Tanzania at a Crossroad: Shifting Gears Towards Inclusive and Sustainable Industrialisation

SUMMARY REPORT
TANZANIA INDUSTRIAL COMPETITIVENESS REPORT 2015

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SUMMARY REPORT
Acknowledgements

The Tanzania Industrial Competitiveness Report (TICR) 2015 is a product of the Ministry of Industry, Trade and Investment (MITI) of the Government of the United Republic Tanzania. The main authors include Esther Mkenda and Valency Mutakyamirwa, forming the Industrial Intelligence Team at the Ministry, and with the support of Neema Towo from the University of Dar es Salaam. At its early stages, the report also benefited from the work of Falecia Massacky.

Support, supervision and guidance was provided by the two Permanent Secretaries of the Ministry of Industry, Trade and Investment: Dr. Adelhelm J. Meru and Prof. Adolf F. Mkenda and by the Director of Industry Development, Mr. Obadiah M. Nyagiro, and the Assistant Director Mrs. Elli Pallangyo. Furthermore, a team from Zanzibar headed by the Ministry of Trade, Industry and Marketing, including Mr. Abdulla R. Abdulla, has contributed to the analysis on Zanzibar’s industrial competitiveness. The report benefited also from the important insight and advice of Dr. Paul Kessy, Deputy Executive Secretary of the President’s Office Planning Commission.

Since 2011, with the start of the UNIDO project “Building institutional capacities for industrial policy design, implementation, monitoring and evaluation” the team has been receiving from UNIDO trainings in various forms which have equipped them with the skills and tools to carry out the analyses of this report. Technical support to the team in the form of guidance, coaching, review, and working sessions was provided throughout the process by the UNIDO team in Dar es Salaam, including Andrea Antonelli (project manager) and Ruth Pollak (international consultant) in particular.

The report has also received an important contribution from Dr. Antonio Andreoni (SOAS, University of London), who drafted large part of Section D, in addition to being in charge of the final reviewing process of the report and a number of UNIDO trainings. Part of Section D drew important analysis and findings from another MITI-UNIDO project on the “Tanzania Manufacturing Systems of Innovation” which benefited significantly from the collaboration with STIPRO (Science, Technology and Innovation Policy Research Organization) in particular through its Executive Director, Dr. Bitrina Diyamett, and Neema Risha, research assistant, and with the Confederation of Tanzania Industries, especially Mr. Hussein Kamote, Director of Policy and Advocacy. Research assistance was finally provided by Pallavi Roy and Kasper Vrolijk, both from SOAS, University of London.

A review workshop, taking place in Dar es Salaam on 16th December, 2014 at Hyatt Regency Hotel, including representatives from Private Sector Associations, from the Development Partners’ community of Tanzania, and from other Government and Research Institutions, provided also valuable inputs for the development and expansion of the report.

Finally, the Research and Industrial Policy Advice Division at UNIDO headquarters and Field Office Team of UNIDO in Dar es Salaam reviewed the report and provided recommendations.
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Today more than ever before, the crucial role of inclusive and sustainable industrial development for Tanzania is well appreciated and targeted in main international and national development plans.

At national level, policies and implementation plans have put the industrial development agenda at the forefront, with the Long Term Perspective Plan (LTPP) 2011/12-2025/6 providing the overarching strategy linking the envisaged three Five Year Development Plans, orientated towards achieving the National Development Vision of making Tanzania a semi-industrialized country by 2025. The second Five Year Development plan is set to articulate the importance of reorganising national efforts to nurture an industrial economy, based particularly on adding value to the abundant natural resources, and with the goal to obtain significant job creation.

At international level, the new “2030 Agenda for Sustainable Development” of the United Nations includes a specific goal (n. 9) for promoting inclusive and sustainable industrialization and foster innovation and some of the spelt targets are already enshrined in the LTPP.

Manufacturing, which assumes a central role in the industrial sector and one that would guarantee vertical and horizontal sectoral linkages, exhibits growth rates of an ambiguous trend between the periods covered in this analysis. Since the turn of the century, Tanzania’s manufacturing has witnessed a healthy growth rate of 7.6 % per annum. Following the promising decade 2000-2010, manufacturing growth rate has shown a slight slowdown to 6.6 % per annum since 2010. This recent trend calls for a careful evaluation of the manufacturing sector and solid monitoring of future progress, to ensure a continuous and people-oriented industrial development trend.

This periodic report is meant to provide a solid monitoring framework to track progress towards national and SDG targets as well as valuable information to decision makers throughout the policy formulation and implementation process. It is therefore an effort to enhance evidence-based policy-making. It comes as the result of the collaboration between the Industrial Intelligence Team at the Ministry of Industry, Trade and Investment, UNIDO International Experts and other key stakeholders, including the Ministry of Trade, Industry and Marketing in Zanzibar. In particular, the report benefited from the UNIDO Industrial Policy and Statistics Capacity Building Programme under the United Nations Development Assistance Plan I (2011-2016) targeting key stakeholders encompassing public, private and research institutions, with the aim of producing relevant and demand driven quantitative analysis including policy recommendations for decision-makers and other beneficiaries.

It thus gives me great pleasure to present this analytical report at this early stage of my tenure as the Minister of Industry, Trade and Investment in Tanzania. I am particularly pleased that the report underlines the critical areas of policy focus: the effect of regional integration on Tanzanian industry and the challenges ahead, the domestic and international opportunities that emerge in the new global market for manufactures, the key role of technology and skills for industrial development, and an overview of trends of employment in manufacturing,
among others. The four main sections (B-E) and related policy recommendations can be read separately according to the interest of the reader. It is my hope that this report will provide concrete elements for discussion to policy makers, especially at this time when the second Five Year Development Plan focusing on industrialization is at its last stages of preparation.

I am very grateful to the Industrial Intelligence Team, UNIDO’s international experts and other key stakeholders who joined hands to produce this analytical report. I therefore look forward to seeing it become one important tool to support the planning of activities for inclusive and sustainable industrial development in Tanzania.

Hon. Charles John Mwijage
Minister for Industry, Trade and Investment
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
</tr>
<tr>
<td>COSTECH</td>
<td>Tanzania Commission for Science and Technology</td>
</tr>
<tr>
<td>CTI</td>
<td>Confederation of Tanzania Industries</td>
</tr>
<tr>
<td>EAC</td>
<td>East African Community</td>
</tr>
<tr>
<td>EVAD</td>
<td>Export of Value Added database</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FYDP</td>
<td>Five Year Development Plan</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GFCF</td>
<td>Gross Fixed Capital Formation</td>
</tr>
<tr>
<td>IDR</td>
<td>Industrial Development Report</td>
</tr>
<tr>
<td>INDSTAT</td>
<td>UNIDO Industrial Statistics Database</td>
</tr>
<tr>
<td>LTPP</td>
<td>Long Term Perspective Plan</td>
</tr>
<tr>
<td>MHT</td>
<td>Medium-High Tech</td>
</tr>
<tr>
<td>MVA</td>
<td>Manufacturing Value Addition</td>
</tr>
<tr>
<td>NBS</td>
<td>National Bureau of statistics</td>
</tr>
<tr>
<td>NES</td>
<td>Not Elsewhere Specified</td>
</tr>
<tr>
<td>PTI</td>
<td>Public Technology Intermediaries</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>REC</td>
<td>Regional Economic Community</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SME</td>
<td>Small and medium-sized enterprises</td>
</tr>
<tr>
<td>TBS</td>
<td>Tanzanian Bureau of Standards</td>
</tr>
<tr>
<td>TDV</td>
<td>Tanzanian Development Vision</td>
</tr>
<tr>
<td>TICR</td>
<td>Tanzania Industrial Competitiveness Report</td>
</tr>
<tr>
<td>TVET</td>
<td>Technical Vocational Education and Training</td>
</tr>
<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>URT</td>
<td>United Republic of Tanzania</td>
</tr>
</tbody>
</table>
After a decade of manufacturing upsurge, Tanzania is today at a crossroad. Despite the significant and fast expansion of its manufacturing output, since 2010 the industrial performances of Tanzanian firms have started slowing down.

