PACT EAC2
Promoting Agriculture, Climate and Trade Linkages in the East African Community

Tanzania

Sustainable Industrial Development Policy

What Role for Climate Change, Food Security and Trade?

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Acronyms

ACRP	Agriculture Climate Resilience Plan
AMP	Agricultural Marketing Policy
ASLMs	Agricultural Sector Lead Ministries
CSOs	Civil Society Organisations
DoE	Division of Environment
EAC	East African Community
ESRF	Economic and Social Research Foundation
FAO	Food and Agriculture Organisation
FYDP	Five-Year Development Plan
FYDP II	Five-Year Development Plan II
GDP	Gross Domestic Product
GoT	Government of Tanzania
IIDS	Integrated Industrial Development Strategy
LDC	Least Developed Country
LGAs	Local Government Authorities
MALF	Ministry of Agriculture, Livestock and Fisheries
MDAs	Ministries, Departments and Agencies
MITI	Ministry of Industry, Trade and Investment
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania
MNRT	Ministry of Natural Resources and Tourism
MoFP	Ministry of Finance and Planning
NAP	National Agriculture Policy
NAPA	National Adaptation Programme of Action
NCCS	National Climate Change Strategy
NEMP	National Environment Management Policy
NFNSP	National Food and Nutrition Security Policy
NGOs	Non-governmental Organisations
NSGRP II	National Strategy for Growth and Reduction of Poverty II
NTP	National Trade Policy

PCF	Product Carbon Footprint
SADC	Southern Africa Development Community
SAGCOT	Southern Agriculture Growth Corridor of Tanzania
SIDP	Sustainable Industrial development policy
SMEDP	Small and Medium Enterprises Development Policy
TAFSIP	Tanzania Food Security Investment Plan
TBS	Tanzania Bureau of Standards
TDV	Tanzania Development Vision 2025
TFDA	Tanzania Food and Drugs Authority
UNIDO	United Nations Industrial Development Organisation
URT	United Republic of Tanzania
VPO	Vice President's Office
VPO-DE	Vice President Office, Department of Environment

Executive Summary

In recent years, there has been an increasingly renewed interest in industrial development policy review across the East African Countries (EAC) including Tanzania. This has been fostered by the incessant dynamics in the global economy and the advancement of technology and communication, climate change and the incongruity of the existing policy to the current national agenda, Tanzania in particular. Over two decades since its formulation, the current Sustainable Industrial Development Policy (SIDP), is confronted by great advancements that have taken place in and outside the industrial sector. These need to be considered to fit in the policy in accordance with the current national agenda of industrialisation. While the existing SIDP aimed at setting the path for the sustainable development of the Tanzanian industrial sector to contribute towards the achievement of the Tanzania Development Vision (TDV) 2025, the policy ignores the synergies between climate change, agro-industries, food security and trade. Moreover, the extent to which interventions support and make use of such opportunities deserves further examination and policy review.

The purpose of this work was to investigate the position of the SIDP on the current Tanzanian industrial development challenges of accommodating synergies with agro-industry, climate change, and trade and food security. Specifically, the work intended to: i) investigate the impact of the SIDP on Tanzania's industrial development; ii) analyse existing policy frameworks that contribute towards industrial development in Tanzania; iii). identify and understand challenges and opportunities that face the implementation of the SIDP; iv) document best practices from countries that have developed industrial policies, which are well linked with the aspects of climate change, food security and trade and; v) analyse the role and responsibilities of stakeholders in ensuring that sustainable industrialisation materialises.

Methodological triangulation using a variety of data sources to engender robust results was employed and revealed the following findings:

- Agro-processing industries are vulnerable to and influence cross-cutting issues notably, climate change, food security and trade; hence a dual cause;
- These cross-cutting issues are key variables that affect forward and backward linkages in the agro-processing subsector;
- Empirical evidence shows that there are several policies that acknowledge the importance of the agro-processing sector to economic and human development;
- National policies, plans and strategies on industrialisation and agro-processing industries have not sufficiently reflected and linked these cross cutting issues with industrialisation.
- The implementation of these provisions poses a major challenge in three areas: weak inter-ministerial and sectoral coordination and cooperation; weak sectoral linkages for policy; and low level public awareness and knowledge of policy issues.

The study recommends that national industrial development policies should provide a clear link between agro-processing and trade, climate change and food-security which is currently a glaring gap that requires the utmost attention when reviewing the SIDP. In view of this, the revised SIDP should indicate the integration and sectoral linkage as well as highlight the monitoring and evaluation mechanism to ensure each responsible organ performs what it is required to do. Hence, this piece of work will contribute towards sustainable industrial development in Tanzania.

Chapter 1

Introduction

1.1 Background information

In 1996, the Government of Tanzania launched the Sustainable Industrial Development Policy (SIDP) covering the period 1996-2020. The policy aimed at setting the path for the sustainable development of the Tanzanian industrial sector to contribute towards the achievement of the overall national long-term development goals as enshrined in the Tanzania Development Vision (TDV) 2025. With more than two decades since its launch, it is important to address the extent to which the policy provides the linkage between agro-processing and cross cutting issues including climate change, trade, and food security. In this context, the study has identified gaps in the SIDP in relation to climate change, food security, and trade linkages in Tanzania. In addition to the SIDP, the government has also adopted several policies, strategies, programmes and regulatory frameworks aimed at governing agro industry, trade, food security and climate change, through the respective ministries, specifically: the MALF, the MITI and the DoE (in the Vice President's Office). Even though most policies acknowledge the importance of agro industries, there is a need to find out the extent to which they explain the linkages among agro industries, trade, food security and climate change. The potential spillover benefits and efforts to tap and build upon such linkages are expected to be articulated. Moreover, the extent to which interventions support and make use of such opportunities deserve further examination in order to ensure the identification of new challenges that call for policy review.

Recognising the identified vacuum in the current SIDP (1996-2020), in providing the synergies with agro-industry, climate aware, trade and food security for Tanzania's industrial sector, review of this policy is vital. In this context, climate aware means climate literacy and public or individual understanding of local dimensions of climate change. This will offer unique aspects and importance of harmonizing industrialisation and agro-processing, thereby supporting and strengthening the collaborations between industrial policy and other measures related to climate change, food security and trade. Recognition of the need for harmonisation of these sectors provides a unique opportunity for the inclusion of these cross-cutting issues in the development process, specifically in the industrialisation agenda. In doing so, the country will have an industrial policy that takes into account climate-vulnerability of different sectors. Special attention is also likely to be given to agro-processing, which is adversely affected by climate change, while addressing issues of food security and trade and ensuring a holistic approach to this important sector.

1.2 Situation analysis of implementation of the SIDP

The SIDP (1996-2020) was designed to be implemented in three stages. The first stage ran through 1996-2000, focussing mainly on rehabilitation and consolidation of existing industrial capabilities. The second phase (2000-2010) focussed on the generation of new capacities through the use of efficient technology and learning process. The third phase (2010-

2020) aims to achieve major investments in basic capital goods and industries to ensure consolidation of industrial structures developed in the previous phases. Over the years, the implementation of SIDP has been aided by a number of policies, strategies and plans. These include the Integrated Industrial Development Strategy (IIDS) 2025, the Long-Term Perspective Plan and its respective Five-Year Development Plans (FYDP) and Agricultural, Trade and SME Development Policies.

In 2010, the Ministry of Industry formulated an IIDS 2025 to carry forward the SIDP objective. The strategy targets six priority subsectors, namely agro-processing, textiles, leather, fertilizer and chemicals, light machinery, and iron and steel. In 2016, the government launched the Second National FYDP (2016/17-2020/21) which is mainly geared towards promoting resource-based industrialisation. The FYDP2 is themed towards nurturing industrialisation for human development.

1.3 Study objectives

The main objective of the study was to identify gaps in the SIDP in relation to climate change, food security, agro-processing and trade linkages in Tanzania. Specific objectives were:

i. To investigate the impact of the SIDP on Tanzania's industrial development;
ii. To analyse existing policy frameworks that contribute towards industrial development in Tanzania;
iii. To identify and understand challenges and opportunities that face the implementation of the SIDP;
iv. To document best practices from countries that have developed industrial policies, which are well linked with the aspects of climate change, food security and trade; and
v. To analyse the role and responsibilities of stakeholders in ensuring that sustainable industrialisation materialises.

