products; Poverty Reduction through Productive Activities projects.

Senegal: Valuation of Forest Eco Systems; Promotion of Cultural Industries; Integrated Programme for Senegal - Various Components; Employment Creation and Vocational Training for the Youth and for Women Entrepreneurs; Support Programme to Reduce Poverty; Export Promotion and Upgrading of Quality and Environment; Support for the Accelerated Growth Strategy (SCA); Support for Public-Private Partnership; Micro and Small Enterprise Promotion; Development of Textile and Garment Industry Sector; National Industrial

Upgrading component of the Integrated Programme (IP); National Industrial Upgrading Office; IP components on clean technologies, maintenance, productivity, and sub-contraction; linkages with the EU-UNIDO-UEMOA Quality Programme; Technology Parks in Senegal, Dakar Technopolis (DTP).

South Africa: Training of Trainers for the Promotion of Emerging Agro-Processing Clusters (project in the pipeline); Automotive Component Supplier Development Programme; Environmental Benchmark of the Automotive Component Suppliers; Industrial Energy Efficiency Improvement; Support of HCFC phase-out investment activities (and management plan); Comparative Analysis of South African Motor Industry Development Programme (MIDP); Assistance for the Industrial Policy Action Plan (IPAP) - Sector specific Projects; Establishment of a National Cleaner Production Centre; UNIDO Business Partnership Programme; Industrial Upgrading and Modernization Programme (for SADC countries); Diagnostic study of rooibos and honey bush tea for product value addition and promotion of exports; Durban Industry Climate Change Partnership Project; UNIDO SPX (Subcontracting and Partnership eXchange) for establishing a network of Regional SPX Centres.

Zambia: Renewable energy based electricity generation for isolated mini-grids; Trade Capacity Building; Assistance for the total Phase-Out of Methyl Bromide in tobacco, cut flowers, horticulture, and post-harvest uses; Renewable Energy powered rural Pilot Demonstration Tele-centre; Renewable Energy Entrepreneurship Development for augmenting Youth Employment; Support Programme for Employment and Sustainable Livelihoods; Rehabilitation of industrial enterprises; National Industrial Statistics Programme; National Leather and Footwear Industry Scheme (as part of the Regional Africa Leather and Footwear Industry Scheme/RALFIS); Projects for the Refrigerator Sector; Development of Small-scale and Micro Enterprises; Development of Mosquito Coil Manufacturing; Analysis for the Promotion of Indigenous Vegetable Oils and Protein Cake; Dissemination of Appropriate Food Processing Technology among Women; Improved Exports through Quality improvement.

Source: Various UNIDO sources were used for this overview; however, the data are only used for the purpose of showing the profile of UNIDO activities in the respective country, and so this is not a complete presentation of all UNIDO projects and programmes. It is not an authorized description of UNIDO projects and programmes.

What are the perspectives of agro-industrial development and of the work of UNIDO in these case study countries? From the profile of UNIDO activities as presented above (Box 10.1) it is possible to conclude that UNIDO can take a lead role in agro-industrial development in Africa – in cooperation with other international and regional organizations and bilateral donor agencies – and as well in agribusiness promotion. However, the analytical insights and the recommendations of the most recent UNIDO study on the issues (UNIDO 2011) and of the present study have to be considered. The policy context for agro-industrial and agribusiness development has changed fundamentally; a New Industrial Policy Framework (NIPF) should guide agro-industrial development and has to be worked out in cooperation with national governments and regional economic communities.

The New Industrial Policy Framework (NIPF) has to be formulated, first of all, in such a way that the contribution of the private sector is maximized through investment in business opportunities, and by minimizing the risks of public sector-generated policy initiatives for private sector development while providing for the needed level of public goods (see especially UNIDO 2011, chapter 10). This means that all major agro-industrial development initiatives have to be designed, promoted and executed in dialogue between public and private sectors and donor agencies. UNIDO has started in some of the case study countries work on forums for such a dialogue (see Box 10.1). This trend should be strengthened, improved, and even accelerated. Climate change and need for environmental sustainability lead to another component of the New Industrial Policy Framework (NIPF).

Second, a new emphasis on renewable energy and on environmental protection is needed and has to be incorporated into a NIPF. Focusing on green technology industrial growth and on clean energy to increase resource-efficiency and a low carbon growth trajectory are important policy elements for African countries too when they are developing their industry, and especially so their agro-industries. Oil-exporting countries, like Nigeria, and African countries with capital-intensive and large-scale energy projects have to move more quickly in this direction (UNIDO 2011, chapter 10). UNIDO has already directed many of its projects and programmes in the case study countries towards these objectives of promoting renewable energy and environmental protection.