• The capacity of manufacturing firms to increase value addition and diversify their production output towards more advanced products are also lagging behind. Critically, the domestic production system has remained very disarticulated and there are no signs of increasing development of backward and forward linkages between local manufacturing industries.

• Manufacturing export indicators, both within regional and international markets, have raised similar worries about the nature of the Tanzanian industrialisation process. While the country has increased its share of manufactured products in total exports consistently until 2010, partially thanks to the good performances in sectors like food, beverages and tobacco or palm oil, this positive trend has reverted since then. Also, the capacity of firms to capture value within global value chains is still limited as in the case of the cotton sector.

• The balance of trade within the EAC and SADC regional markets is negative, despite the potential untapped demand of neighbouring landlocked countries.

The Tanzanian Industrial Competitiveness Report 2015 investigates the main features of this industrialisation process, its weaknesses but also untapped opportunities, ultimately the extent to which Tanzania has entered an inclusive and sustainable process of structural transformation. Tanzania is today a country with enormous opportunities and a number of those have been already captured in specific sectoral value chains and markets. However, the overall empirical evidence raises a fundamental policy dilemma for Tanzania today, at this critical crossroad. Tanzania needs urgently to shift a number of critical gears to move from a shallow process of industrial growth towards an inclusive and sustainable structural transformation process, including:

• Decreasing trends and poor performances in production capacity development, including gross fixed capital formation and capital goods imports, but also in secondary/tertiary education and industrial research need to be urgently reverted.

• The overall technology infrastructure has to be reorganised in view of scaling-up and boosting efficiency and product quality among small and medium-sized enterprises (SMEs).

• Light manufacturing industries including food, beverage and tobacco, furniture and textiles have led the increase in manufacturing jobs absorption over the last years, and the creation of further employment opportunities, in these sectors in particular, should be encouraged.

• The improvements in working conditions and jobs formalisation are critical and should go hand in hand with the overall industrial and technological deepening of the country.

The development of industrial capabilities and the creation of more and better jobs are key if Tanzania wants to fully exploit and defy its comparative advantage towards a more inclusive and sustainable industrialised economy.
Tanzania is a fast growing economy, with rates above the average sub-Saharan Africa since 2005. While the quantum of growth is certainly important, the *Tanzanian Development Vision* (TDV) and the *Long Term Perspective Plan* (LTPP) recognise that manufacturing-led structural transformation is the only path towards a more inclusive society, sustained economic growth and sustainable economic system. Starting from 2000 Tanzania has already made important steps in this direction, while a number of policy strategies targeting various economic sectors have been promoted and received increasing support. The forthcoming *Second Five Year Development Plan* (FYDP II 2015/16 – 2020/21) is centred around the need to boost industrialisation and productivity growth across the economy, especially targeting light manufacturing and resource-based industries. The twin policy goal is to create – both directly and indirectly – more and better jobs via manufacturing development and the industrialisation of the agricultural sector.

With the Second Five Year Development Plan, Tanzania is probably entering the most critical stage of the long term journey envisioned in the TDV and LTPP. The *Tanzanian Industrial Competitiveness Report 2015/16* provides empirical evidence in support of the ongoing policy discussion and points to a number of emerging challenges as well as productive opportunities for Tanzania. Each of these challenges and opportunities call for appropriate policy responses and require continuous industrial monitoring, policy learning and adaptation. The report includes two core sections focusing respectively on the competitive industrial performance of Tanzania (Section B) and its main structural drivers, including the ongoing changes in the local production system and linkages both within and across sectors (Section D). These analyses are complemented by two thematic sections focusing on two key policy issues, namely the ways in which Tanzania can increase value addition in specific sectoral value chains (Section C) and the impact of these overall structural transformations on employment (Section E).
B.1. Latest trends in industrial production and trade

The combined analysis of these empirical evidence points to a fundamental fact: Tanzania is today at a critical crossroad. Since 2010 while the country has continued registering increases in its overall Manufacturing Value Addition (MVA), the speed at which the industrial sector is expanding has significantly slowed down. The average annual growth rate in Tanzania’s MVA has declined from roughly 9 % during the first decade of 2000 to under 6 % for the years between 2010 and 2013. This is unusual for countries at comparable income levels (also historical comparators like Vietnam), and could ultimately result in the catch up of regional competitors. At its current speed, Ethiopia could reach Tanzania industrialisation level in less than a decade (Table 1).

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>601</td>
<td>944</td>
<td>1,031</td>
<td>1,153</td>
<td>1,348</td>
<td>9.46%</td>
<td>12.61%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>10,848</td>
<td>16,897</td>
<td>18,756</td>
<td>19,844</td>
<td>21,320</td>
<td>9.27%</td>
<td>8.06%</td>
</tr>
<tr>
<td>Zambia</td>
<td>820</td>
<td>1,029</td>
<td>1,111</td>
<td>1,191</td>
<td>1,245</td>
<td>4.65%</td>
<td>6.56%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>145</td>
<td>197</td>
<td>213</td>
<td>226</td>
<td>236</td>
<td>6.34%</td>
<td>6.14%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1,235</td>
<td>1,897</td>
<td>2,029</td>
<td>2,112</td>
<td>2,249</td>
<td>8.96%</td>
<td>5.84%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>924</td>
<td>1,109</td>
<td>1,129</td>
<td>1,237</td>
<td>1,263</td>
<td>3.72%</td>
<td>4.43%</td>
</tr>
<tr>
<td>Kenya</td>
<td>1,974</td>
<td>2,332</td>
<td>2,501</td>
<td>2,487</td>
<td>2,626</td>
<td>3.39%</td>
<td>4.04%</td>
</tr>
<tr>
<td>Uganda</td>
<td>632</td>
<td>883</td>
<td>952</td>
<td>978</td>
<td>954</td>
<td>6.93%</td>
<td>2.59%</td>
</tr>
</tbody>
</table>

Source: World Development Indicators

This worrying trend is also reflected by the main indicator of industrial capacity, which discounts differences in country size. Tanzania’s MVA per capita in 2013 stood at 46 USD, behind Kenya, Mozambique and Zambia. While the growth rate of Tanzania’s MVA per capita is slightly faster than that of Mozambique and Kenya between 2010 and 2013, its growth rate has slowed down significantly, from 5.4 % in 2005-2010 to 2.7 % in the past three years (Figure 1).
The significant slowdown of manufacturing value addition growth in both absolute and per capita terms raises a critical policy question around the quality of structural transformation that Tanzania experienced since 2010. In 2013 the contribution of manufacturing to the country’s GDP was at 8.13% for Tanzania, slightly higher in 2010 at 8.34%. This is lower than other countries such as Kenya (9.4%), South Africa (14.9%) and Mozambique (11.4%), and particularly far behind if we consider historical comparators like Vietnam (23.1%). The service sector, which is the largest sector of the economy, is continuing to increase its share in GDP, as its average growth rate has been 7.5 % between 2010 and 2013. The share of the agricultural sector in Tanzania has been declining in terms of value added (average growth rate of 3.3 %).

