

Agro-industrial Development Policies

What Nexus to Climate, Food
Security, and Trade?

Uganda

Elisabeth Tamale
Jane Nalunga

CUTS
International



PACT EAC2

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

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Authored by:

Elisabeth Tamale
Jane Nalunga

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Uganda

Contents

Acknowledgements	i
Note on Authors	iii
Acronyms	v
Executive Summary	vii
1. The State of Uganda’s Socio-Economic Development	1
1.1 Economic Status	1
1.2 The Structure of Uganda’s Trade	2
2. The Link between Industrialisation, Structural Transformation and Sustainable Development	4
2.1 Understanding the Linkages between Agro-industrialisation, Climate Change, Food Security, Trade and Gender	5
2.1.1 <i>Agro-industrialisation and Climate Change</i>	5
2.1.2 <i>Agro industrialisation and Food Security</i>	6
2.1.3 <i>Agro-industrialisation and Trade</i>	7
2.1.4 <i>Mainstreaming Gender in Agro-industrial Policies</i>	7
3. Extent of Inclusion of Agro-industrialisation Linkages in National and Regional Policies	9
3.1 Uganda’s Vision 2040	9
3.2 National Development Plan II (NDP) 2015/16-2019/20	10
3.3 Mainstreaming Food Security, Trade and Gender in Uganda’s Agro-industrialisation Policy	10
3.4 Agro-industrialisation within the Broad Context of Regional Development Plans and Strategies	11
3.4.1 <i>East African Community (EAC) Treaty</i>	11
3.4.2 <i>The EAC Development Strategy (2011/12-2015/16)</i>	12
3.4.3 <i>EAC Industrialisation Policy and Strategy (2012-2032)</i>	12
4. The Challenges of Mainstreaming Climate Change, Food Security, Trade and Gender in Agro-industrial Policies	15
5. Examining the Gap in Agro-industrialisation Policy: the Case of the Pineapple Sub-sector in Uganda	17
5.1 Pineapples	18
5.1.1 <i>Agro-processing of Pineapples</i>	18
5.2 Government Initiatives in the Horticulture Sector	19
6. Conclusions and Recommendations	20
References	24
Endnotes	26

List of Tables

Table 1: The Structure of Uganda’s Economy (Sectoral Composition of GDP) 1

Table 2: Real GDP Growth by Economic Activity 2

Table 3: Sector Contribution to GDP and Employment 2

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Note on Authors

Elizabeth Tamale is currently working as the Enhanced Integrated Framework Coordinator for Uganda. Previously, she worked in various capacities in the Ministry of Trade, Industry and Cooperatives and retired at the level of an Assistant Commissioner in the Internal Trade Department of the Ministry, a post she held for 8 years. Elizabeth has vast experience in Trade policy development and negotiations, export and business development. She holds a B.A. Hons from Makerere University Kampala, MA from University of East Anglia (UK), certificates in Mastering Trade Policy and Negotiations from Harvard Kennedy School, a WTO Diploma in Trade Policy and certificates in Export Market Development.

Jane Seruwagi Nalunga is an expert on trade policy and related issues in general and the multilateral, bilateral, regional and national trade and investment policies and Agreements in particular. She has more than twenty years of experience in policy research, analysis and advocacy and has authored a number of policy oriented studies and articles. Jane sits on a number of national policy making bodies; and advises government and Parliament on trade related matters. She is a member and actively participates in a number of trade related networks at national and global levels. She holds an Honours Bachelor of Arts degree and Diploma in Education from Makerere University; and a Masters of Arts (M.A) from the University of London. She is an Associate of the Institute of Chartered Secretaries and Administrators (ACIS). She is currently the Country Director of SEATINI- Uganda. (SEATINI is a sub-regional NGO operating in Eastern and Southern Africa).

Acronyms

COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
EU	European Union
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Produce
GHG	Greenhouse Gas
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MDA	Ministries, Departments and Agencies
MPED	Ministry of Finance, Planning and Economic Development
MGLSD	Ministry of Gender, Labour and Social Development
MTIC	Ministry of Trade Industry and Cooperatives
NEMA	National Environment and Management Authority
NDP	National Development Plan
NICs	Newly Industrialised Countries
NIP	National industrialisation Policy
NTBs	Non-Tariff Barriers
SADC	Southern Africa Development Community
UBOs	Uganda Bureau of Statics
UIRI	Uganda Industrial Research Institute
UNECA	United Nations Economic Commission for Africa

Executive Summary

The study is an analysis of Uganda’s agro-industrial policies and the extent to which they have mainstreamed climate change, food security, trade and gender. There has been resurgence in the efforts by many African countries in general, and Uganda in particular, to promote industrialisation in order to address the current development challenges. Although Uganda’s economy has registered an impressive growth rate of 5 percent in 2014/15 (projected to increase to 5.5 percent for 2016/17)¹, this growth has not translated into improved livelihoods. Unemployment levels are increasing owing to limited industrialisation, as well as limited backward and forward linkages between agricultural, industrial and service sectors. This lacuna has negatively affected agricultural production and productivity, increasing rural-urban migration creating further challenges in urban areas. Incomes at both household and national levels have also reduced owing to the trading and exporting of raw materials and importation of finished products. Given these challenges, the debate around structural transformation has taken centre stage in Uganda’s policy making.

Industrialisation, especially agro-industrialisation, is a key strategy to promote structural development. It is important for Uganda where agriculture is the mainstay of the economy, contributing about 26 percent to GDP and employing over 70 percent of Ugandans. Adding value to agricultural products is key to rural transformation and the promotion of forward and backward linkages within the economy. Uganda has taken consideration of this by developing policies and strategies to promote general industrialisation as well as agro-processing in particular.

In order to promote sustainable development, it is important to ensure that agro-industrial policies incorporate and are cognizant of the key issues of climate change, food security, trade and gender, especially given the complex and complementary relationship between these variables. Mainstreaming these key development issues will ensure that the resultant development “meets the needs of the present without compromising the ability of future generations to meet their own needs”² and also enables all people, especially the most vulnerable, to meet their basic needs and extend to all the opportunity to satisfy their aspirations for a better life. Mainstreaming involves assessment of the implications for climate change, food security, trade and gender for any agro-industrial policies and how agro-policies affect these issues.

Therefore, the main objective of this study is to examine the extent to which agro-industrial policies take into account climate change, food security, trade and gender.

The specific objectives of this study are as follows:

1. To explore the link between industrialisation, structural transformation and sustainable development;

2. To find out how agro-industrial and development policies at the national and regional levels currently address climate change, food security, trade and gender;
3. To assess the challenges of mainstreaming climate change, food security, and trade into agro-industrialisation policy;
4. To undertake an in depth analysis of the horticulture sector; and
5. To make recommendations regarding policies that should be put in place to mainstream climate change, food security, trade and gender linkages into current agro-industrialisation policies.

Methodology

In terms of methodology, the study employs a two-pronged approach. The study conducted a review of secondary literature of theoretical linkages between industrialisation in general, as well as a focus on agro-industrialisation, in addition to structural transformation and sustainable development. Studies undertaken by organisations such as UNECA were reviewed to determine the climate change, food security, trade and gender linkages to agro-industrialisation.

The study analysed a number of agro-industrial policies and policy documents to verify how the issues of climate change, food security, trade and gender are mainstreamed therein. The policies analysed were for both Uganda and the East African Community (EAC), given the fact that policies enacted at the EAC level are binding at the Partner State level. The study reviewed the status of social and economic development of Uganda in order to position the research within the broader context of Uganda's economy and also to bolster its argument regarding the need to promote climate change-friendly agro-processing. The study analysed broader national and regional development policies and plans in order to ascertain the extent to which agro-processing is catered within these policies.

The study also employed a case study in order to supplement the qualitative data and further provide empirical evidence of how climate change, food security, trade and gender are mainstreamed in agro-industrialisation policy. The case study examines the horticultural sub-sector, focusing mainly on pineapple commodities. The case study analyses the present condition of the subsector, as well as key actors involved in the pineapple sub-sector. Producers, traders and processors were interviewed to ascertain the extent of the integration and the effects of climate change, food security, trade and gender on their operations, and the strategies they have put in place to address the challenges.

