ISSN 2410-7530

ADDIS CHAMBER JOURNAL OF TRADE AND BUSINESS

Volume II Number 1 December 2016

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Published by Addis Ababa Chamber of Commerce and Sectoral Associations

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www.addischamber.com

Editorial Committee

Addis Chamber Journal of Trade and Business (ACJTB) is published annually by Addis Ababa Chamber of Commerce and Sectoral Associations (AACCSA), with the financial support from Danish International Development Agency (DANIDA). The articles in the journal deal with issues and challenges of the Ethiopian manufacturing sector. The objectives of the journal are to help:

- Understand problems and challenges of the private sector;
- Identify issues of competitiveness and investment opportunities as well as the comparative advantages and level of business competence of Ethiopian companies against those in Sub-Saharan Africa; and
- Analyze public policy and the regulatory environment to come up with concrete evidence and policy recommendations for Public- Private Dialogue with the concerned government organs so as to make the business environment more conducive.

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Danish International Development Agency DANIDA

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Prospects and Challenges of Industrial Zones Development

Bayisa Tesfaye[1]

ABSTRACT

There has been growing recognition of the links between success in manufactured exports and rapid economic growth and industrial transformation, which the Ethiopian industrial zone development program is trying to follow at the moment. The country aspires to be the hub of manufacturing industries in Africa by attracting investors, mainly foreigners. To this end, the government has been engaged in building industrial parks in various growth corridors with the aim of providing the necessary services and facilities for industries as a means to encourage more Foreign Direct Investment (FDI) and domestic investment. It is also expected to scale up the capacity and productivity of strategic light manufacturing industries like textile, leather, agro-processing, food and beverage, chemical and pharmaceuticals through transfer of technology and skill upgrading.

If implemented effectively, these economic zones would serve as a fuel for spurring industrialization by attracting FDI, stimulating export trade, creating immense jobs, addressing capital shortage through generating foreign earnings, and creating long-term dynamic effect on the local economy. In this regard, though few zones in operation have managed to attract some foreign and local investors and created a significant number of jobs, nothing much could be said about their actual contribution for the country's industrialization at this level, except that they are facing problems related to institutional capacity, infrastructural provision, technical and managerial skills, access to utilities, etc from the very beginning.

Industrialization requires a combination of good policy and strong private dynamism. In this regard, the prospect of success of industrial zone programs in Ethiopia is determined, among others, by not only the extent to which it would attract FDI but also by its capacity to create dynamic linkage with domestic small and medium enterprises through the value chain as well as engaging the private sector (local or foreign) in the development, management and operation of zones now after. This can enhance the dynamic benefits of zones (knowledge and technology spillover, productivity, competitiveness, improved working culture and entrepreneurialism, etc) that could be cascaded to the country's GTP.

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Part I: Introduction

1.1. General Background

The establishment of industrial zones is an essential strategy for implementing industrialization in developing countries and regarded as one among several instruments of industrial policy (Amado, 1989:83; Zeng, 2015:3). In economies that are largely agrarian in nature like Ethiopia, industrial zones can foster new manufacturing investment, stimulate exports and expand employment opportunities which underneath a step towards structural transformation (Brautingem and Tang, 2014).

Industrial zones are also regarded as a prerequisite for balanced regional development, especially when the regions concerned do not possess appropriate sites for location of industries (Ganne and Lecler, 2009; Rohne, 2013). In the new context of globalization and liberalization as well, the development of industrial parks is considered as an important vehicle for reviving the industrial sector and taking up challenges in the competitive global world (Sefrioui, 1999; UNCTAD, 2015). Therefore, if implemented effectively, zones can play a critical role in catalyzing economic growth, diversification, upgrading and competitiveness (Falore, 2011:14).

Despite decades of international experience, there remains no blueprint for successful special economic zone policies, since the majority of them fall well below expectations (Falore and Moberg, 2014). However, industrial zones in Asia and Latin America are more successful than those operating in Africa (WB, 2008), though the program is rapidly flourishing in the continent recently.

Unlike industrial zones in Asia which have created significant backward and forward linkages between the local economy and the zone-based firms thereby transferring technology, zones in Africa are mostly traditional export processing enclaves isolated from local economies, and allegedly incapable to achieve the expected outcomes of ample employment generation and structural transformation of the economy (Stein, 2009; UNDP, 2015).

In addition, issues related to weak infrastructural facilities (electricity, water, transport, communication, etc), poor regulatory environment, weak planning and management, rent-seeking customs services, unsuitable locations, and high cost and low-productivity labour supplies, etc have discouraging effects on the flow of potential investors, foreign or domestic (Vastveit, 2013; UNDP, 2015).

As of recent times, the Government of Ethiopia is striving to establish industrial zones that are thought to facilitate and encourage its industrial transformation plan. According to the Ministry of Industry (MoI) (2015), the main objective of industrial

zone development program is to contribute to job creation through attracting investments, promoting exports and improving enterprise competitiveness in the targeted industrial zones.

To this effect, the government has identified potential areas, established policy and regulatory frameworks and is pushing the program forward as part of its consecutive five year development plans. Meanwhile, the country is able to attract a substantial number of FDI in the export-oriented light manufacturing sectors like textile and leather and created employment opportunities for thousands, though the achievements are far below expectations.

Though it is too early to make an account on its successes and failures, the industrial zone development program in Ethiopia shares a lot of similar features with its African counterparts from the very beginning, as the situations of few operating zones show. The factories operating in the Bole-Lemi-I industrial zone and Eastern Industrial Zone (EIZ) have repeated by expressing their dissatisfaction regarding frequent power cuts, erratic water supply, poor custom procedures and long work permit procedures, etc.

1.2. Objectives of the Study

The principal objective of this study is to explore the challenges and opportunities of industrial zones for industrial transformation in Ethiopia. It is also aimed to address the ensuing specific objectives:

- To explore the contribution of industrial zone programs for Ethiopia's industrialization agenda;
- To examine some critical benefits of industrial zones for private sector development in Ethiopia;
- To assess regional and international best practices that could offer valuable lessons in developing industrial zones in Ethiopia;
- To find out the existing policy and institutional guidelines regarding industrial zones development in Ethiopia;
- To identify challenges facing industrial zone development programs in Ethiopia, make an account on available opportunities, and provide recommendations on the ways forward.

To address these objectives, the paper is structured in four main parts. The first part introduces the study by providing a highlight of its background, key objectives, significance and limitations, and methodology. The second part briefly reviews the existing literature on industrial zone programs with special emphasis given to its conceptual framework, rationale, and ownership and management structures as well as its trends in Africa. The third part, which lies at the core of this study, is devoted to examine the narratives of industrial zone development program in Ethiopia; specifically its

practices, contributions to the private sector, policy and regulatory frameworks, and challenges and opportunities. In addition, it deals with important lessons Ethiopia could learn from others (success and pitfalls) as a late comer economy. The last part of the paper draws conclusion and offers recommendations for different stakeholders, zone developers, operators, investors, etc.

1.3. Significance and Limitations of the Study

This study has theoretical as well as practical contributions. Theoretically, it illuminates the existing knowledge and scholarly debate in the area, both in Africa and beyond, and thereby helping late comer economies like Ethiopia in attempting to design an appropriate industrial zone development strategy for laying a transformative industrial base.

The findings of the study have also a practical significance for the academia, policy makers, industrial zone developers and operators as well as the private sector within or outside the zones. Generally, the study has a potential to fill research gaps in the area and could be an important input for future action, both for government and the private sector in Ethiopia.

Despite its significance, there are limitations associated with its very nature and the specific situations in Ethiopia. From the very start, as agreed with Falore (2011), there is lack of systematic, data-driven analysis on the performance of economic zones and limited up-to-date analysis of the policies and practices that determine that performance. This problem is mainly serious in Africa where industrial zones have short life history, research and development in the area are lacking, and zones are seldom sustainable.

With a history of less than a decade, research findings on industrial zone development in Ethiopia is critically scant and this has its own impact in making a thorough analysis of its political, social, economic and environmental feasibility. In addition, the limited time frame and financial capital have restricted the flexibility of the study in terms of depth and width.
The restricted entry policy of resident companies and the absence of concerned personnel to provide information are also considered as shortcomings in enriching this study further.

1.4. Methodology

The study has employed a qualitative research approach to address the objectives identified above since most of the zones are at the commencement stage from which adequate data could not be generated to make performance analysis. Accordingly, data were inductively analyzed using information generated from both primary and

secondary sources.

Primary data was gathered through field observation (visit to zones in Addis Ababa and its vicinity) and key informant interviews with different public and private sector actors (concerned government officials, experts from chamber of commerce, company managers and private industrial zone developers and operators).

Published and unpublished secondary information were also used from various documents to supplement the primary sources.

Main emphasis was given for assessing the existing practices (good and bad) so as to make an account on the potential contributions of industrial zones to Ethiopia's structural transformation agenda. But, caution was made from making any conclusion due to an early stage of development. The intention here is to comprehensively scan the pre-conditions and precautions needed in initiating the program in Ethiopia.

Part II: Literature Review

2.1. Evolution and Definition of Industrial Zone

Use of industrial zone for economic reason has a long history and dated back as early as 1704 in Gibraltar, 1819 in Singapore, and 1848 in Hong Kong. These early zones were geared towards facilitating external trade through the use of free ports; an area where the commodities were circulated (imported, exported, exchanged) free of local prohibitions, taxation, duties, and excises (Farole, 2011; Amado, 1989).

However, in its modern design and aim, the concept initially appeared after the Second World War (Sefrioui, 1999) with the establishment of the 'first modern industrial zone' in Ireland (Shannon) in 1959 and immediately followed by Puerto Rico (Mayaguez-the first modern zone in developing countries) in 1962 (Zhang and Ilhéu, 2014:6; Guangwen, 2003; Stein, 2009; Amirahmadi and Wu, 1995; Amado, 1989).

Soon after, it evolved in Asia (India in 1965, Taiwan in 1966, South Korea in 1970), and then flourished in other countries in the region like Malaysia, Sri Lanka, Thailand, Philippines, Indonesia, etc in 1970s, and China following the 1979 open-door policy); Latin America (with Colombia and Dominican Republic established in 1964 and 1965, respectively, and then spread to many others like Mexico, El Salvador, Guatemala, Honduras, etc in the early 1970s); Middle East and North Africa (Egypt, Israel, Jordan, Syria, etc) in 1960s and 1970s; and most Sub-Saharan African (SSA) countries in the 1990s and 2000s (Stein, 2009; Amirahmadi and Wu, 1995; Falore, 2011).

Industrial development zones are widely known by different names in the literature:

Industrial Park (IP), Special Economic Zones (SEZ), Eco-Industrial Parks (EIP), Free Trade Zones (FTZ), Technology Parks (TP), Industry Clusters (IC), Export Processing Zones (EPZ), Economic Development Zones (EDZs), Innovation Districts (ID), Industrial Estates (IE), etc (UNIDO, 2015; Sefrioui, 1999; OECD, 2009; Zeng, 2015; Parole, 2011).

The variation in their nomenclature, for instance, Guangwen (2003) has identified about 66 different terminologies, reflects the linguistic preferences of developing and implementing authorities as much as functional differences between different kinds of zones pertinent to their establishing objectives, geographical location, and country's politics, among others (Pakdeenurit et al., 2014; Falore, 2011). However, the multiplicity of terminologies is highly confusing and created difficulty in defining, classifying and understanding the concept (OECD, 2010; Guangwen, 2003).

To address this confusion, scholars in the area are attempting to introduce their own generic name that is taught to represent all kinds of zones. Accordingly, Wang (2013) uses 'economic development zones'; Farole (2015) adapts 'special economic zones'; Guangwen (2003) uses 'free trade zones'; OECD (2010) prefers 'economic zones'; World Bank (WB ,2015) uses 'industrial parks'; Amirahmadi and Wu (1995) and UNCTAD (2015) adapt 'export processing zones'. Yet, there is no consensus reached among scholars on the generic term itself, though the name 'special economic zones' is repeatedly used in the literature. Despite their confusing nomenclature and definitional crisis, industrial development zones typically possess the following structural features to be an industrial zone across time and space (Wang, 2013; Zeng, 2015; Falore, 2011):

- Zones are formally delimited portions of the national territory defined by specific ***regulatory regimes*** (operating rules) that are more liberal and administratively efficient than those prevailing in the rest of the national territory;
- Zones have a single management or administration. The administration of the regime usually requires ***a dedicated governance structure***, centralized or decentralized, to ensure the benefit of investors through efficient management of the regimes;
- Zones have a separate customs area (duty-free benefits) and streamlined procedures. They are usually provided with ***special incentives*** (land, roads, electricity, water, telecommunications, transportation, etc) to attract investment and facilitate the activities of firms operating within the zone;
- Most zones aim to ***attract FDI*** in order to increase exports, and enhance competitiveness;
- Zones offer ***primary benefits*** for investors physically within the zone, though local small and medium enterprises are expected to benefit from linkage spillovers.

Based on the criteria mentioned above, industrial zones are commonly known as

ring-fenced enclaves (geographically delimited and planned areas) that enjoy special regulatory, incentive, administrative and institutional frameworks and other facilities that are different from the rest of the economy (OECD, 2009; Zeng, 2015). Unlike natural areas where firms are located predominantly to be closer to suppliers and markets (like the footwear cluster in Merkato and handloom cluster in Shero-meda in Addis Ababa) (Merima, 2012).

Industrial zones require deliberate government effort: feasibility studies, master planning, construction, and management follow-up (Kim, 2015). The development of industrial parks, therefore, reflect the government's policy intent and evolves as the industrial policy regime changes, and normally operates under more liberal economic laws than those typically prevailing in the country (Kim, 2015; Zeng, 2015).

In the context of Ethiopia, the name 'industrial zone development' adapted in the amended Investment Proclamation No. 849/2014 was replaced by 'industrial park' in the new industrial park proclamation No. 886/2015. The new proclamation has defined industrial park as

an area with distinct boundary designated by the appropriate organ to develop comprehensive, integrated, multiple or selected functions of industries, based on a planned fulfillment of infrastructure and various services such as road, electric power and water through one stop shop, and have special incentive schemes, with a broad view to achieving planned and systematic development of industries, mitigation of impacts of pollution on environment and human being and development of urban centers, and includes special economic zones, technology parks, export processing zones, agro-processing zones, free trade zones and the like designated by the investment board (Industrial Park proclamation No. 886/2015:2).

For the purpose of this study, the name "Industrial Zone Development (industrial zone for short)", the one adapted by the amended Investment Proclamation of Ethiopia, No. 849/2014) has been chosen as a generic term applying to all establishments mentioned in the definition provided above. This is because both proclamations (the amended proclamation No. 849/2014 and proclamation No. 886/2015) have accorded similar definition to the concept. Any other names used in the body of the text is implying this generic term.

2.2. Rationale for Developing Industrial Zones

The rationale for the development of industrial zones may differ between countries depending on their economic strength, degree of openness, stage of development, degree of privatization, and geographical conditions. Accordingly, while developed countries build zones to boost exports, developing countries tend to leverage zones

to accelerate industrialization (Madani, 1999; WB, 2008).

However, the general rationale for industrial zone development is that firms in dense geographic proximity tend to innovate and grow better than isolated enterprises due to certain advantages they could enjoy from agglomeration, which could happen in at least three different ways (Oyelaran-Oyeyinka and McCormick, 2007:21; WB, 2008).

First, demand for their goods and services are enhanced as potential customers become aware of the cluster, which (tenant firms) can easily gain scientific and technical knowledge through agglomeration (knowledge externality) that potentially provide inputs into a firm's innovation efforts, enhance their ability to supply quality products and reduce technical and commercial uncertainty. Secondly, export-oriented zones are intended to convey 'free trade status' manufacturers that can enable them to compete in global markets and counterbalance the anti-export bias of trade policies.

Though one can distinguish their rationale between policy, economic and infrastructural ones, several literatures (WB, 2008:12; Amirahmadi and Wu, 1995; and UNDP, 2015:9-10) have provided the following broad policy reasons for the development of zones in developing countries.

- **Industrial zones have a demonstration effect for the host economy:** through showcasing the success of zones, the international perception of a country's economy can be significantly improved and its relation with other countries could be strengthened.
- **To promote national or regional development:** zones are also used to concentrate scarce national resources in core areas and strategic sectors having dynamic long-term national importance, which is synonymous with Hirschman's unbalanced growth model.
- **Zones can create a dynamic backward linkage and have technological diffusion and inter-firm learning effects,** and hence contribute to local business development.

2.3. Ownership, Development and Management of Industrial Zones

As international experience shows, industrial zones could be built and owned by any profit making public or private (foreign, domestic, or joint venture) or public-private partnership , and managed and/or regulated by the developer or outsourced to a specialized firm/consultant (Ohno and Ohno, 2015; Sefrioui, 1999).

As a rule, the development and ownership of Industrial Zones (IZs) were mainly the affairs of the public sector until 1980s. However, with the exception of few East Asian

government-run zones, most of the establishments failed to meet the expected objectives due to the drawbacks of government management and regulation of zones that emanated from large government expenditure on infrastructural development and operation, lack of the required skill and experience among government employees, too much red-tape and corruption, etc (Pakdeenurit et al., 2014; Parole, 2011; Ceron, 2008).

As a result, several countries have changed their rules and regulations in the late 1980s and 1990s in allowing the private sectors to develop, own and manage industrial zones. Accordingly, about 62% of IZs in developing and transition countries were owned and operated by the private sector since 2007 in contrast to less than 25% in the 1980s, though some of them are operated by joint management between private sector and government (Pakdeenurit et al., 2014; WB, 2008; UNCTAD, 2015; Vastveit, 2013).

The table below compares zone development and management between traditional and modern framework.

Table 1: Zone development and management between old and new framework

Old framework	New framework
• Zone authority/corporation would develop, own, operate and regulate the zone	• Zone authority only regulates activities within the zone
• Zone authority has little power over other government bodies	• Private developer develops, owns and operates the zone on a cost-recovery basis
• Zone funded by government, typically subsidized services and facilities	• Outsourcing of core functions to private sector and specialized consultants
• Public sector development and operation of zones, usually through central agencies	• The government designates zone development and operations to private enterprises and service intermediaries

Source: Jose M. Ceron (2008)

The key factor behind the augmentation of private industrial zones is the realization that development and operation is more profitable in the hands of the private sector, and that this trend also reduces the burden on government resources (Farole, 2011).

According to WB (2008), privately owned Industrial zones are less expensive to develop and operate than their public counterparts, yield better economic results,

offer better facilities and amenities, command higher prices from tenants and attract 'higher end' types of activities. As a result, private zones generally have been more profitable and have had better social and environmental track records than public zones throughout the world (WB, 2008:2; Farole, 2011).

The growth of local and multinational private companies for development and/or management of zones and increasingly sophisticated demands from users and tenants are also the other reason (Ceron, 2008). A debate on public versus private zones is provided in the table below.

Table 2: Comparison of public and private zones

Public Zones	Private Zones
• Public zones are instruments of public policy, uniquely capable of providing public goods with broad impact: employment, attracting FDI, improving technology, increasing labor skills, etc.	• Private zones correspond to the reality of the global economy. Being profit-oriented, they maximize their competitiveness.
• They are instruments of industrial policy, focused on the long-term national strategic issues for which private zones have no interest.	• They are divorced from long-term politics and are focused on the short-term private economic interest.
• Public zones have a duty to serve all clients equally, no matter their respective size or origin, and can help small firms better than private zones.	• They apply strict financial rules to maximize efficiency, which requires innovation and flexibility.
• The government provides strategy and policy formulation, legislation, regulation, and enforcement—key public goods the private sector cannot or should not provide.	• They are better shielded from corruption and red tape and have, in case of disputes, a better chance of positive outcome, and as a result attract more investors.

Source: Falore (2011:38)

As Farole (2011) suggests, there is no comprehensive empirical analysis so far undertaken to answer the question whether the public or the private sector approach is more efficient. The general trend across the regions shows that zones in Latin America are dominated by the private sector, but are divided between the public and the private sector in Asia and Africa, and mainly dominated by the public sector in Middle East and North Africa as well as in Europe and Central Asia (WB, 2008; Farole, 2011). While East Asia provides ample evidence that public zones have the potential to be well managed and deliver significant economic returns, in Africa both

dominantly government run zone programs and the few private-sector-led ones have failed to generate any economic significance till now.