While the first decade of the century was characterized by sustained manufacturing expansion, this process has not led to broader economic diversification and technological upgrading, at least until 2013. If we consider the relatively longer cycle started in 2008, the share of medium and high tech products in MVA has declined since then. This drop was generated by the slashing of production of chemicals and chemical products, and rubber and plastics – both product groups together accounted for 95 % of all medium and high tech production in 2008 (Figure 2).

Figure 1 Manufacturing value added per capita for Tanzania and Comparators (2010-2013)

<table>
<thead>
<tr>
<th>Country</th>
<th>2010</th>
<th>2013</th>
<th>AGR (2010 - 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>220.0</td>
<td>200.0</td>
<td>9.3%</td>
</tr>
<tr>
<td>Zambia</td>
<td>150.0</td>
<td>130.0</td>
<td>8.0%</td>
</tr>
<tr>
<td>Kenya</td>
<td>100.0</td>
<td>90.0</td>
<td>8.0%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>150.0</td>
<td>130.0</td>
<td>8.0%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>100.0</td>
<td>90.0</td>
<td>8.0%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>50.0</td>
<td>45.0</td>
<td>8.0%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>20.0</td>
<td>15.0</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Source: World Development Indicators

Figure 2 Share of medium and high tech products in MVA for Tanzania and comparators (2008-2010)

Source: INDSTAT
These alarming figures point to the need to shift up the gears of the current industrial strategies towards more industrial deepening and diversification. More than ever, they must target firm-level processes and production upgrading, technological and organizational capabilities development, local production system integration in regional value chains and quality standards. These are critical factors if Tanzanian producers want to capture the trade opportunities offered by regional and international markets.

The empirical evidence shows that this is possible and that, in fact, there are already a number of successful industrial cases in Tanzania. From 2000 to 2010 Tanzania’s manufactured exports have been growing rapidly at 31% annually on average. This is the fastest growth of all the comparator countries in Figure 3. However, while between 2010 and 2012 Tanzania’s manufactured exports continued to grow, they dropped significantly between 2012 and 2013. This has caused a negative average annual growth rate of – 8% since 2010 which resulted in a decrease of manufacturing export per capita of 9 USD.

In terms of the composition of the export basket, while in 2010 metal products made up a substantial proportion of manufacturing exports (54 %), in 2013 they only contributed to 30 % of total manufactured exports. The shrinking of metal sector exports is due to declining base metals exports from 27 % in 2010 to 1 % in 2013, as well as exports in metal waste. Additionally, the exports of precious metals fell by roughly a third.

Taking aside metals, since 2010 the Food, Beverages and Tobacco sector has emerged as the most important contributor to manufacturing export (e.g. steep growth of the sugar and honey product group), followed by petroleum products whose export has grown by 81% since 2010 (Figure 4). Tanzania’s exports include a low share of manufactured products (roughly 38 %), as well as a low share of medium and high tech (MHT) products among the manufactured exports (25 %). Since 2010, however, the share of MHT manufacturing exports has been increasing significantly faster (Figure 5). This was caused by a simultaneous increase in MHT exports of 12 % on average per annum, coupled with a decrease in both resource-based products and low tech products. These emerging MHT productive sectors are critical to complement more traditional primary product exports.
While Tanzania needs to boost agro-processing and resources beneficiation to increase value addition, these manufacturing products offer new value capture opportunities. Primary exports tend to be highly vulnerable to market shocks due to volatile international demand and price changes beyond domestic control, and their values are generally lower than that of processed goods.

**Figure 4 Manufactured exports by sector, excluding metals (2010 & 2013)**

![Manufactured Exports by sector, excluding Metals 2010 and 2013](image)

Source: UN Comtrade

**Figure 5 Export structures and changes for selected countries (2005, 2010 & 2013)**

![Export structures and changes for selected countries](image)

Source: UN Comtrade
In boosting its manufacturing export capacity, Tanzania must also realize that the competition has been growing significantly in the regional markets, taking aside the international trade scene. From 2000 – 2010 Tanzania increased its shares of manufactured exports in the world significantly, from 0.0026 % to 0.017 %. This trend has reversed in recent years and from 2010 to 2013 Tanzania’s share of manufactured exports to the world has decreased by 0.005 percentage points (from 0.017 to 0.012% respectively).

With respect to the two main regional economic communities (RECs), the Southern African (SADC) and East African (EAC) ones, Tanzania’s exports are significantly more diversified and have a higher share of MHT manufactures products than its exports to the rest of the world. This confirms the strategic opportunities that RECs offer to Tanzania, in terms of technological learning and product quality upgrading, access to larger markets and concerted attraction of foreign direct investment (FDI) in the region (within EAC, Tanzania outranked in 2011 with USD 9.2 billion). Nonetheless, the figure below (Figure 6) shows that Tanzania still needs to strengthen its capacity to export manufactured products within the regions, despite having more diversified exports. It can be seen that countries like Rwanda, Kenya, Zambia and Zimbabwe have stronger capacities to do so. Its negative trend in the EAC market since 2010 is particularly worrying.

**Figure 6 Manufactured exports per capita to EAC and SADC markets (2010 & 2013)**

Tanzania’s manufactured exports to the SADC countries have been increasing at an average annual growth rate of 20% between 2010 and 2013 whereas in the EAC the trend was negative (-3%), at the same time when Uganda, Burundi and Rwanda have been growing significantly (Tables 2 and 3). Part of the good news related to trends in SADC is that Tanzania boosted its medium and high tech exports at an average annual growth rate of 29 % and 56 % respectively. An inverse trend again is observed in the EAC where Tanzania’s high tech exports have been decreasing at 15 % per annum whereas its medium tech exports remained relatively stable at a mere 3% growth.
Setting the Scene

Table 2 Intra-regional manufactured exports and imports of selected SADC member states by product category (2010-2013)