Policy recommendations were drawn from the information gathered from both secondary research and the case study.

The study is organized as follows:

Chapter 1 explores the socio-economic dynamics of Uganda. This chapter provides the context within which the study is situated, and also sets the stage for the assessment of the extent to which agro-industrialisation policies incorporate issues of climate change, food security, trade and gender.

In Chapter 2, issues of industrialisation and structural transformation of Uganda are

explored, agro-processing being a sub-component of overall industrialisation. The manifestation of the relationship between agro-industrialisation on the one hand, and climate change, food security, trade and gender on the other, are also discussed.

Chapter 3 examines how key development policies at national and regional levels address agro-industrialisation and whether they incorporate the relationships and linkages between agro-industrialisation, climate change, food security, trade and gender. Given the acceleration of regional integration, and the rule of subsidiarity whereby policies and laws enacted at the regional level supersede national policies and laws, regional agro-industrial policies are examined to determine the extent to which they mainstream climate change, food security, trade and gender. In order to situate agro-industrialisation within the broader development context, the overall national and regional development policies, plans and strategies are analysed in order to assess the extent to which they incorporate the relationships and the linkages between climate change, food security, trade and gender with agro-industrialisation.

Chapter 4 analyses the challenges faced by policy-makers and technocrats in mainstreaming climate change, food security, trade and gender into agro-industrialisation policies. The chapter also examines the establishment of governmental institutions that affect the mainstreaming of the key issues identified.

The general horticulture sector and pineapple subsector are analysed in Chapter 5 in order to further articulate the gap in agro-industrialisation policy and the aspects of climate change, food security, trade and gender. This in-depth analysis draws out the practical challenges of mainstreaming the aforementioned issues in agro-industries. The conclusions drawn from this case study are used to provide recommendations to address the challenges of mainstreaming the key aspects in agro-industrial policies.

Chapter 6 provides recommendations on how the gaps identified can be addressed and also provides proposals for further research.

Chapter 1

The State of Uganda's Socio-Economic Development

1.1 Economic Status

Uganda is a landlocked East African country with a total population estimated at 34.9 million people, and an annual population growth of 3.03 percent³. The country is ranked as a least developing country (LDC), with GDP per capita estimated at USD \$ 788 in 2013/14⁴. Uganda's economy is based primarily on agriculture undertaken by smallholder subsistence farmers who own on average 2.5ha of farmland. The agricultural sector is dominated by women, and limited mechanisation is used in production which limits growth. Currently, agricultural production is rain-fed. Major Ugandan exports are coffee, tea, tobacco, cotton and a number of non-traditional commodities such as fish, maize,

and beans. As indicated in Table 1, the contribution of agriculture to GDP has been steadily declining, owing to a number of factors including declining production and productivity. The sub-sectors which have demonstrated high levels of growth include construction, transport and communication. Manufacturing has tended to decline in the last few years on account of electricity and water shortages. Services on the whole have registered notable increase.

The contribution of the Agriculture sector to real GDP growth has also been declining while that of manufacturing and services has increased. Table 2 indicates the contribution to real GDP growth per sector.

Sectors	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/2016
Agriculture	26.2	24.7	24.0		23.1	22.5	22.2
Mining & Quarrying	1.1	1.3	1.2	1.3	1.3	1.5	1.4
Manufacturing	8.5	8.4	8.3	7.8	7.6	8.0	7.7
Electricity	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Water	1.9	1.8	1.9	1.9	1.9	1.9	2
Construction	5.8	6.1	6.1	6.1	6.5	6.4	6.4
Wholesale & Retail	12.9	13	12.6	12.4	11.7	11.6	11.4
Hotels & Restaurants	2.3	2.2	2.3	2.4	2.5	2.3	2.4
Transport & Communication	8.1	8.7	9.7	10.7	11.5	10.8	11.9

Source: Uganda Bureau of Statistics, 2016

Table 2: Real GDP Growth by Economic Activity

Sector	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15 Projections
Agriculture, Forestry & Fishing	3.2%	2.9%	1.1%	1.8%	1.8%	2.3%
Industry	7.8%	11.4%	3.1%	4.3%	4.3%	5.5%
Services	5.9%	12.4%	4.9%	4.0%	4.2%	5.7%

Source: MFPED: Background to the Budget 2015/16

Table 3: Sector Contribution to GDP and Employment

	Agriculture	Services	Industry
Share in GDP (2013/14)	23.7%	47.6%	20.4%
Share in Total employment 2013	71.9%	20.2%	4.4%

Source: Uganda Bureau of Statistics 2015

Despite the declining contribution of agriculture to GDP and real GDP growth, agriculture remains the largest sector of employment. According to data from the Uganda Bureau of Statistics, 72 percent of the working population engaged in the agriculture sector and were dependent on agriculture for their livelihoods and income. Table 3 illustrates the sector contributions of agriculture, services and industry as well as their share of total employment.

The economy is estimated to have grown by 4.6 percent in the financial year of 2015/16, which is lower than the growth target of 5.0 percent, yet still remains significantly higher than the projected growth rate of Sub-Saharan African economies estimated at 3.0 percent. This growth performance was mainly affected by a fall in international commodity prices, a decline in private sector credit and depreciation of the shilling.

1.2 The Structure of Uganda's Trade

Uganda's exports are divided into traditional and non-traditional commodities. Traditional exports include coffee, cotton, tea, and tobacco. These commodities contribute significantly to the country's export revenues, with coffee alone accounting for over 18 percent of total export

earnings in 2014⁵. In recent years, however, the share of traditional exports fell from 53 percent in 2000 to 31.4 percent and 25.8 percent in 2011 and 2014, respectively⁶. The main reason for this decline has been the fall in world market prices and the proliferation of overseas markets of non-traditional export commodities (NTEs).

NTEs include fish, cut flowers, fruits, vegetables, vanilla, sesame seeds, hides and skins, gold, soap, cement and others that can be airlifted to markets abroad. The share of NTEs in Uganda has been growing over the years, rising from 47 percent in 2000 to 68.6 percent and 74.2 percent in 2011 and 2014, respectively. NTEs have replaced traditional exports as the main sources of export revenue, contributing USD \$1,679 million while traditional exports contributed USD \$582 million in 2014⁷. In addition, on the services account, earnings by professional and non-professional Ugandans in the diaspora, through remittances from abroad, have registered remarkable growth.

Uganda's main trade partners are the EAC Partner States, the European Union, and COMESA, as well as relatively new trading relationships with South Africa, the Middle East, Asia (Japan, South Korea, Singapore), and the USA.

As Uganda is an exporter of mainly raw agricultural products and imports mainly manufactured products, the country has a systemic trade deficit which has been steadily increasing from USD \$1.24 billion in 2005 to USD \$3.54 billion in 2015, with a record high of USD \$3.7 billion in 2014. In the same year, Uganda's exports totalled USD \$2.34 billion while its imports amassed to USD \$6.03 billion. This represents a significant amount relative to Uganda's GDP, which was USD \$27 billion in 2014⁸.

Uganda's economic growth has yet to be translated into human development. Based on the UBOS 2012/13 survey, it was estimated that 19.7 percent of Ugandans are poor, corresponding to nearly 6.7 million people. The incidence of poverty remains higher in rural areas than in urban areas. The rural poor represent 22.8 percent of the total population compared to only 9.3 percent in urban areas. The rural areas, with about 77.4 percent of the population, constitute 89.3 percent of national poverty, whereas 22.6 percent of the population living in urban areas constitute 10.7 percent of national poverty. Uganda's Human Development Index value in 2012 was categorized in the low human development category with a value of 0.456, positioning the country 161 out of 187 countries and territories. The northern part of the country

is particularly disadvantaged as a result of the legacy of the violent conflicts. Effects of climate change are most felt within rural areas, where dependency on agriculture is high, yet experience frequent occurrences of floods, droughts and erratic weather patterns. Coupled with limited post-harvest handling facilities, climate change has led to instances of famine and hunger in many parts of the country.