Since a decade in to the new millennium, industrial zones have been operating in more than 130 countries with total investment capital of more than 400 billion USD (Ceron, 2008) and have created more than 130 million jobs worldwide, of which China took the lion's share (Farole, 2011). The number of economic zones has exploded from 79 to 3500 between 1975 and 2005 (including zones in developed economies), and most of the expansion occurred in the last decade of the 20th century and first decade of the 21st century (Falore, 2011).

According to WB (2008) statistical figures, about 2500 economic zones have been operating in the emerging and developing economies, of which 41% are in East and South Asia, 30% in Latin America, 15% in Europe and Central Asia, 10% in Middle East and North Africa, and 4% in SSA. Most zones in SSA are single factory units, and about half of which are in Kenya (WB, 2008; Farole, 2011). The section below gives us an overview of industrial zone programs in Africa.

2.4. The Status of Industrial Zone in Africa

Since the advent of the 21st century, a number of African countries have observed significant economic growth, with sub-Saharan Africa (SSA) being one of the fastest-growing developing regions. Most economies in SSA have been struggling to alleviate poverty, generate employment for their fast growing labour force, and bring structural transformation of their economies by moving away from agriculture and natural resource dependence to high value adding manufacturing sectors (Vastveit, 2013).

However, the share of manufacturing sector to gross domestic product (GDP) in SSA is generally small (only 1% since 2012), and SSA's share of global light manufacturing has been declining overtime rather than increasing.

Africa as a whole has experienced a decline in manufacturing as a share of total GDP from 15% in 1990 to 10% in 2008 (UNCTAD, 2012; Dihn et al., 2012) resulted in economic stagnation. The recent explosion of industrial zones in SSA is an attempt to address such critical problems by attracting FDI, promoting exports, generating employment, creating enabling business environment, increasing private sector competitiveness, and finally, accelerating industrialization as envisaged by African Union Agenda 2063 (UNDP, 2015).

Though they failed to attract the expected foreign investment, industrial zones are not new to Africa since several zone programs were launched in the early 1970s in countries like Liberia (1970), Mauritius (1971) and Senegal (1974). However, over 80

percent of the programs were initiated and became operational in the 1990s and 2000s (see table 3 below) (Falore, 2011).

Table 3: Chronological order of industrial zone development in African countries

Decade	Country
1970s	Liberia, Senegal, Mauritius
1980s	Djibouti, Togo
1990s	Burundi, Cameroon, Cape Verde, Equatorial Guinea, Ghana, Kenya, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Seychelles, Sudan, Uganda, Zimbabwe
2000s	Gabon, Gambia, Mali, South Africa, Botswana, Zambia, Eritrea, Mauritania, DRC Congo, Tanzania, Ethiopia

Source: Farole (2011) and Zeng (2015)

As of 2014, Industrial zone programs have been launched in nearly 30 countries (60%) of the region, and many others are in the process of developing them (Zeng, 2015). Viewing from the unprecedented expansion in recent years, more zones are expected to be developed in Africa over the next decades than during the three preceding decades combined (Falore and Moberg, 2014).

Despite their growing number, African industrial zones, especially those in SSA, have generally been unsuccessful and failed to attract significant investment, promote exports, or create sustainable employment relative to many other zones elsewhere, except in Mauritius and also some partial initial success in Kenya, Madagascar and Lesotho (Vastveit, 2013; Falore, 2011; Dinh et al. 2012).

In some countries, zones are either partially functioning or totally abandoned (Brautigam and Xiaoyang, 2011). In reference to various literatures (Farole, 2011; Falore and Moberg, 2014; Dinh et al., 2012; Radelet, 1999; Zeng, 2015; WB, 2015; Vastveit, 2013, etc), the following are the main reasons for the failure of African industrial zones, among others.

- Unlike the modern large scale multi-use zones (hosting agricultural, manufacturing, construction, and other services) that have an economic wide effect and spearheaded by the private sector, the vast majority of African zones are traditional export processing zones, mainly operated by the public organ, and are disconnected from the local economy.
- Inadequate leadership support and policy variability: many African countries are passing good Industrial zone development proclamations but failing to implement regulations. Due to lack of leadership commitment, infrastructure in many zones

mirrors the worst domestic experiences, including water shortages, electricity outages, and health, safety, and environmental shortfalls. Fundamental rules of the game are also frequently changing without having any positive economic impact.

- In Sub-Saharan Africa, industrial zones are usually reserved for large exporters, most often firms with foreign ownership, and hence are not a direct solution for the development of domestic small and medium enterprises.
- There is a long list of export platforms that have failed because of high administrative burdens, rent-seeking and corruptive system, and other related problems.
- Poor implementation capacity and lack of responsible authority: African industrial zones often lack the agency responsible for developing, promoting, implementing, and regulating the program, or if it exists, it lacks resources and capacity to carry out its mandate or the agency is not autonomous to stand on its own feet.
- Many zone programs in Africa are myopic in their orientation: they have been inspired by, including those in Ethiopia, preferential trade regimes like AGOA and EBA, which could expire anytime. In addition, they have been focusing on light manufacturing industries like textile, leather and consumer products which add little value to the economy in general due to slowing demand in international market.
- The location of African IZs is too often determined by political rather than commercial or economic considerations. As a result, they are short of fulfilling the required infrastructural facilities which have negative impact in attracting investment.
- Poor strategic planning and a mismatch with comparative advantage: many zones in Africa have been initiated without careful studies of market demand, and are often targeted at sectors well outside the country's comparative advantage.

In addition to the above problems, African industrial zone development programs are affected by poor timing. Most African programs were launched in the 1990s and 2000s when the international economic environment is more competitive due to the emergence and entrenchment of 'factory Asia', the expiration of the Multi-fiber Arrangement2 (MFA), the consolidation of production networks, and the recent slowdown in demand in traditional export markets, etc.

For instance, the end of MFA has decreased the competitiveness of textile and apparel sector in Kenya, though AGOA has been playing an important role in keeping firms in this sector (Vastveit, 2013).

As a result, the African IZs are experiencing stagnating growth and their contribution to industrial transformation is under question. Despite these challenges and the increasing costs associated with zone's incentive.

The MFA had governed the world trade in textiles and garments from 1974 to 2004, imposing quotas on the amount developing countries could export to developed countries. It expired on 1 January 2005 at Uruguay Round and was brought under the jurisdiction of the World Trade Organization (WTO). This condition forced developing countries to make trade reform packages, many African governments remain committed and pushing their programs of industrial zones forward (Vastveit,2013).

2.4.1. China Initiated Industrial Development Zones in Africa

Although China's economic zone programs have initiated lately relative to other Asian countries like India, Taiwan, South Korea, and Malaysia, the approach has been significantly successful in accelerating industrialization in China than any other country in Asia, which signals its dominance in regional thinking (Walsh, 2015).

China has learnt the economic impacts of industrial zones from the experiences of other European (such as Ireland) and Asian (like Japan and Singapore) countries and now trying to share its experience with other developing countries, especially African (Zhang and Ilhéu, 2014). The emergence of China-sponsored industrial zones in Africa is the outcome of the China-Africa economic cooperation strategy officially announced by the Chinese government in 2006, which is inspired by the government's policy of 'going out' in search of new markets for Chinese companies.

The Chinese IZs in Africa are believed to offer mutual benefit for both African and Chinese enterprises, i.e. they provide oversea market access for Chinese enterprises and enable small and medium enterprises in Africa to learn from the experiences and lessons of Chinese zones in their respective country (Brautigam and Xiaoyang, 2011; Rohne, 2013; Zhang and Ilhéu, 2014; UNDP, 2015).

On the forum on China-Africa cooperation forum held in Beijing in 2006, the Chinese government announced its intention to establish up to 50 special economic cooperation zones abroad, of which three to five zones were pledged to be established in Africa. Consequently, Chinese initiated industrial zones have been established in six African countries: Ethiopia, Egypt, Nigeria, Mauritius, Algeria and Zambia, starting from 2006, though it was unexpectedly aborted in Algeria (Zhang and Ilhéu, 2014; UNDP, 2015).

Among these countries, Mauritius stands out as the most and best experienced nation with the first export processing zones established 40 years ago. Egypt (Alexandria Free Zone since 1973) and Nigeria (since 1991) have also some level of experience, though none of the IZs in Nigeria are considered successful. On the other hand, Ethiopia

and Zambia had no experience with special economic zones so far and the Chinese operated zones are the first ones in both countries (Brautigam and Tang, 2013).

The table below provides an overview of China's Economic and Trade Cooperation Zones in Africa

Table 4: China's industrial zones in Africa

S. No.	Country	Name of the zone	Year begin	Status
1	Algeria[2]	Jiangling Economic and Trade Cooperation Zone	2007	Not implemented
2	Ethiopia	Eastern Industrial Zone	2007	Operational (partial)
3	Egypt	China-Egypt Suez Economic & Trade Cooperation Zone	2007	Operational
4	Mauritius	Jinfei Economic and Trade Cooperation Zone	2006	Under construction
5	Nigeria	Nigeria Ogun-Guangdong Free Trade Zone	2007	Operational
6	Nigeria	Lekki Free Zone	2006	Operational
7	Zambia	Zambia-China Economic and Trade Cooperation Zone	2006	Operational (partial)

Source: UNDP (2015); Zeng (2015)

Except one zone that is engaged in natural resource (mineral) extraction (the copper processing zone in Zambia), all the other IZs initiated by China in Africa have mainly focused on manufacturing products for export. In terms of ownership, the IZs in Ethiopia and Mauritius are 100% Chinese-owned, while the others are joint ventures, usually with African national or state-level governments as minority partners. For example, in Nigeria, the Ogun and Lagos State governments (the states in which the companies are located) hold 18% and 40% of the shares in the Ogun and Lekki zones, respectively. An Egyptian consortium holds about 20% of the shares in the Suez zone (Brautigam and Xiaoyang, 2011).

The presence of China's industrial zones in Africa can present more opportunities than costs for the host countries. If successful, they can attract significant local and foreign investment, create employment, promote exports and elevate industrial competitiveness.

[2] The Algerian zone had stalled because of unexpected changes in Algeria's legislation governing foreign investment (Brautigam and Xiaoyang, 2011).

These opportunities are dependent on the extent to which Chinese enclaves are connected to the local economies and participate local business; willing to employ young Africans relative to expatriates; willing to train and transfer technology and know-how to the local people; committed to social and environmental safety; and capable of learning local conditions and able to produce high standard products than those outside the enclaves, etc. In the absence of these things, their presence will instill a fear of exploitation and would adversely drive nascent local firms out of business, let alone catalyze industrialization in Africa.

Part III: The Narratives of Industrial Zone Development in Ethiopia

Among SSA countries, Ethiopia's recent economic growth is impressive and its GDP grew on average by 11% between 2004 and 2014 (WB, 2015).

In order to sustain the growth momentum and further induce industrialization, the government of Ethiopia has introduced the ambitious Growth and Transformation Plan (GTP1 and 2) since 2010/11, in which the private sector has been considered as an engine of economic growth and transformation that primarly intends in reducing poverty and bringing structural transformation through building an economy with modern and productive agricultural and industrial sectors that would ultimately take the country to a middle-income status by 2025 (UNDP, 2015; MoI, 2015).

The structural transformation of an economy, however, is not just associated with the growth of the economy, but it pertains to a transition from lower to higher productivity sectors, mainly a shift from agriculture to industry and modern services with corresponding increase in incomes and average employment-to-output ratios (UNIDO, 2013:15, 131; ECA, 2014).

According to the 2015 World Bank report, Ethiopia has achieved successive economic growth over a decade. However, the country could not manage to bring transformation in terms of economic and social structures with the agricultural sector contributing about 40.2 % of GDP and employing about 77.3% of the country's labour force since 2013/14. To reverse this condition and open a new road towards industrialization as envisaged by GTP, the government of Ethiopia has been introducing many policy instruments; among others including the initiation of industrial zone development program.

The government aims to build an industrial base through the program and considers it as a key instrument of its short-and long-term development plans. According to

the new Industrial Park Proclamation No. 886/2015, the establishment of industrial zones in strategic locations in various parts of the country is needed for the following four main reasons:

- To accelerate economic transformation and development of the country through promoting and attracting productive domestic and FDI thereby upgrading industries and generating employment opportunities;
- To enhance exports;
- To protect the environment and human well being; and
- To use land economically, and establish and expand planned urban centers.

3.1. The Role of IZD for Industrialization

In many literature, industrialization through the strategy of industrial zone development is treated under unbalanced growth model. Theorists in this camp like Albert Hirschman (1958), Gunnar Myrdal (1963), Francois Perroux's (1955) and others argue that industrialization in developing countries does not require simultaneous investment in all sectors and areas due to shortage of resources and skilled manpower. Instead, governments of these countries should concentrate their limited resources in core areas and priority industries having greater backward and forward linkages, which could in turn stimulate growth in other areas and industries.

The theory also recognizes the significance of government role, especially in investments like road construction, irrigation works, power generation, transportation, and communications (Peet and Hartwick, 2009; Rohne, 2013). Given the labour-abundant and capital-scarce nature of the Ethiopian economy, the government's strategic focus on labour-intensive light manufacturing industries (so called 'last touch industries') is feasible from the perspectives of this theory.

Similar to what the unbalanced growth model proposes, Ethiopia needs a more focused approach to facilitate structural transformation than waiting until problems across all sectors of the economy are solved (Rohne, 2013). As the WB (2015) accounts as well, one of the reasons for the Ethiopian government in embarking on the industrial park development program is partly the recognition that 'systematic investment-climate reforms in multiple areas take time to address and are politically challenging to implement'.

In what appears to be similar with the arguments made above, the Ethiopian government has identified strategic areas around the country and provided the establishment of special economic zones in priority medium and large scale light manufacturing industries like textile and garment, leather and leather products, sugar, cement, metal and engineering, chemicals, pharmaceuticals, and agro-processing products. Feasibility study has been conducted and specific targets regarding

the number of companies that are going to set up business in the zones are spell out (UNDP, 2015; Lee, 2015).

At the moment, more than a dozen of industrial zones are identified and the construction of some of them is underway, with the EIZ (private) and Bole Lemi I (public) already partially in operation since 2010 and 2014, respectively. However, the majority of zones are planned to be owned, developed and managed by the public sector as the table below displays. Though this is somewhat normal at the early stage of the program, government monopoly is not advisable in terms of quality and its economic efficiency.

Table 5: Industrial zones under construction and those partially completed

S. No	Name of IZ	Owner-ship	Location	Distance from AA	Dis-tance from port	Area in hectare	Num-ber of factory shades	Major eligible industries	Completion period
1	Addis indus-try village	Public	AA	AA	863	8.7	-	Apparel	Operational since 1980's
2	Bole Lemi I	Public	AA	AA	863	156	20	Apparel, leather and leather products	Operational since 2014
3	Bole Lemi II	Public	AA	AA	863	186	60	Textile and apparel, leather and leather products	2017
4	Kilinto	Public	AA	AA	863	337	75	Food Processing, Pharmaceutical, Furniture, House appliance, Electron-ics, etc	2017
5	Hawassa	Public	South	275	998	300	172	Textile and apparel	2016
6	Dire Dawa	Public	East	473	380	1500	184	Textile & apparel, vehicle assembly & food processing	2016
7	Mekele	Public	North	760	750	1000	125	Textile & apparel, & food processing	2016
8	Kombolcha	Public	North-East	380	480	700	101	Textile & apparel, & food processing	2016
9	Adama	Public	South-East	74	789	2000	188	Textile & apparel, vehicle assembly & food processing	2016
10	Bahir Dar	Public	North-West	578	985	1000	101	Textile & apparel, & food processing	2016/17
11	Jimma	Public	South-West	346	1098	500	101	Textile & apparel, & food processing	2016/17
12	Akaki-Kaliti	Public	AA			330		Textile and garment, leather products, agro-processing	
13	Eastern IZ	Private	Dukem	30	830	200	80	Construction materials, leather processing, textiles and garments, car assembly, services, etc	Operational
14	Ethio-Turkish IZ	Private	Sendafa		863	100	-	Textile and gar-ment,warehouse and logistics	
15	Ethiopia-Chi-na Dong Guan International Light IZ	Private	AA		863	137	-	Leather and leather products, textile and garment, etc	
Total	15 zones					8454.7	1106		

Source: Constructed by the author based on data obtained from various documents

Industrial zones can be an engine of economic growth and industrialization, if given a proper place as a policy tool and proper care is taken as to their ultimate achievements and costs (Madani, 1999). According to an interview conducted with government officials at IPDC and EIC, Ethiopia aspires to be one of the most suitable destinations for investment, a growth corridor for East Africa, and a manufacturing hub in Africa.

To this effect, the country has decided to seize the opportunity presented by increasing labour costs in China and other Asian markets, and attract migratory investors into the manufacturing sector.

One of the ways of doing this is by establishing industrial parks that can provide a 'plug-and-play' factory shells to ambitious entrepreneurs. According MoFA , the Ethiopian government has targeted over US$1b annual investment in industrial parks over the next decades to boost exports, which is expected to create over two million jobs in the manufacturing sector alone. However, lack of potential contractors and very limited financial capacity are among the core problems the government is facing, as officials interviewed say.
both local and foreign investors accelerating exports and generating employment opportunities for locals as stated in (Ethiopian Herald, January 15, 2016). To this end, the government emphasizes mainly on labour-intensive light manufacturing industries for exports.

As table (5) above shows, the textile and garment sector followed by food processing and leather and leather product sectors is dominating the manufacturing industries to be located in the zones. The aim is to see Ethiopia as a globally-known cluster for textile and garment products, as the government officials reiterate as Reuter stated in its , July 4, 2014 report.

However, authors like Vastveit (2013) argues that African manufacturing products like textile and garment could not competently penetrate the international market due to their lower quality and other associated problems, unless they are provided with preferential arrangements like AGOA. The expiration of MFA, the more liberal trade policies of the contemporary world; and the skewed nature of domestic supply and demand market (unlike in many Asian countries like China) could narrow the alternatives the country has in this regard.

Therefore, the potential of industrial zone to facilitate a situation for planned transition to industry-led economy in Ethiopia is highly vulnerable to national and international conditions as it appear today, though one can still to wait to see its socio-economic impact ahead.

3.2. Trends of Operational Industrial Zones in Ethiopia

Though many industrial zones are beginning to flourish all over the country at the moment, the program has still remained at the very early stages of its journeys in Ethiopia. The first modern industrial zone, the privately developed and managed EIZ, was initiated in 2007 by the Chinese investors and began operation in March 2010, with Zhongshun Cement Manufacturing PLC became the first to invest in the zone (Brautigam and Tang, 2011; WB, 2011). On the other hand, the Bole Lemi-I Industrial Zone, the country's first government-run economic zone, was initiated in 2012 and began operation in February 2014 with George Shoe Ethiopian PLC, a Chinese-owned company (UNDP, 2015). Currently, expansion to the second stage is underway in both zones.

Located some 35 km, south east of Addis Ababa in the town of Dukem, Oromia Regional State, the EIZ is one of the first six Chinese economic zones established in Africa under the China-Africa economic cooperation framework. It has occupied a total land area of 200 hectares with an investment capital of 101 million USD and initially intended to create over 20,000 domestic jobs by attracting about 80 manufacturing companies within five years (UNDP, 2015; Rohne, 2013; WB, 2011).

According to information obtained from the EIZ head office in Addis Ababa, currently about 45 companies have occupied the zone of which only three (Arova Plastic PLC, Araek Import and Export PLC, and Rainbow Garment PLC) are local private companies. Out of the total resident companies, only 22 are in production, and the majority of them are on the pre-production preparation and installation stage, including the three domestic ones.

Till now, the EIZ has created approximately 7250 jobs of which 450 belong to the expatriate staff originated from different countries. According to the WB (2015), the operating companies have invested more than 460 million USD in the zone. Though it is about nine solid years since its operation has started and its current status is far below its original plan (inter alia job creation, investment attraction, replacement of operation level expatriate staff with domestic workforce), there is no particular reaction or policy change by the Government of Ethiopia in addressing the gap to the initially anticipated level.