1.4 Study methodology

The study involved desk review of key documents and in-depth interviews that were conducted in Dar-es-Salaam with officials in the Ministry of Agriculture, Livestock and Fisheries (MALF). Further key informants' interviews were done with the officials in the MITI, Ministry of Natural Resources and Tourism (MNRT) and the Environment Division (in the Vice President's Office). These consultations were carried out using individual questionnaires where discussions mainly focussed on agro-industrial development and linkages among the cross-cutting issues of climate change, food security, and trade.

Chapter 2

Overview of Industrial Development in Tanzania: Historical Context

Industrialisation in Tanzania has been characterised by shifts in the roles of the state and private sector; starting with largely private sector-driven industrial development up to the mid-1960s and then shifting to largely state-driven industrial development from 1967 to the mid-1980s and shifting back to private sector-driven industrialisation after 1986. After a decade of macroeconomic stabilisation and deindustrialisation the industrialisation agenda was rekindled in the mid-1990s with the formulation of the SIDP of 1996–2020 and the IIDS of 2011–2025.

In the early 1960s, the national economic agenda focused on growth with little attention to structural change or ownership. The colonial pattern of import substitution was continued (largely processing simple consumer goods). This period also saw the first active state promotion of the import substitution strategy, starting with the establishment of the National Development Corporation in 1965. The industrialisation agenda was to increase the relative importance of the manufacturing sector through placing greater emphasis on production of substitutes for already imported goods.

Tanzania's ideological shift expressed in the Arusha Declaration of 1967 led to a rise in socialism and self-reliance; where major industries were nationalised and the bulk of subsequent industrial investments were undertaken by the state. The Arusha Declaration introduced state-led import substitution, state-led expansion of manufacturing, and a revision of ownership and management of established entities in favor of direct ownership and management of state organisations. By the early 1970s, the increase in manufacturing had succeeded in meeting 70 percentof domestic demand for consumer goods and improved clothing exports, but failed to improve the absorption capacity of technology transfers. These shortcomings prompted the launch of discussions to chart a long-term industrial strategy covering twenty years (1975–95). The twenty-year basic industry strategy was devised to improve the nation's industrial base to implement plans towards achieving national goals. The guiding national goals were structural change and self-reliance. The basic industry strategy aimed to meet the basic needs of the population and intermediate and capital goods in the economy.

During the late 1970s the economic crisis set in. In response, the government adopted the structural adjustment programme to stimulate growth and improve the availability of foreign capital inflows. The objective was to restore economic stability and accelerate structural reforms in order to create a sustainable position of the country's balance of payments, correct budget deficits and achieve macroeconomic stabilisation. However, macroeconomic reforms, privatisation, and trade liberalisation led to deindustrialisation. For instance, by 1990, 22 out of 24 textile factories had closed. In terms of technology development and growing industrial

complexity, there was industrial shallowing (e.g. the textiles industry began producing grey material instead of printed products).

In 1996, a 25 year SIDP for Tanzania (SIDP 2020) began to be implemented with the aim of enhancing sustainable development of the industrial sector. For the period 1996–2020 the government aimed to achieve sustainable industrial sector growth in order to create favourable levels of employment, economic transformation, equitable development, import substitution and export promotion. SIDP accorded priority to employment creation, economic transformation, and equitable development and sought to strike an appropriate balance between import substitution and export orientation. The private sector was recognised as the main vehicle for making direct investment in the sector while the government would provide an enabling environment.

In June 2010 an IIDS 2025 was also adopted for the purpose of promoting efforts to achieve the SIDP goal of bringing the economy to a state of sustainable industrial development. The IIDS was envisaged as a gateway port in improving growth and infrastructure development for the region and promoting Economic Development Zones. It also articulates an industrial village concept whereby opportunities are created for the growth of micro- and small enterprises.

The First Five-Year Development Plan (2011-2016) focused on unleashing growth potentials by investing in infrastructure and removal of other constraints (mainly infrastructural) to growth while the second five-year plan (2016-2021) is slated to focus on industrialisation. The current industrialisation strategy is based on a conceptual framework, which emulates the development and utilization of productive capacity as a central concern of structural transformation in an environment of widespread poverty and lower levels of human development.

Chapter 3

Tanzania's Industrial Development-related Policy Frameworks

Apart from policies reviewed in the previous section which are directly or indirectly linked with the national industrialisation agenda, Tanzania has additional industrial development policies and particularly agro-industrial development policies. Enshrined by TDV 2025, such policies include but are not limited to: the National Agricultural Policy (NAP of 2012), the Agricultural Marketing Policy (AMP of 2008), the National Climate Change Strategy (NCCS of 2012) and the Agriculture Climate Resilience Plan (ACRP for 2014-2019). This study considers these policies paramount because they take into account climate change, trade and food security linkages, which are central to our discussion.

3.1 Tanzania Development Vision 2025

TDV 2025 is the main reference document on the national development strategy. Thus, all national policies in Tanzania are formulated around this long-term development strategy, the medium term national poverty reduction strategies and specific sector or cross-sectoral policies. Having focused on macroeconomic stabilization for a decade, Tanzania started to address poverty as a major policy concern in 1996 within the framework of the macroeconomic policies which were being implemented (UN, 2008).

The current Tanzania aspiration is to achieve middle-income country status and semi-industrialisation by the year 2025. This aspiration and commitment is articulated in the TDV 2025 and implemented through the Tanzania Long Term Development Perspective Plan in a series of five-year development plans in which National Five-Year Development Plan Phase II (2016/17 – 2020/21) is currently being implemented with a theme of nurturing industrialisation for economic transformation and human development (URT; 2016).

3.2 National Agricultural Policy

Agriculture remains the mainstay of Tanzanian economy and supports livelihoods of the majority of Tanzanians by employing a significant workforce of smallholder farmers. Pursuant to the Tanzania national agenda on industrialisation, the NAP of 2013 keenly emphasises the development of efficient, competitive and profitable agriculture industry that contributes to the improvement of the livelihoods of Tanzanians and the attainment of broad based economic growth and poverty alleviations. However, the sector remains underdeveloped and generally vulnerable to the whims of nature (URT, 2016). Still, the agriculture sector provides about 66.9 percent of employment, accounts for about 23 percent of GDP, 30 percent of exports and 65 percent of inputs to

the industrial sector. There has been improvement in the productivity of some of the crops (maize, rice, oil seeds, livestock and fisheries), but there has also been a decline in some previously key cash crops (for instance, cotton, cashew-nuts, coffee and sisal). The area under irrigation is less than 10 percent of the potential and the rate of investment in irrigation infrastructure is still not encouraging. Most of the agricultural exports have continued to be in raw form, mainly due to a weak agro-processing industrial base; poor financing and investment in agro-processing industries that hinder private sector participation in investing in manufacturing sector; and absence of clear policy for promoting the agro-processing sector. Most of the privatised key agro-processing industries, e.g. leather, have not performed as per expectations, resulting in continued exports of raw produce (URT, 2016).

Climate change is recognised as one of the most serious global challenges of the 21st century. Its multiple effects on basic human support systems such as agricultural production, forests, water resources, and the ecosystem are well documented (Twagiramaria *et al.,* 2017). The Intergovernmental Panel on Climate Change (IPCC) fourth and fifth Assessment Reports (2007; 2014) maintain that most of the warming of our climate is very likely due to increasing greenhouse gas (GHG) concentrations in the atmosphere resulting from human activities, including but not limited to: the burning of fossil fuels in power stations for electricity and in vehicles, as well as in industrial processes. Like in other Sub-Saharan African countries, Tanzania is highly vulnerable to global environmental change, particularly climate change (Kangalawe, 2012). The country's economic base has for years been dependent on the use of natural resources, rain-fed agriculture and biomass for household energy (URT, 2007).

