



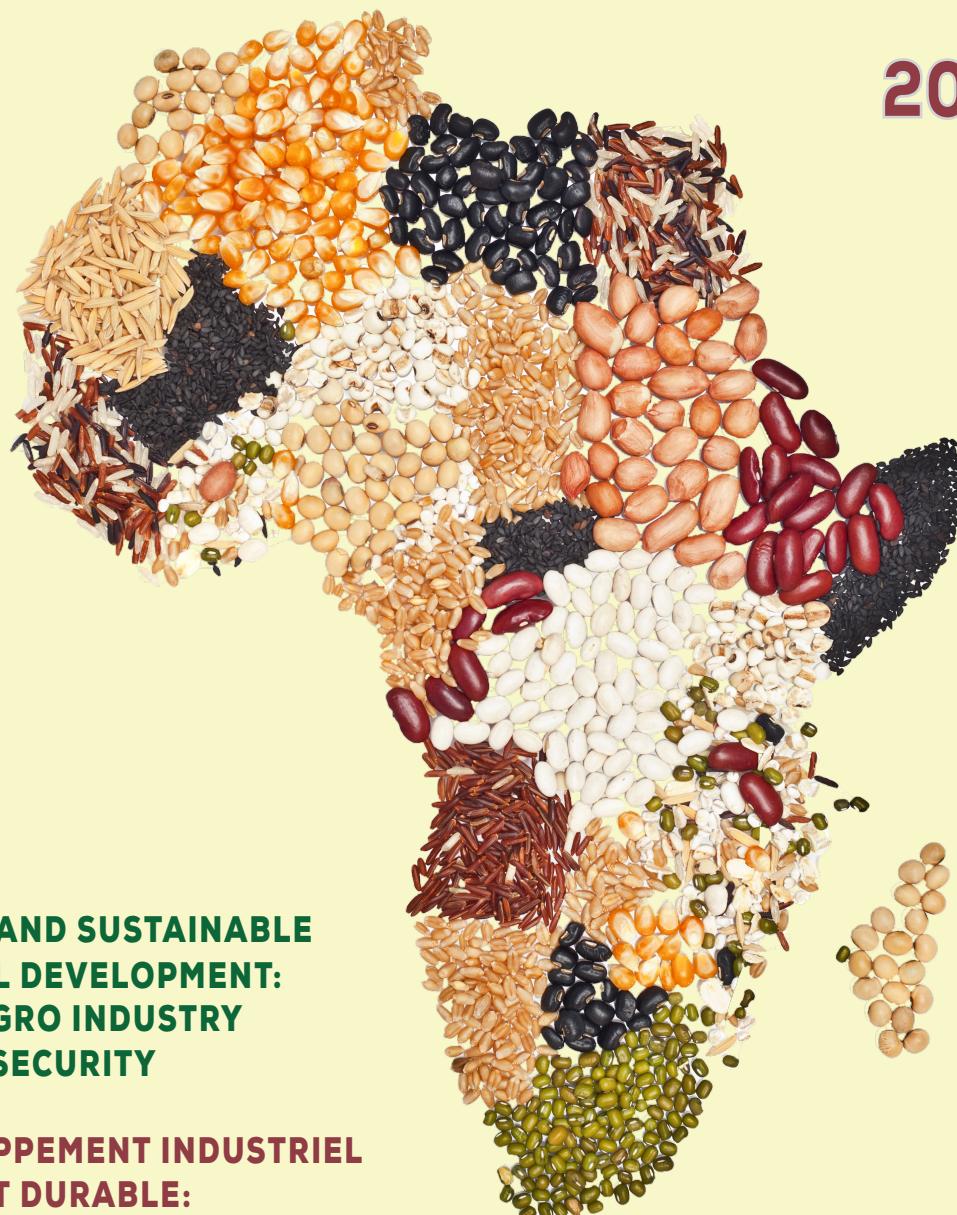
Africa Industrialization Day

Journée de l'industrialisation de l'Afrique

يوم التصنيع في أفريقيا

BACKGROUND DOCUMENT

20.11.2014



**INCLUSIVE AND SUSTAINABLE
INDUSTRIAL DEVELOPMENT:
AFRICAN AGRO INDUSTRY
FOR FOOD SECURITY**

**LE DÉVELOPPEMENT INDUSTRIEL
INCLUSIF ET DURABLE:
L'AGRO-INDUSTRIE AFRICAINE
POUR LA SÉCURITÉ ALIMENTAIRE**

التنمية الصناعية الشاملة والمستدامة:
تسخير الصناعة الزراعية الإفريقية للأمن الغذائي

Agribusinesses' contribution to food security

Conceptual Framework

A Working Paper prepared by the Food Systems Unit



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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This technical report has been prepared by the team of the Food System Unit of the Agri-Business Development Branch of UNIDO. The team that carried out this work is grateful for the contributions and comments made by colleagues from other UNIDO Branches and Units.

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Introduction

Nelson Mandela said that "like slavery and apartheid, poverty is not natural. It is man-made and it can be overcome and eradicated by the actions of human beings". Like poverty, food insecurity is man- made and not natural. Food insecurity is closely linked to poverty and is related with access, availability and utilisation of food. Poverty and food insecurity lead to increasing levels of deprivation, vulnerability, hunger and malnutrition which trigger social unrest and constraint development. The need to come up with sustainable ways in order to increase the levels of food security is more crucial than ever.

In that context, we ought to acknowledge that food insecurity is not solely related to low levels of food production but rather, on a complex food system. An intrinsic part of this food system is agribusiness and agro- industries. Agribusinesses have the potential to empower the vulnerable groups of our society- who are the most sustainable stakeholders in our food system- by increasing their access to assets and their resilience to different shocks. By doing so they allow them to use their full potential and become active agents able to enhance food security and shape a sustainable food system. Simultaneously, agribusinesses are able to target directly food insecurity by creating safe, quality and nutritious food. Working along the supply chain, agribusinesses have the potential to address inequalities and thus shape a pro- poor supply chain.

Various prerequisites need to be put in place and challenges to be addressed so as agribusiness to take full advantage of the beneficial linkages it can trigger in our food systems. Participatory agro- industrial development, women's empowerment in the supply chain, re-captivation of the supply chain by vulnerable groups, facilitation of small scale farmers' up scaling in the supply chain, emphasis on domestic or localised supply chains are among some of them.

The goal of this paper is to show that - since agricultural growth is the most effective way to reduce poverty in developing countries- agribusiness needs to become a social and economic empowerment tool that facilitates the creation of sustainable food systems which promote food security.

Inclusive Sustainable Industrial Development and Food Security

We live in a time of great social, economic and technological change. While close to one billion people suffer hunger or under-nutrition the potential for dramatically improving the economic status and food security in developing countries has never been greater.

Sound development calls for a holistic approach for rural transformation, firmly including crop growers, cattle and livestock herders and users of natural resources such as fisheries in a food system from the primary resource to processing industry and markets.

The ability of the agricultural and food industries to continue to respond to the undoubtedly substantial increase in demand in future decades will be highly dependent on the increased application of existing technologies as well as exploitation of new and innovative technologies to reduce post-harvest losses and increase resource efficiency, thus contributing to sustainable food security.