Bole Lemi I industrial zone that covers around 156 hectares of land is found on the South Eastern outskirts of Addis Ababa linked to the country's air and rail transport network. The zone is entirely owned and managed by the government and developed at a cost of 2.5 billion birr (more than 125 million USD), financed by the state, and has attracted mainly garment industries from South Korea and India, though George Shoe

Corporation is the first to begin investment in the zone.

The zone is entirely developed by domestic contractors, though it has raised a lot of quality concerns from the resident companies (interview with IPDC officials; Reuters, July 4, 2014). All the 20 factory shades are rented to 12 investors, out of which eight are in production, and created about 5268 jobs by the beginning of January 2016. Of these 4739 are females.

The Korean garment industry called Shints Ethiopia Garment PLC alone has six factory shades, and created about 2000 jobs and generated export earnings of more than 3 million USD within one year, according to interview conducted with the company's local general manager. As the manager further explained, the company had a plan to employ 5000 workforce at the end of June 2016 and lift its export earnings to 168 million USD after three years. The zone is expected to create employment opportunity for about 50,000 citizens when its ongoing expansion project is completed (Bole Lemi-II), as information obtained from the IPDC officials indicate.

It is important to see some differences and similarities between the two zones currently in action. Being a public sector-run project, Bole Lemi-I has been developed and managed by the Ethiopian IPDC that was established in 2014 (Council of Ministers Regulation No.326/2014) while the Qiyuan Group (the Chinese consortium) is responsible for planning, development, management, promotion, and financing of EIZ, according to the MoU signed between the Ethiopian government and the Chinese consortium (WB, 2011). While Bole Lemi-I industrial zone is entirely rented to foreign exporting companies and limited to garment and leather products, the companies in the EIZ are occupied by both domestic and foreign investors producing diversified products such as shoes, construction and packaging materials, steel products, textile and garments, food processing, chemical products, automobile assembly and leather processing) both for export and local market.

In terms of zone land rent rate, the government run-zone offers land for factories at 1 USD per square meter a month while the EIZ is charging 2.25 USD per square meter a month, which is considered high by Chinese standards.

Resident company managers interviewed behave, the two zones are more similar in the type of problems they have been facing. The most critical common problem in both sites, as tenant firms reflected, is high rate of labour turnover followed by power outage, logistic and custom clearance problems, and shortage of domestic raw-materials, among others. Similarly, the WB (2015:46-47) also identified a range of common problems that have held back the performance of both zones those are:

…lack of an effective and functioning policy, regulatory and institutional framework;

weak strategic planning and demand driven approach; poor on-and-off site infrastructure planning; lack of specific on-and-off-site costing, performance agreements, and economic and financial analysis; absence of institutional capacity to oversee IP development; inefficient procedures and controls, including customs administration; lack of systematic investment promotion to attract committed anchor investors; and deficiencies in designing and implementing a linkages program, a communications and outreach strategy, and establishing and tracking performance indicators.

The above problems, combined with a poor business environment and weak eco-system related to skills and technology, could limit these zones to meet the envisaged outcomes. Notwithstanding their shortcomings, these zones have been playing a crucial role in addressing poverty and unemployment. Together, they have created about 12, 518 jobs at their initial stage and have been transferring technical skills to the employees through on-job and off-job (3 to 12 months training in China, for instance (UNDP, 2015) that could have long-term positive impact on the development of the country.
Though export performance is far below the target, FDI is considerably flowing into the country the prospects seems better in the future due to enhanced commitments from the government. The government could also learn many important lessons from these zones to improve its approach in the future.

Experiences obtained from EIZ would enable the government to favorably deal with potential private zone developers like Turkish, Indian and Egyptian investors; while those gained from Bole Lemi-I can help the government improve the development and management of zones in its ongoing projects in Bole Lemi-II, Kilinto, Hawassa, and others. In this case, these zones are serving as laboratories for testing and adjusting government policies and regulations; and hence one could be optimistic of their substantial role in the development process the government is currently embarking on.

3.3. The Benefits of Industrial Zones for the Private Sector

Successful industrial zones have a lot of benefits both to the country in question and its domestic private sector, which is greatly associated with the principal policy objectives often used to justify their establishment.

For the country, economic zones can generate either static benefits such as boosting employment, attracting FDI, and increasing and diversifing exports, or dynamic benefits such as promotion of non-traditional economic activities, hard and soft technology transfer, encouragement of domestic entrepreneurism, stimulating local economy through linkages, streamlining administrative and regulatory interfaces, and promotion of economic openness (Farole, 2011; Gibbon et al., 2008).

Accordingly, the benefits of industrial zones for the domestic private sector is the outcome of their dynamic and long-term objectives than the static and short-term ones that are meant to attract FDI mainly for promoting exports. As evidence suggests, however, the dynamic effects of industrial zones are probably low for traditional export processing zones (Gibbon et al., 2008) in countries like Ethiopia whereby industrial zones are dominated by foreign-owned labour intensive manufacturing activities on the level of industrialization is low and the competitiveness of zone enterprises highly associated with local and global incentives provided.

In addition, industrial zones have a lot of other advantages for the firms, foreign or domestic. By providing a plug-and-play factory shells, they play a significant role in facilitating access to better infrastructure and bank credit, creating market linkages, promoting competitiveness, reducing establishment and other related costs, easing of access to land for industrial and commercial purposes, improving their productivity, easing bureaucratic requirements, etc, which would eventually advance business activities (Ethiopian Herald, January 15, 2016; FDRE, Volume III, 2014). Jahansson (1994, cited in Omar and Stoever, 1999) is also identified the following three interrelated contributions of industrial zones for the domestic private sector that in turn is a paramount importance for national development.

First, domestic firms lack needed technical, marketing and managerial know-how, and FDI within the zones fills this gap. Second, domestic firms seldom have access to international distribution channels and need support from international or joint venture companies. Finally, entry channels into international markets would be difficult to domestic industries without access to established foreign firms with wide international business dealings (Omar and Stoever, 1999:138). With this back- ground, let us discuss some of the main benefits in detail in the context of Ethiopian domestic private sector below.

1) Provision of special Incentives

Though the length and extent of their provisions varies across nations, all countries offer a multitude of incentives like tax breaks and tax holidays to attract business and investment to their zones. These incentives are different from those prevailing in the domestic market outside the zone and include duty free access to imported raw-materials, exemption from sales and value-added tax on exported goods, tax holidays for corporate income tax, free repatriation of profit and market access, indirect subsidies for education and training, provision of subsidized utilities (land, water, electricity, etc), flexible labour laws, etc (Wang, 2013; Madani, 1999; Vastveit, 2013).

The Ethiopian government also extends various incentives (fiscal and non-fiscal) for investors investing in the industrial development zones. According to the 2015

Ethiopia's investment guide published by EIC, the following are some of these incentives:

- 10 years of income tax exemption if the investment area is in Addis Ababa and special zones of Oromia surrounding Addis Ababa and 15 years, if the investment is located in other areas, provided that the investor exports 80% or above of the product from his/her manufacturing industry or supplies as production input to an exporting investor;
- 100% duty free imports of capital goods such as machinery, equipment and construction materials, and spare parts worth up to 15% of the total value of the imported investment capital goods. In addition, duty paid at the port of entry and locally on raw materials used in the production of export commodities is 100% refunded;
- No export tax is levied on export products of the country, except on semi-processed hides and skins (150%);
- Access to industrial land through inexpensive lease or sub-lease basis for developers or renting premises in the zones cheaply (1 USD to 2.25 USD per square meter a month);
- Exporters are allowed to retain and deposit in a bank account up to 20% of their foreign exchange earnings for future use, etc.

Though these and other incentive mechanisms are mentioned in different official documents and other investment laws such as Investment Proclamation No. 269/2012 and Investment Incentive Regulation No. 270/2012, specific incentives for companies investing in the zone were not clearly stated in the Industrial Park Proclamation No.886/2105. There is also nothing provided in the proclamation concerning the preferential treatment needed for the domestic private sector, given that they could not compete with foreign investors and that the core objective of the industrial zone program is to stimulate the capacity of local firms.

2) Increasing Competitiveness

The success of industrial development zones is closely linked to the competitiveness of the national economy, which among others, depends on factors like the entrepreneurial base of local labour and its costs, level of technological development, level of market access, and the general business and trade regimes (openness, efficiency, etc) (Farole, 2011; Amirahmadi and Wu, 1995).

A country's comparative advantage in terms of low labour cost and large internal market can attract FDI, which, if effectively tailored into the domestic economy, would upgrade its competitiveness in the long run through technology diffusion and product specialization. Though Ethiopia is a low-labor cost advantage in relation to other emerging developing countries in Africa and Asia, the skill and productivity of

its labour force is still very low, as many used to agree. In addition, its internal input and output market is too shallow, and hence force investors to import raw-materials which are costly in terms of time and money.

Due to these conditions, Ethiopia's manufacturing products like leather and textile and garments could not become competitive in the international market, even relative to other African countries like Kenya, though provided with the same preferential trade regimes like AGOA. According to MoT (2013), even though Ethiopia is one of the top ten exporters of AGAO, its export share is less than 1% of total SSA exports until 2012. Between 2001 and 2012, as the ministry further stated, the top two performers, namely, Lesotho and Kenya, respectively exported to the US almost 135 and 68 times more than what Ethiopia exported. This shows the poor performance of the export sector even to make use of the opportunities at hand.

3) Creating backward linkages

Industrial zones have a positive impact in creating supply and demand linkages with local small and medium enterprises, though this is largely conditional on the industrial base of the nation (Madani, 1999). Using local raw materials has a net benefit for firms in the zone, for local suppliers and the country as a whole. It connects domestic small and medium producers with large zone-based export manufacturer which could make them 'indirect exporters'. For the resident firms, it saves much money and time, especially in countries like Ethiopia where poor trade logistics makes about 10% of their production costs on average (Dihn et al., 2012). For the country concerned, it saves foreign currency and increases its competitiveness in the long-run. The situation in Ethiopia in this regard is not attractive. Local raw-material shortage is the common problem of investors operating in both zones, except few industries connected to local packaging material producers and leather input suppliers (UNDP, 2015).

While export-oriented manufacturers, like in textile and garment, are importing almost all their raw materials, local cotton producers, on the other hand, are complaining for lack of market for their products. According to an interview made with some private companies in the zone, the quality of domestic raw-materials like cotton is below the standard required by their buyers, and this forced them to import from countries like India. This requires attracting investors not only to promote exports but also to substitute imports of the required quality, as lessons from countries like South Korea show. As Farole (2011:12) argues, 'policies promoting links between industrial zones and the domestic economy are key in realizing the dynamic potential of the zones'.

4) Providing one-stop shop services

The main advantage of industrial zones is the provision of various subsidized utilities

and services under one window to facilitate a 'plug-and-play' process for resident firms. The Ethiopian government also wishes to address investment-climate-related issues to land access, infrastructure (electric power, water, telecom service, banking, roads leading to the zones and within the zones), logistic, customs processes, training centers, regulatory environment, etc so as to further attract FDI (MoFA, 2015; interview with IPDC and EIC officials).

The provision of all these services in a single site can speed up the activities of manufacturing companies, offer cost and time benefits, reduce governmental red-tape and is likely to have a noteworthy effect on the competitiveness and export performance of firms. In the case of functional industrial zones in Ethiopia, these facilities were not adequately fulfilled at the moment, though they were better addressed in the EIZ than Bole Lem-I. Though the government run Bole Lemi-I has started its operation about two years ago, basic utilities like electric power (an engine of manufacturing), customs procedures and water, among others, are the core problems.

As a result, the resident companies are forced to use generators as an alternative for frequent power cuts, and this situation has had a direct impact on their production capacity besides the additional cost it incurs. As the officials responded, however, the government is tirelessly working to solve these problems as soon as possible and the forthcoming projects will have all the facilities on site from the very beginning.

5) Transfer of Knowledge and Technology

Clusters of industrial activity may increase firms' productivity through the ability to support specialized suppliers, pool skilled workers, and transfer knowledge. By attracting FDI with better knowledge and technology, industrial zones can contribute to an increase in manufacturing and economic growth in a given country (Vastveit, 2013).
They also provide job training and learning by doing for both skilled and unskilled workers that would help increase their productivity and work discipline. The composition of many companies in a single site can also create competition in terms of the technology they use, salary and other benefits they provide to workers, product quality, and innovation and entrepreneurship (Zeng, 2011).

Accordingly, industrial zones can play a catalytic role in inducing new work culture into the host economy that benefits the private sector in particular and the country in general. However, the benefits of skill acquisition is somewhat limited, as most production processes are low-skill and low-tech and foreign investors often prefer to use their own nationals in managerial and technical positions to avoid training costs (Madani, 1999). Vastveit (2013) also argues that knowledge and technology spill over from FDI to competitive domestic firms depends on the extent, durability, and quality

of linkages between foreign investors and the domestic economy.

Therefore, in countries like Ethiopia where zones are mainly reserved for FDI (Bole Lemi-I, for instance) with very limited linkages to the domestic economy, the prospect of spill over effects remain at margin. Yet, the government is thinking to reserve some industrial shades for domestic investors in its upcoming expansion plans to fill this gap.

3.4. Lessons from International Best Practices

Notwithstanding industrial development zones have been in operation in many developing countries, including Africa, there is not uniform economic outcome since the past three decades. By all measures, the most successful export zones in the world have been located in Asia; mainly in China, Korea and Taiwan (Stein, 2012), which many African countries are looking to emulate over recent years in their attempt to create jobs and reduce poverty (UNDP, 2015).

Yet, countries are different in terms of their geographical size and location, size of their economy, history, market access, institutions, resource endowment, human capital, etc; and these variations have their own impact on the type of lessons they could offer to one another, i.e. good practices to share or pitfalls to avoid. By any means, perfect replication is impossible in comparative studies, though important lessons could be learnt and adopted once modifications are made to the specific context of adopting countries.

In adopting the industrial zone approach, the government of Ethiopia is emulating the path of the Asian countries mentioned above where the approach was successfully used as a platform to attract and encourage foreign investment in their greater comparative advantage manufacturing sectors (WB, 2015).

In all these economies, industrial zone programs were designed as part of their broader long-term industrial policy strategy and in line with shifting priorities, and carefully linked with the local economy through an array of new institutions.

Unlike the neo-classical argument that considers development zones as a second best solution to free trade and competitiveness (the first being overall liberalization of the economy) (Falore and Akinci, 2011; WB, 2011; Madani, 1999), zones in Asia (mainly China, Korea and Taiwan) have generally been promoted as part of the strategic approach to transform the institutions and economic structures of their respective country, though there are differences in their approach; for instance, zone programs in China have initially introduced to pave the future directions of economic liberalization while those in South Korea and Taiwan were initiated as part of an overall

industrialization process after the base of industrialization has already laid and the market system became functional (Stein, 2009).

In this connection, the existing industry zone approach in Ethiopia resembles more to the Chinese than the Koreans or the Taiwanese since it aspires to lay a foundation for industrialization and private sector led economy through government directed industrialization strategy. To fit the requirement of the modern trading regimes, the government needs a more open and flexible approach in its zone program.

The other important lesson to be learned from well performing Asian economies is the strategies they have used to ensure the benefit of local enterprises from their zone programs.

In this regard, the Asian countries have applied various sequenced and differentiated incentive mechanisms for enterprises that want to invest in the zone. For instance, China has been encouraging joint-venture enterprises by reducing corporate tax rates so that they could have strong local connections (in using local inputs) compared to wholly-owned foreign operations. In this case, industrial zones were seen as a means for attracting FDI not only for promoting exports but also for transferring technology and creating backward linkages (Radelet, 1999; Stein, 2009).
Similarly, South Korea and Taiwan have been extending various incentive mechanisms for zone manufacturers using local raw materials as well as for those supplying it. This means the suppliers are becoming indirect exporters, which gradually allow them to substitute the foreign inputs imported duty free by companies in the zones. In addition, both Korea and Taiwan have provided special technical assistance and guidance to potential local suppliers and subcontractors to upgrade the quality of the products of the suppliers.

Accordingly, the percentage of locally used inputs grew substantially over time; for instance, from 3% in 1971 to 44% in the mid of 1990s in Masan zone of Korea (Radelet, 1999; Brautigam and Tang, 2013). Since the zone development program is at its infancy and the domestic business sector is not yet connected, Ethiopia can apply the best combination of these countries' experience to develop its private sector.

Asian governments are also providing various incentives for private zone developers and tenant firms. For instance, the Government of the Republic of Korea has eased restrictions on land acquisition and reduced red tape connected with the approval of constructions, urban planning and the environment.

The government has also been paying part of the infrastructure in the industrial parks, such as roads, water supply lines, and sewerage, and subsidized the purchase of land

for special purposes, such as apartments, rural industrial sites, and industrial parks for lease. Developers received tax incentives, such as exemption from land acquisition tax, registration tax, and property tax. Acquisition and registration tax exemption and partial relief from property tax were also extended to firms to be located in the industrial parks. In addition, preferential loan arrangements were made available at the time of site purchase (Kim, 2015). Though the Ethiopian government also offers part of these incentives, more lessons are still needed, especially on the modalities of its implementation.

Relative to Asia, one can rarely learn any success stories from African industrial zone experimentation so far. If anything important to Ethiopia in this regard is to critically understand the major problems facing African zone programs (those mentioned under section 2.4 above) and effectively working against them.

Yet, countries like Mauritius, the only well performing African country comparable to Asians (Amirahmadi and Wu, 1995), can still offer useful lessons to zone programs of Ethiopia and other Africans, especially in using industrial development zones as a means of import substitution, employment generation to manage destabilizing social and political tensions, quick knowledge transfer through attracting foreign investors into joint ventures with local companies, etc.

Being a latecomer industrial zone developer, reference to the experiences of the countries so far discussed and others could help Ethiopia evaluate its industrial zone programs in terms of the country's comparative advantage, for instance, its dynamic manufacturing sectors; nature of the private sector; technical, institutional and administrative capacity; viability to national and regional sustainable development; and regional and international best opportunities.

3.5. Policy and Institutional Framework for IZD

The failure or success of zone development is strongly linked to policy and incentives framework and the way the zones are located, developed, and managed, as experiences from Latin America and East Asia suggest (WB, 2015). Therefore, countries need to provide specific policy and institutional guidelines in establishing new industrial development zones or in keeping the existing ones, so as to enhance the probability of success of such establishments.

Accordingly, legal provisions are required in areas of taxation and tariff structures; infrastructural facilities and subsidized utilities; labour rights, wages and workers safety; and environmental issues, among others (Madani, 1999).

Considering industrial zone development as a gateway for economic growth and

industrialization, Ethiopia has put in place industrial park development policy framework and dedicated institutions for facilitating the development and management of the program (the Ethiopian Herald, January 15, 2016; UNDP, 2015).

Though the government has incorporated industrial zone programs as a policy tool since the commencement of GTP I, its legal base was too shallow as it was included only under few articles of Investment Proclamation No. 769/2012 (as amended). To fill this gap and begin its comprehensive and long-term development journey, the government has introduced Industrial Park Proclamation No. 886/2015 by HPR and IPDC by Council of Ministers Regulation No. 326/2014, that respectively represent the policy and institutional frameworks of industrial zone development programs. As the establishing proclamation declares, developing industrial zones is required to speed up the country's economic transformation agenda through intensifying exports and using scarce resources efficiently in selected strategic areas and economic sectors. More specifically, the proclamation has outlined the following objectives:

- Regulating the designation, development and operation of industrial parks;
- Contributing towards the development of the country's technological and industrial infrastructure;
- Encouraging the participation of the private sector in manufacturing industries and related investments;
- Enhancing the competitiveness of the country's economic development; and
- Creating ample job opportunities and achieving sustainable economic development.

According to this proclamation, industrial zones could be developed and managed by any profit making public, private or the combination of both. But, the scope of public sector developer and manager is not clear, i.e. whether it includes regional and local governments or is limited to the federal government.

The proclamation has also provided the rights and obligations of industrial zone developers, operators, and resident enterprises. However, many of the provisions were not clearly stated; for instance, the facilities expected to be provided under one-stop shop by the zone operator were not listed, the duration for replacing expatriate staffs by local personnel was not specified, tax exemption and other incentives to be provided to the practitioners were not clearly mentioned.