The high poverty levels found in rural areas and urban slum areas are mainly a result of the limited linkages between the agricultural, industrial and service sectors. The fast growing sectors that contribute most to GDP, such as industry and services, employ the least people. Consequently, unemployment rates are high though the official figures of the overall Unemployment Rate (UR) was 9.4 percent in 2012/13, with females experiencing higher unemployment rates (11 percent) than males (8 percent).⁹

The state of Uganda's socio-economic development provides an imperative to promote agro-industrialisation to address the current poverty and related challenges. The close linkages between agriculture, climate change, food security, trade and gender as indicated in the chapter calls for the mainstreaming of these aspects into agro-industrialisation policy in order to ensure sustainable development.

Chapter 2

The Link between Industrialisation, Structural Transformation and Sustainable Development

Industrialisation is the process through which a society or a country transforms itself from a primarily agricultural society into one based on the manufacturing of goods and services. The importance of industrialisation as an engine of economic growth and as a precondition for sustainable development cannot be overstated, especially for developing countries. For the economies of LDCs, such as Uganda, which are largely agro-based, with limited backward and forward linkages between agriculture, manufacturing and service sectors, agro-industrial development becomes a key element of a country's industrialisation agenda. Industrialisation, and agro-industrialisation in particular, is a key component of structural transformation as it involves the reallocation of economic activities across agricultural, industrial and service sectors. The revitalisation of production in each of these key sectors has the potential to facilitate backward and forward linkages.

It has been proven that no country, state or region can make progress on the basis of primary productive occupations alone, especially when such a region has a large and rapidly increasing population. To achieve higher levels of income, higher standards of living, higher purchasing power, greater opportunities for employment and overall development, more proficient and efficient uses of natural and agricultural resources are vital.

By facilitating linkages between service and agricultural sectors, rural and urban economies, as well as consumer, intermediate and capital goods industries, industrialisation can lead to the creation of job opportunities at higher skill levels, facilitating the increase of stable incomes at both household and national levels. This is achieved as prices of manufactured exports are less volatile and less susceptible to long-term deterioration than those of primary goods.

Industrialisation therefore revitalises production across the main sectors of the economy, thus promoting structural transformation and sustainable development.

As a subset of industrial policy, the development and promotion of agro-industrial processing has witnessed resurgence in many developing countries, including Uganda. Given that agriculture is the mainstay of Uganda's economy, contributing 22.6 percent to GDP in 2014/2015 and employing about 70 percent of the people, agro-industrialisation is central to rural development and the development of the entire country. There are clear indications that agro-industries have a significant impact on economic development and poverty reduction in both urban and rural communities around the world.

The agro-industrial sector is defined as a subset of the manufacturing sector that processes raw materials and intermediate products derived from

agriculture, fisheries and forestry. Thus, the agro-industrial sector is taken to include manufacturers of food, beverages, tobacco, textiles and clothing, wood products and furniture, paper, paper products and printing, as well as rubber and rubber products¹⁰.

Agro-industries have the potential to provide employment for the rural population not only in farming, but also in off-farm activities such as handling, packaging, processing, transporting and marketing of food and agricultural products. However, the full potential of agro-industries as an engine for economic development has not yet been realised in many developing countries, especially in Africa. With their forward and backward linkages, agro-industries have high multiplier effects in terms of job creation and value addition. A fruit processing plant, for instance, creates jobs not only at the processing facilities, but also for fruit farms, collection centres, farm input supply and product distribution centres. Agro-processing plants stimulate other secondary economic activities and also the production of other by-products. For example, while cotton is mainly processed for textiles, cotton by-products include, inter alia, animal feed, tooth picks and oil.

Developing competitive agro-industries is crucial in generating employment and income opportunities in both rural and urban areas. It also contributes to enhancing the quality of and demand for farm products, leading to improved livelihoods in rural areas.

The debate regarding the formulation of policies and strategies for agro-industry has mainly concentrated on the key factors affecting their competitiveness. In addition, the debate focus has included potential priority action areas and how to develop competitive agro-industries that maximize the impact of the agro-industrial sector on peoples' livelihoods. Moreover, discussions have prioritised the inclusiveness of the small-scale farmers, especially the integration of women within the value chain, as well as fostering an enabling environment for the development of agribusiness, agro-industries and agro-based value chains.

Agro-industries can have either positive or negative implications for climate change, food security, trade and gender, depending on the specific policies within each sector. Therefore, agro-industrial policies and frameworks should recognize the synergies between agro-industrialisation and climate change, food security, trade and gender. Conversely, policies related climate change, food security and trade should also incorporate linkages with agro-industry. Recognition of these inter-linkages within these policy frameworks will ensure that agro-industries promote sustainable development in Uganda. Ensuring agro-industrialisation that takes into account climate change, food security, trade and gender issues would lead to more sustainable and inclusive development, integrating the most vulnerable groups, notably women small-scale farmers and traders.

2.1 Understanding the Linkages between Agro-industrialisation, Climate Change, Food Security, Trade and Gender

2.1.1 Agro-industrialisation and Climate Change

Industrialisation and agro-industrialisation have negative and positive effects on the climate, and subsequently play a role in climate change dynamics¹¹. Despite their important contribution to overall economic development and agricultural development, agro-processing industries can give rise to undesirable environmental side effects. The basic causal relationship between agro-industrialisation and climate change occurs through economic growth. Economic growth entails increased productive activities achieved through increased use of fossil energy sources and increased pollution leading to increases in green house gas (GHG) emissions into the atmosphere, which subsequently lead to adverse climatic change. Increases in agro-industrial activities are also accompanied by increased energy demands to transport products, ultimately intensifying the emissions tied to one product.

As with any other industry, agro-industry can also create environmental pollution or hazards in various ways: for example, increased agricultural production most often leads to the use of fertilisers, pesticides, herbicides and fungicides – the production of which requires considerable petroleum-based inputs – and the discharge of organic or hazardous excess waste into water systems.

However, agro-industrialisation can also support the mitigation of climate change impacts through targeted mutually-supportive policies and strategies. For example, the conscious production of goods with low carbon footprints, such as organic production. Increased economic growth can also enable a country to access climate-friendly technology. Moreover, policies and strategies can be implemented to reuse agro-industrial wastage.

Therefore, the extent to which the positive inter-linkages between agro-industries and climate change are promoted will greatly depend on the way related policies and strategies are crafted.

2.1.2 Agro-industrialisation and Food Security

Food security is one of the key development strategies pursued by Uganda and other African countries. Given Uganda's dependence on rain-fed subsistence agriculture and the erratic weather conditions as a result of climate change, there are incidences of food insecurity. Policies, strategies and initiatives do exist to boost agricultural production, productivity and food security at both national and regional levels. Therefore, as industrialisation and food security are both topical development issues throughout Africa, and affect Uganda in particular, it is imperative they be considered complementary rather than alternative development objectives. However, as Maio¹² astutely notes, industrialisation and food security are rarely mentioned together in the same document or discussion space. Maio further argues that the achievement of one of these development objectives is very likely to have positive effects on the likelihood of achieving the other as well¹³.

There is also a positive relation between food security and industrialisation which is based on the link between agricultural development and the increase in agro-processing activities. Agro-processing ensures a stable outlet for agricultural products, stimulating greater production. Therefore, agro-processing increases agricultural production, generating two positive effects. Firstly, the increase in production simply reduces the dependence on external food provision. Secondly, it creates the possibility to process additional products, allowing the generation and expansion of value-added agro-processing activities. Agro-processing will also ensure that small-scale farmers have a market for their produce, which will stimulate greater food production. Given the perishable nature of agricultural products, agro-industries are often situated close to production. A policy that supports the location of industries in rural areas promotes rural transformation and limits rural-urban migration, thus ensuring a higher and more stable labour force in rural areas. Therefore, industrialisation and food security should be viewed as complementary strategies as the achievement of one would also facilitate the achievement of the other.