The future development of the agro-food industry as one of the drivers for increased food security will vary in different regions of the world depending on their status with respect to the production; preservation and processing of agricultural produce. It will be crucial to identify and prioritize food system needs and create necessary support.

With the changing demographic conditions and food demands there will be increasing need for the design and development of efficient integrated systems of food production, processing, preservation and distribution from rural producers to expanding and diversifying urban populations in developing and emerging countries. It will be important to build new partnerships and enhance networking between existing food system stakeholders

The fact that the world's arable land, fresh water and energy are not distributed around the world in the same proportions as the population calls for new approaches.

As a response to these challenges, UNIDO is promoting inclusive and sustainable industrial development (ISID) to harness the full potential of industry's contribution to the achievement of sustainable development, and lasting prosperity for all.

Committing to sustainable production patterns makes business sense. It reduces the wastage of costly resources, and contributes to increased competitiveness. How much impact industry has on poverty eradication, environmental sustainability and food security is ultimately defined by the pattern of industrialization that a country chooses to follow. A long-term strategy can put in place a framework of stable economic, legal and political conditions. It can also create incentives to invest in the necessary education, infrastructure, and product quality.

At all levels of development, industry can be the primary driver in fighting poverty, ensuring food security and preventing social polarization.

UNIDO's inclusive and sustainable industrial development approach is based on two main pillars: the first one is about creating shared prosperity for all, and the second focuses on safeguarding the environment. This applies to all fields of work UNIDO is engaged in, including technical cooperation, analytical and policy advisory services, standard setting and compliance, and a convening function for knowledge transfer and networking.

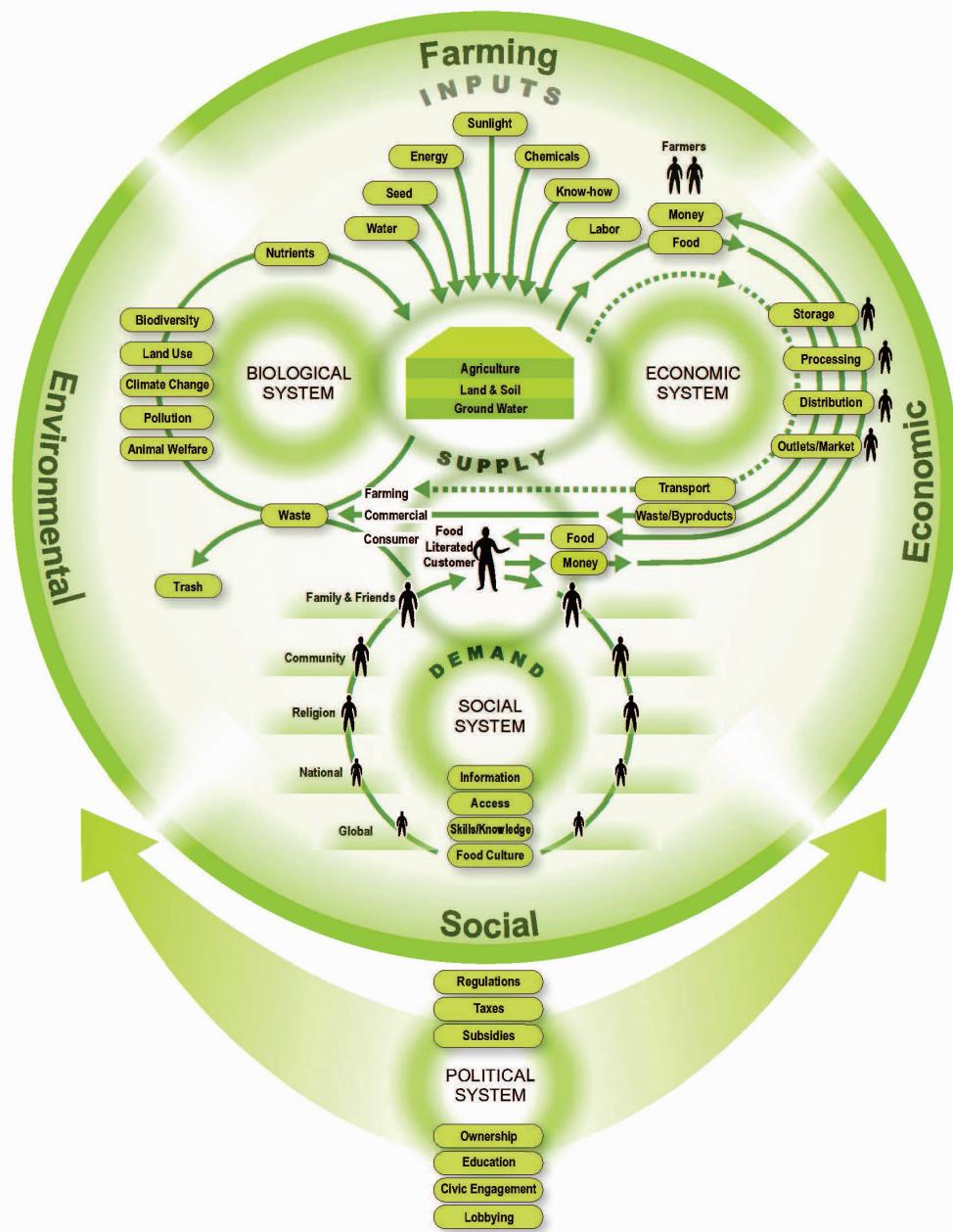
Inclusive and sustainable industrial development will be a key driver for the successful integration of the economic, social and environmental dimensions of sustainable development.

Food Security and Food Systems

The agricultural sector consists of an important part of developing countries' economic sector. According to FAO (2012) most of the extreme poor depend on agriculture and related activities for a significant part of their livelihoods. Among the 3 billion people who live in the rural areas of developing countries, around 2.5 billion of them are involved in agriculture as farmers or workers and at least 1.5 billion live from and work in small family-run farms. Additionally, for each percentage point growth in agricultural yields, the number of people living on less than US\$1 per day is reduced by between 0.6 per cent and 1.2 per cent. No other economic activity generates the same benefits for the poor while providing affordable food (Quan, 2011). Many studies show that growth from agriculture is up to four times more effective and sustainable in reducing poverty than growth in other sectors (Båge, 2008). Agriculture can provide a variety

of social, economic and environmental services. Sustainable agriculture manages natural resources sustainably and has the potential to reduce hunger, malnutrition and poverty amongst vulnerable groups. Agriculture is the force that determines our food systems.

Our food system is not only related to production. A food system involves all the various phases from the production to the consumption of food, through distribution and processing (Alinovi et al, 2010) down to waste and disposal. It describes the complex relationships between these stages and includes the inputs needed and the outputs generated.



Food Systems map; amended from Nourishlife (www.nourishlife.org)

A sustainable food system is in place when sustainable food production, processing, distribution and consumption are integrated to enhance the economic, environmental and social health of a particular place.