After all, the proclamation, as most of its articles state, was introduced for the consumption of FDI and unconditionally disregarded any special provision to domestic private sector developers, operators and investors. In addition, the objectives it wants to address are more related to the traditional export processing zones widely in operation in Africa. This is of course natural in the early stage of the journey, but it

has little dynamic effect on the overall development of the country as the experience elsewhere shows.

The Ethiopian Industrial Park Development Corporation (IPDC) was established to facilitate the development, operation and administration of industrial zones across the country, excluding those developed and operated by the private sector like the EIZ. The Corporation is governed by public enterprises' law and aims to be an innovative and leading eco-industrial parks developer and operator in Africa by 2025. To attain its vision, it is committed to boost industrial parks development through the highest standards of professionalism that can drive industrialization, promote exports, and create employment opportunities so as to contribute to the country's development goal of the middle-income status (IPDC leaflet, June 2015).

According to the establishing regulation, the corporation is responsible to serve as industrial park land bank, prepare detailed national industrial parks master plan and develop industrial zones on behalf of the government, hand over land to private zone developers through lease or sub-lease land, sell or rent shades, make necessary infrastructural facilities and required offices to deliver OSS service, etc. The corporation also coordinates inter-ministerial committees established to address industrial zone development and operational challenges.

As an independent government authority directly accountable to the prime minister, the corporation is receiving its annual budget from the national treasury. It can also access other financial sources including arranging bank loans or seeking foreign aid for the development of the industrial complexes. It can also raise revenues from the rent of industrial zones to investors (Addis Fortune, July 2012).

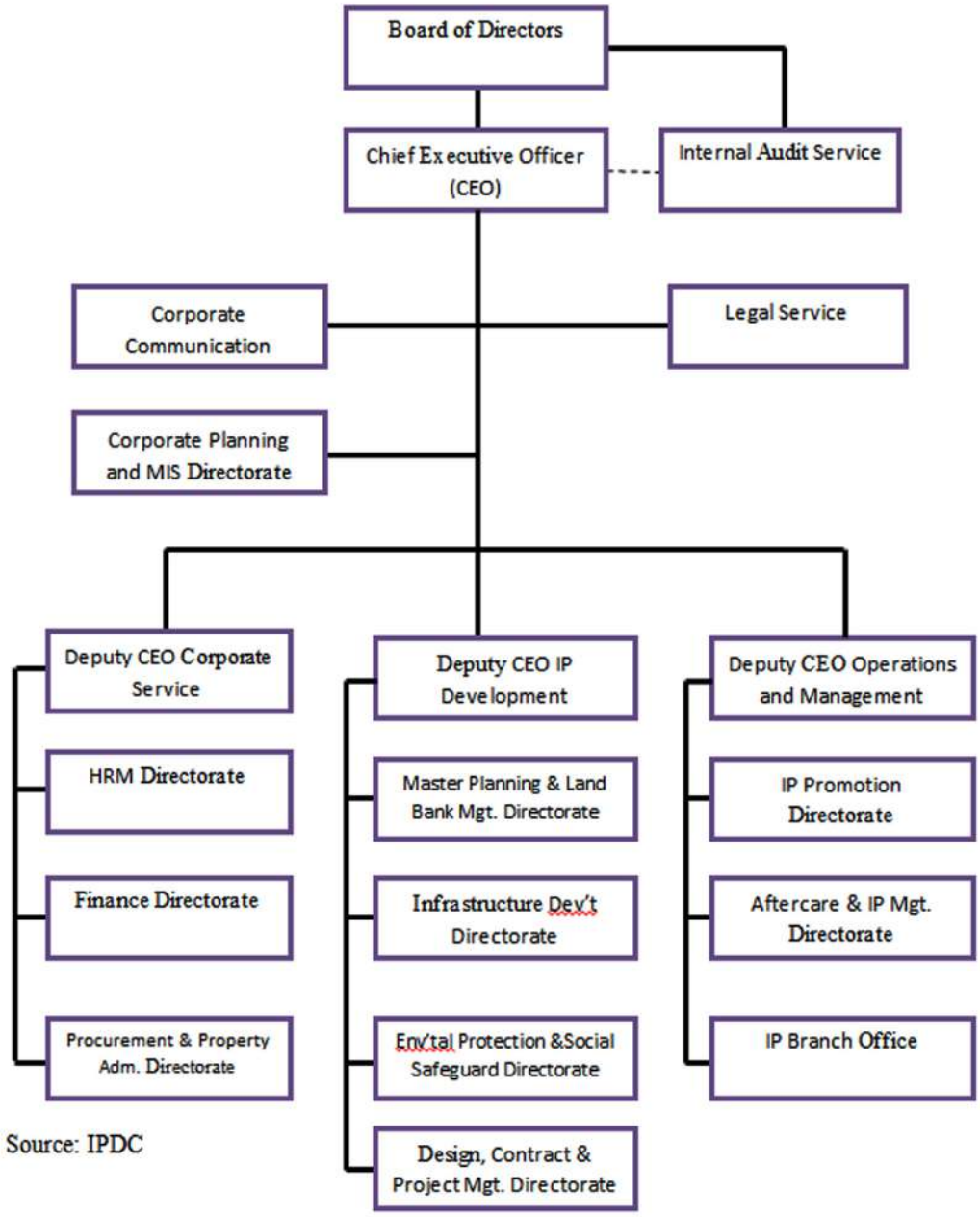
Even if its board serves as a higher decision making body, it is supervised by Ethiopian investment board, chaired by the prime minister, for all its activities. Though the corporation is trying to harmonize industrial parks' short and long terms development activities to materialize its vision, it is facing various problems from the start.

The main challenges, among others, include lack of experience in developing and managing large industrial complexes, weak stakeholder coordination and inability to deliver one-window service on the site (though offices are ready and attempts are underway by now), financial problem in the development and operation of industrial zones, inefficient handling of administrative procedures that involve various bureaucratic entities, such as import and export procedures, certifications and approvals as well as taxation issues (interview with IPDC officials, UNDP, 2015).

As it appears now, the development and management of industrial zones is highly

centralized, which may raise conflict of interest with regional governments where the zones are being established. The figure below provides an organizational structure of the IPDC.

Figure 1: The organizational structure of IPDC



Source: IPDC

3.6. Challenges and opportunities of IZD

3.6.1. Challenges: Theoretical and Practical

Industrial zones are controversial as they are popular. At their best, they align infrastructure provision and agglomeration economies to jolt industrial growth. At their worst, they fail to generate the required skill and investment; sit empty or simply do not get built; eroding the tax base; increase land speculation and loss of agricultural land; delivering hand-outs to favored firms; funneling spending to favored districts; cause environmental degradations, etc (Saleman and Jordan, 2013; Zeng, 2015). For the purpose of this study, some of the challenges associated with industrial zone programs are discussed under two headings: theoretical and practical.

1) Theoretical challenges are drawbacks generally associated with any zone development programs. In reference to the works of the WB (2008; 2011), Wang (2013) and Vastveit (2013), Madani (1999), some of the negative repercussions of industrial zones include the following:

- ***Industrial zones delay general economic liberalization and deregulation programs.*** Through the use of subsidies country's can attract FDI without liberalizing the economy as a whole. That is why the World Bank and other classical economists consider industrial zones only as the second or third best approach towards free trade.
- ***Zones impose significant direct and indirect costs to the host country.*** Costs for zone development and infrastructure construction, administrative and subsidized service costs, and several other indirect costs linked to zone development programs can distort resource allocation and potentially retard economic growth. As some authors argue, industrial zones could even totally fail before covering their construction costs and other concessions granted, and this has a negative net present value for the country.
- ***Zones cause government revenue losses through incentives.*** The various tax incentives provided for firms in the zone can erode the revenue base of the government. Tax breaks and tax holidays do not necessarily result in economic growth because it may attract firms that would not be competitive without the given incentives. In addition, zones might not be profitable if land and its leasing are subsidized, especially for cases where utilities such as water and power are also subsidized. According to Reporter Newspaper, (Feb. 23, 2016), Ethiopia loses more than 90 billion birr per annum to tax incentives, more than the total capital required to complete the Grand Ethiopian Renaissance Dam.
- ***Zones may cause uneven growth between areas as well as companies.*** Industrial zones are usually criticized for creating discrimination between companies located

in the zones and those outside the zone, and between domestic and foreign companies in the same country. Areas in which zones are located have better job opportunities and other positive externalities than those located elsewhere and this would enlarge economic gaps between regions. Again, zone programs are biased towards foreign industries than domestic ones to promote exports, which have limited productive impact for national development, as the case in Ethiopia today.

- ***Zones may have social and environmental impacts.*** The development of the industrial zones can have negative bio-physical and social impacts unless they are implemented by giving due emphasis to the protection of the environment in general and the wellbeing and livelihood of the population in and around the project area in particular. Otherwise, it can cause adverse impacts in the form of socio-economic crisis and other related problems like resistance against the project itself. In Myanmar, for instance, forceful relocation of villagers from their original area, as Walsh (2015) points out, has mounted to armed resistance that has finally halted the construction of zones.
- ***Zones may violate workers' rights and welfare*****.** Companies in zones have been heavily criticized for exploiting workers, paying them negligible wages and providing poor working conditions, though there are variations between countries and companies associated with the prevailing institutional and regulatory environment of the government, nationality and corporate policy of the firm, labour market conditions, etc. Low salary and poor treatment of workers are considered as a cause for high labour turnover in Ethiopia, as some officials of IPDC state.

2) Practical Challenges are problems specifically facing operational industrial zones from the very beginning or will face them in the future, as reflected by investors and government officials interviewed as well as other secondary sources. These include:

- ***Lack of suitable workforce and high labour turnover*** is the most critical common problem facing functional industrial zones in Ethiopia today. As the operating companies said, the required local labour force is essentially scarce, poorly qualified due to weak entrepreneurial base and has limited motivation for work. As a result it is forced to retain expatriate staffs. What is worse is that employees are continually leaving to other nearby companies after cost-intensive training is being imparted.

In this case, the employee trained by on a company is easily taken by the other, which the 'Arvind Lifestyle Apparel Africa PLC' operations manager called 'job transfer or diversion than job creation'. This is a loss for the companies as well as the country unless proper measure is taken by the government immediately, as the manager further says.

For instance, in a single company at Bole Lemi-I, about 98 employees have left within three days. In addition to its economic impact on the respective company and the host country, the situation has an implication in distorting the data officially reported by the company and the government concerning the jobs created. Though high rate of turnover is associated with low salary and poor working conditions, as the government officials describe, the companies are associating the problem with poor working culture and concentration of similar manufacturing activities in the same zone that has made easy for the employees to switch from one shade to the other in the same site. Whatever its causes, high turnover rate can slow down trust between workers and managers and deter on-job-training efficiency.

- ***Gaps in working culture and labor productivity.*** According to resident foreign companies, certain cultural requirements like attending neighbor's funeral (emanated from religion and long-established social norms) have been forcing local employees to be absent from work, and this trend, in addition to their low productivity, has slowed down the overall performance of the firms. Though the companies are willing to replace expatriate staff with domestic work force due to their relative high salary scale, they are forced to keep them to fill these gaps. As the companies interviewed complained, wage also keeps going up while productivity of workers does not grow significantly.

- ***Frequent power interruptions*.** Zone-based companies are strongly complaining about the repeated outages of electric power because it has a direct impact on their performance targets and profitability of their work. As the industrialists state, power shortage has constrained their production capacity and forced them to use expensive generators as an alternative. In addition, water and communication services are so irregular and the sewerage system is not hygienic, which the government also admits, especially in Bole Lemi-I industrial zone.

- ***Poor trade logistics and customs procedures*** are other critical problems the private business is repeatedly raising in any of its meetings with the government authorities. The same problem is currently running in the industrial zones, in contrast to the expected solutions it would render. Poor trade logistics incur heavy cost on firms that mainly rely on imported inputs like the large export-oriented firms in Ethiopia.

According to Dinh et al. (2012), poor trade logistics on average incurs about 10% of the production cost on firms in Ethiopia. Logistic problems also cause long and uncertain delays, which are not acceptable to most global buyers, especially in the time-sensitive apparel industry. That is why global buyers are hesitant to place large orders on African products. The table below compares Ethiopia with other African

and Asian countries in terms of time and cost of trading across borders.

Table 6: Time and Cost of Trading across Borders in Ethiopia relative to other Countries

Country	Cost to import a 20-foot container (US$)	Time to import (days)	Cost to export a 20-foot container (US$)	Time to export (days)	Ranking[3] (2011)	Ranking[4] 2015)
Ethiopia	2993	45	1890	44	157	166
Tanzania	1,475	31	1262	24	109	180
Zambia[5]	3,315	56	2,664	44	150	152
SSA average	2,492	38	1,962	32		
Vietnam	645	21	555	22	63	99
China	545	24	500	21	50	84

Source: Dinh et al. (2012:87), who took the original data from WB (2011); and WB (2015[b])

As indicated in the table above, trading across borders in Ethiopia is expensive in terms of time and money even in the eyes of some African countries. Moreover, Ethiopia's logistic performance index is getting worse over time and made the country one among 25 low performing economies of the world by 2015. According to Dinh et al. (2012), poor trade logistics in Ethiopia and other Africa countries is the result of six broad factors: higher inland transport costs, higher port and terminal handling fees, higher customs clearance and technical control fees, higher costs of document preparation and letters of credit, high cost of foreign exchange, and high shipping costs to and from Ethiopia. The table below compares the costs of the first four factors in Ethiopia with other economies in Africa and Asia.

Table 7: Four main factors that impair trade logistics (*US$ per 20 foot container)*

Country	Inland transportation	Port & terminal handling	Custom clearance	Preparation of documents and letters of credit	Total
Ethiopia	1000	500	340	600	2,440
Tanzania	200	400	250	520	1370
Zambia	2,300	300	110	280	2,990
Vietnam	230	160	100	110	600
China	120	80	70	250	520

Source: Dinh et al. (2012:88), original data taken from WB (2011)

As the table shows, the high costs associated with the four main factors mentioned above have affected the normal performance of trade logistics in Ethiopia. The World

[3] Ranking among 183 economies in 2011on all Doing Business trading-across-borders indicators

[4] Ranking among 189 economies in 2015 on all Doing Business trading-across-borders indicators

[5] In contrast to Addis Ababa's 863 kilometers away from the port of Djibouti, Lusaka's distance from the nearest port (Durban) is more than 2300 kilometers on road.

Bank's ease of doing business index has associated logistic problems to the country's distance from the sea (port).

Being a landlocked country, Ethiopia could face difficulties in addressing these problems sustainably. As Omar and Stoever (2008:142) argue 'industrial zones are not a viable strategy for economic development in landlocked countries because of the associated logistic costs. From experience, relatively successful cases are either islands or countries with coastlines'.

- ***Poor labour laws.*** Countries are intentionally relaxing labour related issues in the zone to attract investors. According to the Ethiopian industrial park proclamation, the issue of labour contract in the zone is to be negotiated between the employer and the employee. The Ethiopian labour law or the industrial park proclamation did not set the minimum wage rate for private employees. Without granting the minimum wage rate, it is difficult for the government to address the complaints emerging from both the employers (concerning high turnover) and the employees (related to low salary).

In addition, the Ethiopian labour law allows only 20 hours per month for overtime work. Though this law could protect labour abuse, it is too few relative to other countries (for instance Japan 42 hrs/month, Korea 48 hrs/month, Taiwan 46 hrs/month, etc) and this has created a problem though both the employee and employers need it for their own respective benefits.

- ***Weak domestic private sector participation.*** Unlike the expectation that industrial zones would create an opportunity for the domestic private sector to learn from experiences of foreign firms and enhance their competitiveness, there is no domestic private sector hosted in Bole Lemi-I and only three local private firms recently rented shades in EIZ.

Though this could be related to the lack of special treatment mechanisms for local private sector, there are also factors related to the nature of the domestic private sector itself. In this regard, many literature like GRIPS (2011) and Altenburg (2010), have characterized the private sector in Ethiopia by short-terminism, job hopping, foreign product worship, real estate speculation, dependency on subsidies and protection, and failure to create a new mind-set towards value generating manufacturing activities.

- ***Weak linkages to the local economy.*** Companies in Ethiopia are expressing difficulties in identifying local raw material suppliers, and as a result heavily rely on expensive imported inputs. The quality of domestic raw-materials like cotton

is low and could not meet the standard required by their customers, and this forced them to look outside. In contrast to other countries in Africa like Zambia, comprehensive backward and forward linkages between zone based companies and local small and medium enterprises is very low. In such situation, the expected contributions of industrial zones (employment creation, export promotion, structural transformation, etc) will be questionable.

- ***Sustainability problems.*** Rapid economic globalization presents major challenges more than ever to the sustainable development of 'development zones' in many emerging economies. For instance, export processing zones in China have lost their importance following the country's accession to WTO (Wong and Tang, 2005), because some of the traditional incentives for investors in the zones, such as tax breaks for exports, are no longer in line with WTO rules (UNCTAD, 2015). The ever becoming open trade relations among world economies and Ethiopia's attempt to join WTO have strong implication on the futurity of zones. Again, the sustainability of industrial zone development program in Ethiopia is strongly questionable after the termination of preferential trade regimes like AGOA and EBA, also true for other African countries since it is primarily motivated by such arrangements.

- ***Lack of coordination among service rendering government institutions*.** Coordination between important institutions like EIC, IPDC, MoI, CBE, Customs and Revenue Authority, electric power and telecom agencies, etc is very weak in facilitating the operation of zone based companies, though these services are expected to be provided under one-window in the zones.

- ***Lack of clarity on the implementation of industrial zone development program*.** The Ethiopian industrial development strategy clearly puts that local enterprises, primarily the micro and SMEs, are the bases for industrial transformation in the country while GTP II focuses mainly on the development of industrial parks to attract and house large, mainly foreign owned, enterprises to meet manufacturing targets.

- ***Lack of experience in industrial zone related policies and management practices*** have led to multiple challenges in planning and implementation of the two operating zones (WB, 2015; interview).

3.6.2. Opportunities: Internal and External

Despite the theoretical and practical challenges discussed, there are a lot of internal and external conditions that can present opportunities for the success of industrial zones in Ethiopia. These, among others, include:

- ***Ethiopia's eligibility to duty free market access*** (AGO, EBA, etc) plus other benefits available for low income countries even under WTO rules;

- ***Ethiopia is one of the two countries chosen by UNIDO for Inclusive and Sustainable Industrialization*** because the country has a clear short-and long-term industrial development strategy (UNIDO, 2014, 2015; MoFA, 2015). UNCTAD (2015) also reposition export processing zones as centers of excellence in corporate sustainability, attracting investment and contributing to the SDGs;

- ***Ethiopia's relative proximity to large Asian and European markets***.This may help the country to experience a shift to higher-value adding and technology-intensive production better than others countries in SSA;

- ***Fertile black soil suitable for the growth of cotton***, the basic raw material for manmade textile fabrics, ***and large number of cattle, goat and sheep population*** that can contribute raw materials for leather and leather product manufacturers;

- ***Sustainable renewable green hydro power energy***. Cheaper than any country which makes favorable for textile specially the power intensive spinning and fabric manufacturing;

- ***Cheap and trainable labor as compared to other garment producing countries makes it more feasible for the growth of the garment industry.***

According to Justin Lin (former Chief Economist of the World Bank) about 80 million jobs in light manufacturing in China are bound to leave the country in the coming few years due to the rapidly escalating labour cost over the last 10 years. Ethiopia, with a large potential workforce, cheap electricity and access to raw materials has the potential to be a strong candidate, especially for garment and leather products (interview made by Sebastian Frendo on July 9, 2015);

- ***Huge investment in core infrastructures*** (energy, railway, airway, roads) to ease business activities and promote competitiveness;

- ***The structural shift of light manufacturing industries like apparel, footwear and textiles in favour of developing countries***. Due to the structural shift of the developed from basic to more advanced industries (consumer durables like cars and televisions, and newer industries based on technological breakthroughs like IT, medical equipment and environmental investment technologies), as Hepburn et al. (2013) argue, developing countries like Ethiopia have better opportunity to be a suitable destination for basic manufacturing products;

- ***Multiple manufacturing opportunities, political stability, security, comfortable climate, and the strong desire and considerable commitment of the Ethiopian government to pull citizens out of poverty.***

Part IV: Conclusion and Recommendations

4.1. Conclusion

Based on the wide literature covered by this study, there are various arguments towards industrial development zones. While the historical success of economic zones in some Asian countries like Korea and Taiwan supports the argument that zones could be the first-best option for economic liberalization and accelerated industrialization, there are substantial grounds for considering them, in their traditional form, as second-best (like in China) or even irrelevant in most countries (like in SSA) today.