The effects of climate change in Tanzania are disproportionally felt by poor people who mostly depend on rain-fed livelihood activities (IPCC, 2014). The rural poor communities in Tanzania depend mainly on agricultural production, i.e. crop production and livestock-keeping activities, for their survival both of which are severely affected by climate change (Theodory, 2017). Agricultural production, which is essential to ensure food security, is weather-dependent, which has occasionally subjected the country to food shortages and insecurity in years with low rainfall (Kangalawe, 2012).

There is a general consensus that growth in agriculture, particularly in Sub Saharan Africa, is at least two to four times more effective in reducing poverty than in other sectors (Comenetz and Caviedes, 2002). Therefore, if the linkages among climate change, trade and food security are taken into account at the policy, legislative and implementation levels, the improvement in the agricultural development in Tanzania will certainly have a positive impact. This can explain why the government has identified agriculture as one of the priority sectors and envisions it as a modernised, commercial, highly productive and profitable sector relying on the active involvement of the private sector. However, this sector still faces numerous challenges, the critical ones being: lack of adequate infrastructure development; the process to gain access to land is lengthy for foreign and domestic investors alike, and land tenure remains insecure for smallholders; and restrictions on agricultural trade hinder investment in agriculture (OECD, 2013).

3.3 Overview of agriculture and other related policies

Agriculture and industrial sectors are viewed as the main impetus to economic growth. Manufacturing has backward linkages with agriculture and exhibits a *pull effect* on other sectors of a given economy by stimulating demand for more and better services, for example, in education, banking, insurance, communication and transport. The sector has been confirmed as the main vehicle for technological and human development in both developed and developing countries (Amakom, 2012; Rwehumbiza, 2015). Most importantly, rich countries have historically been distinguished from poor ones based on their higher capabilities in manufacturing. Usually, countries with a strong manufacturing base demonstrate higher

productivity, and, most importantly, that productivity tends to (although does not always) grow faster than in agriculture and services (Chang, 2007; UNIDO and URT, 2012; Rwehumbiza, 2015). Based on the importance of the manufacturing sector and its potential, Tanzania designed the SIDP 1996-2020 and the IIDS to revitalise the sector to enable it to contribute to the objective of the National Development Vision 2025. The objective of SIDP is to achieve human development and the creation of employment opportunities through the development of agro-allied industries like food, textiles, building materials, leather and leather products.

Indeed, industrialisation covers more economic activities than manufacturing alone. Alongside SIDP, the government has formulated a number of policies that have a direct link with agriculture, which constitutes the main source of industrial inputs. These include the Agriculture and Livestock Policy (ALP), 1997; Cooperative Development Policy (CDP), 2002; Rural Development Policy (RDP); National Trade Policy, 2003; Small and Medium Enterprises Development Policy (SMEDP), 2003; National Livestock Policy, 2006; Agricultural Sector Development Policy, 2006; Agricultural Marketing Policy, 2008; National Fisheries Policy, 2003; National Forest Policy, 1998; National Beekeeping Policy, 1998; Gender Policy, 2000; Wildlife Policy of Tanzania, 1998; National Environment Policy, 1997; and the National Population Policy, 2006.

There are also legislations, strategies, regulations as well as programmes and action plans that operationalise the aforementioned policies. These include: the Agricultural Sector Development Strategy (ASDS), 2001; the Agricultural Sector Development Programme (ASDP), 2005; 2016; the National Adaptation Programme of Action (NAPA), 2007; the Climate-SMART Agriculture Guideline, 2017; the National Strategy for Gender Development; the National Climate Change Strategy, 2012; the Cotton-to-Clothing Strategy 2016-2020; the Leather Sector Development Strategy 2016-2020; the Tanzania National Export Strategy 2010-2014; the Value Chain Roadmap For Pulses 2016-2020; and the Sunflower Sector Development Strategy 2016-2020. As such, policies, strategies and programmes identified here mention climate change, food security and disadvantaged social groups, but have lopsided effect since they neglect a comprehensive programme that integrates the interaction between climate change, trade and food security in relation to industrialisation. Thus, the government needs to review SIDP by formulating the comprehensive programme to effectively operationalise these aspects.

3.4 Overview of industry-related policy frameworks

From this point of view, Tanzania has done better in developing policies which guide the direction in which we want to achieve our development vision. The major challenge in this respect is the implementation of these policies (Mashindano and Baregu, 2016). For better results and achievements, the policies in place should be reviewed periodically to strengthen their implementation; however, such a role is seldom performed. In addition to this challenge, there are issues in the Tanzania policy framework that do not favor better execution of the plan. In particular, for agro-based industrial policies the following issues were noted in the literature review:

a) **Weak inter-ministerial and sectorial coordination and cooperation stated by the policy.**
   Most policy issues cut across several sectors. For instance, agro-industrial policy or industrial policy in that case involves many participants even at the executive level of government with differing responsibilities. Therefore, overlapping responsibilities, roles and duties are inevitable. However, for proper implementation of strategies and mission's division of roles and mandates are necessary. Having so many policies with no clear linkage between them and authorities implementing such policies is a bottleneck to the successful implementation of the policy.

The phenomenon is found to be critical in industrial policies that do not indicate which authority is responsible for the execution of planned activities. For instance, linkages between agro-processing and climate change could be maintained by a different body of authority and administered by the Ministry responsible for industry and at the same time the Ministry of Agriculture. Which ministries do what and what authority does what becomes a critical question. This has implications for budget and human resource capacity at different organs and authority. This will also facilitate the accountability of the responsible organ(s).

b) **Weak sectoral linkages for a particular policy**
Different sectors are affected differently or similarly by a particular policy. When a policy is formulated, it should state directly which sectors of the economy and organs are affected. It should bring attention to the targeted sectors and responsible authorities. In industrial policies, different plans and strategies are articulated but not indicated right away which organs are targeted. This brings confusion especially to the public with little knowledge and may result in a lack of accountability for failure to implement the policies.

c) **Public knowledge and awareness gap**
Many policies do not specify strategies on how awareness and capacity building is created for the general public. For instance, the government is revolutionising the industrial sector but the public, who are more likely to be the investors through savings, do not understand the agenda and what they can contribute to it. This calls for public awareness through workshops and public sensitisation seminars and meetings. Media responsibility cannot be underestimated in this endeavour.

Chapter 4

Roles and Responsibilities of Key Stakeholder

Agro-processing industries, climate change, food security and trade linkages, as discussed previously is a multi-sectoral and multi-stakeholder phenomenon. This implies that quite a large number of stakeholders with differing roles are involved in the process of ensuring that agro-processing industries are climate change aware, food security enhancing and trade driven.

4.1 Ministries, departments and agencies

A frequent driver of industrialisation, and the most important institution, is the government; it actively facilitates the transfer of technologies, controls exchange currency and capital in pursuit of long-term objectives. Moreover, for a crucial period, it protects infant industries against foreign competition (Rwehumbiza, 2015). It follows that the leading stakeholder in policy formulation and implementation is the government. It plays its role through various ministries, departments and agencies (MDAs). Consonant with the issue at hand, the government can design policies and programmes that shape the direction of other stakeholders in ensuring agro-processing industries take into consideration issues related to climate change, trade and food security.

In Tanzania, respective government organs are Vice President Office, Department of Environment (VPO-DE); Agricultural led ministries (headed by Ministry of Agriculture, Livestock and Fisheries); and an organising organ is the MITI. However, in the course of implementing policies, various sectors overlap with the linkage this study is striving to evaluate. Therefore, government capacity and roles should be explicitly defined and analysed by involving every responsible ministry, department or agency. For instance, in the current case the government can perform a range of activities including researching the linkages among agro-processing industries, climate change, food security and trade, as well as associated outcomes; creating awareness, building capacity among its key stakeholders and providing aid to trade. The government can additionally promote rural-urban linkages (internal market integration) through the provision of appropriate infrastructure, it can participate in bilateral, regional and multilateral business and trade negotiations; it can install trade discipline, by for instance controlling quality of imports and hence improve local firms' competitiveness.