<table>
<thead>
<tr>
<th>SADC (selected countries)</th>
<th>Product Category</th>
<th>Exports in 1000 USD</th>
<th>CAGR of Exp</th>
<th>Imports in 1000 USD</th>
<th>CAGR of Imp</th>
<th>Net Trade (in 1000 USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2010</td>
<td>2013</td>
<td>2010-2013</td>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Manufactured trade</td>
<td>65,776</td>
<td>372,485</td>
<td>78%</td>
<td>1,085,880</td>
<td>2,904,065</td>
</tr>
<tr>
<td></td>
<td>High Tech</td>
<td>676</td>
<td>62,902</td>
<td>353%</td>
<td>66,318</td>
<td>1,125,222</td>
</tr>
<tr>
<td></td>
<td>Medium Tech</td>
<td>9,616</td>
<td>51,724</td>
<td>75%</td>
<td>219,358</td>
<td>440,937</td>
</tr>
<tr>
<td></td>
<td>Low Tech</td>
<td>5,401</td>
<td>160,348</td>
<td>210%</td>
<td>407,801</td>
<td>958,608</td>
</tr>
<tr>
<td></td>
<td>Resource based</td>
<td>50,956</td>
<td>97,510</td>
<td>24%</td>
<td>392,403</td>
<td>379,298</td>
</tr>
<tr>
<td>Malawi</td>
<td>Manufactured trade</td>
<td>115,152</td>
<td>92,700</td>
<td>-7%</td>
<td>757,941</td>
<td>1,040,896</td>
</tr>
<tr>
<td></td>
<td>High Tech</td>
<td>1,237</td>
<td>6,920</td>
<td>78%</td>
<td>29,695</td>
<td>37,863</td>
</tr>
<tr>
<td></td>
<td>Medium Tech</td>
<td>33,560</td>
<td>31,771</td>
<td>-2%</td>
<td>255,724</td>
<td>348,134</td>
</tr>
<tr>
<td></td>
<td>Low Tech</td>
<td>31,677</td>
<td>22,264</td>
<td>-11%</td>
<td>113,140</td>
<td>134,690</td>
</tr>
<tr>
<td></td>
<td>Resource based</td>
<td>48,677</td>
<td>31,745</td>
<td>-13%</td>
<td>359,382</td>
<td>520,211</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Manufactured trade</td>
<td>263,251</td>
<td>458,596</td>
<td>20%</td>
<td>828,059</td>
<td>881,416</td>
</tr>
<tr>
<td></td>
<td>High Tech</td>
<td>8,811</td>
<td>33,442</td>
<td>56%</td>
<td>36,321</td>
<td>88,590</td>
</tr>
<tr>
<td></td>
<td>Medium Tech</td>
<td>50,761</td>
<td>108,750</td>
<td>29%</td>
<td>274,954</td>
<td>333,437</td>
</tr>
<tr>
<td></td>
<td>Low Tech</td>
<td>77,419</td>
<td>137,004</td>
<td>21%</td>
<td>201,706</td>
<td>169,583</td>
</tr>
<tr>
<td></td>
<td>Resource based</td>
<td>126,259</td>
<td>179,400</td>
<td>12%</td>
<td>315,079</td>
<td>289,805</td>
</tr>
<tr>
<td>South Africa</td>
<td>Manufactured trade</td>
<td>17,617,305</td>
<td>20,912,038</td>
<td>6%</td>
<td>2,244,880</td>
<td>3,440,752</td>
</tr>
<tr>
<td></td>
<td>High Tech</td>
<td>1,262,935</td>
<td>1,289,386</td>
<td>1%</td>
<td>136,282</td>
<td>30,940</td>
</tr>
<tr>
<td></td>
<td>Medium Tech</td>
<td>6,852,454</td>
<td>8,515,692</td>
<td>8%</td>
<td>551,369</td>
<td>577,830</td>
</tr>
<tr>
<td></td>
<td>Low Tech</td>
<td>3,934,957</td>
<td>4,089,011</td>
<td>1%</td>
<td>441,800</td>
<td>727,601</td>
</tr>
<tr>
<td></td>
<td>Resource based</td>
<td>5,566,959</td>
<td>7,017,950</td>
<td>8%</td>
<td>1,115,430</td>
<td>2,104,382</td>
</tr>
<tr>
<td>Zambia</td>
<td>Manufactured trade</td>
<td>749,004</td>
<td>1,973,647</td>
<td>38%</td>
<td>2,941,487</td>
<td>5,026,929</td>
</tr>
<tr>
<td></td>
<td>High Tech</td>
<td>8,409</td>
<td>52,207</td>
<td>84%</td>
<td>111,158</td>
<td>176,629</td>
</tr>
<tr>
<td></td>
<td>Medium Tech</td>
<td>176,866</td>
<td>416,917</td>
<td>33%</td>
<td>1,051,695</td>
<td>1,688,371</td>
</tr>
<tr>
<td></td>
<td>Low Tech</td>
<td>105,568</td>
<td>203,214</td>
<td>24%</td>
<td>348,062</td>
<td>724,135</td>
</tr>
<tr>
<td></td>
<td>Resource based</td>
<td>458,161</td>
<td>1,301,309</td>
<td>42%</td>
<td>1,430,572</td>
<td>2,437,794</td>
</tr>
</tbody>
</table>

Source: UN Comtrade

In terms of trade balance, Tanzania shifted from a positive trade balance in the EAC in 2010 to a negative one in 2013 partly as a consequence of emerging competition in particular from Uganda and more recently Rwanda and the dominant role of Kenya. Tanzania reduced its trade deficit with the SADC in 2013, though still significantly larger than in the EAC. Within SADC, South Africa is the only country showing a trade surplus.
Source: UN Comtrade

SADC has the largest demand for medium tech products followed by resource-based products, while the EAC has the highest demand for resource-based exports followed by medium tech goods. Tanzania is currently well positioned to capture this growing demand for resource-based products (with a focus on value addition), as this is the product group it exports most to the region. Moreover, being surrounded by a few landlocked countries, Tanzania has the opportunity to develop backward and forward industry linkages, logistics services and infrastructures (Figure 7).
Figure 7 Comparison of market shares for manufactured products in landlocked neighbours (2010 – 2013)

* Mirror data used for Rwanda

Source: UN Comtrade
The strategic development of manufacturing export capacity requires an in-depth analysis of specific sectoral value chains, to assess where more value can be captured.

**C.1. Sunflower Oil Value Chain**

The production of sunflower oil, and in general edible oils, ranks among the priority areas for industrial development in Tanzania including in the Integrated Industrial Development Strategy 2025. If we consider the main product groups of this value chain, crude and refined sunflower oils showed the same unit price on average since 2008 (Figure 8).

![Figure 8 Global unit values of sunflower products (2008-2014)](image)

Source: UN Comtrade

The exports of oilcake and other waste has generated by far the largest revenue for Tanzania in this value chain until present (Figure 9). Tanzania has only recently started to produce and export refined sunflower oil, and it was able to record an export growth of 29% between 2012 and 2013 and a doubling of exports between 2013 and 2014. From observing trends in demand, EAC seems to offer promising and feasible market expansion prospects for Tanzania, both for crude and refined sunflower oils. However, at the moment, Tanzania is mainly focusing on the crude form, of which it is the leading EAC exporter.
C.2. Cotton Apparel Value Chain

Another important sectoral value chain is the one of cotton products, which allows the country to exploit some of its natural resources and can create a large number of jobs for the population. Within this additive value chain, the unit prices of different products increase on average with every additional step of processing (with the exception of textile articles). Engaging in the production of those products that offer highest returns and have a significant and fast growing demand, would be most promising for the expansion of the sector (Figure 10).
Tanzania is still mainly exporting raw cotton, which is mostly shipped to Asian economies (nine of the top ten destinations are in Asia, with the top three being Thailand, Vietnam and India). Producing and exporting cotton yarn, for example, can create substantially more revenue for the country, due to higher prices and large and fast growing demand (11% on average annually). At present Tanzania is exporting cotton yarn to countries in different continents, mainly China, Kenya, Switzerland, South Africa and Mozambique, where China and Mozambique currently represent the most attractive markets with a growth in demand of over 40% annually in each (Figure 11). Expanding in these countries could be beneficial, as well as seeking new opportunities, such as in other countries in East Asia, where demand is large and fast growing.

Figure 11 Tanzania’s exports of cotton products (2008-2014)

The main destinations for Tanzania’s cotton fabrics include France, Mozambique, Kenya, the UK and Zambia. Out of these, Mozambique seems to be the most promising market as its growth in demand sailed recently at 27% per annum. Additionally, out of all destinations, Tanzania has the largest market share in this neighbouring country which provides the basis for further expansion. Lastly, Tanzania’s exports of cotton apparel, though only recently showing signs of recovery, are mostly reaching markets in South Africa, the US, Switzerland, Kenya and Zimbabwe (hence, similar regions to those of cotton fabrics). Among these countries, the highest growth in demand is from Kenya and Zimbabwe.