These arguments imply that the success of zones is heavily dependent on countries' capacity to capitalize on their comparative advantages in time and space than its mere physical presence. That is why economies like China have successfully used industrial zones not only for moving from an agricultural to an industrialized economy but also for continual industrial upgrading and legal reforms, though the program is still the second-best option. China is also widely cited as the center of excellence in the success of zone programs.

From this perspective, it is possible to argue that industrial zones can play a catalytic role in economic development and inducing industrial transformation. Stimulated by the modest performance of Asian economic zones, many countries in Africa have been developing industrial zones since the past two decades to attract investment in their strategic sectors that is thought to reduce poverty and bring structural transformation of their economy.

Though Ethiopia has joined its African counterparts very recently with the same objectives, the country is pushing the program forward and has even began generating a substantial benefit from its few zones in operation, especially in terms of creating employment opportunity.
The findings show that a considerable number of investors have started production for exports and more than 12, 500 jobs were created in the two zones. Though their linkage with domestic economy is generally insignificant (as discussed under section 3.6 above), some companies in the zone are beginning to get inputs like packaging materials from the local producers. Others like the Huajian leather processing industries in EIZ are able to source about 80% of their raw materials from the domestic market. In addition to the expansion work underway for the existing zones,

the government has also completed feasibility study to begin the construction of industrial zones in many other areas (see table 5 above), with the zone in Hawassa about halfway to completion.

Despite such efforts, the Ethiopian industrial zone program, as trends on the ground and its policy direction show, is more inclined to generate the static benefits of FDI attraction, export promotion and job creation , among others, than bringing an economic wide dynamic benefits.

This idea is practically supported by the very weak concern given to the domestic private sector in the development, management and operation of zones, albeit this partly emanates from the nature of the domestic private sector itself. Though attraction of FDI has a net benefit in nurturing the needed capital and skill, it may not be successful in enhancing exports and inducing industrialization unless integrated with regional development plans and the wider domestic economy, as the experiences in other countries show.
The findings of the study also show that industrial zone program in Ethiopia is mainly inspired by preferential trade regimes like AGOA and EBA, which makes sustainability uncertain after their expiration, though the country did not generate much benefit from these initiatives relative to other African countries like Kenya.

A successful drive to industrialization requires the development of capacities and policies to foster private sector investment. The development of industrial zones is a good starting point to begin to learn how to apply those capacities. Yet, attracting the private sector (domestic or foreign) to zone premises is a matter related to a 'beauty contest', as the ECCSA external relation manger said. It needs leadership commitment, robust policies and regulatory mechanisms, fulfilling the required infrastructural facilities (physical and human), etc to be a good contender, which the Ethiopian government seldom affords at the moment, but to think about in the future.

Many zone projects in Africa have failed to achieve the intended goals so far because they were established without having the required legal, institutional and infrastructural frameworks in place, which is labeled by various scholars as 'putting the cart before the horse'. It is a bit early to pronounce on the success and failure of Ethiopian industrial zone program; 5 to 10 years are required for the gradual success of zones as literature provide. However, the challenges identified under section 3.6 above need critical concern both to improve the performance of operational zones and to make important caution in the construction of forthcoming zone projects so as to enhance its potential contribution for the country's industrialization agenda.

4.2. Recommendations

There is a strong political commitment to industrial zone development program in Ethiopia, with the program elevated to the Prime Minister's Office recently. At the same time, industrial zones have been consistently inaugurated at the Head of State and Government level and are regularly visited and promoted by high-level government officials.

To accelerate industrialization through exports, the government of Ethiopia has also integrated the program with its national development strategies and plans and pushing forward the construction of zones in core areas to attract investment in priority industrial sectors. This being a good beginning, its future prospect is more related to addressing the challenges and using the opportunities identified above. The following recommendations could also re-orient the concerned stakeholders to this end.

- To address high labour turnover, the government needs to improve labour law that could solve questions associated with salary and other benefits, introduce dormitory and daily meal services to address transportation and food related problems, and strongly work on the workers' work discipline and attitude through training and discussion forums.
- Regardless of their role in zone development and management, the private sector should be encouraged to participate in strategic planning and policy decisions affecting zone programs, which in turn requires the development of public-private coordinating institutions.
- In addition to attracting large FDI in to the zone compound, the government should also attract the larger local small and medium businesses, like through joint-investment with foreign companies, by introducing special policy instruments and incentive mechanisms which could also create a supply-demand value chain.
- Changing private sector's mind-set to improve entrepreneurship, quality, productivity and voluntarism to national development policies by initiating a comprehensive national movement that includes mass campaigns, factory projects, training, awards and institution-building, etc spearheaded by the government and business representing institutions until it becomes an integral part of popular mind-set, which was effective in some Asian countries like Japan and Korea as well.
- Promoting private entrepreneurs to assume the responsibility of developing and managing zones not only to minimize the risks and costs associated with government monopoly of the task but also to increasing efficiency and flexibility in its operation.

- Creating linkage between resident companies and learning institutions like TVET to get the required workforce as well as to transfer skills. In addition, strengthening the capacity of research and development institutes like TIDI and LIDI (by feeding them with competent and professional human resource) is required to promote the implementation capacity of the government and the industrialists.
- Strengthening industry-university linkages and involving the academia in strategic research, policy making and advising, and other professional engagements.
- Industrial zones should be used as a pilot and demonstrative projects with the aim of encouraging broader economic wide reform than short term means to boost exports.
- Caution must be made in locating industrial zones since it may involve forceful relocation of farmers from their land or adversely affect the environment, which may amount into resistance against the program itself.
- Arranging discussion forums for all stakeholders (government, zone developers and mangers, operating companies, employers, community representatives, research institutions and academia, etc) to filter out problems and propose possible solutions.
- Given the nature of the domestic private sector (small and immature), the underdeveloped infrastructure and the fast changing international norms, it is better for the Ethiopian government to make few zones fully work before starting new ones.
- Equipping zones with necessary infrastructures and utilities (banking, customs office, telecom, clinics, training centers, etc) to attract more investment. More urgently, installing power and water transmission sub-stations, partially becoming functional in the EIZ, to provide sustainable solution for erratic power and water provisions.
- Learning from other well performing countries like China and Mauritius on ways of handling logistic problems effectively, and alternatively sub-contracting the services to experienced organizations.
- Strengthening coordination among responsible government institutions (IPDC, MoI, EIC, customs office, etc), clearly specifying their responsibilities, and utilize strategic and phased approach in the development of industrial parks to ensure sustainable demand for it.
- Promoting regional economic integration to address the problem of weak domestic market, and promote the competitiveness of domestic economy through increasing productivity.

References

1. Amado, J. D. (1989). Free Industrial Zones: Law And Industrial Development in the New International Division of Labor. U. Pa. J. Int'l Bus. L. Vol. 11, No. 1, pp. 81-150.
2. Amirahmadi, H. and Wu, W. (1995). Export Processing Zones in Asia. *Asian Survey*, Vol. 35, No. 9 (Sep., 1995), pp. 828-849. http://www.jstor.org/stable/2645785
3. Boniface, O. (2015). Strategies for Improving the Implementation of Special Economic Zoning Programmes in South Africa. Journal of Economics and Sustainable Development, Vol.6, No.11.
4. Brautigam, D. and Tang, X. (2013). "Going Global in Groups": Structural Transformation and China's Special Economic Zones Overseas. *World Development,* Vol. 63, pp. 78–91.
5. Ceron, J. M. (2008). International Lessons on Industrial Zone Development: Public Private Partnerships. Workshop on Private Sector Participation on Industrial Parks and Special Economic Zones. May 26-27, 2008, Ain Sokhna, Egypt.
6. Dinh, H.T., Palmade, V., Chandra, V. and Cossar, F. (2012). Light Manufacturing in Africa: Targeted Policies to Enhance Private Investment and Create Jobs. A co-publication of the Agence Française de Développement and the World Bank.
7. Farole, T. (2011). Special Economic Zones in Africa: Comparing Performance and Learning from Global Experience. World Bank. https://openknowledge.worldbank.org/handle/10986/2268 License: CC BY 3.0 IGO."
8. Farole[1], T. and Moberg[2], L. (2014). It worked in China, so why not in Africa? The political economy challenge of Special Economic Zones. UNU-WIDER Working Paper 152.
9. Frendo, S. (2015). Made in Africa - Ethiopia the new factory of the world? Africa Governance Initiative (AGI) blog, 9th July 2015.
10. Ganne, B. and Lecler, Y. (Eds.) (2009). Asian Industrial Clusters, Global Competitiveness and New Policy Initiatives. World Scientific Publishing Co. Pte. Ltd., Singapore.
11. Guangwen, M. (2003). The Theory and Practice of Free Economic Zones: A Case Study of Tianjin, People's Republic of China. PhD Dissertation, Ruprecht-Karls University of Heidelberg, Germany.
12. Kim, J-I (2015). Lessons for South Asia from the Industrial Cluster Development Experience of the Republic of Korea: ADB, South Asia Working Paper Series, No. 37.
13. Lee, J.H. (2015). Research Notes on a Feasibility Study for the Development of Industrial Parks in Ethiopia. SGI Consulting Incorporated
14. Madani, D. (1999). A Review of the Role and Impact of Export Processing Zones. The World Bank
15. Merima Ali (2012).Government's role in cluster development for MSEs: Lessons from Ethiopia. Chr. Michelsen Institute (CMI) Report 2012:2.

16. Ministry of Foreign Affairs (MoFA) (2015). Investment Opportunities in Manufacturing Sector in Ethiopia. Ethio-UK Trade and Investment Forum, October 2015, London, UK.
17. Ministry of Trade (MoT) (2013). Ethiopia's National AGOA Response Strategy Draft. Ethiopian Ministry of Trade, October 2013.
18. *Moberg, L. (2015). The political economy of special economic zones. Journal of Institutional Economics,* 2015, vol. 11, issue 01, pages 167-190.
19. OECD (2010). Towards Best Practice Guidelines for the Development of Economic Zones. A paper prepared for the MENA-OECD Investment Program Ministerial Conference, 15-16 February 2010, Amman.
20. Ohno, I. and Ohno, K. (2015). Industrial Zone Development: Key Issues from the Experiences of Japanese Industrial Zone Developers in Vietnam & Thailand. GRIPS Development Forum, Addis Ababa, January 2015.
21. Omar, K. and Stoever, W. A. (2008).The role of technology and human capital in the EPZ life-cycle. *Transnational Corporations,* Vol. 17, No. 1, pp 135-159, April 2008.
22. Oyelaran-Oyeyinka, B. and McCormick, D. (eds.) (2007). Industrial clusters and innovation systems in Africa: Institutions, Markets, and Policy. United Nations University Press, Tokyo, Japan.
23. Pakdeenurit, P., Suthikarnnarunai, N., and Rattanawong, W. (2014). Special Economic Zone: Facts, Roles, and Opportunities of Investment. Proceedings of the International Multi-Conference of Engineers and Computer Scientists, Vol. II, March 12 - 14, 2014, Hong Kong.
24. Peet, R., and Hartwick, E. (2009). *Theories of development: contentions, arguments, alternatives (2nd ed.)*. The Guilford Press, New York, USA.
25. Rohne, E. (2013). Chinese-initiated Special Economic Zones in Africa: a case study of Ethiopia's Eastern Industrial Zone. Master programme in International Economics with a focus on China, Lund University
26. Saleman, Y. and Jordan, L.S. (2013). The Implementation of Industrial Parks: Some Lessons Learned in India. Published by the World Bank, Washington DC.
27. Stein, H. (2009). "Africa, Industrial Policy and Export Processing Zones: Lessons from Asia". Paper prepared for Joseph Stiglitz, Akbar Noman, Howard Stein and Kwesi Botchway. eds. *Good Growth and Governance in Africa: Rethinking Development Strategies* (submitted to Oxford University Press, November 2009).
28. UNCTAD (2015). Enhancing the Contribution of Export Processing Zones to the Sustainable Development Goals: An analysis of 100 EPZs and a Framework for Sustainable Economic Zones. UNCTAD/DIAE/IPB/2015/, United Nations Publication.
29. UNDP (2015). If Africa builds nests, will the birds come? Comparative Study on Special Economic Zones in Africa and China. Working Paper series, No. 06, 2015.
30. UNIDO (2014). Sustainable Industrial Development for Shared Prosperity: Inclusive

and Sustainable Industrial Development Program for Country Partnership.

31. UNIDO (2015). Economic Zones in the ASEAN: Industrial Parks, Special Economic Zones, Eco Industrial Parks, Innovation Districts as Strategies for Industrial Competitiveness. Prepared by UNIDO Country Office in Viet Nam.
32. UNIDO [a] (2015). Economic Zones in the ASEAN: Industrial Parks, Special Economic Zones, Eco Industrial Parks, Innovation Districts as Strategies for Industrial Competitiveness. Prepared by UNIDO Country Office in Viet Nam.
33. UNIDO [b] (2015). Technical Support for the Implementation of an Integrated Agro-industrial Park (IAIP) in Ethiopia. UNIDO project in Ethiopia.
34. Walsh, J. (2015). The Special Economic Zones of the Greater Mekong Sub-region: Land Ownership and Social Transformation. *Conference Paper No. 19,* 5-6 June 2015, Chiang Mai University,
35. Wang, X. (2013).The Role of Economic Development Zones in National Development Strategies: The Case of China. Doctoral dissertation, Pardee RAND Graduate School, China.
36. Wong, S-W. and Tang, B-S. (2005). Challenges to the sustainability of 'development zones': A case study of Guangzhou Development District, China. *Cities*, Vol. 22, No. 4, p. 303–316. Elsevier Ltd., Great Britain.
37. World Bank (2008). Special Economic Zones: Performance, Lessons Learned, and Implications for Zone Development. Available online at www.fias.net.
38. World Bank (2011). Chinese Investments in Special Economic Zones in Africa: Progress, Challenges and Lessons Learned (Final Report).
39. World Bank (2015). 4th Ethiopia Economic Update: Overcoming Constraints in the Manufacturing Sector
40. Zeng, D. Z. (2015). Global Experiences with Special Economic Zones: With a Focus on China and Africa. Investing in Africa Forum, Addis Ababa, Ethiopia.

Developments in Chilled Meat and Dairy Products

Henok Abadi[6]

ABSTRACT

Ethiopia has largest livestock resource, ranking first in Africa and tenth in the world. Meat and dairy production offer an immense opportunity to exploite local and international markets. However, many producers in the country tend to avoid commercial livestock trading mainly due to producers preference to sell their livestock only when they need money or face draught hits.

This study paper attempted to assess the development of agro-processing industries by emphasizing on chilled meat and dairy production. In line with this, the study analyzed the performance of chilled meat and dairy product industries across time in the country; investigated the competitiveness of chilled meat and dairy product industries in different countries; assessed factors affecting the development of chilled meat; and forwarded possible suggestions and recommendations for the betterment of the sub-sectors. To this end, the study employed varying techniques to collect and analyze pertinent first hand and secondary information for the subject under review.

In order to increase the rate of meat export growth as well as to attract additional domestic and foreign investors to this sector, the government should concentrate and follow up the proper implementation of the existing incentives for the sector. In addition, actors in the sector should devote increased focus towards achieving a better production through formalizing the market chains, awareness creation and financial commitments.

1. Introduction

1.1 Background

Livestock trading practices in Ethiopia have not shown much difference to what they were in the early days. The business transactions include: live animal trading, cross-border informal or illegal live animal exchanges, low quality export of meat products to Middle East countries: that are highly vulnerable to fluctuations in fasting seasons and foreign demands and many other peculiar characteristics of the sector. The dairy production also is at its infancy with per capita consumption as low as 19 liters per annum (FAOSTAT, 2013). This is mainly attributed to the low per capita consumption of milk, predominance of informal and unpasteurized home marketing of milk, and again the period seasons among Orthodox Christians.

Ethiopia is among the countries with largest livestock resource, ranking first in Africa

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and tenth in the world. Meat production offers an immense opportunity to serve a wide domestic as well as export markets. However, many producers in the country tend to avoid commercial livestock trading mainly due to producers preference to sell their livestock only when they need money or face draught hits. Not only is commercial livestock trading underutilized, but dairy production in Ethiopia too.

A report from the Central Statistical Authority (CSA) indicates that in 2013/14 the country had 55 million heads of cattle with sheep and goats (shoats) nearing 55.5 million. The number of camels, horses, mules and donkeys were also estimated at 1.1 million, 1.96 million, 0.36 million and 6.95 million, respectively (CSA 2013/14). Unfortunately, unlike such enormous endowments of livestock population in Ethiopia, the proportion of meat and meat production is insignificant with each accounting for less than 4%. In this regard, the proportion of beef production among 3-10 years aged cattle was 0.77%, mutton 2.59%, 2.64% goat meat, and 2% camel meat production (CSA, 2013/14). As mentioned above, most of the cattle were used for draught power by smallholder farmers.

Similarly, dairy production is at its infant stage in Ethiopia, comprising 6.6 million dairy cows (12.1% of total cattle population) and 10.7 million milking cows (19.5% of total) in 2013/14. Also, milking goats were only 1 million (3.5% of total goat population); and there were nearly 265 milking camels (24% of total camel population). The total estimated cow and camel milk production for the rural sedentary areas of the country were 2.9 billion and 250.51 million liters respectively in 2013/14. Cow milk production showed decline while that of milk witnessed a slight improvement as compared to the 2011/12 period.

Hoping to maximize revenue from live animals and meat products in both domestic and in foreign markets, the Ethiopian government has taken unique approach through facilitating the provision of land and other incentives to stakeholders in the sector without direct intervention in the sub-sectors. Promising changes are being achieved in the number of private investors engaged in animal fattening, breeding, abattoir, processing of meat and dairy products. However, limited quality meat production and shallow marketability of dairy products are still prevalent. Lack of properly chilled meat production, in addition to the limited capacity of dairy processors in Ethiopia, are among the leading reasons for limited progressions and performances of the sub-sectors to date.

Several studies have been conducted to identify the major constraints of meat and dairy production in Ethiopia. From these, two major issues can be deduced. First, there is high concern over quality of meat among consumers in target end markets, mainly due to poor cold chain management in the course of delivery. Second, the domestic informal markets are estimated to supply more than 90% of the country's milk consumption demand.

With all these backdrops, this study is dedicated to assessing the following research questions and attempting to address the possible remedial options in the respective business sectors.

1.2 Research Questions

- How does agro-processing industry in Ethiopia perform across time?
- To what extent does chilled meat and dairy industries compete across countries?
- How and which factors affect the development of chilled meat and dairy industries in Ethiopia?
- In what way does the current investment policy affect the industries?

1.3 Objectives of the Study

- To analyze the performance of chilled meat and dairy product industries across time in the country;
- To investigate the competitiveness of chilled meat and dairy product industries in different countries;
- To assess factors affecting the development of chilled meat and dairy product industries in Ethiopia;
- to examine the implication of current policy incentives towards competitiveness of chilled meat and dairy products; and
- To come up with possible suggestions and recommendations for the betterment of the sub-sectors.

1.4 Methodology and Data Collection

This research has employed varying techniques to collect and analyze pertinent first hand and secondary information for the subject under review. Accordingly, secondary data have been collected to analyze the export and domestic market performance of chilled meat and dairy product industries from sources such as the Ethiopian Investment Agency (EIA), Central Statistical Agency (CSA), Ethiopian Revenue and Customs Authority (ERCA) and United Nations Commercial Trade Data Base (UNCOMTrade). Data on the performance of exporting chilled meat and dairy products were also gathered from the UNCOMTrade and FAO websites. These data were analyzed descriptively by using simple statistical software (SPSS or STATA). For primary data, key informant interviews were conducted to identify problems of the exporters in trading Ethiopian chilled meat products to the Middle East and some

East European countries.