In a sustainable food system:

- The soil is maintained and improved
- The availability and quality of water are protected and enhanced
- Farmers, farm workers, and all other actors in the supply chains have liveable incomes
- The food we eat is affordable and promotes our health
- Sustainable businesses can thrive
- The flow of energy and the discharge of waste , including greenhouse gas emissions, are within the capacity of the earth to absorb forever (Roshon et al, 2012)

A sustainable food system is multidimensional and it encompasses all the social, economic and ecological components that affect the levels of **food security** of people in a given country. According to FAO (1998) “**food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life**”. Food security depends on food availability, food access and food use. *Food availability* refers to the supply of sufficient quantities of food, available on a consistent basis. **Food availability is not only a function of primary production, rather the productive sectors of agriculture, fisheries, forestry and livestock are important building blocks towards the achievement of food security outcomes.**

Food access incorporates the physical and the economic assets that facilitate access to food. It refers to having sufficient resources- including appropriate infrastructure- to obtain appropriate food for a nutritious diet (Mo Ibrahim Foundation, 2011) as well as being able to afford food (*food affordability*).

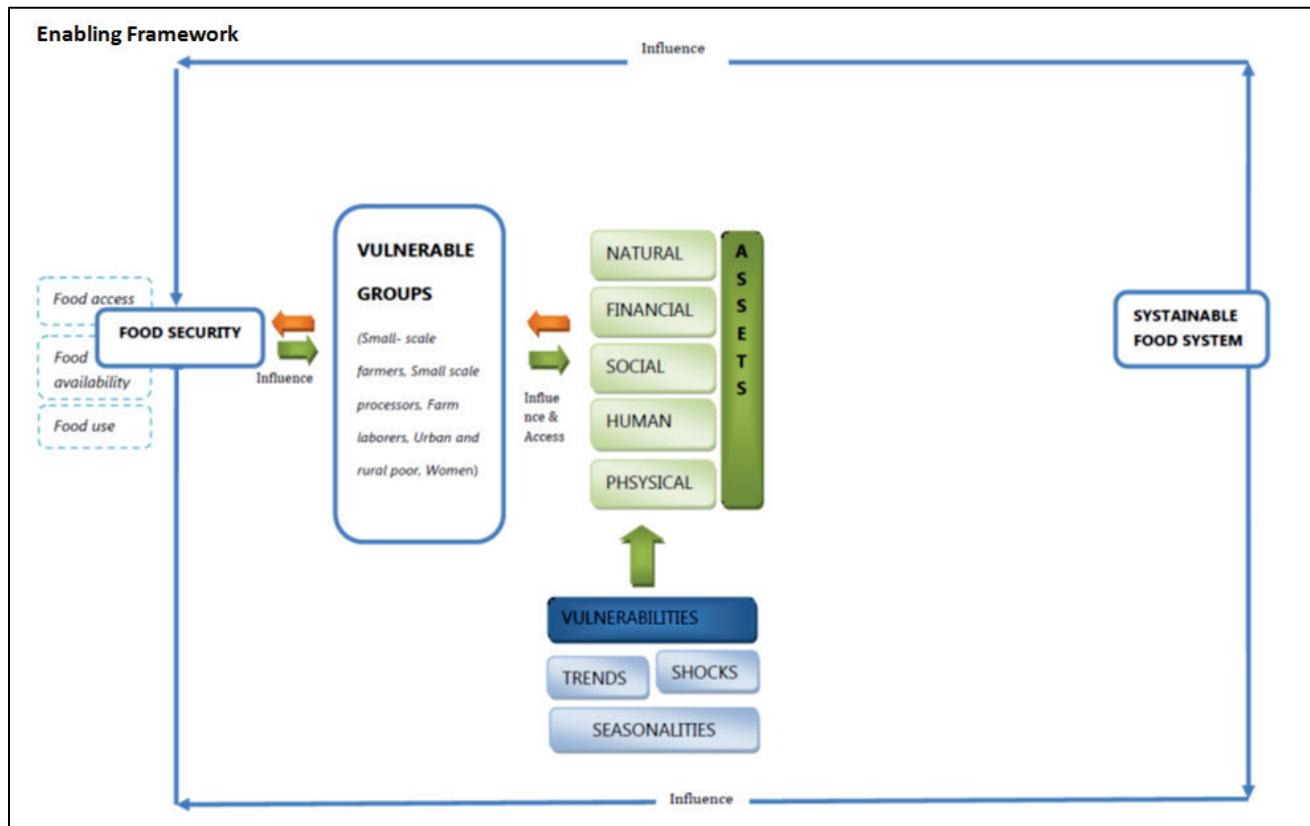
Food use is determined by food safety and quality, how much a person eats and how well a person converts food to energy, all of which affect proper biological use of food, nutritional status and growth (WFP, 2007).

Over the last 40 years, the agricultural sector has significantly increased production (Pretty, Hine 2001). However, the benefits have been unequally distributed. Amartya Sen argued that food insecurity is not a matter of adequate supplies of food not being available, but rather of people being unable to access or afford to buy sufficient and nutritious food (Quan, 2011). Over 850 million people are going to sleep hungry each night and about 150 million children under 5 years old are being severely under- nourished (Watson, undated). **The key in achieving food security is to promote a sustainable food system and an even distribution of the increased produce through empowering the vulnerable groups by increasing their access to assets¹.**

An efficient food system developed based on the value chain development (VCD) approach can increase the resilience of economies and producers including vulnerable groups’.

¹ For more information on the assets look at Annex 1

Food Security, Vulnerable Groups and their access to Assets



Vulnerable groups are both active and passive agents in the food system. *On one hand they have the power to promote food security and shape a sustainable food system. On the other hand, a pro-poor agricultural agenda which promotes a sustainable food system and thus promotes food security could benefit the most vulnerable segments of our societies resulting in social equality and economic sustainability.* These groups- due to their lack of access to different assets - cannot use their full potential in order to shape their food system and reduce levels of food insecurity. As a result their vulnerability to different trends, shocks and seasonalities² increases making them more marginalised and delinked from the markets- therefore they become less resilient to different shocks, trends and seasonalities.

The pattern and level of **vulnerability** of each of the aforementioned groups heavily depends on the different types of **assets** that they hold and activities that they undertake in order to derive their livelihood (Morris et al, undated). Some studies argue that access to assets is in many cases an *indicator of poverty* and helps us evaluate the impact of the markets on poverty (Seville et al, 2008). Assets are the *building blocks of a sustainable livelihood*. By building assets, individuals and households develop their capacity to cope with the challenges they encounter – *increase their resilience*-, meet their food needs on a sustained basis and actively participate in shaping a sustainable food system (Seville et al, 2011). Lack of assets may push vulnerable groups to different *coping mechanisms* in order to survive and fulfil their food needs. In view of different shocks, the most common coping mechanism is an intensified sale of the assets (labour, livestock, capital) that vulnerable groups may hold (Morris et al, undated). This results in further increasing their level of vulnerability and disempowering them. Consequently, they become less active agents in shaping our food systems which results in lower the levels of food security, social equality and economic sustainability.