In sum, in order to increase revenues from exporting cotton products, it is necessary for Tanzania to maintain and improve its strong position in some of its current markets, as well as identify economies with dynamic demand into which it can diversify so that Tanzania can take advantage of high demand elasticities. Such diversification will not only increase income but also reduce vulnerability.
Box 1: Industrial competitiveness of Zanzibar

Zanzibar’s capacity to produce manufactured goods is lower than in mainland Tanzania (18.5 USD versus 48.3 USD per capita in 2013). As Zanzibar has been experiencing a gradual decrease in MVA per capita of 1 % per annum since 2005, the gap between its MVA per capita and that of mainland Tanzania is further widening. Furthermore, the Archipelago exhibits a weaker production capacity even in comparison with that of other similar small island economies. While Mauritius and Seychelles can be seen as role models, Maldives, Comoros and Madagascar⁴ have also been struggling on this front in recent years (Figure 12).

![Figure 12 Industrialization level of Zanzibar and comparator countries (20005-2013)](image)

Source: UN Comtrade

Zanzibar’s capacity to export its manufactured products is significantly lower than its capacity to produce, and it is almost 10 times lower than that of Tanzania as a whole. Also in this respect Zanzibar is lagging (far) behind its fellow small island economies (Figure 13). The only exception is Comoros, which Zanzibar was able to overtake due to a significant jump in its export performance since 2010, combined with a sharp drop in manufactured exports from its neighboring island.

![Figure 13 Manufactured Exports per Capita, Zanzibar and comparators (2010-2013)](image)

Source: UN Comtrade

It is needless to say that the manufacturing sector still plays a small role in Zanzibar’s economy (less than 4 % of GDP and 13 % of total exports). These shares are lower than in Tanzania and all other comparator countries, with the exception of Maldives whose share of MVA in GDP is slightly lower than Zanzibar’s.

---

3 Added here among comparators, though not correctly a small island economy.
Furthermore, the Archipelago sees no significant structural change towards manufacturing. In the past 25 years, Zanzibar has experienced a shrinking contribution from the manufacturing sector to GDP. Services, in particular tourism, have instead gained shares against agriculture. The discovery of oil and gas might also contribute to an expansion of non-manufacturing industries vis-à-vis agriculture.

On a more positive note, Zanzibar's exports have been performing better in recent years. Between 2010 and 2013, total exports increased by 70% on average per year. A large contributing factor has been the exports of seaweed, which has been targeted by the Government as one of the priority sectors in several strategy and development plans. However, there was little transformation of seaweed and it has been exported mainly as a primary product. At the same time, however, there has been an increase in the exports of a number of manufactured products (most notably in wood and wood products, manufactured food, beverages and tobacco and machinery). This has led to a 73% average annual growth rate in manufactured exports, resulting in the slight increase of the share of manufactured exports in total exports of the island.

Zanzibar has recently put efforts into accelerating its economic growth agenda through the formulation of MKUZA II (the Zanzibar Strategy for Growth and Reduction of Poverty, 2010) to achieve the objectives of the Zanzibar Vision 2020 which aims to transform the economy from a predominantly rural, subsistence-based one, to a diversified and semi-industrialized one.

**Policy recommendations**

The reduction of production capacity on the island, and no observation of change in the structure of the economy in the past 25 years illustrates that Zanzibar needs to undertake drastic measures if it hopes to achieve the objectives stated in the Zanzibar Vision 2020 of becoming a semi-industrialized economy. Much can be learnt from success stories of other small island economies, such as Mauritius, which has proven that resource-rich small islands can indeed industrialize.

Adding value to products currently exported in raw form and hence exploiting its wealth in natural resources is key. Zanzibar is successful in exporting certain products in raw form (seaweed, spices, sugar), holding a globally competitive position in some. It therefore has the foundations to export the same product type, though with some degree of value addition. Indeed, some efforts have already been observed in agro-processing and wood sectors.

The demand on the island itself for locally manufactured products should not be underestimated. The strong tourism sector and its positive growth creates demand for (unique) products based on Zanzibar’s natural resources. Having such demand outside the doorstep means less competition than on international markets, and a clientele interested in Zanzibar’s treasures. Hotels themselves offer promising opportunities as buyers of simple Zanzibari manufactured products such as soaps and cosmetics, as well as food products.
D.1. Industrial Capabilities in Tanzania

Sectoral value chain upgrading is one of the most fundamental challenges Tanzania faces today. The creation of a competitive local production system is the result of a concerted effort involving multiple public and private actors. Productive companies are the cornerstone of the industrial capabilities’ development process, as they have to continuously invest in their equipment, machinery and other capital goods, scale up production capacity and introduce new products if they want to create and capture more value in the domestic and international markets. If we look at this fundamental driver of industrial competitiveness – i.e. production capacity, we find worrying evidence (Figure 15).

Figure 15 Share of Private GFCF in Gross Domestic Product (GDP) (%) – Tanzania and Comparators

Source: World Development Indicators
The share of manufacturing in total gross fixed capital formation of Tanzania has been declining from around 20% between 1995 and 2000 to around 7% or 8% between 2003 and 2010. Notwithstanding the share of private gross fixed capital formation in GDP has been gradually increasing until 2012, but then to come to a halt in 2013 at 30% of GDP. In terms of capital goods imports, they had been gradually increasing between 1996 and 2011, but have been declining since. In comparison to other countries, Tanzania has been importing more capital goods than many other comparator countries, but less than Ethiopia and Vietnam (Figure 16).

Figure 16 Capital Goods Imports – Tanzania (USD)

Note: Capital goods imports (current US Dollars) over GDP per Capita (current US Dollars).
Source: World Development Indicators

Policy interventions boosting and complementing investments in capital goods, establishments and other productive assets are critical to increase the manufacturing base and raise productivity. Moreover, they should go hand in hand with more strategic investments targeting dynamic comparative advantage and technological development. The expenditure on research and development (R&D) in Tanzania has increased over time (from 4.9 in 2009 to 6.5 USD per capita in 2010), but not as much as in many other countries (e.g. Kenya, Uganda, Mozambique). The share of R&D expenditure financed by the government is high at 56% (above that of all other comparator countries, while Ethiopia shows similar levels), although this follows a slight reduction in the recent years.

Alongside private companies, Universities and vocational schools play a critical role in conducting basic research and developing a skilled and technically capable workforce. Workforce skills constitute that know-how base on which firms rely for absorbing and adapting technologies to local conditions, modifying organizational practices and new work methods. Tanzania has increased its share of secondary and tertiary educated in the total population from 1.12% in 1990 to 2.56% in 2010, but well below other relevant comparators: Kenya (3.27% to 16.7%), Rwanda (2.42% to 6.69%), South Africa (11.49% to 54.22%), and Vietnam (4.33% to 22.7%) (Table 4).
A number of other intermediate institutions such as sector and technology-focused applied research centres support firms and farms in the absorption of technologies and innovation, in increasing productivity and process efficiency as well as in reaching international product standards. Investments in technology and sustained innovation require financial credit, regulatory frameworks and various forms of public support, especially in its infant stages. Therefore, banks, government departments and a number of other public and private institutions can also play a critical developmental role. All these actors, infrastructure and institutions constitute the Tanzanian Manufacturing System.

Starting with the financial infrastructure, the domestic credit flowing towards the private sector has been increasing over time, from 3% of GDP in 1996 to 18% of GDP in 2012. In comparison to other countries, Tanzania has in 2012 provided a higher share of GDP in credit to the private sector than Uganda and Ghana, but not close to other comparator countries (Figure 17).