Furthermore, the study has also reviewed and critically analyzed the investment policy of the country in order to find out its attractiveness to new investors that capitalize in these sectors in comparison to East African countries.

1.5 Scope of the study

- The study covered the domestic as well as the international competitiveness of the Ethiopian chilled meat production across time and country.
- On the other hand, the study only covered the domestic market of dairy product.
- To analyze the performance of chilled meat industries in Ethiopia, it used the 2000-2013 data.

II. Analysis of findings

2.1 Performance evaluation of chilled meat production

Ethiopia's beef production is still at its low, considering specifically the high priority given to draught protection by most smallholder farmers in Ethiopia. According to CSA, the total population of cattle was estimated at 55 million in Ethiopia in 2013/14. The level of beef production from cattle's aged 3 to 10 years (estimated to be 34.9 million) was only 1.5%.

Similarly, the total sheep and goat population was estimated at 27.3 million and 28.1 million, respectively. Among those 2 years and above (14.43 million sheep and 14.45 million goats) the proportion of sheep used for mutton and goats used for meat production was about 0.5% each (CSA, 2013/14).

Despite the meager level of exploitation compared to the rich livestock resource in Ethiopia, the production of beef and meat products has been peaking up recently in volume.

Meat and edible meat offal production to the export market explains better the performance of chilled or frozen livestock production in the country. The following table summarizes the amount of meat and edible meat offal export-import trends in Ethiopia.

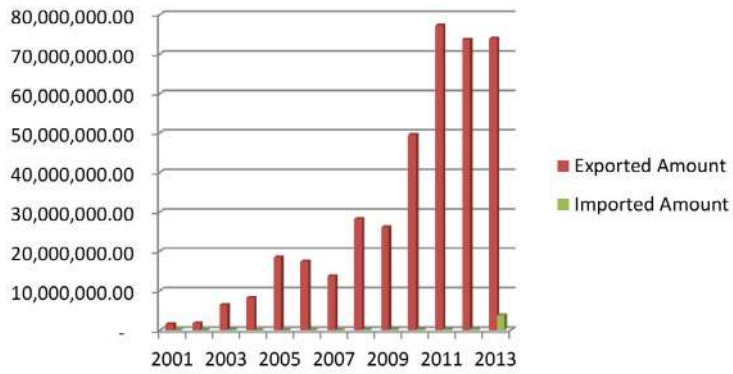
Table 1: Performance of meat and edible meat products export-import trends in Ethiopia

Year	Exported Amount (In USD)	Imported Amount (In USD)	Gap between export and import
2001	1,534,909.00	48,732.00	1,486,177
2002	1,708,535.00	50,614.00	1,657,921
2003	6,399,869.00	138,668.00	6,261,201
2004	8,291,193.00	55,720.00	8,235,473
2005	18,370,078.00	43,108.00	18,326,970
2006	17,400,233.00	78,929.00	17,321,304
2007	13,699,832.00	76,009.00	13,623,823
2008	28,197,054.00	186,082.00	28,010,972
2009	26,045,169.00	155,505.00	25,889,664
2010	49,547,663.00	219,129.00	49,328,534
2011	77,210,231.00	297,872.00	76,912,359
2012	73,768,626.00	367,521.00	73,401,105
2013	73,956,755.00	3,738,081.00	70,218,674

Source: UNCOMTrade (2013/14)

Both the volume and value of international transactions of meat production have shown improvements during the last decade. The country's export has remarkably shown progress as compared to what it was a decade ago. This is manifested in a staggering increment of export from 1.5 million USD in 2001 to 73 million in 2013. The level of imported meat products however, declined insignificantly, with the exception of the year 2013 which exhibited an astounding 917% growth as compared to the preceding year.

Figure 1: Performance of export-import trends in meat and edible meat products



On the flip side of such achievement in volume of international trading activities, the growth of chilled meat products export tend to stagnate over time. Regardless

of the remarkable growth (275%) achieved in 2003, significant drops occurred in the growth of the country's meat products export. Even worse, significant drops were recorded in these sorts of international transaction reaching levels as low as -4% and 0% percent in 2012 and 2013 respectively.

Figure 2: Export growth of meat and edible meat products

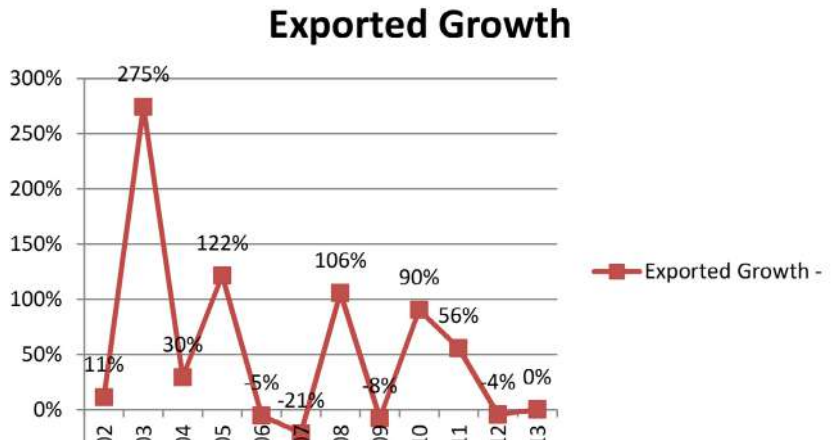
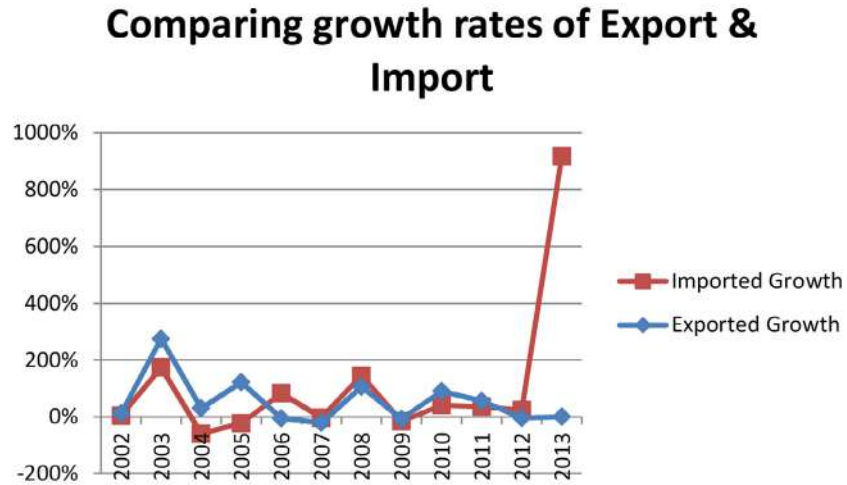


Figure 3: Comparison of export & import growth rate of meat and edible meat products



Unlike the export performance, the growth of the country's imported products of chilled/frozen meat had moderate trends except an outlier significant deviation in the year 2013, which accounted 917% growth when compared to the previous year. The import trends kept more or less exhibited a modest pace.

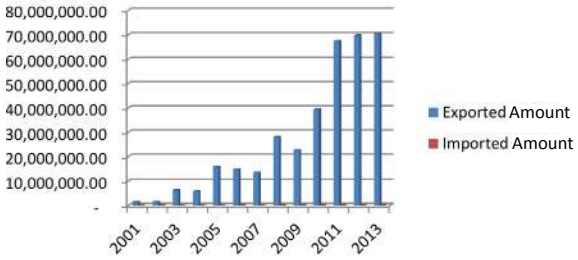
Similarly, resembling trends were observed over the trends of shoats international transactions for the same period. Accordingly, an increasing trend in export volume of shoats transaction were recorded; though the growth rates still shrank as one

ascended over the years. On the other hand, the volume of import was highly insignificant, apparently indicating net export in the product category.

Table 2: Meats of shoats chilled/frozen/fresh

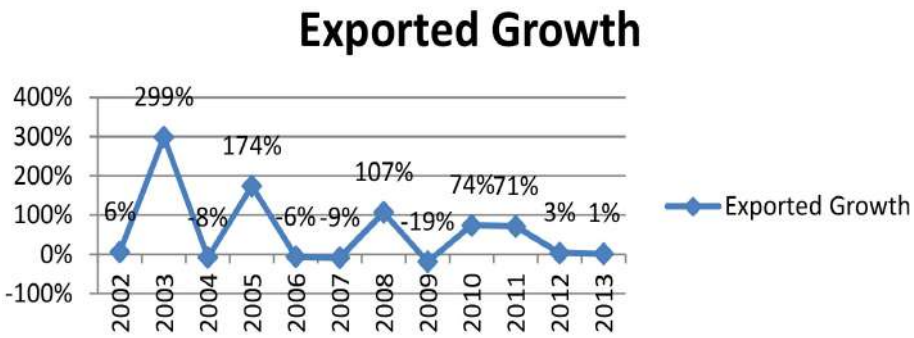
Year	Exported Amount (In USD)	Imported Amount (In USD)
2001	1,499,166.00	2,043.00
2002	1,585,778.00	15,969.00
2003	6,328,465.00	-
2004	5,810,611.00	1,751.00
2005	15,925,429.00	1,237.00
2006	14,910,889.00	4,879.00
2007	13,567,978.00	2,147.00
2008	28,053,702.00	12,658.00
2009	22,759,932.00	15,767.00
2010	39,555,584.00	25,185.00
2011	67,602,532.00	51,734.00
2012	69,717,633.00	83,443.00
2013	70,518,013.00	20,197.00
Source: UNCOMTrade (2013/14)		

Figure 4: Meat of shoats chilled/frozen/fresh



Regardless of the fluctuating growth rates recorded in the reference period, the trend in the export of chilled/frozen shoats shows an ever decreasing experience. The figure below portrays the trends in Ethiopia's export of shoats in the form of chilled/frozen or fresh for the years 2001-2013.

Figure 5: Export growth of sheep and goat chilled/frozen/fresh



2.2 Performance evaluation of dairy production and international trading

Dairy production is the least utilized industry in Ethiopia. Most dairy production is conducted traditionally, mainly for home use. According to Ethiopian Investment Agency, there were around 218 registered business entrepreneurs engaged in animal farming and dairy processing between 1992 and 2013. Of these, the number of operational dairy and animal farms as well as dairy products processing units were 42 and 3, respectively in the period under consideration. The remaining were at stages pre-implementation and implementation.

Though encouraging, registered investors were recorded for the years 2012-2013 in manufacturing of dairy production. Only one investor was registered last year. Similarly the number of dairy and animal farms progressed better until 2013 and started to drastically drop in the number of registered entrepreneurs afterwards. The slight improvement during 2012/13 could be linked to amendments in the Investment Proclamation No. 769/2012 and the Council of Ministers Regulation on Investment Incentives in 2012.

Table 3: Number of registered dairy and animal farms

Year	Dairy and animal farms	Manufacture of dairy products
2001	3	
2002	3	
2003	3	1
2004	5	1
2005	16	
2006	8	1
2007	17	
2008	14	
2009	12	
2010	15	
2011	10	
2012	26	5
2013	26	15
2014	4	1
2015	2	
Grand Total	164	24

Source: Ethiopian Investment Agency

Regional distribution of registered investment projects in the period considered is summarized as follows.

Table 4: Regional distribution of registered dairy and animal farms in Ethiopia

Region of investment	Dairy and animal farms	Manufacture of dairy products
Addis Ababa	15	11
Amhara	14	1
Dire Dawa	9	
Harari	3	
Multiregional	11	1
Oromia	127	13
SNNPR	8	
Somali	3	
Tigray	2	
Grand Total	**192**	**26**

Source: Ethiopian Investment Agency

As the table above, Oromia region takes the highest share of the investment distribution in terms of number, raised capital, employment generated and others. Amhara region also enjoys better advantages in terms of employment generation and mobilized capital as compared to the slightly higher number of registered investment projects in Addis Ababa.

Ethiopia had 6.6 million dairy cows and 10.7 million milking cows, out of the total estimated 55 million heads of livestock in the country, in 2013/14. The total estimated cow and camel milk production for the rural sedentary areas of the country were 2.9 billion and 250.51 million liters respectively in the same year.

Table 5: Milk production in Ethiopia, 2013/14

Milk Production		Quantity produced
Cow milk	Average daily milk production (liters/cow)	1.371
	Total Milk Production (Liters)	2,903,247,759
Camel milk	Average daily milk production (liters/cow)	3.406
	Total Milk Production (Liters)	230,509,032

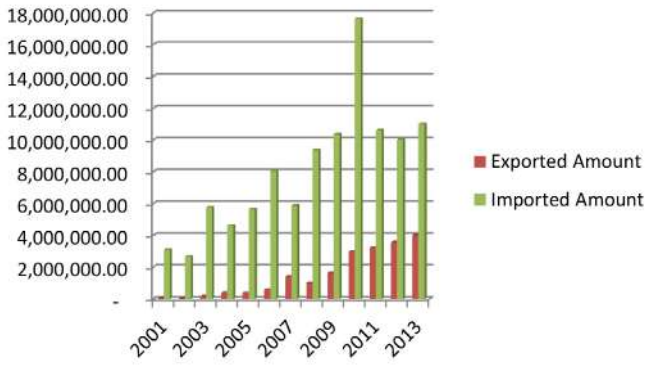
Source: CSA, 2013/14

Unlike the international market performance of chilled meat production, Ethiopia highly depends on imported dairy products to sustain its domestic market. However, statistics shows that Ethiopia exports animal products including egg, honey and other edible animal products in small amount.

Table 6: Dairy products international performance

Year	Exported Amount (USD)	Imported Amount (USD)
2001	25,767.00	3,113,806.00
2002	35,797.00	2,679,357.00
2003	163,434.00	5,770,141.00
2004	399,393.00	4,639,508.00
2005	392,744.00	5,648,689.00
2006	586,798.00	8,048,262.00
2007	1,410,657.00	5,878,831.00
2008	992,279.00	9,366,343.00
2009	1,644,944.00	10,367,325.00
2010	2,993,737.00	17,643,731.00
2011	3,235,189.00	10,623,625.00
2012	3,577,454.00	10,031,537.00
2013	4,034,524.00	10,998,957.00

Figure 6: Dairy products international performance

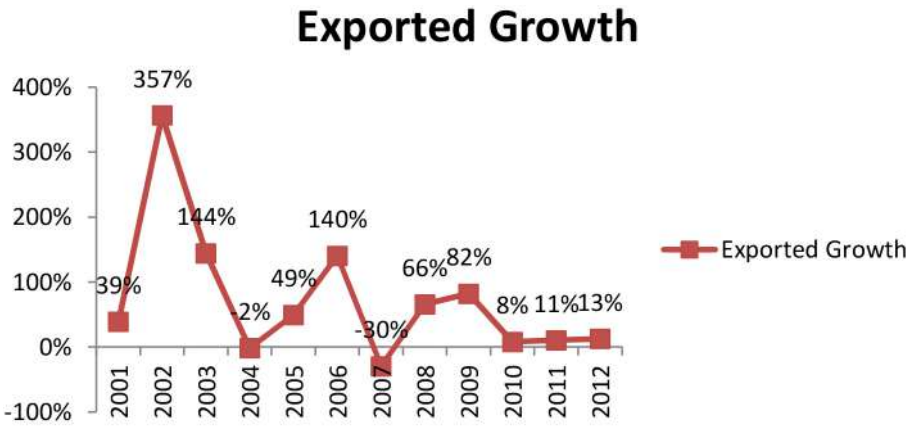


Source: UNCOMTrade, 2013/14

During the entire reference period, Ethiopia was net importer of dairy products that sustain its unsatisfied domestic demand. Even worse, the volume of import has been growing over time with the country's import becoming twice of the export volume. The import of milk reached 11 million USD in 2013 from 3.11 million in 2001.

Moreover, export of milk drastically slowed down drastically with the export volume remaining stable around 4 million USD in the period considered.

Figure 7: Growth of export of dairy products in Ethiopia



Ethiopia vs Botswana

The global market for meat is driven by the increase in income, population growth and urbanization. The distribution of the income will be important to impact on a greater number of lower income consumers. These factors are having positive impacts on the rise in consumption of meat in the target markets.

In 2013, the value of world exports of meat (fresh, chilled or frozen) increased by 10.1 percent (compared to 10.6 percent average growth rate from 2009-2013) to reach 43.3 billion USD (UN COMTRADE, 2013), while imports increased by 7.6 percent to reach 39.5 billion USD. Exports of this commodity accounted for 3.4 percent of world exports. Australia, Brazil and USA were the top exporters in 2013 accounting for 12.7, 12.4 and 12.1 percent of world exports, respectively, (see Table 7). USA, Russian Federation and Japan were the top destinations, with respectively 9.0, 7.3 and 6.9 percent of world imports (see Table 7).

Top 15 countries/areas accounted for 85.8 and 69.5 percent of total world exports and imports, respectively (see tables 7 and 8). In 2013, Australia was the country/area with the highest value of net exports (+5.5 billion USD), followed by Brazil (+5.1 billion USD).

Table 7: Top 15 global meat exporters in 2013

Country or area	Value (million US$)	Growth (%)		World share %
		2009-13	2012-13	
World	43262.9	10.6	10.1	100.0
Australia	5507.8	13.0	11.9	12.7
Brazil	5358.7	15.4	19.2	12.4
USA	5239.0	20.5	12.5	12.1
India	4486.6	46.1	49.8	10.4
Netherlands	3010.0	3.6	0.5	7.0
Ireland	2081.2	4.6	3.5	4.8
Germany	1888.2	-0.9	-2.6	4.4
New Zealand	1722.8	11.2	2.3	4.0
Uruguay	1300.7	8.2	-7.2	3.0
France	1296.3	-1.0	-5.2	3.0
Poland	1254.8	12.1	15.7	2.9
Canada	1108.9	2.5	5.2	2.6
Paraguay	1004.7	16.1	33.0	2.3
Argentina	993.1	-10.2	0.0	2.3
Belgium	846.6	5.2	8.2	2.0

Source: UNCOMTrade, 2013/14

Table 8: Top 15 global meat importers in 2013

Country or area	Value (million US$)	Growth (%)		World share %
		2009-13	2012-13	
World	39478.1	8.6	7.6	100.0
USA	3550.4	9.5	1.8	9.0
Russian Federation	2874.1	5.6	-2.8	7.3
Japan	2729.1	8.1	-1.1	6.9
Italy	2655.5	-1.6	-1.2	6.7
Germany	2161.4	8.3	4.2	5.5
Netherlands	1969.4	8.2	-0.9	5.0
France	1864.4	3.4	5.3	4.7
China, Hong Kong	1632.5	36.2	108.9	4.1
United Kingdom	1490.5	5.2	11.9	3.8
Rep. of Korea	1395.7	15.0	10.8	3.5
China	1270.1	131.7	398.8	3.2
Canada	1145.3	14.7	-1.9	2.9
Chile	904.7	17.9	7.1	2.3
Mexico	894.4	1.6	7.5	2.3
Venezuela	890.1	0.6	13.5	2.3

Source: UNCOMTrade, 2013/14

The data presented above grossly show export and import information in general. In practice, however, data are available for export and import of meat, exporting low value meat and importing premium quality (usually in more developed economies) or vice versa in less developed ones. For example, in 2013 the United States exported USD 5.2 billion of meat, and imported USD 3.6 billion. Other such large active traders among the top 10 exporters and importers are the Netherlands, Germany, Italy and Canada. This practice is an important consideration for Ethiopia's going forward. Especially, Ethiopia's meat, being predominantly grass fed and naturally reared (organic), is high quality product and would be expected to command a substantial premium.