4.2 Agro-processors

This is the target and executing group whose members implement and execute agro-processing programmes and conduct agro-businesses. The major role of this group is knowledge-seeking and implementing government directives to ensure that they do not affect environment, food security or hamper trade. They ensure the adaptation of the stated standard of agro-products and comply with laws

and regulations, tap opportunities, be more motivated to feed the world and seek for market (both local and international) and hence promoting trade. Agro-processors are also expected to be drivers of the economy in the area of agro-processing as well as adapt environment conserving technologies.

4.3 Agro-producers and smallholders

After a great deal of awareness creation and capacity building, this group is expected to become climate sensitive and adapt different strategies to minimise climate change risks, mitigate climate change-related risks and improve the quality of raw materials for agro-processors. This is expected to improve backward linkages of the agro-processing sector. As government directives and incentives, agro-producers are expected to shift to more climate resilient crops, livestock breeds and fishing, food enhancing alternatives and crops that are more demanded in the market.

4.4 Academia and research institutions

Higher learning institutions and research bodies are another group of key stakeholders. The major roles of these organs are undertaking research for better and clear understanding of the existing linkage between agro-processing, climate change, food security and trade. These organs should also strive to develop new technologies and knowledge suited to local environment which promotes agro-processing, climate change, food security and trade linkages which enables to tap opportunities and mitigate any arising threats. The knowledge, information and technology developed should be disseminated to practitioners in order to achieve better results.

4.5 Civil Society Organisations

Civil Society Organisations (CSOs) are important in creating public awareness and capacity building on issues related to climate change, food security and trade with respect to agro-processing industries. These institutions are in touch with the public and hence can easily access the target population. Moreover, in collaboration with other organs including the government and other development partners, they could develop context specific projects to promote agro-processing, food security, climate and trade linkages. They could also tap into arising opportunities and mitigate negative effects and then adapt to climate change.

The Mass Media and Communications Agencies have a major role to ensure that the public is informed of the directions and intentions of the government. They are also involved in designing specific programmes and writings that are intended to create public awareness and generate information about the opportunities and threats imposed by cross-cutting issues on agro-processing.

4.6 Development Partners

Development partners play a major role of technical and financial support in implementing programmes that ensure that agro-processing is climate aware, food security enhancing and trade-driven. These include research and development support, practical programmes design, sensitization and capacity building for the local people as well as implementing agencies, technological adaptation and infrastructure support.

Generally, a significant number of stakeholders are involved in ensuring agro-processing is climate aware, food security enhancing and trade-driven. However, to ensure that new SIDP promotes the link between agro-processing, climate changes, food security and trade the following stakeholders will be involved with their respective policy issues, resources and roles (see Table 1).

Table 1: The roles of stakeholders, strategies and resources required to ensure that agro-processing is climate aware, trade-driven and food security enhancing				
S.No.	**Policy Issue**	**What is to be Done**	**Stakeholders Involved**	**Required Resource**
1.	**Procedural and issues in establishing and implementing a strategy**			
1.1	Situational analysis section in new SIDP	• Shows the linkage between agro-processing industries, climate change and food security and likely associated outcomes relevant to the local context • Conduct a vulnerability assessment study	• Ministry of industry, Trade and Investment • VPO-DE • Meteorology agency • Research and higher learning institutions • Ministry can commission research studies to establish the links required	• Funds to conduct vulnerability assessment • Relevant skilled human capital composed of different fields and expertise especially skills in agro-industry development, policy analysis, climate change and agro-processing • Equipment for the study(ies)
1.2	Develop objectives of the policy in respect to the linkage between agro-processing on one hand and climate change, food security and trade disaggregated to subsector specifics	• Disaggregate agro-processing industries into subsector and develop sector specific situation • State what is to be done in respect to the situation stated per sector • Develop objectives relevant to the analysis	• MITI and policy review committee • Other stakeholders consulted	• The right human resource (Knowledgeable, capable and committed) • Financial resources to enable the process
1.3	Develop strategies per each objective	• Taking into context the objective and situation existing, develop best strategies to ensure each objective is achieved.	• MITI and other government agencies responsible • Policy review committe	Human and financial resources
1.4	Develop an implementation strategy	• Indicate how each objective is going to be implemented • Show the quantified indicator that shows the progress	• MITI and other government concerned agencies • Policy review committee	Human vested in policy implementation skills, and knowledge in climate change and agro-processing and financial resources
1.5	Develop monitoring and evaluation framework	• Indicate the progress indicators • Indicates evaluation plan • Indicate intervention organs and plan in case progress is not as expected	• Policy review committee in consultation with MITI, DOE-VPO and other stakeholders	• Human resources with skills in agro-industry development, policy analysis, climate change and agro-processing • Financial resources • Policy oversight organ

S.No.	Policy Issue	What is to be Done	Stakeholders Involved	Required Resource
1.6	Evaluate risks and other obstacles	• Indicate which are the risks • Assess other obstacles associated with policy implementation	Policy review commitee	• Human resources • Financial resources
2. Sector specific Interventions: Towards climate aware agro-processing industries				
2.1	Promote sustainable energy use in agro-processing industries	• Strengthen research and development of sustainable energy • Design programmes and actions to aim at clean energy supply to agro-processing industries	• Ministry of industries, trade and investment • Ministry responsible for infrastructure and communications • National energy supply agencies • Private sectors and Non-government organization	• Human resources particularly knowledgeable on green energy value chain • Financial resources
2.2	Promote early warning system	• Strengthen weather forecasting capability • Strengthen weather information dissemination system • Have a weather agency emergency to ensure rescue coordination	• All agricultural led ministry • Vice President office-Department of Environment • All environment agencies • Meteorology agency	• Human resources with knowledge and skills in climate change and agro-industry • Financial resources • Weather forecast and study equipments
2.3	Control for emissions from agro-processing industries	• Establish laws and regulations to compact environmental degradation • Inspection of agro-processing sewage system • Encourage the use of clean energy in manufacturing	• Responsible ministries particularly VPO-DE, MITI and MOALF. • Agencies responsible for agro-industries oversight.	• Human resources with knowledge and skills in climate change and agro-industry • Financial resources
2.4	Improve sewage and dust maintenance	• Establish laws and regulations to compact environmental degradation • Inspection of agro-processing sewage system • Encourage the use of clean energy in manufacturing	• Responsible ministries particularly VPO-DE, MITI and MOALF. • Agencies responsible for agro-industries oversight.	• Human resources • Financial resources
2.5	Ensure enforcement of laws and regulations	• Ensure established laws and regulations are observed • Reduce contradicting laws and regulations	• MITI, MOALF and VPO-DE • Agro-processors associations	Human resources vested with legal skills in environmental management

S.No.	Policy Issue	What is to be Done	Stakeholders Involved	Required Resource
3. Towards trade driven agro-processing				
3.1	Improve rural-urban linkages through development of infrastructure	• Improve roads, railways and air infrastructure for rural-urban linkages • Reduce trade obligations, inspections and bureaucratic procedures of doing trade	• Ministry of Industries, Investment and trade. • Ministry of agriculture, Livestock and fisheries. • Tanzania revenue Authority.	• Human resources with knowledge and skills in climate change, rural and urban planning and agro-industry • Financial resources
3.2	Strategies in international trade negotiations	• Specify trade national priority and national stands in negotiations • Encourage and develop international trade negotiations agencies	• Ministry of Industry, trade and Investment • Trade promotion agencies • Trade negotiation agencies • Other stakeholders	• Human resources with deep knowledge on trade especially international trade • Financial resources
3.3	Promote quality improvement of agro-processed products through incentives and rewards	• Encourage quality observance • Develop the methodology to reward the best quality and internationally competitive	• Ministry of Industry, trade and Investment • Trade promotion agencies • Trade negotiation agencies • Other stakeholders	• Human resources with deep knowledge on trade especially international trade • Financial resources
3.4	Promote exports through encouragement and incentives	Develop export promotion strategy	• Ministry of Industry, trade and Investment • Trade promotion agencies • Trade negotiation agencies • Other stakeholders	• Human resources with deep knowledge on trade especially international trade • Financial resources
3.5	Improve agro-processing industries competitiveness in local and external market	• Develop means to reduce costs especially compliance costs • Tax relief development • Better negotiations stand at international scope	• Ministry of Industry, trade and Investment • Trade promotion agencies • Trade negotiation agencies • Other stakeholders	• Human resources with knowledge and skills in agro-industry and international trade and business • Financial resources
3.6	Discourage dumping and killing of local industries	Enact laws to reduce importation of low quality products which affect local market	Ministry of Industry, Trade and Investment	• Human resources vested in trade protection policies • Financial resources