Third, a New Industrial Policy Framework NIPF) needs to be developed for Africa by deriving lessons from the BRIIC (Brazil, Russia, India, Indonesia, China) countries. Learning from their experiences (in their policy reforms, their investment strategies in agro-industrial research and extension services, their market orientation in line with comparative advantages, their steps towards social inclusion and environmental sustainability, and their way of trade negotiations and agreements) can be a great help for the design of a NIPF in Africa (UNIDO 2011, chapter 10).

Fourth, a NIPF rests on institution-building and human resource development. Although UNIDO has used several components in this regard as part of its Integrated Programmes in Africa, institution-building for agriculture and agro-industrial development and human resource development specific to agro-industries and agribusiness are important objectives, and it is necessary to extend these policy interventions more to the local government level. Too often the Old Industrial Policy Framework (OIPF) is oriented towards the central government level of planning and action, and too frequently this model of intervention is associated with a dominant role of the public sector towards private industry interests.

Fifth, it is necessary in a NIPF to view the extended menu of policy options and to look at the full policy space for supporting private sector in overcoming the binding constraints on agro-industry and agribusiness development. This can be done best by integrating the key policy factors and the key development pillars into a strategy that is consistent and comprehensive. The steps towards such a strategy are explained in detail for each country in the present study (and in the various chapters of UNIDO 2011, and as summarized in chapter 11). Key policy messages emerge and they have to become part of a NIPF (using agribusiness for poverty reduction and social inclusion, addressing market failures in agro-industrial development, using more fully aid for trade, improving public-private sector cooperation and dialogue, strengthening coordination among actors to promote faster innovation, and using more effectively the interventions of international and regional African organizations).

Sixth, the translation of strategies and policies into action is most important in a NIPF. The country case studies show severe weaknesses in this regard, especially so in some of Africa's economically large and in some of Africa's middle-income countries. Proposals how to overcome this situation are found in this report (and also in UNIDO 2011, especially the Chapter 11 with an Agenda for Action and chapter 12 with a Programme Framework). More work on programme objectives, programme implementation, and programme governance at national, sub-regional and international levels is needed so as to support a New Industrial Policy Framework (NIPF) and concrete action along these lines in the African countries.

These six elements of a New Industrial Policy Framework (NIPF) have to be adapted to the specific country conditions and should then lead to the emergence of a National Action Programme for Agro-industry and Agribusiness Development (NAPAAD).

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Abbreviations and Acronyms

ADLI	Agricultural Demand Led Industrialization (strategy in Ethiopia)
AfDB	African Development Bank
AUC	African Union Commission
CFCs	Chlorofluorocarbon
CFCs	Common Facility Centres
CPCs	Community Power Centres
CSF	Country Service Framework
DTP	Dakar Technopolis
ECCAS	Economic community of Central African States
ECOWAS	Economic Community of West African States
EU	European Union
FAO	Food and Agriculture Organization
FSAS	Food Safety Assurance System
GDP	Gross Domestic Product
HCFC	Hydrochlorofluorocarbons are enabling the phase-out of chlorofluorocarbon
IFAD	International Fund for Agricultural Development
IIT	Intra-industry trade
IP	Integrated Programme
IPE	Integrated Programme for Ethiopia
IPAP	Industrial Policy Action Plan
MDGs	Millennium Development Goals
MIDP	Motor Industry Development Programme
MSMEs	Micro, Small and Medium Enterprises
NAPAAD	National Action Programme for Agro-industry and Agribusiness Development
NGOs	non-governmental organizations
NIS	National Innovation System
NIPF	New Industrial Policy Framework
OIPF	Old Industrial Policy Framework
PPPs	public-private partnerships
RCA	Revealed Comparative Advantage
RECs	regional economic communities
R&D	Research and Development
RALFIS	Regional Africa Leather and Footwear Industry Scheme
SADC	Southern Africa Development Community
SANE	South Africa, Algeria, Nigeria, Egypt (country group of largest economies)

SCA	Stratégie de Croissance Accéléré/ Accelerated Growth Strategy
SMEDAN	Small and Medium Enterprises Development Agency of Nigeria
SPX	Subcontracting and Partnership eXchange
STI	Science, Technology and Innovation
SVO	Straight Vegetable Oil
TC	Trade Competitiveness (indexes)
UEMOA	Union Economique et Monétaire de l'Ouest Africain
UNECA	United Nations Economic Commission for Africa
UNIDO	United Nations Industrial Development Organization

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