As for the technology infrastructure, the report has collected qualitative evidence on the current state of the public technology intermediaries in Tanzania. The Tanzanian Manufacturing System presents a wide variety of public technology intermediaries (PTIs) clustered in four main sectoral groups. COSTECH (Tanzania Commission for Science and Technology) plays a coordinating role although each institution has a different mandate and relies on a mix of public and private funding, on average 80% public and 20%

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania</td>
<td>1.12</td>
<td>1.23</td>
<td>1.05</td>
<td>1.44</td>
<td>2.56</td>
</tr>
<tr>
<td>Kenya</td>
<td>3.27</td>
<td>4.97</td>
<td>7.78</td>
<td>12.36</td>
<td>16.7</td>
</tr>
<tr>
<td>Rwanda</td>
<td>2.42</td>
<td>3.06</td>
<td>3.86</td>
<td>5.16</td>
<td>6.69</td>
</tr>
<tr>
<td>Burundi</td>
<td>1.83</td>
<td>2.43</td>
<td>2.92</td>
<td>3.86</td>
<td>5.51</td>
</tr>
<tr>
<td>Uganda</td>
<td>1.63</td>
<td>2.78</td>
<td>3.76</td>
<td>5.9</td>
<td>7.25</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1.01</td>
<td>1.09</td>
<td>1.58</td>
<td>2.12</td>
<td>3.64</td>
</tr>
<tr>
<td>Senegal</td>
<td>3.93</td>
<td>4.37</td>
<td>3.8</td>
<td>3.81</td>
<td>3.44</td>
</tr>
<tr>
<td>Ghana</td>
<td>12.27</td>
<td>14.07</td>
<td>16.96</td>
<td>19.09</td>
<td>19.94</td>
</tr>
<tr>
<td>South Africa</td>
<td>11.49</td>
<td>26.78</td>
<td>18.99</td>
<td>31.32</td>
<td>54.22</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4.33</td>
<td>7.7</td>
<td>11.56</td>
<td>16.79</td>
<td>22.7</td>
</tr>
</tbody>
</table>

Source: UNESCO

Table 4 Share of Secondary and Tertiary Educated in Total Population (%)
The establishment of a denser network of linkages in the domestic economy is a key feature of an economy undergoing a sustained process of structural change. The more domestic companies intensify their supplying relationships and, as a result, develop technology collaborations and other forms of stable linkages, the more the domestic economy is able to create manufacturing value and value addition.

In the study of the transformation of the Tanzanian production system we focus on two types of linkages. Backward linkages refer to the value that is created in other countries and that flows towards various sectors in Tanzania. On the contrary, forward linkages refer to the value created for exports in each of the sectors of Tanzania. These analyses provide evidence of the limited value addition in manufacturing industries. For example, between 1997 and 2011, the processed food sector has been dependent on value created abroad. In other words, the value that the processed food sector in Tanzania produces for exports to other countries is significantly lower than the value that the same sector receives from other countries. In contrast, the distribution services sector has increasingly created more value to other countries than what it received from other countries (Figure 18). This reflects the high transaction costs and value extraction from sectors like distribution services in Tanzania. The overall picture points to the fundamental lack of significant domestic value addition in a number of manufacturing industries. Increasing value addition in these sectors call for targeted value chain interventions targeting medium size enterprises whose role is critical in expanding and anchoring the supply chain in the country.

![Figure 18 Inflows and Outflows of Value for Tanzania between 1997 and 2011 (USD)](source: EVAD, World Bank)
The same problem – i.e. lack of manufacturing valuable linkages – is reflected within the domestic economy. The Agro, Forestry and Fishery sector absorbs a relatively high degree of value created in the Tanzanian economy, and at the same time, this sector also produces the majority of the value used within the domestic economy (Figure 19).

However, in terms of absolute value (and in contrast to the relative value, above) the distribution services sector generates the highest value for other sectors in the Tanzanian economy, and this value has been considerably increasing from 1997 onwards (Figure 20).

**Figure 19 Domestic relative forward linkages for Tanzania between 1997 and 2011**

![Graph showing domestic relative forward linkages for Tanzania between 1997 and 2011](image)

Source: EVAD, World Bank

**Figure 20 Domestic absolute backward linkages for Tanzania between 1997 and 2011 (USD)**

![Graph showing domestic absolute backward linkages for Tanzania between 1997 and 2011 (USD)](image)

Source: EVAD, World Bank
The limited capacity of the industrial system to generate valuable linkages and, thus, increasing domestic value addition, among productive companies within the Tanzanian economy is partially reflected in the limited linkages between private companies and the public technology intermediaries. Innovative extension, production and technology services may not only facilitate the application of new technologies, but also proactively involve farmers and manufacturers in the design, experimentation and improvements of new technologies. As these activities imply companies’ direct involvement in processes of trials and errors, inverse engineering, redesign of production techniques, they would result in a sustained process of technological capabilities building. The Tanzanian Manufacturing System is equipped with a broad variety of public technology intermediaries. Among them, a critical role is played by the Tanzanian Bureau of Standards (TBS) and a number of sector-specific technology intermediaries. A number of these public technology intermediaries have reported important results in terms of technological collaborations and development. However, a recent pilot industrial survey including 50 medium size manufacturing companies located around Dar es Salaam revealed how the majority of the private companies do not interact at all with these public technology intermediaries. According to the UNIDO-CTI preliminary piloting work, less than 20% of the interviewed companies have had any interaction with one of the above listed public technology intermediaries. In many cases the private companies were not aware of their existence and of the types of technology offering, production extensions and training services these institutions are able to offer. The capacity of the public technology intermediaries to link up with the private sector and support its technological development is also dependent of the availability of sufficient funding, adequate equipment and tools as well as conducive organisational structures. The lack of updated equipment, facilities, machineries and tools are critical issues reported by both the public technology intermediaries and the companies that have approached them to address their technological challenges. These findings suggest the need for a systematic revision of the public technology intermediary systems in view of establishing more and valuable linkages between these key actors within the Tanzanian manufacturing system.
Jobs and equality – what can industry contribute in URT?

Structural change within manufacturing is approximated by the growing technology content of activities and a progressive shift from low- to medium and high tech industries and eventually leading to greater value addition. At lower-income levels the application of low capital-intensive technologies allows for improvements in both productivity and employment. As the capital intensity of technology increases, productivity gains dominate and employment shifts towards manufacturing-related and other services. For developing countries aiming to maintain growth while creating sustainable jobs, manufacturing offers an opportunity not only to rebalance the economy towards higher value-added sectors but also to provide a relatively wide employment base with higher labour productivity. This contrasts with a direct transition from agriculture to services, especially for low-income countries, which offers the opportunity to achieve only the first objective (employment), not the second (productivity).

Tanzania needs to undergo major structural transformation in order to meet the target outlined in the LTPP for 2025, namely increasing industry’s share of employment from 6% in 2010 to 20% by 2025. While in Tanzania there has been a growing importance of the manufacturing sector in terms of employment (and a shift away from agriculture), the increase was modest (Table 5). These statistics on formal employment which was compiled from the Employment and Earnings surveys (2012 and 2014) shows that the service sector consistently takes a lead in creating more (formal) employment followed by the manufacturing sector, agriculture and lastly other sectors (which include mining and construction). Education, public administration and defence sub-sectors have been large contributors in creating employment within the service sector. Nonetheless, whereas the share of employment in other sectors has been decreasing, the manufacturing sector has been increasing its own one by 3% in these two years with an annual average growth rate of 28%.