² For more information on Vulnerabilities look at Annex 2

For vulnerable groups to become resilient to shocks, trends, seasonalities, take control over their lives and shape a sustainable food system, gaps in key livelihood assets need to be addressed and livelihood strategies need to be diversified (Frakenberg et al, 2012). Last but not least, identification of asset access and ownership by vulnerable groups would help us evaluate and understand how a group can benefit from trading and market opportunity (Seville et al, 2008)

For the purpose of this paper, vulnerable groups constitute small- scale farmers, farm labourers, small scale processors, women and urban and rural poor (low- income urban consumers). More specifically:

Small scale farmers are the backbone of food security. This is because they can produce food sustainably, they acquire local knowledge systems and they are the biggest producers of food. In Africa, they produce over 90 per cent of the continents food supply. Additionally, small scale farmers frequently enough promote efficient and resilient modes of production. As it has been noted, there exists an inverse relationship between the farm size and the farm produce- small farms are more productive and efficient than bigger farms. Interestingly enough, small scale farmers can also be adaptable to market fluctuations and other shocks. This is because, despite the shocks, they usually diversify into different crops and they quickly scale back into production (Quan, 2011). However, small scale farmers make up more than 50 per cent of the food insecure population (Mwaniki, undated & Medius et al, 2012). This pattern is repeated in Asia. While Asian agriculture accounts for 56 per cent of the world's GDP, the primary contributors to it are small scale farmers who constitute one of the most food insecure groups in the continent and they have to rely on off- farm activities in order to sustain themselves (Patkar, Saleela, 2012). This is because small- scale farmers are scattered, unorganized, climatically vulnerable, have no access to technology which is resulting in price seasonality and low bargaining power.

Farm labourers are contributing significantly to food security in the world both as workers and as citizens. They promote the formation of trade unions and cooperatives which contribute to meeting the new food challenges by creating partnerships and up- scaling sustainable agriculture. Additionally, they are highly adaptable to shocks as in such occasions they sell their labour elsewhere and they quickly up- scale production. However landless farm workers in rural areas make up around 50 per cent of the food insecure population in Africa (Mwaniki, undated & Medius et al, 2012). The lack of access to natural capital (i.e land or livestock) as well as their lack of access to physical, financial and human assets disempowers them. Their working conditions are harsh, the nature of the work is seasonal or temporary and they are usually paid on a piece work basis. The 2007 FAO report argues that farm labourers have become allies of small and subsistence farmers and rural and urban poor. This is due the fact that rural employment has become casualised and their distinction with the rest of the "working in agriculture" population is much less clear (Hurst, 2007).

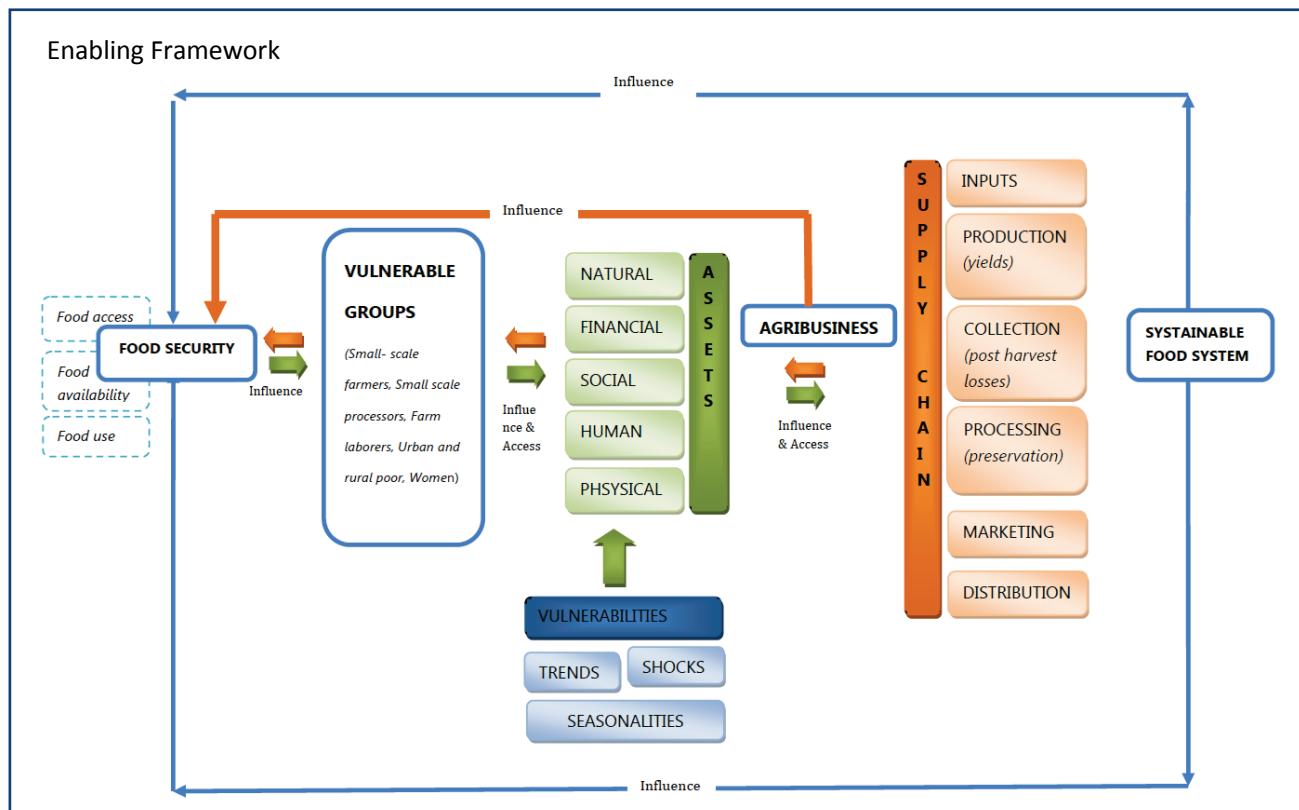
Small scale processors are "the vital link in the food supply system contributing to the health and food security by creating foods that are safe and nourishing for local consumption. They also enable seasonal crops to be made available year-round even in locations where they do not normally grow" (Geoffery, 2011). Additionally small scale processors contribute to a significant extent to food security as, through their activities, they add value to the agricultural produce, they increase food availability, they improve food distribution channels, and they promote income and livelihood diversification as well as a local food production system. However, due to lack of access to adequate processing methods, equipment and packaging, poor marketing skills as well as weak linkages with producers they are income and food insecure. Furthermore, because small scale processors are constraint from using their full potential the sector remains largely unexploited, allowing imported foods to dominate internal markets. This perpetuates food insecurity and hails food sovereignty.

Women grow 80 to 90 per cent of the food in Sub- Saharan Africa but own less than 2 per cent of all land in Africa and face serious constrains in decision making. Their poverty levels are much higher than those of men. According to Mo Ibrahim Foundation (2011) giving women the same access to men in agricultural inputs could increase yields 20 to 30 per cent, reducing the number of hungry people in the world by 100 to 150 million. According ICRW (2012) women are

also integral to alleviating hunger and malnutrition because they are primarily responsible for ensuring that food for their families is reliably available, accessible and nutritionally balanced.

Urban and rural poor, who constitute of low-income food consumers, are particularly vulnerable to fluctuations in food prices and income since food makes up a large part of their household expenses- often over 60 per cent. Rapid urban growth and growing urban poverty should raise concerns particularly about African urban food security, supply and distribution systems (RUA Foundation, 2010). Therefore, they are one of the vulnerable groups that from one hand could significantly benefit from food security and from the other hand, needs to be protected from food insecurity.