However, in general, food security and industrialisation are not always complementary. Rapid industrialisation in cities may attract labour from the countryside as young people migrate to towns looking for industrial jobs, thus diminishing the productive capacity of the rural areas, ultimately contributing to food insecurity. In addition, high demand for food within cities and industrialising areas may force the redistribution of food from rural to urban and industrial areas. There have also been incidences where traders purchase agricultural land and its yield before the crop matures. Evidence has shown that when there is increased availability of lucrative markets, traders prefer to sell all the food to the market, leaving the households with very little food for their own subsistence or income.¹⁴ Examples of this phenomenon have occurred with maize in the northern region of Uganda, and also with pineapples in the Kayunga District of Uganda. It is therefore important to understand how various geographic and socio-

economic variables interact with each other and how to craft policies that create the conditions to achieve both food security and agro-industrialisation.

2.1.3 Agro-industrialisation and Trade

Industrialisation and trade are closely linked, representing two sides of the same coin¹⁵. There is a direct relationship between agro-industrialisation and trade as they facilitate each other. Trade can foster industrial development and upgrades, facilitating the exportation of the agro-processed products to foreign markets. According to the UNECA Economic Report on Africa 2015, trade can serve as an instrument of accelerated industrialisation and structural transformation in Africa. The imperative to promote generalised industrialisation as well as agro-industrialisation in Uganda arises from the present challenge whereby Ugandan exports tend to be raw and low value-added products, leading to an ever increasing trade deficit that grew from 8.3 percent of GDP in 2014/15 to 8.7 percent in 2015/16¹⁶, as the country continues to import manufactured products.

Trade can promote trade-induced agro-industrialisation as long as it is deliberately oriented to promote agro-industrialisation. Uganda's trade negotiations at regional and international levels should encourage foreign market access for Ugandan agro-processed products, and protect specific sectors to allow agro-processing to flourish. Therefore, goals to promote agro-industrialisation must also guide the conduct, negotiations and implementation of trade and investment agreements and arrangements. Strategic trade policies and agreements will promote agro-processing at the national level, and also promote the export of agro-processed products in national, regional and global markets.

Empirical evidence shows that newly industrialised countries (NICs) were able to catch-up with developed countries through highly selective trade policies. This is evident from East Asia's growing share in global exports, increasing from 2.25 percent in 1970 to 17.8 percent in

2010, coupled with the fact that manufactures constituted between two-thirds and four-fifths of the region's total merchandise exports¹⁷. Therefore, trade is a basic pre-requisite to promote agro-industrialisation, and conversely, agro-industrialisation is key to competitive trading in the regional and global arena.

2.1.4 Mainstreaming Gender in Agro-industrial Policies

In most agro-processing activities, there is a strong gender segmentation in both production and processing, which is reinforced by prevailing gender stereotypes. Women are considered to have greater skills for tasks requiring manual dexterity and patience, such as harvesting, sorting, grading, de-boning and packaging. Women in industrial sectors are often young and under-skilled. In comparison, men are perceived to have superior physical strength, supervisory capacity and mechanical skills. Female participation is higher in specific agro-industries. According to the ILO (2014), the participation of female workers in clothing and textile industries is above the manufacturing average, being significantly higher within the clothing sector. The share of female employment in clothing is considered to be more than 89 percent in Cambodia, 80 percent in Bangladesh and 82 percent in Sri Lanka. Female participation in India and Turkey is below 50 percent, while in Guatemala, clothing manufacture constitutes nearly half of total employment. Female participation in textiles is generally lower, below 50 percent, with the exceptions of Cambodia (76 percent) and Sri Lanka (61 percent).

Many high-value agro-food and non-food chains are characterized by increasing levels of female participation (Dolan and Sorby, 2003). In the Dominican Republic, women comprise roughly 50 percent of the labour force employed in horticulture processing (Raynolds, 1998). In Mexico, nearly 90 percent of employees in packaging are women (Barrón, 2000). In Kenya and Zambia, over 65 percent of workers in horticulture pack-houses and farms are women (Barrientos et al., 2001).

The allocation of labour in agro-industries is generally unfavourable to women as they are trapped at the lower end of the value chain, thereby earning less than men who generally occupy skilled positions within the sector. For example, women are mainly involved in sorting maize rather than manning machinery. However, women are more involved in the agro-processing of products that do not require complicated

technology, such as the solar drying of fruits, such as pineapples, mangoes and papaya.

This chapter indicates that there is an undeniable relationship between agro-industrialisation, climate change, food security, trade and gender dynamics. These relationships are often subtle, and as such, there is a risk that they may be omitted in policy development; hence the importance of this study.

Chapter 3

Extent of Inclusion of Agro-industrialisation Linkages in National and Regional Policies

This chapter examines key development and agro-industrial policies at national and regional levels, and how they address agro-industrialisation and incorporate linkages between agro-industrialisation, climate change, food security, trade and gender.

3.1 Uganda's Vision 2040

Uganda's Vision 2040 envisages "A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years"¹⁸, achieved through the promotion of industrialisation supported by necessary policy, legal and regulatory frameworks. Ugandan policy-makers have recognised that there is a strong positive correlation between industrialisation and rapid development, and hence the need to strategically address bottlenecks in the agricultural sector and low industrialisation that have constrained Uganda's socio-economic development since her independence. The Vision's position on industrialisation is clear: a strong and competitive industrial base is important to cushion the economy from external shocks, create employment, advance technology and promote a resilient and diversified economy.

The Vision recognises that Uganda's industrial base is largely dominated by food processing, leather and leather products, textiles, clothing and garments; therefore, it makes a commitment that in "the first ten years of implementing this Vision, emphasis will be put on the establishment

of economic lifeline industries including; agro-based industries [...] that will be a springboard for advanced industrialisation"¹⁹. This will enhance Uganda's competitiveness within the world market, boost foreign exchange earnings, as well as employment. "It can also reduce wastage, enhance food security, improve livelihoods for low-income groups and empower disadvantaged groups of society like rural women, youth and the disabled." Furthermore, the Vision affirms that agro-processing will make agriculture profitable, competitive and sustainable in the provision of food and income security to all the people of Uganda.

Climate change is central to the promotion of sustainable development. The Vision recognises that Uganda is not immune to the impacts of climate change, and that these impacts pose significant challenges, especially given Uganda's limited capacity to cope. The Vision also acknowledges that climate change affects all sectors of the economy, including agro-processing. The linkage between agro-processing and climate change comes out clearly when it recognises the rapid deterioration of the quantity and quality of the natural resource base owing primarily to increasing pressures from high population growth and economic activities, in addition to poor disposal practices of solid and liquid waste from industrial activities. The Vision commits to promote renewable forms of energy including wind, solar and biogas, as well as develop appropriate adaptation and mitigating strategies on climate change in all sectors to

increase the country's resilience to the impacts of climate change.

Uganda has made considerable effort to promote gender equality and empower women to participate as equal partners in development. Uganda's Constitution guarantees equality between women and men before the law. The Vision recognises that in the past, women have been left behind in the development process owing to socio-cultural factors; therefore, deliberate efforts have to be made to enable women to equally participate in key sectors such as agriculture and industry. Hence, the Vision links agro-processing directly to dimensions of food security and gender.

Regarding trade, the Vision is aware of market opportunities for Uganda's agro-processed products presented by regional and international markets, notably the EAC, COMESA, SADC and the EU.

Therefore, Uganda Vision 2040 is cognisant of agro-processing and the linkages between it and climate change, food security, trade and gender.

3.2 National Development Plan II (NDP) 2015/16-2019/20

The National Development Plan (NDP) stipulates the Country's medium term strategic direction, development priorities and implementation strategies. In addition, it details Uganda's current development status, challenges and opportunities. The second National Development Plan's theme is "*strengthening Uganda's competitiveness for sustainable wealth, creating employment and inclusive growth*", and identifies priorities for investment in five areas with the greatest multiplier effect to the economy, one of which includes agriculture. NDP II lays emphasis on encouraging and facilitating investment in 12 agricultural enterprises, namely coffee, cotton, tea, maize, rice, cassava, beans, fish, beef, milk, citrus and bananas.