Table 5 Composition of Tanzania Employment by sectors and average growth rate (2012 – 2014)

<table>
<thead>
<tr>
<th>Sectors</th>
<th>No of employees 2012</th>
<th>Sub-Sector’s percentage share in 2012</th>
<th>No of employees 2014</th>
<th>Sub-Sector’s percentage share in 2014</th>
<th>CAGR (2012-2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>96,101</td>
<td>6.2%</td>
<td>116,804</td>
<td>5.5%</td>
<td>10%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>260,403</td>
<td>16.8%</td>
<td>423,379</td>
<td>19.8%</td>
<td>28%</td>
</tr>
<tr>
<td>Service</td>
<td>1,133,063</td>
<td>73.1%</td>
<td>1,524,417</td>
<td>71.2%</td>
<td>16%</td>
</tr>
<tr>
<td>Other sectors eg construction, mining</td>
<td>60,450</td>
<td>3.9%</td>
<td>76,750</td>
<td>3.6%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,550,018</strong></td>
<td><strong>2,141,351</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Employment and Earnings Survey, 2012 & 2014 (NBS)
The composition of manufacturing employment for Tanzania is dominated by the food, beverages and tobacco sub-sector. It provides over half of all jobs in manufacturing, though it has recorded a small decrease since 2008. Over 16% of employees in manufacturing are in the wood products and furniture sector, and more disaggregated data reveals that the vast majority of these work in the production of furniture (70%). Textiles, wearing apparel and leather together make up almost 14% of manufactured employment, making it the third most important sector in terms of employment.

However, the sub-sectors which generate the most employment in manufacturing are not the most productive sectors. Out of the three light-manufacturing sub-sectors mentioned above, food, beverages and tobacco had the highest productivity with less than 15,000 USD value addition per employee in year 2010. This is significantly lower than sectors such as non-metallic minerals, chemicals, basic metals and machinery, equipment and transport (Figure 21). The majority of sub-sectors which reflected higher productivity are from medium and high tech groups, generating higher value addition with fewer workers. This is different from light manufacturing industries which are highly labour intensive, that is, the value created is largely dependent on the number of employees.

Figure 21 Labour productivity by manufacturing sub-sector (2008-2010)

![Labour productivity by manufacturing sub-sector (2008-2010)](image)

Source: INDSTAT

The light manufacturing industry led to economic transformation in many fast growing developing countries including China and Vietnam which began with a focus on low-skilled, labour-intensive sectors before they invested in more sophisticated ones to ensure continuous competitiveness and economic growth. Increased efficiency and sophistication can also be developed within sectors, by using technology, skills and know-how to make production processes more efficient. A good example is Ethiopia which is currently focusing on Agricultural Development Led Industrialization.

In the Sub-Saharan region, the light manufacturing industry is characterised by relatively few medium-sized formal firms...
and a large number of small and informal firms, generally producing less efficiently. Product quality is often also less competitive and the products are mainly for the domestic markets. The Tanzanian economy like many Sub-Saharan African countries possesses a number of characteristics that could enable it to be competitive in light manufacturing, for instance: (i) A comparative advantage in low-wage labour; (ii) Abundant natural resources; (iii) Access to high-income markets for exports; finally, large local and regional markets. However, at present the majority of these light manufacturing sectors are operating far below their full capacity (Table 6). This situation calls for targeted interventions to restore productive use of existing establishments.

Table 6 Utilization of production capacity by activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Capacity Utilization (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacture of food products</td>
<td>44</td>
</tr>
<tr>
<td>Manufacture of beverages</td>
<td>66</td>
</tr>
<tr>
<td>Manufacture of tobacco products</td>
<td>25</td>
</tr>
<tr>
<td>Manufacture of textiles</td>
<td>34</td>
</tr>
<tr>
<td>Manufacture of leather and related products</td>
<td>36</td>
</tr>
<tr>
<td>Manufacture of wood and products of wood and cork, excl furniture</td>
<td>31</td>
</tr>
<tr>
<td>Manufacture of furniture</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: Annual Survey of Industrial Production and Performance, 2008
Policy Recommendations

Shifting Gears Towards Inclusive and Sustainable Industrialisation

The TICR represents a major data collection and analysis effort towards more effective and evidence based policy-making. Drawing from the findings of this report, the policy recommendations are organised around fifteen evidence-based policy recommendations.

- **Gear 1: Exploit the country comparative advantage in natural resource-based sectors**: in the short-medium term, boost production output and value addition in those sectors in which the country has abundance of natural resources, such as agro-industries, extractives, cotton and wood products. Agro-industries development, downstream beneficiation of extractive resources and cotton processing are strategic activities to support the transitioning from a predominantly agricultural and resource based economy to one characterised by value addition in manufacturing industries economy (currently, over 70% of the population is engaged in agriculture, mainly subsistence farming, while metals constitute one third of the export basket). The TICR shows how production has been decreasing in a number of these sectors over the last years, including the food, beverages and tobacco sector as well as the wood and wood furniture sector, while employment has also been declining in the former. This report has furthermore shown that there is significant underutilization of the existing production capacity and manufacturing processing remain still limited. For example, the vast majority of cotton and leather is still exported in its raw form. Processing these goods, even if just into semi-finished products, would not only increase revenue, but create a large number of new jobs through backward and forward linkages. The value chain analysis in this report has stressed the attractiveness of Tanzania producing cotton yarn, fabrics, and apparel to increase revenue and create employment.

- **Gear 2: Capture learning and jobs-creation opportunities in light-manufacturing industries**: in the short-medium term, light-manufacturing industries should be supported as they offer Tanzania learning opportunities in production (such as development of technological capabilities in components production and organizational capabilities) and significant employment opportunities given the labour-intensive nature of the sector. In Tanzania, as well as globally, light manufacturing industries absorb large sections of the population. Particularly for low-income countries there is still much scope to increase productive employment in these sectors (empirical evidence was offered in the UNIDO IDR 2013).

- **Gear 3: Defy the country comparative advantage and build your competitive advantage**: in the medium-long run, the country shall ensure that the targeted sectors become more technology-intensive and internationally competitive, while the domestic production system is transformed towards increasing domestic addition and export basket diversification.

- **Gear 4: Build the country competitive advantage through specialization in sectoral value chain-stages**: Specific stages of sectoral value chains should be identified which are expected to support increasing value addition and capture. Each sectoral value chain at its different
stages offer different opportunities for technological learning, value addition and labour absorption. Two priority sectors for the country to focus on in the medium term are the cotton apparel and sunflower oil value chains. The analysis of these sectoral value chains has clearly illustrated that identifying the most attractive stages of production for each value chain in terms of unit prices, demand and demand dynamism is an important starting point for steering firms’ productive investments. As for cotton, for example, it was identified that over 80% of all cotton products exported was in raw form, however, producing and exporting cotton yarn, fabrics or apparel would lead to significantly higher returns and meet a large and growing demand. The report has also identified potential markets for these products. These structural transformations at the level of sectoral composition and sectoral value chain specialisation are critical for Tanzania to become a semi-industrialized country, as projected in its Vision 2025. The report has shown that there are already some medium and high tech goods and sectors where Tanzania is developing various types of production capabilities. These are manufactured fertilizers, transport vehicles and civil engineering plants. While resource based manufactured goods have seen a 10% contraction of their exports, medium and high tech exports from Tanzania grew at an average of 12% per annum.