Agribusinesses: Addressing Food Security



In order to promote a sustainable food system and thus food security we need to focus not only on the production phase of food but also on the processing and distribution of locally grown edible agriculture produce (Geoffery, 2011). Supply chain development is a useful framework as it allows us to analyse all the routes the produce follows until it reaches the consumers. As a result, supply chain frameworks are also involved with different actors in the different stages of the supply chain. The supply chain can give us the appropriate insight on vulnerable groups and can create opportunities to increase their assets. According to the World Bank (Jaffee et al, 2008), the goal of supply chains is to improve and understand the position of certain stakeholders, especially the most vulnerable ones. Interventions targeted at those or their interfaces with others would help differentiate the products and integrate vertically the vulnerable groups into the different stages. Therefore, it can help unlock additional value for the supply chain and for the vulnerable groups. There is an important link between the assets of the vulnerable groups and the supply chain. "Both the literature and project experience tell us that access to assets by poor households and their ability to accumulate and use those assets effectively are critical to their participation in supply chains and their ability to benefit from participation" (Seville et al, 2011: 10). Increased access to assets and thus increased participation of vulnerable

groups in the supply chains can translate into empowerment and increased resilience to different shocks, trends and seasonalities³. This can help vulnerable groups take control over their lives and increase the levels of food security.

Agribusiness can assume this responsibility. **Agro- businesses and agro- industries have the potential to intervene in each stage of the supply chain by including vulnerable groups so as to improve their access to assets and empower them; thereby enabling them produce more food for their needs and for other as additional source of income. Therefore, agribusiness can serve as a social and economic empowerment tool that facilitates the creation of sustainable food systems which promote food security.**

Additionally, agribusinesses can also directly impact on the levels of food security in a given country or region. They can **target systemic problems of the food systems and increase food availability, access and improve food utilisation.**

According to a UNIDO publication (Yumkela et al, 2011:28)

Agro- business is a broad concept that covers input suppliers, agro-processors, traders, exporters and retailers. It provides inputs to farmers and connects them to consumers through the financing, handling, processing, storage, transportation, marketing and distribution of agro-industry products.

and:

Agro-industry comprises all the post-harvest activities that are involved in the transformation, preservation and preparation of agricultural production for intermediary or final consumption of food and non-food products.

As a result, agro- industry is the decisive component of our food system as it intermediates raw material production in the rural context and consumption in the urban milieu working along the supply chain (UNIDO, FAO, IFAD, 2008).

More specifically:

Interventions during the **collection (post harvesting) and processing** stage can:

- Secure raw materials (reducing losses)
- Utilise by-products
- Add value to raw materials.
- Diversify available food as well as diet
- Provide on- and off- farm employment and diversify the livelihoods of the vulnerable groups.
- Increase the income of small scale food- processors and increase farmers' returns on their produce and support the creation of new jobs. This is important especially if we take into consideration that small scale farmers are relying on a few crops for their household income which puts them at the mercy of price fluctuations (Morse et al, 2009).
- Contribute to the local economy and to the independence, self-sufficiency and food sovereignty of the country. The raw materials used expand the market for local agricultural produce, thereby supporting the economic stability of small scale processing enterprises (Geoffery, 2011).
- Increase food availability at household and community levels as it decreases food post-harvest and stock losses. According to a 2011 FAO study (Gustavsson et al, 2011), given that many of the small farmers are living in the margins of food insecurity, a reduction of food losses would have an immediate and significant impact on their livelihoods and food security. And this is especially true for low- income countries where the majority of the food is

³ For more information on Vulnerabilities look at Annex 2

lost in the early and middle stages of the supply chain- production to processing stage. Additionally an increase in food availability could lower food prices and result in increased access to food by urban and rural poor. Post-harvest grain losses in sub-Saharan Africa could total \$4 billion per year. This lost food could meet the minimum annual food requirements of at least 48 million people (Mo Ibrahim Foundation, 2011).

- Target directly food seasonality and perishability problems by improving shelf life, contributing in that way to the availability of food at a community level.
- Can provide a platform for the creation of unions and cooperatives whilst promoting and strengthening a unified voice of different vulnerable groups.
- Introduce the necessary technologies, infrastructure and knowledge.

In addition, food processing can increase vulnerable groups' resilience to external shocks by significantly building on **the financial, human, physical and social capital to ensure food and income security**.

Food Systems:

During the marketing and distribution stage agribusiness can:

- Provide the necessary marketing infrastructure-the physical preservation, accessibility and Food seasonality combined with lack of food conservation infrastructure could have detrimental consequences on food availability and vulnerable groups' food security. According to Mo Ibrahim Foundation (2011) lack of infrastructure for adequate transportation, storage, cooling and selling put fresh products like fruits, vegetables, meat and fish at risk of being spoilt or contaminated due to climatic conditions. This has a significant impact on urban and rural poor consumers' food security, who are residing farther away from food markets and may face higher prices, time constraints and transport costs in accessing food"(RUAF Foundation, 2010:5).
- Help filter food prices down to the farm gate (Båge, 2008). It is not uncommon for African farmers to receive only 10 to 20 percent of the market value of the products they sell, with the remaining 80 to 90 percent being lost to transportation and marketing costs. By investing in market development, agribusiness could help reduce the transport and marketing costs and increase income security of the vulnerable supply chain actors (Diao, Hazell, 2004).
- Reduce food prices. More specifically, in LDCs food supply often exceeds demand during the post-harvest period. This gap results in reducing producer prices and increasing wastage rates. However, until the next harvest the produce can be in short supply with traders and consumers having to pay premium prices to secure the scarce supplies. Storage provision can balance supply and demand. As a result it can make food available and accessible to vulnerable groups (FAO, 1997).

Box 1: Joint Venture

Divine Chocolate Company Ltd. (formerly the Day Chocolate Company) was established in 1998 by Kuapa Kokoo Farmers' Union (KKFU), representing 68,000 cocoa-producing farmers in Ghana, and TWIN Trading, a membership organization based in the United Kingdom of Great Britain and Northern Ireland comprising 24 farmer cooperatives from eight countries dedicated to developing the fair-trade supply chain for the coffee, nuts, cocoa, sugar and fruit produced by 163,000 farmer families. Christian Aid, Comic Relief and Oikocredit, a microfinance institution, also supported the joint venture by taking shares, as did the Body Shop, which later donated its shares to KKFU. The Department for International Development of the United Kingdom guaranteed a bank credit line from a major commercial bank, which gave Divine Chocolate better access to finance and enabled it to grant a larger quantity of shares of the company to KKFU, resulting in greater decision-making power in the operations. KKFU now owns 55 per cent of the shares of Divine Chocolate as well as 33 per cent of the shares of the United States branch of Divine created in 2007. Divine Chocolate sold more than \$71.5 million worth of chocolate in its first nine years of operation. In 2001, dividends were paid for the first time, after offsetting set-up costs. They remain symbolic (a direct payment of \$1 per member), but come on top of the fixed prices by KKFU, the fair-trade premium and the benefits of the farmer support and development programme, to which Divine contributed more than \$1.22 million in its first 10 years of operation. The arrangement facilitated income-generating activities and supported community projects (including boreholes, schools, sanitary facilities and mills), as well as the training of farmers and participatory decision-making

Source: UN, 2011

- Provide valuable inputs and knowledge for vulnerable groups to apply safe food handling practices (Gustavsson et al, 2011) and meet safety and quality requirements. This is especially important taking into consideration the long food distances combined with the increasing quality demands of the global retailers' (DFID, 2010).
- Increase vulnerable groups' access to markets and technology
- Can serve as a fertile space to organise vulnerable groups and increase their bargaining power (UN, 2011). As a result they can facilitate the creation of equitable links between small scale farmers and local, regional and world markets. In turn, this can have a significant impact on vulnerable groups' income.
- Provide off-farm employment and diversify the livelihoods of the vulnerable groups (Byanyima, 2004)

Therefore, interventions at this stage have the potential to increase vulnerable groups' access to **physical, human, social and financial assets**. Additionally, agribusinesses by supporting small scale farmers, who produce more sustainably, has the potential to **determine the levels of environmental degradation** caused by unsustainable, farming practices as implemented by small or large scale producers, export oriented, heavy input, or mono-crop plantations.