NDP II emphasises commercialisation of agriculture to increase production and

productivity along the value chain. This is based on general recognition that in order for the agriculture sector to grow, there is a need to focus on agro-processing which will contribute to adding value on agricultural products. In addition, agro-processing is also regarded as a springboard to industrialisation. One of the key strategies identified in the Plan is export-oriented growth through value addition and agro processing in order to expand GDP while improving the country's balance of payments.

3.3 Mainstreaming Food Security, Trade and Gender in Uganda's Agro-industrialisation Policy

The Agro Industrialisation policy is embedded in the National Industrial Policy (NIP), as there is no comprehensive policy on agro-processing specifically. The NIP sets out the strategic direction for industrial development in Uganda for the 2008/2018 period. The policy provides a framework for Uganda's transformation, competitiveness and prosperity, providing the long-term perspective needed for Uganda to achieve sustained transformation of the economy. Industrial development is an integral and important part of the Government's overall development strategy to transform Uganda into a modern and industrial country. Industrialisation adds value through processing, reduces post-harvest losses and increases high-value exports, especially from agriculture and minerals. Industrialisation also offers prospects for increased employment, greater export earnings, a wider tax base, product diversification, technical skills for modernisation and higher productivity throughout the economy.

One of the guiding principles is the development of resource-based industries and product value chains. Two of the policy objectives for the NIP directly address agro industrialisation. These include:

- (i) Exploiting and developing natural domestic resource-based industries and promoting competitive industries that use local raw materials;

- (ii) Agro-processing focusing on food processing, sugar dairy products and value addition on niche products.

One of the policy actions of the NIP is to deepen and widen the industrial base by strengthening sub-sector linkages. In this regard, the activity proposed aims to support the establishment of model agro-processing industries by coordinating activities of the affiliated institutions consistent with the Government's programme on 'Prosperity For All' and value addition.

Another policy action focuses on sustainable industrial development where "industrial transformation is to be pursued in a manner that ensures efficient utilisation and environmental sustainability". In this regard, the policy appears to recognize the importance of the utilisation of resources, taking into account environmental sustainability. The policy presents several activities, which include the introduction and strengthening of effective industrial pollution and control measures; the implementation of provisions of National Environment Management Authority's policy; and the encouragement of industries to use cleaner technologies.

The policy also attempts to address gender, proposing to "Promote gender balance and gender sensitive industrialisation", harmonise gender policies and practices in government and industry, and establish gender focal points in industries.

Although the NIP mentions gender and climate change in relation to agro-industrialisation, the policy does make direct or explicit linkages between agro-industrialisation and climate change, food security, trade and gender. For example, the Policy does not indicate how agro-industrialisation will promote or impede climate change, food security, trade and gender. There are also no policy strategies to promote the positive effects and mitigate the negative effects between agro-processing, climate change, food security, trade and gender. This has been mainly owing to the fact that there is no stand-alone agro-industrial policy.

3.4 Agro-industrialisation within the Broad Context of Regional Development Plans and Strategies

3.4.1 East African Community (EAC) Treaty

The commitment by EAC Partner States to promote sustainable development and transform the regional economy through industrialisation within the region is articulated in the EAC Treaty, which established the East African Community. Under Article 5 of the Treaty, Partner States agreed to take such steps in the field of industrial development that will promote self-sustaining and balanced industrial growth, and improve the competitiveness of the industrial sector so as to enhance the expansion of trade in industrial goods within the Community and the export of industrial goods from Partner States. In fact, the region's overriding objective is to create a modern, competitive and dynamic industrial sector, fully integrated into the global economy. Furthermore, Articles 79 and 80 clearly and unambiguously articulate the region's commitment to economic structural transformation through industrialisation. This primary commitment to industrialisation is also reflected in other national policies, regulations and action plans of EAC Partner States. Food and agro-industries and the promotion of food security are earmarked as priority areas in the Treaty.

The Treaty does not mention climate change but does recognise that development activities may have negative impacts on the environment, leading to its degradation and the depletion of natural resources. The Treaty establishes that a clean and healthy environment is a prerequisite for sustainable development. Therefore, the Treaty recommends that Partner States, through environmental management strategies, undertake to cooperate and co-ordinate their policies and actions for the protection and conservation of natural resources and the environment against all forms of degradation and pollution arising from developmental activity.

In the Treaty, Partner States recognize that women make a significant contribution towards

the process of socio-economic transformation and sustainable growth, and that it is impossible to implement effective programmes for the economic and social development of Partner States without the full participation of women. Therefore, Partner States have committed to mainstream gender in all its endeavours and enhance the role of women in cultural, social, political, economic and technological development. The Treaty includes specific areas for Partner State interventions to actualize these commitments.

Regarding trade, the Treaty clearly states that a conducive trade regime at national, regional and multilateral levels is necessary to promote agro-processing through viable markets. In this regard, the Treaty has provided space for the development and adoption of an East African Trade Regime and a Customs Union.

Therefore, the Treaty acknowledges the importance of agro-processing and the roles of climate change, food security, trade and gender in promoting sustainable development in the region. However, the Treaty does not link these key development variables together. Given the centrality of agriculture and agro-industries in the development of the region, this is a conspicuous omission.

3.4.2 The EAC Development Strategy (2011/12-2015/16)

Another overarching development policy at the regional level is the EAC Development Strategy. The Strategy provides broad strategic goals of the EAC as well as the specific targets to be achieved during 2011/12-2015/16. It is therefore an important document for examination in order to gauge the importance of agro-industrialisation amongst EAC Partner States.

The Strategy recognizes that the industrial share of GDP declined for the region – however, both Uganda and Rwanda have experienced some slight increases in their share – and that the industrial sector has been generally stagnant, an indication that there was limited value addition, especially in the manufacturing sectors. The Strategy acknowledges that the region exports

mostly primary commodities with low value addition, which is highly concentrated in agro-processing activities, in addition to the trend of declining agricultural shares of GDP in all the Partner States. The Strategy also identifies that the manufacturing sectors in the region contribute less than 10 percent of GDP revenue. EAC Partner States therefore need to expand their manufacturing sectors to enhance value-added exports. The Strategy also recognizes that the potential to produce diversified and value-added manufactured exports, especially agro-products, remains untapped.

The Strategy identifies the challenges facing industrialisation in the EAC which have slowed its transformation, amongst which is the need for harmonisation of regional policies and regulations so as to create an enabling environment to propel this critical sector.

With regard to climate change, the strategy recognizes the need to establish a framework for environmental management in industries and the mainstreaming of resources, including the promotion of efficient and cleaner production approaches and practices in industries.

In spite of the recognition of the importance of agro-industrialisation, climate change, food security, trade and gender in the development of the EAC region, these issues are handled separately. There is still no categorical recognition within these policies that one issue can positively or negatively affect the other.

3.4.3 EAC Industrialisation Policy and Strategy (2012-2032)

The EAC Industrialisation Policy was envisioned to address the challenges facing the region, especially the need to build a more diversified regional economic structure. The objective of the Policy is to achieve “*structural transformation of the manufacturing sector through high value addition and product diversification based on comparative and competitive advantages of the region.*”²⁰ The region’s comparative and competitive advantages were identified to exist within agro-industrialisation, given the centrality

of the agricultural sector in the region's development. The Policy recognizes the fact that the region's abundant agricultural resources present a strategic base for socio-economic growth, economic transformation and food security through the promotion of agro-processing industries. The policy further acknowledges that most agricultural products are exported in their raw form without undergoing value addition, which makes the strengthening of regional institutional capabilities for industrial policy design imperative.

The Policy further acknowledges that agro-processing industries are the biggest direct employer of all manufacturing industries, and also hold huge indirect employment potential in service sectors through backward and forward linkages.