According to Sullivan (2007), certain trends are becoming evident that will impact on Ethiopia's ability to be competitive in the world meat market. These include: a growing demand for particular cuts that allow for ease of preparation; an increasing

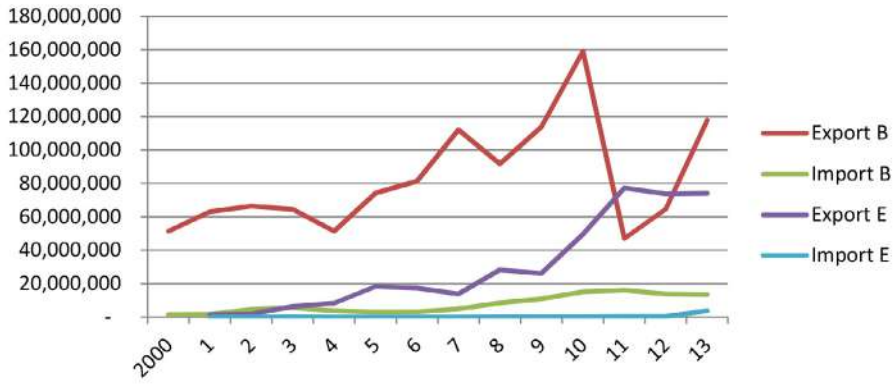
requirement by importers for certification, sometimes by third parties outside the exporters' country; greater need for product safety; greater concern for animal welfare; continuing of the developed countries' role as the major players in global meat production and consumption; general expectation for less trade restriction (excluding animal health concerns).

Under these following section, the study will provide an overview of Ethiopia's competitiveness on export of meat products vis-a-vis the selected competitor, Botswana.

a. Volume of export

From 2000-2007, Botswana experienced a positive and promising chilled or frozen meat export growth except in 2004 when it experienced a slight decline in export. After a period of steady growth until 2007, the global financial crisis contributed to a decline in 2008. Exports continued to increase until 2010, when withdrawal from the EU market caused a sharp fall in exports in 2011. The trend has been positive since then, although exports remain below the 2010 (and 2007) levels. Total exports in 2010 was USD 158.9 million, whereas the figure for 2013 was USD 117.8 million after having fallen to a low USD 46.9 million in 2011, showing a strong rebound. Yet considerable challenges lie ahead in recapturing lost customers.

Figure 8: Trends in Ethiopia's and Botswana's meat export from 2000-2013



From 2001 to 2011, Ethiopia's meat industry experienced steady and positive growth in terms of export volume. But compared to the export volume of Botswana, Ethiopia's export volume was very low until 2011 when Botswana was banned by the European Union. For example, the total amount of meat export of Ethiopia in 2001 was USD 1.6 million, which is less by USD 61.3 million than of Botswana. Although the export volume of Ethiopia is by far less than Botswana's export, the Ethiopian export trend was less volatile. For instance, the Ethiopian export was not affected by the 2008 world financial crisis, but Botswana's export fell by USD 20.5 million.

b. Export destination

After the huge drop of export in 2011 following the EU ban on Botswana's meat export, South Africa has become its major export market. The top four markets, South Africa, UK, Germany and the Netherlands, have been consistent destinations over a number of years. Together, they account for 97.5% of chilled meat exports. In 2013, South Africa accounted for 56% of Botswana's meat export. UK is the largest market for Botswana beef outside of South Africa and has been historically and continues to be the most important premium market. At its peak in 2010, Botswana supplied USD 32.5 million of beef to that market. Nevertheless, it only had a market share of 2.6%, ranking number seven by exporters. Except South Africa, the major export market of Botswana's are on the list of top world meat importers.

Table 9: Major meat export destination of Ethiopia and Botswana in 2013

Rank	Ethiopian's at buyers	Volume in US$	Share in %	Botswana's meat buyers	Volume in US$	Share in %
1	UAE	43,006,274	58.2%	South Africa	66,633,204	56.6%
2	Saudi Arabia	27,545,710	37.2%	United Kingdom	28,435,433	24.1%
3	Honk Kong	1,885,468	2.5%	Germany	14,489,394	12.3%
4	Bahrain	787,823	1.1%	Netherlands	5,251,377	4.5%
5	Turkey	554,637	0.7%	Greece	1,168,995	1.0%
	World	73,956,755		World	117,793,552	

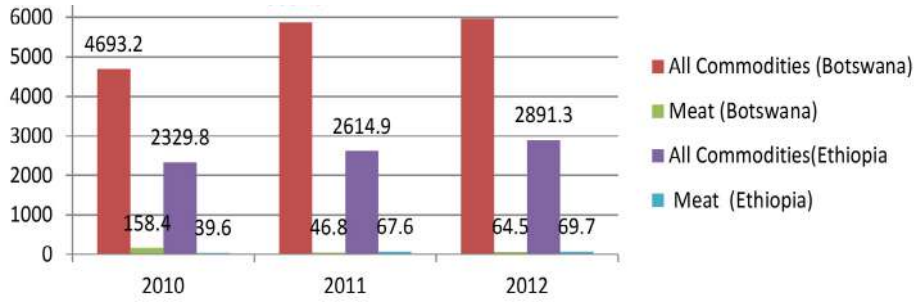
Source: UNCOMTrade, 2013/14

The Ethiopian export market is highly dominated by Middle Eastern countries. Specifically UAE and Saudi Arabia have been top export markets over a number of years. Together they account for 95.4% of chilled meat exports. In 2013, UAE accounted for 56% of Ethiopia's meat export. In this regard, both countries export (Ethiopia and Botswana) highly relied on a single country market. But compared to Ethiopia, Botswana's export is slightly diversified across continent. Until the EU banned Botswana in 2011, Europe was the largest export market for Botswana. After it lost it EU market, it regained the export by expanding its market share in South Africa and some of the EU market in 2012 and 2013. Additionally, all of the Ethiopia's top export market countries are not on the list of the top world meat importer countries. Therefore, expanding Ethiopia's market share in the current receiving countries may not be easier like Botswana did in South Africa. And most importantly, having an export market in a single geographical area, similar culture and similar political region may increase the risk of losing a big market share like what Botswana experienced in 2011.

2.4 Share of meat in Botswana's and Ethiopia's export

Although diamond is the major export item for Botswana, the contribution of meat export reached 3.4% from the total merchandize in 2010. But due to the EU ban in that year, the export share of meat dropped to 0.8% and 1.1% in 2011 and 2012, respectively. Compared to Botswana, Ethiopian's meat export relies on agricultural products. But the meat export share of Ethiopia from the total merchandize has been below 3% since 2000. In 2010, the total share of meat export constituted 1.7% of the total merchandize export. In real figure, it was less by USD118.8 million than Botswana's meat export.

Figure 9: Share of meat in Botswana's and Ethiopia's export from 2010-2012 (in millions)



Source: UNCOMTrade (2013)

III. Key Informants' Interview

3.1 Supply side

Most of the key informants got convinced for having many local animal suppliers. Both lowland and highland cattle have been in use. Animals are mainly sourced from Borena, Afar, Somali, Hawassa, Shashemene, Meiso, Bako, Mojo, and many other southern regions of Ethiopia. Most of the time agreements are reached between companies and suppliers when each of their criterions match.

The criterions are mainly based on weight, body condition and age. Weight criterion is supposed to mean that specifically customers require carcass weight of animals, say for instance shoats to be 15-25kgs if it comes from highland areas, and 15-28kgs if it's from lowland. Here it should be noted that export trade highly depends on the customers wish too. On the other hand, it may not significantly matter whether the body condition contains much fat (fatty) or not, but bony cattle are not preferred. Ages between 2-3 years could be a range where in most animals will be demanded.

Finally, arrangements on delivery will be done between the supplier and companies' agreements.

Difficulties from supply side

Depending on the weather, especially during Bega[7], cattle are abundantly available. In addition to this, during holidays suspecting low price for their cattle farmers usually do not want to sell out their animals hence creating shortage. Similarly, dairy production is highly influenced by weather. When there is low level of rainfall, milk cows reduce production of milk.

Lack of awareness on the next of farmers also affects sustainable supply of animals. This is mainly because farmers bring animals which they think are marketable rather than on direct orders from buyers. With this in mind, a goat could be delivered while cattle are required. Hence many farmers go back home without selling their animal herds.

On the other hand, meat exporters and processers face linkage problem, particularly between livestock husbandry farmers and animal medicine and food process suppliers with animal fatteners and pastoralists. Although most of the meat exporters and processers rely for their supplies on lowland pastoralists, some of the abattoirs have built their own animal feed lot for animal fattening. Because of this, they are forced to rely on only pastoralists who are interested and forced to sell their cattle and shoats during dry seasons. Even for the dairy cows, ordinary animal feeds are suggested to be fed by the farmers.

Additionally, the quality and the quantity of the cattle and shoats are very low when compared to those of the competitors from the continent as well as from Australia and Brazil globally. Even worse, dairy in Ethiopia is reported to be significantly supplied through informal sectors in the traditional market value chain. Processed and pasteurized dairy products are competing against traditionally produced and unpasteurized milk or other dairy products of small households locally.

Export linked criterions

Most of the time, importers at the international market do not prefer to buy specific area animals, say for instance highland sheep. They even strictly request sheep other than from specific geographical location. Yet, specific requirements such as "Wanke" sheep are desired by Jeddah importers. Large goats are mostly preferred in Jeddah and small goats are mostly requested by Dubai and surrounding Emirate states. Similarly weight also affects exports to a significant extent. For instance, in Dubai they often require weight limits of 6.5-8.5kgs carcass weight; while Jeddah importers prefer to obtain carcass weight up to 11kgs. Hence, such specific demands by the buyers direct

[7] 'Bega' season in Ethiopia represents the dry season.

companies which farmer suppliers contact at the very beginning. It is like “backward supply requirement chain” that most of key informant companies follow.

Dairy, on the other hand, appears to be traded internationally at the borders of Somalia and Djibouti at a small scale.

Attempts have been made to discuss with Ministry of Rural and Agricultural Development to create awareness, control and improvements of quality of chilled meat products to the Middle East and other regular customers; though key informants do not know to what extent they have progressed so far.

3.2 Production Side

The key informants define production as the process from slaughtering up to chilled carcass shipment. In this regard, many companies have got employees with doctorate degree veterinary medicine at each production unit. This includes at production and inspection units with such titles as production manager, production supervisor, quality assurance manager and quality assurance supervisor. In this regard, the study has found that most companies hire well educated individual employees to make sure their company exports fine chilled meat to the international market.

Chilling process

In most of the key informants’ companies there are chiller machineries with specific machine operators that work day and night to make sure that the machineries are utilized optimally through controlling, adjusting and supervising the daily operation. A carcass will be preserved at a range of -2 to 2 ˚C for 24 hours meat chilled ready for shipment. However, problems associated with chilling machines sometimes lag the production and supply of meat production. For this reason, every six month officials from quality control authority inspect and negotiate on standardization of the calibration of chilling machineries. Also, problems associated with machine operators had significant obstacles on the production of chilled meat in the surveyed companies.

Export abattoirs have to also abide by the international standards even though customers preference from the demand side affects to what extent this could be adhered to. For instance, the international standard enforces chilling temperature level to be below 0˚C and for offal meat products the regulation requires to keep them under -0.5˚C. But for the sake of preserving the protein and other nutrient contents of the meat when chilling (sucking out water from the meat), there are negotiations on the calibration of machines in the range of -2 to 2 ˚C. Accordingly, in the process of delivering the chilled meat to the international market, a label will be stamped instructing on what temperature ranges it has to be kept. So far, international supervising agencies for chilled meat have been satisfied with it.

Infrastructure

The government has the responsibility to provide at least all the necessary infrastructures such as electricity, water and road. However, there are reportedly severe problems of electric power fluctuations and shortage of tap water. There are times when electric power outage occurs for days or fluctuates the whole day. This has immense effect on production and preservation processes, not to mention associated rising costs. Thus, the companies mentioned that they are forced to use huge generators which ought to work 24 hours sometimes. Here both the acquisition and operation costs are very significant. Even worse, investors are told that installation of electric power cables take more than 3 years for a particular investor in the sector. The associated severe corruption in the Ethiopian Electricity and Power Authority also poses a new threat to the development of this sector.

Special vehicles equipped with "thermo king" temperature preservations should not be driven in inconvenient roads. However, the recent road provision efforts of the government such as the Express Way and several other small detour road pavements have solved the problem somehow.

Among the major utilities of an abattoir is water. Without water every section of the drainage, the compound, and many other fields of the abattoir processing will produce unpleasant smell. Hence, continuous water supply is indispensable regard to water supply, most of the companies sampled for interview have drilled their own underground water inside the compound. It will be treated with chlorine and other chemicals. Regular inspection units from the National Veterinary Institute conduct evaluations by taking samples regularly in six months. Some of the key informant companies are already acquiring their own laboratory at the compound so that the water will be treated at their own equipment's and laboratories. In this regard the companies complained much less about water supply than electricity provision.

Cargo shipment process

The major disaster during delivery of chilled carcass happens when they are shipped out of the company and reache airport. There is utter negligence, lack of follow-up and interruptions during the arrival of chilled meat products. There was a discussion held between owners of the abattoirs and airport aviation officials emphasizing on the great obstacles posed by the operation of their office. In this regard, the officials have accepted their weaknesses. Most of the complaints from the buyer's side could be sourced mainly from their inefficient operation during loading and transportation. As a matter of fact the government has promised to conduct successive corrective measures in order to improve the service delivered at the airport.

3.3 Regulations and policy

Export abattoir regulations are more or less administered internationally. National regulations only apply for the municipal abattoir/butchers who seek to supply domestic market demand.

The major regulation that has to be heeded to is the International Organization for Standardization (ISO) Certification from international organizations. In order to get the ISO Certificate there are specific criterions that should be fulfilled by the abattoirs. These include hygienic standards, Hazard Analysis and Critical Control Points (HACCP) qualification, and employer's standard that have to be evaluated by both internal and external auditors so that the company could be entitled to the certificate. In this instance, Mojo Abattoir was the first Abattoir in Ethiopia to be ISO certified.

Difficulties with regulations and policy

There were significant obstacles faced by most of the key informants to qualify for the certificate. These include standards associated with Animal Welfare Protection. The fact that in Ethiopia this concepts yet to be established does not convince the auditors in animal preservation and protection. Especially the concerned "animal right protection" office does not have significant involvement in the process of animal transportation, loading and unloading, animal feeding, animal management, animal treatment drugs and several other procedures. Here, among the major problems, is drug residue on animals before exchange takes place between farmers and exporting or fattening companies take place. Perhaps deliberate salt infusion into the feeds of animals lead to inappropriate evaluation of the quality of the meat creating critical chilling problems when meat is filled with high volume of water. This consequently leads to non-consumption of the meat production in the foreign countries because of several international health security standards.

A separate mandated office from Ministry of Agriculture or any other concerned ministry could have solved such problems, said the interviewed informants. Hence, in certifying for ISO criterions, one of the major problems lack of control such technical procedures. It not well known to what extent Ministry of Rural and Agricultural Development had devoted efforts to improve such incapacitating problems. Not only quantity of animals has to be looked but also quality of animal meat production control that has to be strictly followed up.

Problems associated with the tax authorities were also among the complaints raised by some key informants. They claimed that the tax authorities count cattle and shoats as assets which does not depreciate. This put a huge tax burden on dairy product producer and meat exporters who are engaged in animal fattening for the purpose of getting quality product. Although the depreciation of an asset is defined in the policy regulation, the execution body of the policy does not want to take any action. Similarly, though the policy regulation gives tax free privileges for the investors to

import machineries for this sector, the bureaucracy and highly negligent work ethics of employees increase the cost of warehouse which is beyond the expectation of the investors customs.

Even if the investment policy extends equal treatment for both foreign and domestic investors, the key informants interviewee suggest that the policy executers favor domestic investors in over foreign investors.

According to the interviewees, consumers in most of the Middle East countries, do not trust the Ethiopian Halal certification. This gives huge advantage to competitors from Pakistan and India to beat Ethiopian meat export in the Middle East.

The key informants also noted that because of poor hygienic management which starts from improper handling at the pre- and post-slaughter stages, and poor cold chain management of the meat by some exporters, reputation of ethiopian meat in the Middle East and Angola market was damaged. This bad image makes it difficult to expand and also to regain the lost market in the Middle East and Angola market, respectively.

IV. Policy Incentives and their Practicability

Agriculture being the major backbone of the economy in Ethiopia, huge emphasis has been devoted to practically improve the performance of each subsector under the umbrella. Many enactments and proclamations have been articulated targeting to achieve high performing agricultural business endeavors. Specifically a number of policy and regulations that aim at impacting the meat processing and dairy business where issued.

Major policy incentive reviews had been enacted in terms of easing licensing and commercializing business registrations, access to finance, solely allowing domestic investors to engage in reserved agro-processing industries, access to investable loan funds, infrastructural developments to enhance production and marketing capability and standardizing and animal health regulatory offices. All of the aforementioned and other policy incentives had been key developments in boosting the contribution of the sector in the growth and transformation of many stakeholders involved including smallholder large scale processor investors, and intermediary actors.

Challenges associated with policy incentives

Given the the weak performance of agro-processing industries, this study devotes much the analysis in this section to the challenges behind incentives put in effect to improve the business activities.

One-window service provision has been observed at business licensing and registration offices a Frequent visit to the Ministry of Trade, Ministry of Agricultural and Ethiopian

Investment Agency attested to their welcoming treatment. However, subsequent failures to admit mandates over the administration of licensing and registration have been tiresome trips for investors in search of the right office responsible for their request. These inconvenient trends in licensing and registering many new projects paved the way for several rent seeking activities or discouragement from the investors side. In addition to this, multiple licensing requests for wholesale trade, retail business, export trade and input supply by the ministry made the journey in the business sector very weak. Meat and dairy products being perishable easily, any delay or interruptions in the business activities of such industries or companies result in greater risks. Specially the mental set back created in the mind of the business entrepreneurs is an immense loss for both actors in the value chain and the economy as a whole.

An agro-processing industry like meat processing and dairy require huge amount of startup capital. As a matter of fact one of the means to acquire such huge finance is through credit from banks in short to long term agreements. Among the incentives the government of Ethiopia provided includes rationing discrete financial assistance to such sectors among others. However, in practice, there had been severe bureaucratic and alleged rent seeking activities which hinder actors in the sector from accessing finance through borrowing.

A special focus has to be established on the fact that livestock assets could not be considered as collaterals for bank loans. It makes the requesting process by entrepreneurs in this sector very difficult to the extent of denying preliminary assessment in regards to other performance evaluation possibilities. On the other hand, banks complain liquidity shortage created through directives pronounced by the National Bank of Ethiopia, enforcing purchase of bonds equal to 27% of each loan disbursement. In fact this by far reveals the potential fund being restricted other than an extended loan possibility. This obviously worsens banks criterion to extend loan with the available small fund to only those with extremely low risky business proposals.

The short term loans provided to the live animals export value chain actors is also restricted only in few selected projects. Many have to benefit from such relaxed financial access regardless of the sub-sector they have engaged in as far as meat export is concerned. Here it is worth mentioning fraudulent attempts from value chain actors terminating export transactions once they have obtained short term loans from bank without fixed assets or securities for collateralizing. However, this shouldn't not be hindrance to decent investors who wish to benefit in a healthy business environment.

For the past years there was strict regulation prohibiting foreign investors involving in different sectors of the economic activities unless exceptions have been made. Domestically favored sectors incorporate also the case of meat production and dairy processing. As has been observed in the performance section of this study, the

drastic decline in the performance of Ethiopia meat and dairy production and export resulted in lack of economic confidence in the domestic business actors in this sector. Hence, recently there has been an incentive cut to allow foreign investors to engage in feed lot operation and live animal export. Nevertheless the changes took effect in 2012. So far insignificant number of foreign investors has shown interest in the sector. However it is worth mentioning that despite a drastic decline in the past two years there was sharp rise in the number of registered investors during this period. There is severe lack of increased institutional capacity which strictly follows up and administers the ever changing economic world market behaviors and standards. There were recent discussions with responsible offices such as Ministry of Rural and Agriculture Development (MORAD), NGO's, stakeholders and other concerned bodies at different levels to enhance institutional capacity of agricultural and related developments. In this regard, this study acknowledges the efforts of Addis Ababa Chamber of Commerce and Sectorial Associations (AACCSA) and United States Agency for International Development (USAID) consecutive symposiums, training sessions, technical assistance, public-private dialogues, financial supports to increase the benefits of all actors in the value chain of meat processing and dairy production.