Supporting small scale farming can also reduce the pressure for land acquisition and through sustainable practices- as usually implemented by small scale farmers- improve the quality of land- which is a major determinant of food production. As Quan (2011:20) states "improved soil and water conservation measures, through the use of cover crops, green manures, low-tillage and agroforestry methods, can help increase yields, while protecting against the impacts of climate change and improving the carbon balance of farming by reducing the demands for additional land and the depletion of the vegetation cover and the soil ecosystem".

The farming practices as described above are commonly used by small-scale farmers. As a consequence, agro industry linkages to small scale farmers can protect the ecosystems, increase vulnerable groups' access to natural assets, increase quality of natural assets, increase food production and promote food security. As a result, this can have a significant impact of vulnerable groups' resilience to natural disasters. Moreover, agro industry promotes the utilisation and transfer of new equipment and technology during various stages of the supply chain. Mechanisation impacts positively or negatively on environment and if appropriately applied can be an effective climate mitigation/ adaptation practice as new equipment and technology can significantly promote sustainable production and sustainable energy resource use.

Food security can also have an effect of **boosting social equality and mitigation of conflicts**, while the reverse holds that social inequality and conflict is often associated with food insecurity. And this is especially true, if we take into consideration that a large number of the conflicts in the developed world are triggered due to unequal access to food and land.

By integrating marginalised groups in the supply chains and enhancing their assets they can reduce social inequality levels which usually stem from economic inequalities and uneven access to different assets. Increased social and economic equality, increased access to assets and food security might have a significant impact on conflicts. Efficiency of food systems based on the approach of value addition and value chain development can potentially increase the assets of the vulnerable groups. At the same time, each of the assets in combination with agribusinesses' valuable inputs in each stage of the supply chain can promote a sustainable food system and have a **direct impact on food availability, access and utilisation**.

As summarised in Figure 1, agribusiness through the nature of the activities it promotes can directly target food security and increase the resilience of vulnerable groups to shocks and drastically increase levels of food security. Provision of natural and physical assets as well as a decrease in post-harvest losses can increase food availability. In turn, livelihood diversification and provision of physical infrastructure can increase access to food by all the strata of the society. Lastly

but not least, an increase of human capital and improvement in food quality, quantity and diversity can improve food utilisation by making food healthy and appropriate for the people of a given country.

Agribusinesses and Supply Chains: Prerequisites for a sustainable food system

As mentioned above, over the past years primary agriculture production has witnessed an increase in production. However the benefits of this increase in the agriculture produce have been uneven. Vulnerable groups still face difficulties to access affordable, adequate and quality food in order to meet their dietary needs. Their lack of access to natural, financial, social, human and physical assets affects and their disempowered position in the supply chain both impedes and perpetuates food insecurity.

For example while the cost of farm inputs has risen, higher food prices have not filtered down to the farm gate (Båge, 2008). In order for agribusiness to promote healthy linkages as depicted in the graph, promote a sustainable food system, empower vulnerable groups and ultimately sustainably increase levels of food security there are a number of prerequisites and challenges to overcome.

The challenge that agribusiness has to face is to facilitate an enabling environment and an empowered position of vulnerable groups in the supply chain by increasing their access to assets and diversify their livelihoods in order to make them an active agent in formulating food security. This would also increase agribusinesses efficiency in the supply chain and result in directly addressing food access, availability and utilisation barriers.

This can be achieved through:

- Participatory agro- industrial development
- Re-captivation of supply chain by the vulnerable groups and facilitation of small scale farmers' up scaling in the supply chain
- New business models that would include small scale and labour farmers as well as women
- Direct- to- consumer food marketing
- Emphasis on domestic or localised supply chains
- Enhanced linkages between farmers' cooperatives to the local food- processing industry or to the local fresh produce retailers
- Analysis and increased understanding of the informal supply chain
- Increased organisation of stakeholders in the supply chain
- Women's empowerment in the supply chain

More specifically:

"The broad aim of **participatory development** is to increase the involvement of socially and economically marginalized people in decision making of their own lives." (Gujt,Shah,1998). In order to address the needs of the most vulnerable, they need to participate in the formulation of the responses (FAO, 2012). Agribusiness should enable community participation by engaging and identifying customary institutions, informal actors in the supply chain and actors that usually lack strong voice and are marginalised.

In addition, a key for strong and inclusive supply chains would be the elimination of unequal power relationships in the supply chain by enabling the re captivation of the supply chain by the vulnerable groups and by allowing **small scale farmers to climb up the supply chain**. Interventions related to supply chain support usually lack continuity and are scattered. This fragments farmers' synergies and denies them the ability to enjoy the full potential they could derive from their farming activities (Afenyo, undated). It is important that small scale farmers and processors are embodied in

the local and regional markets and their rights are protected and promoted (Watson, undated). This holistic approach could promote small scale farmers and processors empowered position in the supply chain. It would enable them to take control of their produce, increase their income by adding value to it as well as diversify their activities whilst organising in a variety of modes.

According to the UN (2011) *contract farming* rarely encourages farmers to climb up the value chain and move into the packaging, processing or marketing of their produce and vulnerable groups are often excluded from the process. This is especially the case with the farming groups who have marginal or limited land and fewer resources. Since small scale farmers usually have very low bargaining power and lack the skills to defend their interests in the globalised food supply chain contract farming can perpetuate or strengthen their disempowered position in the supply chain.

According to the UN (2011) it is vital to ensure a **diversity of outlets for the produce of small-scale farmers** to strengthen their position in the food supply chain and thus contributes to the realization of the right to food and food security. These outlets could be in the form of *farmer-controlled enterprises, joint ventures* (see Box 1 for example) or *direct-to-consumer food marketing* practices by farmers (see Box 2 for example).

Well- organised farmer organisations can lead to the creation of *farmer- controlled enterprises*. It is this type of enterprise- the one where the producer has a say- that is the most successful worldwide. Additionally food production systems that are sustained by producer organisations can attract investment and expertise into the country's food processing sector (Byanyima, 2004) having multiple effects for food security and resilience.