S.No.	Policy Issue	What is to be Done	Stakeholders Involved	Required Resource
3.7	Promote advertisement and promotions both abroad and locally for local agro-processed products	• Encourage international trade promotions • Promote market research	• Ministry of Industry, trade and Investment • Trade promotion agencies • Trade negotiation agencies • Other stakeholders	Human resources vested in agro-processing and international marketing skills and financial resources
3.8	Ensure easy market access and clear regulations with few understandable legal procedures	• Review trading regulations • Eliminate unnecessary complications in regulation • Control market collusion	• Ministry of Industries, Trade and investment • Policy review committee • Stakeholders consultations	Human and financial resources
4. Towards food security enhancing agro-processing industries				
4.1	Prioritise on processing of food products	• Encourage investment on food products processing	• Ministry of Industries, Trade and investment • Policy review committee • Stakeholders consultations	Human with agro-processing skills and financial resources
4.2	Improve food storage facilities including meat and fish products	• Develop storage technology • Encourage storage specialised agencies	• Ministry of Industries, Trade and investment • Policy review committee • Agro-processors • Food storage agency • Stakeholders consultations	• Human with post-harvest and agro-processing skills, and financial resources
4.3	Provide food enhancement guidelines to food processors	• Develop quality standards • Oversight on the observation of the quality standards by processors	• Tanzania bureau of standards • Food and drug agency • MITI and policy review committee	• Human resources with skills in agro-processing industry • Financial resources
4.4	Encourage low price incentives so as to make food affordable for all	• Promote food price oversight • Provide incentives for low priced food goods but with good quality	• Ministry of Industries, Trade and investment • Policy review committee • Stakeholders consultations	• Human resources with marketing and international trade skills • Financial resources
4.5	Ensure technology advancement for food processing	• Conduct research with aim of technology development	• Ministry of Industries, Trade and investment • Policy review committee • Stakeholders consultations • Research institutes and higher learning institutions	• Human resources with skills in agro-processing technology • Financial resources

S.No.	Policy Issue	What is to be Done	Stakeholders Involved	Required Resource
4.6	Promote food transport for urban-rural feeding	• Infrastructure map development • Strategies on infrastructure improvement	• Ministry of Industries, Trade and investment • Policy review committee • Stakeholders consultations • Ministry of transport and communication	• Human resources with food quality and handling skills • Financial resources
4.7	Strategic allocation of food processing industries based on food zones	• Understand country food zones • Promote incentives to allocate food processing industries in these zones • Promote linkage between food zones and food insecure country sides	• Ministry of Industries, Trade and investment • Policy review committee • Stakeholders consultations	• Human resources with skills in agro-industry development and planning • Financial resources

Chapter 5

Linking Industrial Development with Climate Change, Food Security and Trade

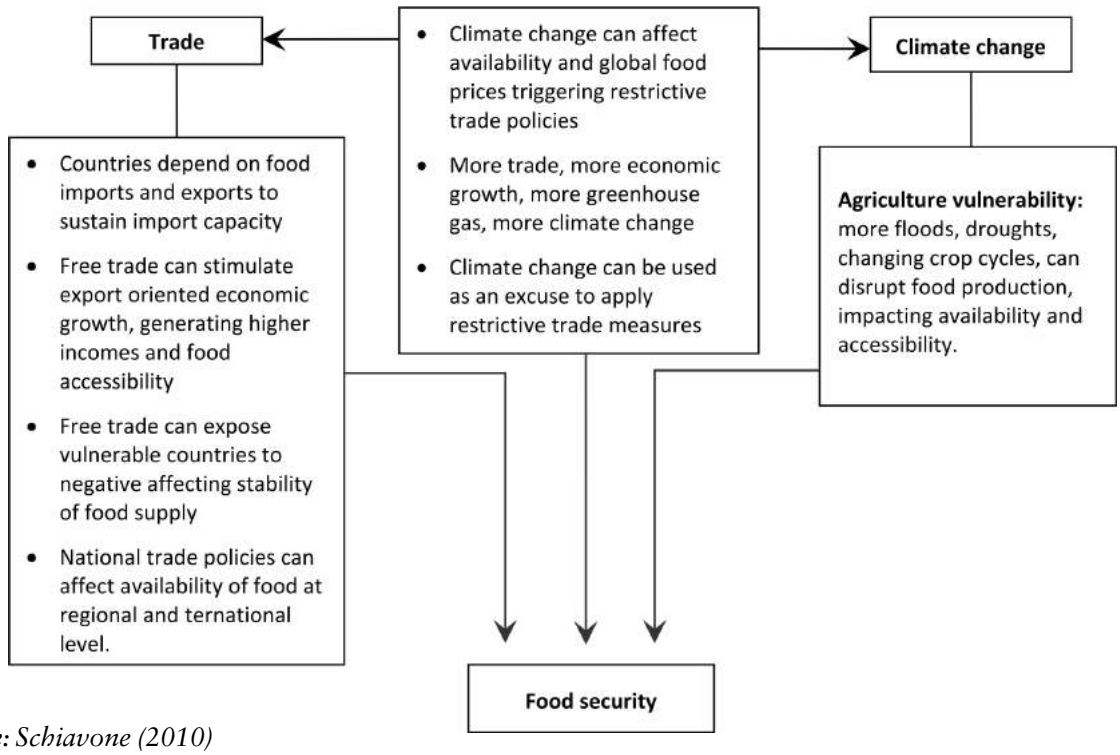
5.1 Understanding the interplay among climate change, trade and food security

Among the important and serious cross-cutting issues arising globally today are climate change, food security and trade aspects. The interplay among these aspects has a considerable impact on industrial development. Climate change impacts on agriculture which provides essential inputs into industrial development, forms the basis of agro-industry, savings and foreign exchange which are essential for industrial development. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food, enabling them to meet their dietary needs and food preferences for an active and healthy life (FAO, 2006). In this sense, food security cannot be confined solely to agricultural issues but extends further to other income generating sectors like industry. Within the context of economies highly dependent on agriculture, both trade and climate change factors may affect food security (Schiavone, 2010). This suggests the need for greater interaction among policy makers from all sectors, both at the national and regional levels.

Trade policies at the national and international levels, (for instance, enhancing trade liberalisation initiatives) have considerable influence on industrial development, both from the demand and supply side through import policies and exports respectively. Trade generates economic growth and increases incomes that give households greater capacity to access food. The inter-linkages between trade and climate change (for instance, climate change affecting global food availability will affect food prices, potentially triggering the adoption of restrictive trade policies). Figure 1 reveals that examining food security from a trade and climate change perspective helps to expose the complexities underlying the food security issue and highlight its strong cross-cutting nature.

From Figure 1, it is argued that if a country relies on imported food, food availability may depend on the country's ability to produce and export goods to generate enough foreign exchange to acquire food on the international markets. The latter may be facilitated by trade liberalisation that progressively eliminates trade barriers and facilitates access to markets of exported products. However, if a country relies on trade for its food supplies, the stability of food supplies may be subject to the variability of world prices. In this case, a more open trade regime may expose domestic markets to the vagaries of international markets. On the other hand, international trade enhanced by preferential agreements can contribute to stronger economic growth, more employment and higher incomes, which eventually may enable households to have food security in the sense of a greater capacity to access food.