The Policy identifies six strategic regional industries in which the region has potential comparative advantage, one of them being agro-processing.

Regarding climate change concerns, the Policy describes the present development status of most African countries as being one of unsustainable economic growth characterised by high levels of pollution, waste production and inefficient use of resources, such as energy, raw materials and water. Moreover, there is limited application of cleaner production, resource efficient, sustainable consumption and production tools within most manufacturing firms in the region.

The Policy recommends that Partner States should promote sustainable production and consumption as well as cleaner production principles in the region. In addition, the Policy calls upon Partner States to co-operate and coordinate strategies for the protection and preservation of the environment against all forms of industrial pollution, including atmospheric pollution and waste disposal. Legislative and regulatory frameworks promoting waste avoidance, prevention, reduction, re-use and recycling are to be developed. Furthermore, the industries with the most harmful impacts on the

environment are to be identified, and mitigation measures are to be designed to ensure compliance with environmental legislation, including exploring opportunities for reducing carbon emissions. The Policy further proposes that Partner States should take necessary measures to accelerate the reform and innovation process leading to ecologically rational, economically sound and socially acceptable industrialisation processes.

The Policy is mindful of the importance of the expansion of trade and market access for manufactured products, especially agro-processed commodities. It therefore recommends that unfair trade practices that affect the trade of industrial products in general and agro-industrial products in particular should be addressed. These include non-tariff barriers (NTBs), and non-harmonised standards. It further identifies a number of policy measures to ensure that trade supports industrialisation. This includes the strengthening of regional supply capacity, and encourages the review of bilateral, regional and international trade arrangements to make them more supportive of industrialisation.

Regarding gender, the Policy is conscious of the fact that in the East Africa region, as in many other parts around the world, women make a significant contribution towards the process of economic transformation and sustainable growth. The Policy further recognises the unique barriers to production and trade faced by women in comparison to their male counterparts. The Policy sets out measures to ensure that industrialisation incorporates gender-sensitive aspects so that female producers, importers and exporters reap the same benefits as men.

One of the unique aspects of the Policy is the recognition of the importance of complementary policies to support the achievement of the industrial policy, and the importance of strengthening and exploiting policy synergies between industrial policy and other sectoral policies. Although the complementary measures identified do not include those related to climate change, food security, trade and gender, the

recognition of the need for complementary policies paves the way for the inclusion of these key development issues as well.

Overall, the EAC Industrialisation Policy's coverage of agro-processing is limited. The recognition of the linkages between agro-industrialisation, climate change, food security, trade and gender is largely linear with little analysis of the interplay among these variables.

Chapter 4

The Challenges of Mainstreaming Climate Change, Food Security, Trade and Gender in Agro-industrial Policies

Mainstreaming is a key approach to promoting different concerns and opportunities in national plans and strategies as well as sectoral policies and plans. Agriculture remains an important cornerstone of the economy in Uganda and the EAC, being a central source of employment, income and livelihood. Agro-industrialisation is also a catalyst for increased agricultural production. In addition, the linkages between climate change, food security, trade and gender are critical and should be taken under consideration, as has been articulated. If more agricultural products are processed and exported without taking into account domestic supply and consumption, it is likely to create a scarcity of food. Furthermore, we have also seen that climate change is closely tied with agro-processing, as industries require energy, GHGs are emitted in production, waste is produced, and processing also requires increased agricultural production which means opening up more land, leading to deforestation. With regard to trade, we have seen that there is a direct link between trade and agro-industries, as the export of raw materials may deny infant agro-industries a supply of raw materials for processing. Some countries have introduced export taxes or export bans in order to ensure that there are sufficient locally-produced raw materials to support agro-processing industries.

Mainstreaming gender in agro-processing policy is also critical. We have seen that women form

the majority of agricultural producers and are often involved in agro-processing activities. However, considering that they are usually marginalized with few opportunities of accessing resources such as capital, technology and skills, it is paramount to mainstream gender when developing agro-industrialisation policy.

There are several challenges that inhibit the effective mainstreaming of climate change, food security, trade and gender in agro-industrialisation policy. Firstly, as there is no specific policy on agro-processing, mainstreaming the inter-linkages of climate change, food security, trade and gender becomes more complex considering the many policies that would have to be altered. However, this is not to say that a stand-alone agro-industrialisation policy is the panacea for addressing the challenge to mainstream key climate-conscious, food secure, trade and gender aspects could ensure a holistic approach to agro-industrialisation. A well-crafted industrial policy with a clearly defined chapter on agro-industrialisation that incorporates these inter-linkages can overcome this challenge.

Moreover, Ministries, Departments and Agencies (MDAs) have different mandates and focus on different priorities. Most MDAs tend to work in silos with little or no effective coordination between agencies. As a result, some key ministries and agencies are often excluded

from the policy-making process. This means that they will also be left out of the institutional frameworks and structures that monitor the implementation of policies.

Another challenge is the capacity of technocrats, who are also the policy-makers, to understand some of the subject areas. Subjects like climate change, food security, trade and gender are complicated, and understanding potential linkages with other sectors can also be challenging. Without a clear understanding of these subjects, it will not be possible for policy-makers to understand and appreciate the need to mainstream these issues in different policies. Technical capacity, in terms human resource finance, skills and knowledge, is key to the development of policies that are inclusive of the relevant cross-cutting policy issues.

The issue of the financing of strategic plans developed after the establishment of a policy can also affect and influence how policies and action areas are identified. The policy-making mechanism, especially at the national level, requires that an assessment of the implications of the policy on the budgetary allocation of the sector be identified. Before a draft policy is presented to the Cabinet, a certificate of financial implications has to be obtained from the Ministry of Finance, Planning and Economic Development (MFPED). Quite often, MFPED

will insist that any extra activities arising out of the policy be paid under the existing ceiling. This means that the overall budgetary implication of the policy will determine its main focus, activities and the different strategies that may be developed. Therefore, in crafting an agro-industrial policy or strengthening the NIP, the line ministry, such as the Ministry of Trade, Industry and Cooperatives for example, must bear in mind the financial implications of the new policy and also include new activities in the budget. This is necessary in order to translate the provisions within the agro-industrial policy into action.

The institutional set up also presents challenges in the policy-making mechanism, both at the national and regional levels. At the regional level, the ministries responsible for East African Affairs undertake monitoring and coordinating of all EAC activities in the country. However, apart from monitoring, they cannot enforce the implementation of decisions made at the EAC level. In addition, EAC policies were developed after the national policies: for example, while Uganda's National Industrial Policy was developed in 2008, the EAC Industrialisation Policy covers the 2012-32 period. While regional policies and laws supersede domestic policy and law, the existing enforcement mechanism is weak.

Chapter 5

Examining the Gap in Agro-industrialisation Policy: the Case of the Pineapple Sub-sector in Uganda

The horticulture sector, with a focus in the pineapple sub-sector, is analysed in this chapter in order to further articulate the gap between agro-industrialisation policy and aspect of climate change, food security, trade and gender. This in-depth analysis draws out the practical challenges of mainstreaming these key issues within agro-industry. The conclusions drawn from this case study are used to provide recommendations to address the challenges of mainstreaming the key aspects in agro-industrial policy.

Horticulture – the science and art involved in the cultivation, propagation, processing and marketing of ornamental plants, flowers, turf, vegetables, fruits, and nuts – is an important sector for cash crop diversification, enhanced food nutrition, income generation, employment creation and foreign exchange earnings, in addition to providing raw materials to agro-processing industries. The horticultural sector has the potential to employ a significant proportion of the rural population, thereby reducing poverty, especially for women and people who own small pieces of land.

Given its conducive climate and soil fertility, Uganda is endowed with a variety of tropical fruits and vegetables which contribute to the country's non-traditional agricultural exports. Horticulture is one of the fastest growing sectors in Uganda. Production and export of Uganda's horticultural products have grown substantially

in the last 20 years, with the introduction of the policy of export diversification and export-led growth strategies under the National Trade Policy. Under this strategy, horticulture was listed as a strategic export. The production and exports of horticulture products, as well as other agricultural products, have steadily increased resulting in significant structural changes in Uganda's export sector.