Direct- to – consumer food marketing is the practice increasingly gaining ground as it has the potential to improve food security of vulnerable groups. In the developing world, over 85 per cent of the food consumed by poor households in rural setting is obtained from the farm (Mwaniki, undated). According to IIED (Medius et al, 2012) less than 20 per cent of small scale farmers or processors are organized in the global value chains or producing for supermarket export, and the majority of people are still buying most of their food in traditional open markets and small retailers. Traditional and usually informal food distribution systems continue to play an important role in satisfying specific food needs of poor urban households" (RUAF Foundation, 2010). Conventional markets are often found to be too expensive for low income urban and rural consumers, especially concentrated in the slums, who are also usually not well served with respect to food distribution. Additionally, public markets, in Sub-Saharan Africa "are poorly adapted for fresh vegetables sales as they are characterised by poor infrastructure and in many cases problematic hygiene conditions; and the absence of market information systems result in weak vertical coordination and inefficiency.

There is a lot of unexplored potential that agribusinesses could lead the way in developing countries by asset provision and promotion of local marketing. According to Byanyima (2004) local capacity for food processing and marketing is still underdeveloped and fragmented in developing countries. "The food processing sector remains largely unexploited and virgin, which is itself an opportunity". This makes developing countries more prone to becoming importers of food and reducing their food sovereignty. Additionally, it implies that there is an unexplored internal market which can be developed by local stakeholders in the supply chain such as farm labourers, small scale farmers and small scale food processors. Through skills and infrastructure provision these stakeholders can produce a diverse range of locally processed and marketed foods that can reach safely and quicker to the domestic markets. This can lead to overcoming seasonality and perishability challenges, increase food availability and decrease food distances having multiple effect to the food security of the vulnerable groups.

Additionally, according to the UN Special Rapporteur on the Right to Food (UN, 2011) the over- emphasis on export led agriculture has diverted our attention and interventions into a model that has adverse effects for small scale farmers,

Box 2: Direct- to – consumer food marketing

In 1993, Belo Horizonte adopted a municipal law; setting out a policy framework based on the concept of food sovereignty and established a secretariat for food policy and supply. Under this framework, it sought to create various channels of affordable access to healthy food. Because conventional markets were often found to be too expensive for low-income groups and because the poorest parts of the city, the favelas, were usually not well served with respect to food distribution, the secretariat established mobile food distribution services.

Source: UN, 2011

fishers, herders, small scale processors as well as women who play a key role in the agriculture sector. "Export-led agriculture in many developing countries may have perverse consequences, leading those countries to depend on a narrow range of raw commodities for their export revenues and making them highly vulnerable to price shocks as food importers"(UN, 2011). The focus should be re-diverted to local and regional markets which would enhance their access to local buyers, particularly urban consumers. "Guideline 4.5 of the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security notes that "States should, as appropriate, promote the development of small-scale local and regional markets and border trade to reduce poverty and increase food security, particularly in poor rural and urban areas" (UN, 2011). Agribusiness can act complementary to the role of the state and foster this process. Therefore, the role of agribusiness would be, to **improve the links between local producers and consumers through appropriate infrastructure, asset provision and the organization of localised supply chains**. The term has been coined as "from farm to fork". The benefits of this system for the vulnerable groups are multiple. It not only filters food prices down to the farm gate and thus increases the income of vulnerable groups, it also makes food cheaper and accessible for low-income consumers.

Localised food supply chains can also lead to non-segmentation of small scale agriculture. Alternative models of development can foster the development of a localised food supply chain. According to Byanyima (2004:3) "the major constraint faced by medium scale processing establishments is the weak linkage between producers and processors". The dairy sector, for example, is highly scattered in developing countries. Milk production is conducted by unorganised small scale farmers who have no formal link with the processors, resulting in lower quality and quantity of milk. This in turn results in an increase in the price of the final product. Agribusiness can help to **increase the linkages between farmers' cooperatives to the local food-processing industry or to the local fresh produce retailers serving low income consumers**. This would enable farmers' to gain control of their produce and thus benefit from an increase in the food prices. Additionally, it can equilibrate unequal power relationships in the supply chain.

Moreover, agribusiness can serve as a knowledge base and help us **understand how the informal sector works**. This way we could improve mechanisms and re-design our value chains whilst supporting access and flexibility of informality (Medius et al, 2012) and including vulnerable groups- who usually work within the informal supply chain. Traditional and usually informal food distribution systems continue to play an important role in satisfying specific food needs of poor urban households"(RUAF Foundation, 2010). According to Chen (2007) of UNDESA the new view on the informal economy has changed during the past years. The informal economy and by extension the informal supply chain with which it works "is 'here to stay' and expanding with modern, industrial growth". As it contributes significantly to the GDP, its linkages and distinctions with the formal economy and formal value chain are blur. Rather than side-stepping or formalising the informal sector the best strategy would be to "decrease the costs of working informally and to increase the benefits of working formally" (Chen, 2007). As a result, agricultural supply chains should take into consideration the informal sector in order to reach out to vulnerable groups.

Box 3: Kenya: Horticulture and self-help groups

In the case of horticulture in Kenya, self-help growers' organizations have enabled small farmers to enter into contractual arrangements that provide more reliable market outlets and to obtain extension advice and seed on credit. The government's recognition and encouragement of the development of a wide range of private marketing institutions, local producer associations, and self-help groups has been important for farmers seeking market access, as has access to credit and other financial services, transport, refrigeration, and storage

Source: Diao, Hazell, 2004

For example **street food** is distributed and consumed through the informal market. Street food is an important source of nutrients for poor communities (Draper, 1996). It is inexpensive, follows the seasonality of the produce and promotes variation in consumer diets, it is widely distributed – in many cases it is better distributed than in the formal market- and available in both rural and urban milieu (Fellows, Hilmi, 2011). Street food is run by family or one person businesses and is a great source of income diversification. Agri-business intervention could take advantage of the food security and income diversification opportunity street food marketing gives, and provide vulnerable groups with the necessary assets in order to re-captivate the supply chain. By addressing the quality, safety, technology and other challenges agribusiness can respond to the informal sector. "If the market responds to the micro processing initiative and the sales are sufficient, then further investment by the farmer may be feasible

and the enterprise can become a more formal small- scale processing enterprise"(Fellows, Hilmi, 2011: 12). This would also enhance the linkages of vulnerable groups with local markets and enable their linkages with the global ones (Seville et al, 2008)

Emphasis should also be given to developing **cooperatives⁴, farmer and business associations, self- help groups, scientific organizations as well as women's associations** explicitly supporting the needs of small-scale agricultural producers, and entrepreneurs to capture and add value to on-farm, post-harvest and off-farm enterprises. This is an important prerequisite able to assist small scale farmers- who produce sustainably without sacrificing yield-, processors and women who overcome high marketing costs and enable them to harness their market potential (Watson, undated). These community structures can also serve as an important source of access to local knowledge systems. Local knowledge can help us understand the local context and form informed and sustainable interventions. Simultaneously, organisations can serve as a channel of provision of additional skills and enhance the human capital of vulnerable groups. Human resource development is able to provide the skills base necessary to develop a competitive agro-industry (UNIDO, IFAD, FAO, 2008) and enhance food security.