Figure 1: Climate Change And Trade Interactions Affecting Food Security



Source: Schiavone (2010)

Effects of climate change on trade

In addition to jeopardising food security, climate change also impedes trade. Primarily and most apparently, this is because climate change compromises food production by hampering farmers' abilities to export agricultural products. If an unfavourable climate persists for an extended period of time it can also ultimately discourage farmers, prompting them to either abandon agricultural activities altogether during extended periods of unemployment, or spur them to assume work in another sector. Climate change can also affect trade by altering the comparative advantage and input costs of a country's specific products. However, climate change does not necessarily entail a negative effect on food production; in some regions it may actually have a positive impact. For instance, the southern region of Tanzania has seen food production improve as a result of warmer temperatures and more rains. Nevertheless, the aggregated impact of climate change in the EAC is a net negative—on food security as well as on trade. From another perspective, climate change can also affect trade by disrupting transportation, supply chains, and logistics. Floods, landslides, and other extreme weather patterns may contribute to increased costs and delays for exports and imports, not only hindering agricultural trade, but also other sectors that utilise geographically extensive supply chains. For example, in 2007, flooding in Uganda destroyed several infrastructures in the country—including bridges, roads and buildings—negatively impacting trade competitiveness (CUTS International, 2013).

Effects of trade on climate change

Conversely, trade can also affect climate change. Most obviously, this occurs due to the increase in GHG emissions (especially through air transportation), and thus significantly contributes to climate change; however, this is not the only way in which trade can impact climate change. In Tanzania, exporting logging, lumber, and charcoal has become an attractive and remunerative activity, leading farmers and even other individuals to clear lands for exports. Trees cut for trade are becoming hazardous, threatening sustainability of ecosystems,

particularly in rainforests where biodiversity is huge (CUTS International, 2013). The main importers of tree products such as logs from Tanzania include, Kenya and China.

Agro-processing on one hand and climate change, food security and trade on the other hand are interlinked components and cannot be separated from one another. Agro-processing promotes and targets trade, affects and/or enhances food security, and is vulnerable to and affects climate change. More importantly, the link is essential for two reasons. One, if agro-processing and trade are to feed Tanzania, East Africa and the globe in the midst of the vagaries of climate change; and second if the EAC is to improve competitiveness of its agro-industry sub-sector through trade and food security, despite climate change (Mashindano and Baregu, 2016). Therefore, the link is important because cross-cutting issues present both spillover benefits and spillover costs in agro-processing industries.[1]

5.2 Industrial development policy linkages with climate change, trade and food security

5.2.1 SIDP and Agro-processing, climate change, trade and food security linkages

SIDP was adopted in 1996 by the country with an overall mission of contributing to the achievement of the national long-term development goals as enshrined in National Vision 2025 and to enhance sustainable development of industrial sector. Among the objectives of the SIDP is to enhance human development and creation of employment opportunities and hence improve the quality of human life and welfare and make basic needs available for the majority of the population. To achieve these goals, agro-allied industries are placed at the centre. Regarding the role given to agro-processing industries in enhancing human development in Tanzania under this strategy, the sustainability of agro-industries is very crucial and essential. To ensure the sustainability of agro-industries in the short and long-term perspectives, the role of cross cutting issues including climate change, food security and trade should be clearly indicated.

Climate Change

Although the policy was started in mid-1990s when environmental issues were not alarming, the policy shows considerable commitment to ensure that industrial development is environmentally friendly and ecologically sustainable. In general perspective, several strategies have been put in place to achieve this goal which both explicitly and implicitly control agro-processing sector (SIDP, 1996). Although the policy emphasises that agro-processing is critical for human and industrial development, it does not explicitly link these issues together and take specific inter-sectoral measures. Therefore, to make issues open and manageable, these two elements should be connected and strategised.

Trade

One of the SIDP strategies to achieve its mission is to promote trade regime through creation of an industrial development enabling environment. The issues taken into account include the formulation of new trade policy to promote trade, internal marketing and distribution, fair trade practices, business licensing and other related institutional frameworks. The strategy also intends to ensure the implementation of standards and quality assurance and other measures. Furthermore, in developing economic infrastructures the government through this strategy intends to create a trade favorable environment that includes power supply, water supply, communication and transportation. These strategies if implemented could promote trade in agro-processed products. Nevertheless, much success could be achieved if agro-industry trade development strategies were reflected more explicitly in this strategy. The importance of this breakdown is to improve efficiency and develop actionable projects with specific goals for the industrial sector. This would also take sector specific challenges and address trade issues

1 For more reference on these spillovers refer to Mashindano and Baregu, (2016) and Zougmore *et al,* (2016).

accordingly. The clarity and specific link is missing between agro-processing industry and trade.

Food Security

The current national industrial development policies guiding the development of industrial sector include SIDP 1996-2020 implemented through the IIDS and National (2016/17-2020/21) with the overall goal of achieving the TDV 2025. Although these policies acknowledge and mention the importance of cross cutting issues to the industrial development endeavour, the linkage between agro-processing industries, climate change, food security and trade is not clearly articulated.

SIDP anticipates promoting human development through improving the availability of basic needs; which among others are to be achieved through agro-processing industries. This broad statement and goal implies that the strategy plans to ensure and sustain food security and more importantly through agro-processing industrial development. Conversely, the policy and its corresponding strategy do not outline any specific strategies to ensure that agro-processing is food security enhancing. Specific measures for food processing industries and control of their sustainability are not in place. This argument corroborates the findings revealed in the study by Mashindano and Baregu (2017). If not well monitored and strategised, agro-processing sector may in fact pose threats to food security if they are meant for export or processed intermediate goods or give priority to non-food components. Issues on availability, accessibility, affordability and linkages between processing and consuming zones of food should be considered carefully. The policy does not indicate a clear linkage between food security and agro-processing industries.

5.2.2 Five-Year Development Plans

The national aspirations and implementation plans (FYDP I and II) place industrialisation as a core for economic transformation and human development. As a developing nation, the agriculture sector is still very important for both income generation and inputs for industrialisation and hence is crucial in industrialisation agenda.

In agricultural value chain, agro-processing industries play a significant role in industrial development, income generation, trade and boosting agricultural production due to increased market of agricultural products as input and final processed products (Mashindano and Baregu, 2016). Tanzania industrial development policies are cognizant of the agro-industry subsector and strategise on its intervention to boost economic growth and human development, especially inclusive growth (URT 2015; 2016).

The Second National FYDP (URT, 2016) has a theme of nurturing industrialisation for economic transformation and human development and also critically strategises on the agro-processing sector. The plan aims at adding value to agricultural, livestock, forestry and fisheries through establishing agro-industries and agro-processing industries (URT, 2016). The main targets of this plan are: textiles and clothing, leather and leather products, edible oils, sugar as well as the food and beverage processing industry. However, the question of linking agro-processing industries and cross-cutting issues of climate change, trade and food security is not sufficiently analysed.

Climate Change

FYDP II, recognises that the agriculture sector in general remains poor and underdeveloped because of a weak agro-processing industrial base. More importantly, the plan also argues that the sector is very vulnerable to the whims of nature (URT, 2016). This means that nature (including climate change) affects agriculture production and thus the whole agriculture value chain including agro-processing industries which depends on agricultural production. Therefore, the strategies in which the plan intends to use to ensure that the agro-processing is climate change aware becomes important. However, the plan does not indicate adaptation or mitigation measures to ensure that agro-processing accommodates climate-related threats.

The positive side of this plan is that it has indirect strategies for adaptation and mitigation of climate change. It covers strategic intervention, notably, natural resource management, environment and climate change; where it indicates adaptation and mitigation measures towards climate change. Nevertheless, this is not covered in relation to agro-processing industries. These interventions include: enforcing environmental impact assessment, strategic environmental impact assessment and other environmental laws in large projects which could also imply agro-processing industries.

The plan also intends to put emphasis on emission reduction, formulating environmentally sustainable policies and strategies for growth in key growth sectors which also might imply agro-processing industries. For the agricultural value chain, the plan aims at mitigating and adapting to climate change including supporting research programme to improve and develop new technologies, quality seeds, pest control and agronomic practices, irrigation measures, livestock management practices, information collection and dissemination for early warning.

The plan translates adaptation and mitigation measures into practicable interventions. However, the interventions and strategies are not directly linked to agro-processing. More importantly, the role played by different actors in ensuring that agro-processing is climate aware are not adequately indicated. Even for the plan flagship project and strategic intervention in agro-processing sector neither climate change challenges nor specific climate aware agro-processing interventions are mentioned. Additionally, since this relationship is a two-way causal relationship, the plan does not elaborate on how to control the effect of agro-processing industries on climate change including emission, land and forest issues as well as waste disposal. For the sustainability of agro-processing industries, the linkage between agro-processing and climate change should clearly be indicated and it should also show the measures to address any potential side effects.