The export of non-traditional exports have overtaken traditional exports, such as coffee, cotton, tea and tobacco. The share of non-traditional exports to Uganda's total exports increased from 14 percent in 1990 to 74.2 percent in 2014²¹. Horticulture exports are worth USD \$35 million per year. Uganda is currently the second largest producer of fresh fruits and vegetables in sub-Saharan Africa, after Nigeria, producing about 1.1 million tonnes per year²².

Horticultural products, especially fruits and vegetables, are produced by small-holder farmers, mainly women who use their own labour, though there has been an expansion of production, with average acreage increasing from about one acre to ten acres. 80 percent of the fruits and vegetables are sold or exported in their raw form with limited value addition. Promoting agro-processing in the horticulture sector will increase production and trade; however, it also has implications on land use, water, and application of chemicals with far-reaching

consequences on climate change, food security and gender relations. The gender aspects of agro-processing may include increased labour burdens of women owing to increased demand for agro-inputs, as well as the reallocation of land from food production to agro-industry, leading to food insecurity. Yet, as the processing of some fruits, such as sun-drying, does not require sophisticated technology, it is likely to be adopted by women producers more easily, thereby increasing female participation in agro-industrialisation. The pineapple sub-sector in Uganda is analysed in the ensuing section.

5.1 Pineapples

The pineapple is a tropical and sub-tropical fruit grown in many countries in Africa. Uganda's climate, soil and overall ecology are favourable for pineapple production. Pineapples are mainly grown in central, southern, south-western and eastern regions of the country. It is one of the major crops produced for household consumption and for the market. Production is mainly small-scale by small-holder farmers, and often intercropped with bananas. There is growing commercialisation of pineapple cultivation, with an average acreage of five acres.

Mr. Kilabira of Semuto Village located in the Semuto sub-county of the Nakaseke District in central Uganda, grows pineapples on six acres of land. He has sparsely intercropped the pineapples with bananas. He shared that he used to grow bananas only for household consumption and sold the surplus to the market, but owing to diseases like banana wilt, he abandoned banana cultivation and is now concentrating on growing pineapples. He pointed out that the District Environment Officer gave him and fellow growers tips around protecting the soils from erosion through mulching and making contour ridges, especially on sloped terrain, to reduce water run-off. He practices organic production and was able to get certification from the National Organic Agriculture Movement of Uganda (NOGAMU), an NGO that promotes organic production and export in Uganda. However, the District Environment Officer criticised the clearing of

forests to plant pineapples, as well as the shift away from banana production which has resulted in negative implications on food security. Nevertheless, there are a number of farmers who intercrop their pineapples with bananas for food security and to supplement their income.

In general, pineapples are sold as fresh fruit on roadsides and in local markets. There are also 'hawkers' who sell pineapples directly to consumers. Pineapple prices vary according to the season. During the peak season, a pineapple weighing one kilogram is sold for approximately USD \$1.50, while they can earn almost double that (USD \$3) during the off-season. There are two main seasons of pineapple harvest, one that spans from December to February, and one from June to September, although some farmers have staggered production to increase availability and benefit from higher returns during off-season. The seasonality of the crop depends on the rainy season. Therefore, climate change has had a negative effect on pineapple growing, which, unlike other fruits, favours more arid conditions.

There has been an increase in regional exports of pineapple, mainly to Kenya, Rwanda, South Sudan and Democratic Republic of Congo (DRC), and also to other international markets. Uganda has 44 companies that export organic produce, 11 of which export organic-certified fresh, pulped, frozen and solar-dried pineapple to the European Union, United States, Japan, Kenya, Rwanda, South Sudan and United Arab Emirates.

In general, Uganda has experienced an increase in the export of dried fruits. Firms, such as Fruits of the Nile, buy fresh organic pineapples for processing into dried fruit that is sold in Britain, the Netherlands, Belgium, Italy and Switzerland.

5.1.1 Agro-processing of Pineapples

The basic value addition undertaken is drying, using mainly sun drying methods. For conventional processing, farmers participate in the processing of pineapples. However, for organic processing, exporters participate in the process of drying to ensure that organic protocols are upheld. About 95 percent of

sundried pineapples are exported. Domestic consumption of sun-dried pineapples has not yet become popularised, though there do exist some niche markets in Kampala. The potential exists especially among school-going children where dried pineapples can be sold as snacks. There are a number of companies that are involved in export of dried pineapples, which include Flona Commodities Ltd, Masaka Organic producers, AMFR, Bio Fresh, Bio Uganda and Fruits of the Nile.

With the assistance of the Uganda Industrial Research Institute (UIRI), companies have been supported to start juice and pulp processing, which is mainly oriented for the domestic market. Some of the companies that package juice, jam and concentrates include Jakana mixed pineapple juice, Britania, and Kyenkyo. There is also an emerging pineapple wine-making industry, though this exists on a very small scale. Value-added products from pineapples have huge potential in both the domestic and regional markets.

The challenges identified by processors include the inconsistent supply of pineapples owing to different production methods, and competition from imported juice and concentrates. Processed horticultural products are mainly consumed in the region. It is difficult for processed horticultural products to access international export markets owing to high tariffs and NTBs, thus discouraging value addition. In addition, they also face competition from similar products from developing and developed countries with more advanced value addition technologies and famous brands. Local producers therefore face substantial challenges in order to penetrate

external markets. Regional markets offer opportunities for local processors to promote their products. Other challenges include inadequate financing opportunities, high costs of utilities and inadequate capacity of the private sector to undertake processing. In 2015, Jakana Foods, one of the key industry players in the juice sub-sector, raised a red flag regarding the importation of tax free processed juice from Egypt under the COMESA Free Trade Agreement.

5.2 Government Initiatives in the Horticulture Sector

There are efforts in place by the Ugandan Government to support the sub-sector through various practical initiatives. The Government, with assistance of the Korean Government, is constructing a fruit processing plant in Soroti, which will be able to process and supply concentrates to industries in the country and export the surplus to the region. This venture has stimulated mango growing in the Eastern region. Another example is the Luwero project that focuses on tomato processing. The Government has also revamped the UIRI, which provides incubation facilities to new upcoming industries, including agro-processing. These services have also been extended to rural districts. This will enable agro-processing firms to develop competitive products.

Despite these initiatives, more actions need to be undertaken by the Ugandan Government in order to promote the horticultural sector. Actions that incorporate sustainability are especially important.

Chapter 6

Conclusions and Recommendations

The analysis of the inter-linkages between agro-processing and climate change, food security, trade and gender is intended to identify gaps within policy and practice as well as pinpoint opportunities to promote these inter-linkages to ensure a holistic approach to agro-processing.

There are strong linkages between agro-industrialisation, structural transformation and sustainable development. There is a causal relationship and inter-linkages between agro-processing, climate change, food security, trade and gender. The promotion of positive linkages between these variables is key to the promotion of sustainable development in general and sustainable agro-industrialisation in particular. Understanding these linkages is the starting point for crafting mutually supportive policies and regulatory frameworks.

Debates around industrialisation have largely emphasised both positive aspects of the process as well as negative impacts. Such debates have also discovered that environmental and gender issues are often ignored or relegated to the background. The predominant view has equated industrialisation to human progress. Prospects of wealth and better living conditions within developed countries are powerful incentives for late-industrialising countries like Uganda. In addition, the immediate, short-term and tangible benefits of industrialisation outweigh other development objectives, such as climate change, food security, trade and gender issues that affect future generations. Therefore, debates and

policies around industrialisation have been geared towards industrial efficiency, that is, how to transform various materials into finished goods in the quickest and cheapest way. As a result, the linkages between industrialisation and other key development objectives such as climate change, the environment, food security, trade and gender have been limited. Understanding the interactions between these variables and the nature of policies that can promote the complementarities among them can facilitate the sustainable development of the industrial sector, especially through agro-processing.