• **Gear 5: Diversify national production and export basket by developing the country domestic production systems and linkages:** Tanzania should diversify in products similar to those it is currently producing and exporting, namely ones which are mainly resource-based, and whose production require a similar endowment of industrial capabilities. Investment should target and boost the development of different high-potential agro-industries and processed food products, while increasing their quality standards and exportability. In the short-medium term, Tanzania should also diversify in complementary products by focusing on both backward and forward linkages development. The report has shown how the Tanzanian production system is still highly disarticulated and how cross-sectoral linkages among manufacturing industries have remained pretty weak, despite the growth in aggregate terms of MVA over the last years. The Tanzania Bureau of Standards and other public technology intermediaries can play a crucial role in this respect, especially for SMEs.

• **Gear 6: Increase the technology content of manufacturing products towards more value addition and capture:** In the medium-long term, the country needs to diversify the economy and engage with more complex sectors and technology-intensive productions (product diversification). Ultimately, this diversification will go hand in hand with the transformation of the Tanzanian domestic production system, the increasing emergence of medium size enterprises and domestic supply chains, towards sustained industrial competitiveness.

• **Gear 7: Identify markets potential for sectors development:** market diversification should be based on the findings of demand dynamism and an understanding of the feasibility of exporting to targeted export markets. The empirical evidence has shown how Tanzania exports the same product to very few countries resulting in large vulnerabilities. We have seen how the vanishing of base metals exports (which were directed to five economies only) led to a reduction in overall exports of manufactured products for the country. Tanzania’s exports to China (its largest partner, accounting in 2010 for over 30% of Tanzanian exports) dropped by 34% per annum since 2010, slashing its revenue from the Asian giant by roughly two thirds, and significantly affecting the entire manufacturing sector. Products as well as market diversification are both critical targets for increasing the resilience of the country and sustained its manufacturing growth.
• **Gear 8: Develop strategically regional markets:** Tanzania should further benefit from being member (at the intersection) of two regional economic communities, EAC and SADC. These are not only important markets for the country (currently accounting for 48% of manufactured exports), but there is also a lot of opportunities to grow in these. While the share of manufactured products out of all exports to the EAC is above 70% for Tanzania, it does not even reach 40% in SADC. It is therefore important that Tanzania focuses on increasing the level of manufactured exports to the SADC region. Tanzania is exporting a significant amount of resource-based products to both the EAC and SADC, which is catering for the current growth in demand in these regions. Nonetheless, demand dynamism in the region should be closely monitored to ensure the country caters to new trends, and does not lose market share, if and when demand shifts. Further emphasis on the exports of medium and high technology products should be placed, to reap the benefits of being part of such economic communities. More attention should be placed on strengthening Tanzania’s presence in neighbouring landlocked countries, as a number of these are experiencing very high growth rate in demand (e.g. Zambia 30%, DRC and Burundi 20%, Malawi over 10% per annum). In most of these, however, Tanzania accounts for less than 4% of the market (with the exception of 7% in Burundi), while its main competitors are Kenya and South Africa. Having a large coast in the Indian Ocean and bordering a number of landlocked economies, Tanzania should really work on exploiting its geographic location for economic benefits. Finally, for the region as a whole, further efforts to deepen regional integration need to be taken. In particular, policies of member states which affect manufacturing performance should be aligned, so as to ease increasing production and exports in the region.

• **Gear 9: Match the increasing domestic consumption pattern with domestic production:** Domestic consumption should not be forgotten. Tanzania is in itself a large market. Many of the sectors that the country is currently engaged in can and should cater for the domestic market as well. Import data will reveal more on this aspect (which goes beyond the scope of this report), however one example was seen in the case of demand for sunflower oil. In order to capture this increasing internal demand, Tanzania companies should increase their production scale (thus, increasing their price competitiveness against imported products) but also reach higher level quality standards.

• **Gear 10: Invest in the technology infrastructure for SMEs development:** The Tanzania Bureau of Standards and other public technology intermediaries should be adequately equipped in view of supporting the local production system, especially those SMEs willing to reach international quality standards, diversify their products portfolio and explore potential new markets. The lack of updated equipment, facilities, machineries and tools are critical issues reported by both the public technology intermediaries and the companies that have approached them to address their technological challenges. The report has also shown how, despite Tanzania is already equipped with many sector-specific public technology intermediaries such as industrial research centres, technology transfer offices and extension services, these are often de-linked from the private sectors. According to the UNIDO-CTI preliminary survey and case study analysis presented in the report, less than 20% of the interviewed companies have had any interaction with one of the existing public technology intermediaries. These preliminary findings suggest the need for a systematic revision of the public technology intermediary system in view of establishing more and valuable linkages as well as providing more appropriate production and technology services to scale up manufacturing production and reach higher quality standards.

• **Gear 11: Develop the industrial capabilities of the workforce and align sectoral-skills policies:** Industrial capabilities’ development needs to be boosted. There is a need to invest heavily on education and technical skills. This should include secondary and
tertiary education in the traditional form (amongst all African comparators, Tanzania is the country with the lowest share of secondary and tertiary educated – 2.6 %, lower than Burundi and Mozambique) as well as technical vocational education and training (TVET) programmes, apprenticeships and other systems of learning which are of particular interest to manufacturing producers. There needs to be strong communication between the manufacturing sector and the Ministry of Education/TVET providers to ensure the particular skills needed by the sector will be developed.

- **Gear 12: Boost domestic and foreign investments in R&D and production capacity:** The government should increase spending on industrial research and development. While expenditure on R&D has increased between 2007 and 2010, it has done so only mildly, and significantly less so than other economies have, such as Kenya, Uganda and Mozambique. Furthermore, government financed Gross Expenditure on R&D is over 50 %, meaning firms are less willing/able to finance this themselves. There is also need to push investment in the country via FDI attraction and via targeted intervention in finance-constrained sectors and infant industries. Tanzania needs to ensure there is a friendly business environment in the country, and one which is particularly supportive of the manufacturing sector. This would give opportunity to promote other industry factor markets like infrastructures, input supplies and technology.

- **Gear 13: Expand access to finance, especially for productive investments in SMEs with growth potential:** Access to finance is for many firms a key constraint. Although Tanzania exhibited a significant improvement in the share of domestic credit to the private sectors, from 3 % to 18 % of GDP between 1996 and 2012, it remains one of the countries with the lowest share among its comparators, with countries like Burundi, Mozambique, Senegal and Kenya giving out more credit to the private sector in relation to their GDP. The government should address the problem of financing for sectors that are languishing in the country because of high costs of working capital for firms or an inability of financial institutions to finance the period of ‘learning’, that is, the phase when firms are going through a period of loss-making as they actually learn how to organize production.

- **Gear 14: Support employment for inclusiveness and social sustainability today:** Tanzania should support those sectors that generate employment for those with low levels of skills and who have been working in the agricultural sector. Such sectors are light manufacturing sectors, such as agro-processing (especially food and beverages), textiles and wood products. Special attention should be also placed on the employment of women and youth, as well as disabled people, ensuring they are provided with adequate work conditions.

- **Gear 15: Create more and better jobs for sustained prosperity:** The shift towards more sophisticated sectors of manufacturing will require developing the relevant skills today for tomorrow. Tanzania should attack skills gaps and mismatches and pursue a strategic alignment between its skills development and sectoral development policies. The lack of skills hampers companies’ opportunities, although skills development without employment opportunities creation is also problematic. Tanzania shall find and pursue a strategic alignment between its skills development and sectoral development policies. Finally, most people employed in the light manufacturing sectors are employed in SMEs, many of which are informal. It is crucial to support such firms in overcoming their main constraints and pushing firms towards jobs formalisation and increasing working conditions.
References


NBS (2013) *Tanzania in Figures 2012*, URT.