Food Security

Agro-processing adds value to raw agricultural produces and hence increases the life span of the consumable products compared to the raw consumable products (Mashindano and Baregu, 2016). Therefore, food security is promoted through such a process. However, food security goes beyond the preservation of food and includes affordability and easy accessibility of food by consumers. Agro-processing could be a measure to eliminate the threat of food insecurity in Tanzania by preserving agricultural processed products, cost effective production (hence more competitive) and ultimately command affordable prices. Coupled with infrastructure development and integration of internal markets (rural - urban linkage), food security improves through agro-processing and increases job availability and hence increased incomes. This situation promotes affordability of food products. Therefore, national policies should promote this linkage if agro-processing is to serve food security to the Tanzanian population.

The National FYDP II acknowledges that successful nations their industrialisation agenda, promoted agriculture so as to promote industrial development and food security. Moreover, with a plan aligned to international visions, particularly sustainable development goals (SDGs), agriculture and food security linkage is emphasised (URT, 2016). Therefore, it should be expected that the plan will provide for measures to ensure food security particularly when value is added through agro-processing. However, no such efforts are explicitly made. The plan makes general statements to ensure food security but does not link it to agro-processing. There are no issues of cost reduction in agro-processing, promotion of trade in processed agricultural products or other value-adding activities that would improve household incomes and affordability of food products. The plan is missing the link between agro-processing and food security.

Trade

Agro-processing industry development aims at improving agriculture value chain by improving the quality of the agricultural produce and intermediate products for final use. However, the most important consideration in establishing agro-processing industries is value addition and profit maximisation. Therefore, agro-processing industry development does not only add value to agriculture value chain but more importantly, promotes trade in both local and international markets (Mashindano and Baregu, 2016). However, for proper and sustainable development of agro-processing industries, trade aspects including markets access, improving quality and competitiveness in both local and international markets ought to be well addressed by national and regional policies.

The National FYDP II acknowledges that industrialisation and trade are two sides of the same coin whereby they promote one another. In this light, the plan outlines issues to intervene so as to promote trade development including value addition through processing and fostering effective trade-induced industrialisation. These statements are too general and do not specifically state how trade is going to promote agro-industrialisation nor does it state specific interventions to ensure that agro-processing is trade-driven. The implications of agro-processing for cost reduction, promoting competitiveness, enhancing access to market as well as improving the quality of the agro-industries products, deserves adequate attention.

5.2.3 Linkages among the Integrated Industrial Development Strategy, Agro-processing, climate change, trade and food Security

IIDS was adopted in 2011 with the overall goal of achieving Tanzania development vision. The strategy emphasises that the only way to achieve or attain development aspiration is by maintaining double digit growth which heavily depends on raising productivity in agriculture and kick-starting a dynamic process of agriculture-led and resource-based industrialisation (URT, 2011). Among other things, the strategy intends to promote backward and forward linkages of agriculture sector, which include agro-processing as a forward linkage. To uphold the importance of agro-processing, the strategy identifies it as one of the six other priority sectors which are central to the industrialisation agenda. Furthermore, the strategy articulates that agro-processing is the dominant industry spreading across Tanzania (IIDS, 2011).

Climate

The strategy develops broad statements aimed at ensuring that agro-processing is climate aware. In chapter nine of the strategy, the mission of the strategy is to implement the *Kilimo Kwanza* strategy by developing agro-processing industries. According to IIDS *Kilimo Kwanza* is a national decision to initiate green resolution which means climate resilient agro-production. In the undertakings of the *Kilimo Kwanza* resolution, the intention is to bring green revolution, modernise and commercialise agriculture. However, the strategy is yet to be translated into action plans to promote climate resilient agriculture and hence agro-processing.

In the sub-sector strategies, agro-processing is only strategised on the basis that climate and other cross-cutting issues are not on board. Unfortunately, no strategies exist to ensure that agro-processing operates in recognition of climate change and environmental sustainability in general. More importantly, the strategy does not provide for environmental conservation as an independent sector.

Food Security

IIDS recognises the importance of agriculture and agro-processing industries in ensuring food security in Tanzania. The goal of promoting agro-processing industries among others is to ensure that food products are readily available even in harder times.

Interestingly the strategy does not present action plans to ensure agro-processing is geared towards enhancing food security. Most plans presented for specific targeted agro-processed products such as milk, cashew nuts and edible oil involve adding value to the sector products but not directly linked to the goal of food security enhancing. For instance, targeting the milk

processing sub-sector, the strategy develops intervention plans to increase its production. Nonetheless, this does not necessarily mean ensuring food security especially when aspects of affordability, quality and accessibility are taken into account in both urban and rural areas. Specific strategies could have been developed to ensure food security is enhanced through agro-processing industries.

Trade

IIDS does not explicitly state measures to promote trade and agro-processing. However, the strategy implicitly indicates trade supporting factors that in one way or another promote agro-processing development. The development of corridors to spur agricultural activities and Special Economic Zones, that promote trade in general and reduce transport costs and efforts to promote urban-rural linkages are some of the examples relating to supporting factors. Additionally, the strategy recognises the existence of labor costs in sub-Sahara Africa and proposes measures to make labor competitive. The latter could translate into measures intending to also improve labor competitiveness in agro-processing industry.

Despite these efforts, trade liberalisation remains a threat to the country's infant agro-processing industries as most of them start small and die small. In this case, selective and strategic protection of infant industries could be part of the desired measures. However, as a backbone of the country's economy, international trade threatens the development of the Tanzanian infant agro-processing industries. Therefore, special attention should be paid to trade aspects. Industrial development strategy should clearly indicate what must be done to promote agro-processing trade and make it globally and regionally competitive.

5.3 Stakeholders' views

To strengthen the desk findings and ensure inclusion of necessary and important stakeholders, in the development of a new policy which links agro-processing industries on one hand and climate change, food security and trade, on the other hand, the study undertook interviews through phone calls as well as focus group discussion. This subsection discusses the perspectives of the stakeholders on the linkage existing between agro-processing and cross-cutting issues.

5.3.1 Policy stance on the linkage between agro-processing and climate change

Generally, stakeholders acknowledged that there is a link between agro-processing and climate change. They argued that, there are both direct and indirect linkages. The direct linkage is through the effect of agro-processing on climate change. One of the stakeholders argued that agro-processing affects the environment through pollution, the flow of dirty water into rivers and the production of dust. This situation should not be left unchecked.

Indirect linkage is upstream (i.e. backward linkage) and exists through agro-processing especially through agro-production. One of the key stakeholders indicated that there is no agro-processing without agro-production and agro-production takes place on the ground which is ultimately affected by climate change. This effect goes on to affect trade and again food security. Due to climate change we produce little or poor quality products which then affect agro-processing. This makes us less competitive and very likely to encounter food insecurity. Stakeholders argued that the effects of climate change already exist in Tanzania. For example, some of the former agro-important zones (Musoma and Kagera, for instance) are turning into desert because of drought. Coffee production in the country is stagnant due to adverse weather conditions.

In terms of policy linkage, stakeholders acknowledged that there is no direct policy stance linking climate change with agro-processing. One of the reasons cited is that when SIDP was being formulated, climate change was not anticipated to be as severe as what we experience now. Since the situation has changed, we should have a policy framework which incorporates these issues. Penalties on emissions

based on their intensity are among the strategic initiatives to be incorporated into a new policy to ensure agro-processing is climate-sensitive. Another strategic initiative could be to punctually make comprehensive and countrywide land use plans that differentiate industrial, commercial, grazing and residential areas. It was also noted that there is a need to encourage green wastes and recycling. Other stakeholders suggested that it would be important for the government to own the climate change agenda and give necessary directives to practitioners.