Cooperatives and organizations also increase the bargaining power of vulnerable groups as well as their access to credit which has a significant impact on increasing their social and financial assets (see box 3). In turn this can help small scale farmers to package and market their own produce. Formation of saving and credit community based groups can also be an efficient alternative able to deal with vulnerable groups' lack of access to financial assets. According to Morse (et al, 2009) they are worthy of consideration as they can foster the spread of agricultural technology. Additionally, empowered small scale producers' organizations protect producers from the global markets. This allows its members to balance cropping for cash and food (Patkar, 2012) as they are enabled to make decisions based not only on income-generation but also on sustainability.

Last but not least the inclusion of **women** is an important prerequisite for the achievement of food security. As already mentioned women are the main growers of food; having the same access to inputs and assets as men can significantly increase yields. They are also integral to alleviating hunger and malnutrition because they are primarily responsible for ensuring that food for their families is reliably available, accessible and nutritionally balanced. However, this potential has not been fully explored. Women face various obstacles which constrain their empowerment. According to the UN (2011) when crops are produced for cash rather than for local consumption, women tend to lose control over decision-making. Women face particular constraints to enter the formal market so they depend on informal ones to sell their produce. During the shift from subsistence to market- driven agriculture, they tend to get marginalized. In the majority of developing countries, while women decide about the use of food for self-consumption- due to entrenched cultural values- they do not decide about where the household's income is spent. Additionally, the largest proportion of rural women worldwide continues to face deteriorating health and work conditions including insecure employment and low income. Their limited access to education, access to and control over natural resources pose serious challenges to development practitioners and impede food security. This situation is due to a variety of factors, including:

- The competitive and unregulated nature of agricultural markets. The growing competition on agricultural markets increases the demand for flexible and cheap labour and increases the pressure on natural resources which triggers conflicts over natural resources
- The diminishing support by governments for small-scale farms and the reallocation of economic resources in favour of large agro enterprises.
- Increasing exposure to risks related to natural disasters and environmental changes
- Limited access to natural resources including access to water and land

⁴ Farming, processing, marketing, service cooperatives and allied agricultural cooperatives

- Limited decision making power. Women in the developing world are most frequently excluded or marginalized in any community consultation process that might be carried out (Vorley et al, 2012).
- Limited access to knowledge, inputs, credit and market information

Women in comparison to men are especially constraint by the factors as described above. Cultural norms and structural issues pose serious stress on both men and women, but it is women who see their assets deteriorating and their produce decreasing in times of crises, leaving them trapped in a vicious cycle of chronic poverty and food insecurity. Due to their ever lower access to natural, social, human, financial and physical assets, women's produce and thus income, is much lower than that of men. Women face more difficulty than men in diversifying their livelihoods and meeting food quality and safety standards. Small and medium- sized agribusinesses have the potential to facilitate the elimination of these obstacles by understanding women's needs and respecting women's rights. Inclusive agribusinesses development would have to formulate gender sensitive interventions taking into consideration that women have a different physiology, take up different parts of the supply- chain and harvest different crops than men (Vorley et al, 2012). Therefore, agribusinesses by intervening in each stage of the supply chain have the unique opportunity to include women in every step of the process and thus significantly contribute in achieving gender equality, help women to regain control over their lives and become active agents able to formulate sustainable food system and increase levels of food security.

Conclusion

Agribusiness is the decisive component in our food system, able to determine levels of food security. Agribusiness is involved in all the stages of the food supply chain- until food is delivered to the consumers. Therefore, agribusiness has a two- fold potential. On one hand it can act as an empowerment tool in the hand of vulnerable groups able to increase their assets and use their food potential in order to achieve a sustainable food system and significantly increase their levels of food security. On the other hand agribusiness also directly targets food security by promoting a pro- poor supply chain and ensuring that food is available, accessible and is utilised properly.

Only by adopting such a holistic approach can food security become reality. Interventions related only with the stage of production cannot ensure that cheap and accessible food will be delivered to the consumers and that farming groups will increase their income and their access to food. Inequality is entrenched in many societies and short term as well as one- sided interventions cannot provide sustainable solutions. It is only by looking at vulnerable groups' needs, providing them with assets and transforming the supply chain into a well- functioning and pro-poor food route that we can increase food security levels and break the vicious cycle of poverty. Human- made problems – as food insecurity- need participatory and holistic solutions that target structural problems.

Annexes

Annex 1: Describing the assets

Natural: Natural capital is the term used for the natural resource stocks from which resource flows and services (e.g. nutrient cycling, erosion protection) useful for livelihoods are derived. There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to divisible assets used directly for production (trees, land, etc.).

Financial: Financial capital denotes the financial resources that people use to achieve their livelihood objectives. The definition used here is not economically robust in that it includes flows as well as stocks and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent that enables people to adopt different livelihood strategies. There are two main sources of financial capital.

- *Available stocks:* Savings are the preferred type of financial capital because they do not have liabilities attached and usually do not entail reliance on others. They can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions.
- *Regular inflows of money:* Excluding earned income, the most common types of inflows are pensions, or other transfers from the state, and remittances. In order to make a positive contribution to financial capital these inflows must be reliable (while complete reliability can never be guaranteed there is a difference between a one-off payment and a regular transfer on the basis of which people can plan investments).

Social: It is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through:

- *networks and connectedness*, either vertical (patron/client) or horizontal (between individuals with shared interests) that increase people's trust and ability to work together and expand their access to wider institutions, such as political or civic bodies;
- *membership of more formalised groups* which often entails adherence to mutually-agreed or commonly accepted rules, norms and sanctions; and
- *relationships of trust, reciprocity* and exchanges that facilitate co-operation, reduce transaction costs and may provide the basis for informal safety nets amongst the poor.

Human: Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a household level human capital is a factor of the amount and quality of labour available; this varies according to household size, skill levels, leadership potential, health status, etc.

Physical: Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods.

- Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive.
- Producer goods are the tools and equipment that people use to function more productively.

Source: DFID, 1999

Annex 2: Describing the Vulnerabilities

The Vulnerability Context frames the external environment in which people exist. People's livelihoods and the wider availability of assets are fundamentally affected by critical trends as well as by shocks and seasonality – over which they have limited or no control. The box below provides examples (this is not a complete list):

Trends	Shocks	Seasonality
<ul style="list-style-type: none">▪ Population trends▪ Resource trends (including conflict)▪ National/international economic trends▪ Trends in governance (including politics)▪ Technological trends	<ul style="list-style-type: none">▪ Human health shocks▪ Natural shocks▪ Economic shocks▪ Conflict▪ Crop/livestock health shocks	<ul style="list-style-type: none">▪ Of prices▪ Of production▪ Of health▪ Of employment opportunities

The factors that make up the *Vulnerability Context* are important because they have a direct impact upon people's asset status and the options that are open to them in pursuit of beneficial livelihood outcomes.

- **Shocks** can destroy assets directly (in the case of floods, storms, civil conflict, etc.). They can also force people to abandon their home areas and dispose of assets (such as land) prematurely as part of coping strategies. Recent events have highlighted the impact that international economic shocks, including rapid changes in exchange rates and terms of trade, can have on the very poor.
- **Trends** may (or may not) be more benign, though they are more predictable. They have a particularly important influence on rates of return (economic or otherwise) to chosen livelihood strategies.
- **Seasonal shifts** in prices, employment opportunities and food availability are one of the greatest and most enduring sources of hardship for poor people in developing countries.

Source: DFID, 1999

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