Agro-processing is recognised in the overarching national and regional development policies and plans, such as the Uganda Vision 2040, the National Development Plan and the East African Development Strategy, as a key sector to promote development by fostering backward and forward linkages in the economy between agriculture and industry. However, despite this recognition, there is no stand-alone agro-industrial policy or strategy to actualise this aspiration. Provisions related to agro-processing are scattered in various trade- and agriculture-related policies, which makes holistic implementation difficult. Absence of a specific agro-industrial policy means that important issues like climate change, food security, trade and gender are not mainstreamed therein.

The study has also shown that there is limited knowledge, understanding and appreciation around the interaction between agro-processing, climate change, food security, trade and gender.

These gaps occur at all levels, from the level of small-scale producers, to processors, local government and national levels and within the key line Ministries. Platforms or fora for dialogue and inclusive policy-making within the focal Ministries of Trade and Industry, Environment, and Agriculture are limited. Despite the existence of such fora, they are not inclusive. The recommendations below are intended to address this lacuna.

Recommendations

- (i) The Ministry of Trade, Industry and Cooperatives (MTIC) will begin the process of reviewing the National Trade Policy and National Industrial Development Policy in 2017. Stakeholders, especially civil society organisations (CSOs), should actively engage in this process to ensure that agro-processing and its linkages to climate change, food security, trade and gender are mainstreamed. A well-crafted National Industrial Development Policy will address the lack of a stand alone agro-processing policy. However, this should not preclude a campaign for a stand-alone policy at national and regional levels. In the meantime, CSOs can engage the MTIC to develop an agro-industrialisation strategy. There are also other critical bills for consideration by the 10th Parliament, in which CSOs should proactively engage to include these critical issues of climate change, trade, food security and gender within activities such as agro-processing. These include the Agriculture Extension Bill and the National Coffee Bill.
- (ii) The existing dialogue platforms within key related ministries should be strengthened and made more inclusive. In the MTIC, there is the Inter Institutional Trade Committee, a multi-stakeholder committee composed of representatives of stakeholders from relevant government ministries, private sector and the civil society, whose overall mandate is to assist the Ministry in formulating trade-related policy. The IITC has various subcommittees dealing with specific trade-related issues. CSOs should advocate for a sub-committee on agro-processing, and also invite stakeholders working on climate change, food security and gender issues to be included within this subcommittee. All the ministries in Uganda organise annual review and planning meetings. In the review held by the MTIC, CSOs should actively participate in this process to ensure that the implementation of trade policies and strategies mainstream the aforementioned key variables.
- (iii) Local governments play a key role in ensuring that climate change, food security, trade, and gender are mainstreamed into agro-processing. Therefore, the capacity and collaboration among key institutions and offices at the local government level, namely the district agricultural officer, the production officer, the environment officer and the commercial officer, should be strengthened. This can be done, inter alia, through targeted capacity-building training.
- (iv) Awareness and capacity-building should be undertaken for the private sector, policy makers, technocrats and politicians within relevant ministries, which include Ministry of Planning and Economic Development (MFPED) MTIC, MAAIF, Ministry of Local Government (MGLS), and agencies like National Environment Management Authority (NEMA) and UIRI. Capacity-building activities could be in the form of briefs, workshops and seminars which will help stakeholders better understand the issue before the policy-making process begins.
- (v) Studies on specific product value chains that explore the inter-linkages between agro-processing, climate change, food security, trade and gender should be undertaken. This will enable key stakeholders to understand the interaction between these key variables and the type

of policy and strategy that needs to be developed.

- (vi) Regarding horticultural production, the Ugandan Government should promote organic production as it provides an opportunity for farmers to adjust their production systems to be able to produce in an environmentally-friendly way and address climate change challenges. Uganda is one of the major organic producers in Africa with a total 231,157 hectares of organic production and 189,610 certified organic farmers. Organic agriculture, therefore, has a significant role to play in addressing food security issues, land degradation impacts, poverty alleviation and climate change. There is also a niche market in Europe and other developed countries for organic products from Uganda. However, commercial organic production can only be attractive to farmers if revenues obtained from their produce are higher than conventionally-produced products.
- (vii) Agricultural, trade, industrial and climate change policies should acknowledge organic production as a way of promoting sustainable production so that activities are developed to promote organic production and processing.
- (viii) The Government should ease the process of organic certification for farmers. At the regional level, EAC Partner States should harmonise biosafety and biotechnology policies to promote organic production.
- (ix) In order to promote organic production and processing, a policy and strategy should be developed that identifies products to be prioritised and targeted by farmers.
- (x) The use of green technologies, such as solar drying methods for processing horticultural products, should be encouraged as it offers an opportunity for farmers to undertake processing at the farm level, reduce wastage and increase incomes. Since this type of processing does not consume fossil fuel, it does not negatively affect the climate.
- (xi) There is also a need to develop a local market for agro-processed products, which will stimulate production. This can be done through the implementation of the 'Buy Uganda Build Uganda' policy that promotes the consumption of locally-produced goods and services.
- (xii) The effect of climate change on production and processing is not very well understood by all stakeholders. Therefore, the sensitisation of stakeholders along the value chain on the effects of climate change on production and processing of horticultural products is critical if production is to be sustained. Different stakeholders along the value chain should also be conversant with the different mitigation measures that can be undertaken to reduce the negative effects of climate change.
- (xiii) Although there have been measures to use cleaner technologies, especially in manufacturing sectors, this has been limited to medium- and large-scale firms and very little attention has been paid to small- and medium-sized enterprises (SMEs) which form the majority of horticultural exporting and processing firms. Use of cleaner technologies should be encouraged at all points of the value chain, starting at the SME firm level. Sustainable production, processing and export of horticultural products, especially fruits and vegetables, requires producers, firms and other stakeholders to understand climate change risks and mitigation measures. For example, as farmers embark in the production of hot peppers in wetlands and pineapples on steep slopes, they should have an idea of the likely impacts on the wetland and steep slopes, both in the short- and long-term.

- (xiv) UIRI should be encouraged to review their policy on incubation of agro-processing projects so that issues of climate change, food security, trade and gender are included within their policies and strategies.
- (xv) There is a need to strengthen coordination mechanisms at the national level between the Ministry of Water and Environment, the Climate Change Secretariat and other Ministries dealing with trade, agriculture and gender. The synergies between different policies are currently weak; for example, although the climate change policy recognises the importance of industry, there is no connection made to trade, yet there is a direct relationship between trade and climate change. As trade increases, there will be more demand for agricultural land to enable farmers increase production and respond to increases in demand. The measures that farmers take to increase production, especially for agro-processing, will have a direct impact on climate change, food security and gender relations at the household level. Therefore, collaborative mechanisms among these key ministries and agencies should be put in place.
- (xvi) Adaptation measures to address climate change effects along value chains of the most vulnerable products should be developed and implemented by key stakeholders.
- (xvii) The gender aspect of agro-industrialisation is complex yet critical, given the central role of women in agricultural production. Mainstreaming is a complex subject that requires the involvement of relevant stakeholders. MTIC should ensure that the ministry responsible for gender and CSOs is brought on board when developing the agro-industrial policy or reviewing the NIP to ensure that gender is mainstreamed in agro-industrialisation policies and strategies.

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Agro-industrial Development Policies: What Nexus to Climate, Food Security, and Trade?

How can agro-processing development in Uganda become more climate-aware, trade-driven and food security-enhancing? This study explores this question and provides policy options for coherently harnessing the full potential of Uganda's still nascent agro-industry despite climate change.

In an ideal scenario, trade policies should ensure the availability of inputs despite climate change, markets for the processed products and access to cleaner technologies; while climate change policies support this effort through targeted adaptation and mitigation initiatives. The role of international trade and climate negotiations in framing the policy space for such policies should not be overlooked.

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CUTS[®]
International

CUTS International, Geneva

37-39, Rue de Vermont, 1202 Geneva, Switzerland
Ph: +41.22.734.6080, Fax: +41.22.734.3914
Email: geneva@cuts.org, Web: <http://www.cuts-geneva.org>