5.3.2 Policy stance on the Linkage between agro-processing and food security

Respondents confirmed that there is a direct and a very important linkage between agro-processing and food security. As such, food security was cited as a critical national issue whose foundation is linked to agro-production. The argument was that climate change affects production and producers' plans. Agro-processing industries store the shelf-value of the perishable agricultural product. So agro-processing should enhance food security through prioritising food sensitive crops like cereals. For this to happen, multiple regulations should be reduced while encouraging incentives to produce food-sensitive products. In relation to the latter, one of the stakeholders suggested that the government ought to encourage people to produce and process food products but not through direct regulations which sometimes impair the productivity. In terms of policy linkage, some stakeholders argued that policies have been addressing food security issues but the question is whether there are strategies linked to agro-processing. The existence of this linkage remains unclear even to stakeholders themselves.

Stakeholders suggested that the government ought to focus on how to reduce trade costs, improve storage facilities and enhance backward linkages especially in agricultural production. Additional suggestions include increasing irrigation schemes to counter adverse effects of climate change, improving seed quality, normalising seasonality tests and increasing subsidies, capacity building and encouraging organic farming. Stakeholders suggested that other policies should also be reviewed including agriculture policies, agriculture marketing policies, sustainable energy policies, trade policies, climate change policies and monetary and fiscal policies to integrate all these issues. They also argue that the balance should be observed between agro-processing and food storage. The village storage bank should also be resumed to ensure food security.

5.3.3 The link between agro-processing and trade and the related policy stance

Stakeholders acknowledged that trade and agro-processing are directly linked. Agro-processors ultimately aim at selling the processed products for profit. The stakeholders also noted that local agro-processors fail to compete in regional and global markets because of various constraints. Such constraints include poor backward linkage of agro-processing industries and poor quality of agro-inputs from farms. Poor agro-inputs and the related poor output lower the quality and competitiveness of processed products and consequently lead to the agro-processors' failure to realise economies of scale. Exemplifying the latter case, one of the stakeholders gave an example of tomatoes. He claimed that tomatoes are produced massively in the country but they are not used in agro-processing industries simply because agro-processors do not get quality produce out of them. They ultimately incur more production costs which lead to highly priced outputs and hence low competitiveness. Trade concentrates mainly on agro-processed products but backward linkages should be improved because they determine the resultant prices. Unfavourable climate and poor agro-processing jeopardise food security and trade activities. In terms of policy linkages, stand-alone policies have been promoting trade including Agricultural Marketing Policy and Trade policy. However, these policies do not interlink cross-cutting issues in an appropriate manner.

Amongst the strategies to be included in the policy to promote trade driven agro-processing is research and development on seeds that need to be sowed based on appropriate seasons. Of paramount importance are also trade facilitation as well as increasing and spreading testing

laboratories across the country. The latter would reduce the costs related to verification – the service that is mainly provided in Dar es Salaam. Furthermore, stakeholders suggested that not only policy issues need to be taken into account, but equally important are mass awareness and public ownership of the policies. In Tanzania, the general public is mainly the recipient of the policies without significant involvement in their formulation. Given the illiteracy among them, some may not even understand what is going on. It would be appealing for future policy formulation process to be done in a participatory manner by raising awareness among the public through advocacy, sensitization and outreach campaigns. It would also be important to widen the coverage of the media in order to spread the information and knowledge of the policies and their formulation among the citizens in order to win their acceptance and ownership of whatever policies being formulated. Various religious groupings could also be asked to devise some programmes to help enhance patriotism and urge people to engage themselves in the struggle to achieve the desired national goals.

Other problems that stakeholders complained about include the misuse of human capital (particularly the skills), lack of grass root skills, inadequate promotion of technical skills as well as lack of research and development. Moreover, another group of acute problems mentioned by the stakeholders includes inadequate allocation and/or reallocation of budgeted funds coupled with overdependence on donor funds, lack of knowledge to link and implement different policies and less effort put in implementing specific strategies.

Chapter 6

Conclusions and Recommendations

6.1 Conclusions

The study has investigated the position of the SIDP in Tanzania's industrial development and has analysed existing policy frameworks that contribute towards industrial development in Tanzania. It has identified challenges and opportunities that face the implementation of the SIDP. It has demonstrated that national industrial development policies should provide a clear link between agro-processing and trade, climate change and food-security.

Agro-processing industries are vulnerable to cross cutting issues and influence crosscutting issues especially climate change, food security and trade hence a dual cause. Indeed, climate change, trade and food security are key variables that can affect the forward and backward linkages in the agro-processing subsector. However, national policies, plans and strategies on industrialisation and agro-processing industries in particular have not sufficiently reflected and linked these cross cutting issues with industrialisation.

It has been shown that there are several policies which acknowledge the importance of agro-processing sector to economic and human development. Such policies also acknowledge the importance of cross cutting issues particularly climate change, trade and food security. However, these policies do not explicitly elaborate existing linkages between agro-processing and these crosscutting issues. There is a dual effect between agro-processing industries on one hand and trade, climate change and food security on the other hand. The industrial policy does not elaborate this dual relationship and how to build on them or mitigate their impact. This is a glaring gap that this study set out to confirm.

6.2 Policy Recommendations

The study recommends that:

- National industrial development policies will need to ensure that industrial development and agro-processing industries are *trade driven, climate aware and food-security enhancing. Industrial development* should take full consideration of future generations, promote trade and enhance food security. This experience suggests that national industrial development policies should provide a clear link between agro-processing and trade, climate change and food-security.
- The new SIDP should have a baseline study to identify the linkages between agro-processing and these cross cutting issues and their outcomes specific to the local context or environment. The results should serve as the subsection of situational analysis section of the new policy.
- The new SIDP should breakdown agro-processing sector into sub-sectors to take sub-sector specific issues into consideration and address specific challenges and opportunities relating to climate change, trade aspect and food security.
- The new SIDP should also indicate elements of agro-industrial support which are environmentally friendly and sustainable. This includes support for clear and green energy supply, water supply and irrigation schemes as well as capacity building on better agricultural practices to local farmers.

- The new SIDP should indicate supporting mechanisms for agro-processed products, trade promotion and support including strategies to achieve compliance on standards and quality, products promotion, export tax relief and incentives, measures to reduce labour costs and increase competitiveness, research and technology advancement and design of new products and trade data availability and usage. It should also indicate measures to increase international negotiations capacity on issues of climate change, food security and trade.
- The new SIDP should clearly indicate which areas of the agro-processing industries should be targeted to increase and ensure food security. These include food sensitive crops, animal and fish products, nutritional food standards insurance, storage facilities, measures to reduce food loss and food waste, long term preservation of the products and the like. The policy should be specific to food security aspects.
- All in all, the policy should have a clear path to ensure agro-processing industries are trade driven, climate aware and food security enhancing through specific strategies to each sector.
- For this to be realised, the role and responsibilities of stakeholders will need to be specified with a view of ensuring that industrialisation is realised in a sustainable manner with assured food security and trade promotion.
- The policy should ensure that there are institutional and roles boundaries, as well as clear responsibilities of each responsible organ. It could identify responsible organs and ministries, departments and agencies and assign roles according to the way they are being affected. The follow-up and evaluation mechanism should be designed to ensure each responsible organ performs what it is required to. In that case, an over-sight authority could be established to perform the monitoring function. The integrated policy should indicate the sectorial linkages and the role expected from them as well as risks that might be encountered.

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About the Book

Developed in 1996 when the effects of climate change were yet to be felt, Tanzania's Sustainable Industrial Development Policy (SIDP) has now become out of sync with the urgent need for synergising agro-processing development with other climate, trade and food security interventions. This study argues that the SIDP review set for 2020 should be seen as an opportunity to take up such synergies right from the design phase. In particular, it suggests concrete interventions in the areas of climate change, food security and trade which should be considered in the SIDP revision.

This book is published under the project "Promoting Agriculture, Climate and Trade Linkages in the East African Community-Phase 2"(PACT EAC2) led by CUTS International Geneva in collaboration with CUTS Nairobi. The key purpose of the project is to capacitate individuals, associations, institutions and governments through ministries to identify and promote appropriate policies for climate-aware, trade-driven and food security-enhancing agro-processing in the EAC region. This book is a joint effort of both CUTS International Geneva and Economic and Social Research Foundation (ESRF) on Tanzania's sustainable industrial and trade development.

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