V. Conclusion and Recommendation

5.1 Conclusion

This study attempted to assess the development of agro-processing industries by emphasizing on chilled meat and dairy production. Accordingly, the study adopted both descriptive and key informant analysis method in order to arrive at the desired objectives of the paper. In due process, efforts were made to define the concepts of chilled meat and dairy production in Ethiopia. Also, the performance of the sector has been reviewed in detail while the global competitiveness of the sector had examined with other competing countries in Africa. It has been attempted to thoroughly incorporate key informant responses regarding concepts such as supply, production, marketing, policy and regulations from different companies in the sector in order to evidently show the practical experiences of development in the agro-processing industries. Finally, a slight overview analysis has been undertaken to assess impacts of the policies and regulations on the industries operations these days.

Despite the increment observed in volume of both chilled meat and dairy production, the growth of the sector declined drastically over the study period. Even worse, new entrants registered formally in dairy products and animal farming companies are stagnating. Hence, despite the fact that the world's export meat consumption is increasing, Ethiopia's participation in the sector is declining immensely. As compared to competitor countries like Botswana, the export performance of chilled meat from Ethiopia is low.

On the other hand, unlike competitor countries, Ethiopia's meat export destina-

tion countries are highly concentrated in a single geographic, economic, cultural and social background group. Although Ethiopia is endowed with big cattle and shoat population, the share from this sectors out of the total export merchandise is even below Botswana with high other export merchandise volume and value. Also commercialization of dairy production is noted to be underdeveloped mainly due to informal market actors accustomed in the traditional raw and unpasteurized dairy products delivery method. This critically reduces the economic contributions of dairy products in addition to the immense discouragement posed on potential dairy processing large scale investors.

Many key informant responses raised issues of seasonal supply shortage, specially Bega and fasting seasons posing great challenges in sustainable supply of cattle. Smallholder farmer suppliers' lack of awareness also creates inconveniencies in production. Disconnected linkage between livestock husbandry farmers and animal feed suppliers with the animal medicine supplies pose critical operational obstacles.

Key informants indicated that import demands depend highly on weight, type, age and body condition. However conflict of interest is observed within the international standards and customers desires in terms of chilling and similar concepts. They have also critically raised inefficient by in Ethiopian Electric Utility (EEU), which has been mentioned as one of the great challenges faced among all the key informants surveyed. Similarly, lack of proper facilities that receive and preserve meat until departure at the airport created huge problems on the quality of meat.

Lack of separate mandated office from the responsible office led to several technical rejections of meat products by international health insecurity standards upon arrival at the importing countries. This includes drug residue problems and deliberate salt infusion through feeding them with inappropriate amounts.

Previous have fraudulent practices by some irresponsible exporters from Ethiopia damaged the reputation and image of the country in Angola and some Middle Eastern countries.

Even though attractive treatment from the bureaus of trade and investment offices are offered, inconvenient trends in licensing and registering many new projects paved the way for several rent seeking activities. In addition to this, severe rent seeking activities were raised when processing access to loanable funds from banks. Furthermore, strict restriction on private commercial banks hinged them from extending their loan provision towards agricultural business endeavors with different packages and loan schemes. Finally, ineffective relaxation of domestically reserved investment areas for foreign entrepreneurs produced no significant improvement in the desired direction.

5.2 Recommendations

In order to increase the rate of meat export growth as well as to attract additional domestic and foreign investors to this sector, the government needs to concentrate and follow up the proper implementation of the existing incentives for the sector.

Since having meat export market in a single geographical, cultural and economical area has high risk of losing huge export destinations; exporters in Ethiopia should expand their markets to different export destinations like southern Africa (Angola and South Africa), western Africa as well as some parts of Europe.

Provided that dairy industries are highly underutilized, actors in the sector should devote increased focus towards achieving better production through formalizing the market chains, awareness creation and financial commitments.

Large-scale commercial animal husbandries should be supported by the government and other concerned non-governmental organizations in order to tackle supply shortage during dry seasons.

Proper cooling and chilling facility, which is designed for the purpose of preserving chilled meat, should be installed at in Addis AbabaBole International Airport.

Establishment of a legal separate entity responsible for animal health standards throughout the entire journey of animal transportation until shipment is crucial in easing international standard qualification by domestic investors.

Mechanization and Large-scale Farming in the Development of Agro-processing Industry in Ethiopia

Wondimu Legesse[8]

Abstract

Although Ethiopia has large unutilized land that is suitable for large-scale agriculture, it has not benefited much from the resource. As a result, large-scale agriculture is not contributing to the development of the sector in general and the agro-processing industry in particular at the desired level. In this paper, the challenges, prospects and the role of mechanized farming in the development of agro-processing industry are discussed.

More favorable investment policies, rapid demand growth, establishment of agro-processing parks, improved business climate and increased incentives to invest in agriculture and agro-processing are among the major prospects of large-scale farming and agro-processing development in Ethiopia. The growth of agro-processing industry is hampered by difficulties in accessing foreign currency, reduced demand for equipment as most clients fail to mobilize resources to acquire equipment, limited infrastructure such as electric power, limited transfer of technology from research, limited access to working capital, poor quality products, limited access to appropriate packaging material for processed products, lack of marketing skills, inadequate support services from training institutions, private sector consultants, small enterprise advisors, weak linkage between agriculture and agro-processing industry, and problems related to land. Besides, some of the major challenges of mechanized and large-scale farming are the red tape in acquiring investment land and getting loan from the Development Bank of Ethiopia, shortage of infrastructure, poor linkage among local, regional and federal institutions, shortage of investment capital, and corruption. Therefore, the concerned bodies should take appropriate measures to improve the role of mechanized large-scale farming in the development of agro-processing in Ethiopia.

Key Words: Mechanized farming, agro-processing, large-scale farming

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I. INTRODUCTION

1.1 Background

Agriculture, which is overwhelmingly characterized by smallholdings in sub-Saharan Africa (SSA), contributes over 80 percent of trade in value, above 50 percent raw materials to industries, and employment for the majority of its people (FAO, 2014). Likewise, agriculture occupies a key place in the Ethiopian economy; and more than 90 percent of agricultural produce are generated by smallholders. Agriculture provides livelihood for more than 85 percent of the population and over 87 percent of the active labor force. Moreover, about 90 percent of export earnings and more than 45 percent of the country's GDP come from agriculture, which is source of food, farm power and major source of raw materials for the agro-processing industry in the country (MoFED, 2014; MoA, 2015; CSA, 2015).

Despite its socio-economic contributions, agriculture in SSA countries is still underdeveloped. Besides, 30 to 40 percent of agricultural produce is wasted due to poor processing and storage methods (Hatibu and Simalenga, 2013). Low-level of technology inputs, especially power, lack of targeted investments and fragmented approach to mechanization, have been cited as the major constraints hindering the modernization of agriculture in Africa (Mrema and Odigboh, 2011). This problem often arises from poor planning and over-reliance on unpredictable or unsuitable aid-in-kind for many mechanization inputs as well as limited coordination within and among government and private sector agencies dealing with mechanization and agro-processing.

One way of enhancing agricultural production and productivity is to encourage the use of technology in agriculture and in associated agro-processing industries. Despite the worldwide developments of agricultural machinery and implements as well as the increasing use of Draught Animal Power (DAP), agriculture in SSA is still predominantly carried out with old hand tool technology (World Bank, 2014; FAO, 2013). Enhancing the use of agricultural mechanization is therefore crucial to increase both production and productivity in the region. In Ethiopia, commercial agriculture provides around 5% of the total agricultural output (CSA, 2014), despite the large amount of agricultural land allocated for investors.

Besides, the link between agriculture and agro-industry is very weak. The specificity of agro-industry vis-à-vis other industrial sectors lies in the agricultural origin of its inputs. Domestic agriculture is the main supplier of raw materials to agro-industry in most developing countries; as the potential for agro-industrial development is largely

linked to the actual or potential availability of such agricultural inputs to processing industries. For this reason, increasing the efficiency of domestic agriculture through mechanization is an important aspect of promoting agro-industrial development. At the same time, agro-industrial processing activities can have positive impact on efficiency in primary agriculture since they promote technological innovation and stimulate competition within the sector.

Moreover, agriculture is believed to lead to industrial development by generating capital and effective demand for industrial outputs. In addition, agro-industrial products obtained by utilizing mechanization pave the way for export market and national development. Mechanization in this way helps to strengthen the domestic market, which ultimately enables local companies to become competitive in the international market. However, there are a lot of factors that hinder the development of mechanized farming and the linkage between agriculture and agro-processing industries in Ethiopia. Therefore, this paper assesses the role of mechanization and large-scale farming in the development of agro-processing industry in Ethiopia.

1.2 Objectives

The main objective of this study is to review the role of mechanization and large-scale farming in agro-processing industry development, while the specific objectives are:

- To review the historical perspectives of mechanization and large-scale farming in Ethiopia;
- To explore the impacts of mechanization and large-scale farming on agro-processing industry development; and
- To identify challenges, prospects and policy issues with regard to the state of mechanization and large-scale farming in the present-day Ethiopia.

1.3 Methodology

The research used both primary and secondary data. The sources of secondary data were Central Statistical Agency (CSA), Ethiopian Investment Agency (EIA), Ministry of Agriculture (MoA) and Ethiopian Agricultural Investment Land Administration Agency. Key Informant Interviews (KIIs) were also conducted with informed and influential targets to check the reliability of the information obtained. These included officials in the Ministry of Agriculture, Development Bank of Ethiopia, Ethiopian Investment Agency, regional investment agencies, and selected commercial farm investors.

II. Agricultural Mechanization in Sub-Saharan Africa

2.1 The Role of Mechanized Farming in Development

Farm mechanization gives the opportunity to increase yield and reduce loss in addition to lowering cost. Mechanization of farm work has three primary objectives: reduce the drudgery of farm work, increase the productivity of farm workers, and increase the timeliness and quality of farm work (Goering, 1992). Moreover, mechanization is a crucial input to agricultural crop production (FAO, 2013). Mechanization is mostly very capital intensive when compared to other usually annual inputs; and it has repercussions on the efficiency of many inputs used in crop production, including seeds, fertilizer, water, and time/labour. It is also much more complex in application, requiring not only correct use but also service infrastructure for maintenance and repair.

For this reason it is essential to embrace the agricultural mechanization sector in the context of sustainable crop production intensification. While agricultural mechanization is crucial to production, it can also have very detrimental effects on the environmental sustainability of farming (soil compaction and erosion, tillage, chemical pollution). However, if the correct technologies are applied, for example climate smart agriculture such as conservation agriculture, safe and efficient application of pesticides, precision application of fertilizers, soil compaction management, and efficient harvesting; mechanized farming increases in labor productivity. This implies that the introduction of machinery to substitute for labor ("labor saving") is a common phenomenon associated with the release of labor for employment in other sectors of the economy or to facilitate cultivation of a larger area with same labor force.

In addition, mechanized farming increases land productivity. The purpose of mechanization is to produce more from the existing land. Machinery is a complementary input required to achieve higher land productivity; for example, through the introduction of pump sets or faster turn-around-times to achieve higher cropping intensity. In labor surplus economies, net labor displacement or replacement should be avoided. Lastly, mechanized farming decreases cost of production. Introduction of a machine may lower production costs or offset increased costs of draft animals or labor.

Mechanization has also been a major contributor to increase in hectares completed per hour of work. Nonetheless, since the problem of developing countries is one of increasing the production of food the highest priority for power and equipment should be for kinds that will contribute to increased yields (Giles, 1967). Mechanization can increase yield through timelier performance of operations and higher quality performance of operations. There is optimum time for performing critical farming

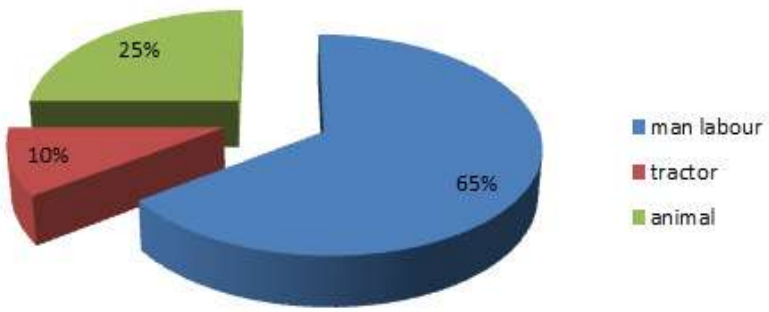
operations such as planting and harvesting. Crop yields tend to be highest when these critical operations are done closest to the optimum time (Goering, 1992). Mechanization allows for timelier performance of critical operations, thus helping to increase yields. It also improves the quality of the farm operation.

2.2 Agricultural Mechanization in SSA

As stated earlier, the bulk of agricultural production in developing countries is in the hands of smallholder farmers who depend very much on tools with very low mechanical advantage. The small farmer or peasant is an important client for new technology developed for the purpose of increasing basic food crops in most tropical developing countries with very limited capital resources. Most of these farmers at different ecosystems and with their resultant cultural practices are aware of the biotechnology and farming systems that are most suitable for their respective agricultural environments.

Several traditional practices reveal indigenous biotechnology at work (Matthew, 1990). In 1961, Sub-Saharan Africa had 2.4, 3.3, and 5.6 times more tractors in use than in Brazil, India, and China respectively. But by the year 2000, India, China and Brazil had respectively 6.9, 4.4, and 3.7 times more tractors in use than in the entire Sub-Saharan Africa, including South Africa (Mrema, Baker & Kahan, 2008). Many projects failed, and now Africa is less mechanized than land-scarce and labor abundant South Asian countries. Additionally, there is widespread acknowledgement that previous attempts to “transfer” technology or bring in large quantities of mechanized power to African farmers have largely failed to improve food output (Woodhouse, 1989).

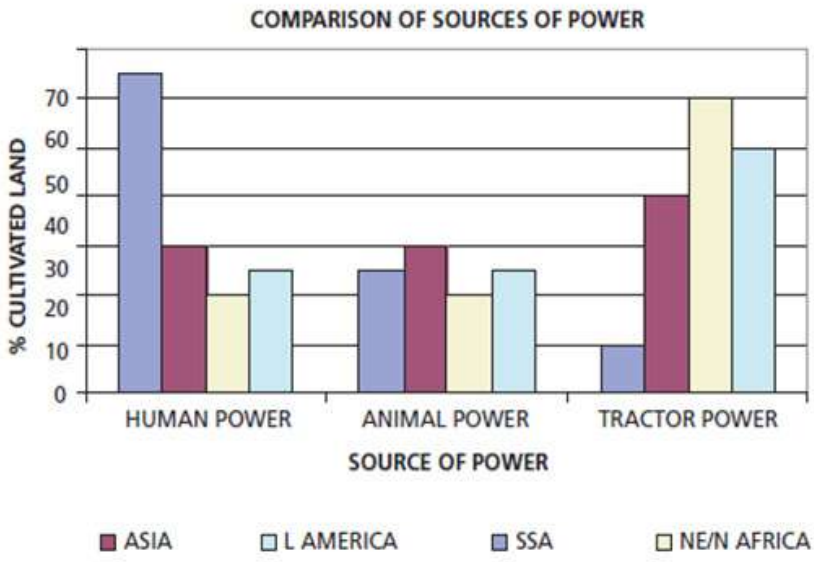
Figure 1: Source of power for cultivation in SSA



Source: FAO, 2013

In Sub-Saharan Africa humans are the major source of power for cultivating over 65% of the total area under cultivation, 25% with draught animals and 10% with tractors (FAO, 2013). The use of tractors is very limited in SSA and concentrated in few countries (See Figure 1). In 2000, the estimated number of tractors used in agricultural production was 221,000 units in SSA, 6,000,000 in Asia, and 1.8 million in Latin America. This implies that the share of mechanized machinery utilization in SSA is the lowest of all regions in the world.

Figure 2: Comparison of area cultivated by different power sources in SSA, Latin America and Asia



Source: FAO, 2013

2.3 Key Factors that Hinder the Development of Agricultural Mechanization in Sub-Saharan Africa

Agricultural mechanization is at a very low level in SSA and this leads to the following consequences with respect to agricultural development:

a) The very low levels of mechanization coupled with equally low utilization of other productivity-enhancing inputs such as improved seed, fertilizers and improved water management for agriculture make small- and medium-scale farming unattractive to the youth who make up the bulk of the population in the region;

b) Agriculture is not attracting the most enterprising members of the population, and it has thus a tendency to remain at subsistence level;
c) Politically driven desire to modernize agriculture in a particular country;

d) Development of large-scale state, irrigated, and/or estate farms;
e) Market-driven need for growth output where scarcity of labour drives mechanization;

f) High capital and operational costs of mechanization coupled with low commodity prices of especially food crops which were targeted by the bulk of mechanization initiatives;

g) Given the fact that political decisions have been responsible for initiating most of the drives towards agricultural mechanization, lack of consistency in policy has been a major cause of failure of these initiatives;

h) Difficult topography in high potential areas where mechanization would potentially pay has been another major obstacle to accelerated mechanization.

III. Mechanization and Large-scale Farming in Ethiopia

3.1. Historical Perspectives

Ethiopia has been characterized by backward subsistence farming. Production and productivity of the agricultural sector were just enough to make farmers live. Imperial Ethiopia gave little attention to commercial farming. In the 1950s, very little of Ethiopia's investment or operational expense budgets were aimed directly at agriculture; and agriculture received less than 5 percent of the total public investment (Dale, 1970; Imperial Ethiopian Government, 1970). However, the second and the third five-year plans (1962 to 1973) attempted to encourage large-scale public, private, and cooperative farms. As a result, over half of the proposed five-year investment budget (about 100 million USD) was allotted for large-scale farm activities, though the implementation was not as demanded (ibid). Major emphasis was made on commercial agriculture and private enterprise activities in the same period. Fund-wise, about 60 percent of the capital expenditure in agriculture was allocated for commercial farms (Imperial Ethiopian Government, 1970).

The military government which took power next opened pilot state and research farms on the basis of the socialist model that paved the way for the establishment of state farms which were later transformed into well organized and relatively mechanized large-scale state farms and institutional farms called "commercial farms". However, up

until 1990 the development and widespread of large-scale farms was limited to few pocket areas in the country. The promotional activity remained the sole responsibility of the government. Consequently, the contribution of these farms to the country's gross total agricultural output was limited to about 2 percent (Habekiristos, 2016).

After the downfall of the military government in 1991 the Federal Democratic Republic Government of Ethiopia has embarked on private investment in large and medium-scale farms with a view to reducing poverty and maintaining food security, in addition to small-scale farming (MoARD, 1996; Habekiristos, 2016). Accordingly, large-scale farms are organized on the basis of the market-oriented economic policy adopted by the government.

3.2 Mechanized and Large-scale farming in present-day Ethiopia

Mechanized and large-scale agricultural investment has become the most important part of the strategy of the Ethiopian government for economic development and food security. Agriculture is indeed at the heart of the country's economy, contributing 45 percent to GDP, 85 percent to employment, 85 percent to export, and accounting for 95% of the total food production of smallholder farmers, but only 5% for commercial farmers. Nevertheless, Ethiopia is chronically food insecure, with significant food deficits each year. In the highlands, plots are small, dependant on erratic rainfall and low in productivity. Lowland livelihoods are heavily dependent on pastoralism, agro-pastoralism or shifting cultivation (UNDP, 2013; MoA, 2015).

Based on these factors the government shifted its policy with the different instruments that encourage market-oriented agricultural system beginning from the time of PASDEP in 2005. To achieve rapid agricultural transformation, the Federal Government has also been implementing the Growth and Transformation Plan which gives special emphasis to the role of agriculture as a major source of economic development in the country since 2010/11.

Specifically, GTP II envisages increasing production and productivity of the agricultural sector to make agro-processing products and light manufacturing the main export revenue generating areas and to increase the contribution of the manufacturing sector to export revenue to 25% from its current level of 10%, registering an annual growth of 29% to the export revenue (MoA, 2010; MoFED, 2015; UNDP, 2013). As a result, the contribution of large-scale farming to the country's gross total agricultural output increased to about 18 percent (Habekiristos, 2016). Despite all the efforts, the contribution of modern farming system to total agricultural development is not as expected (UNDP, 2012).

Table 1: Summary of licensed agriculture investment projects by investment type and status (July 22, 1992 - April 26, 2016)

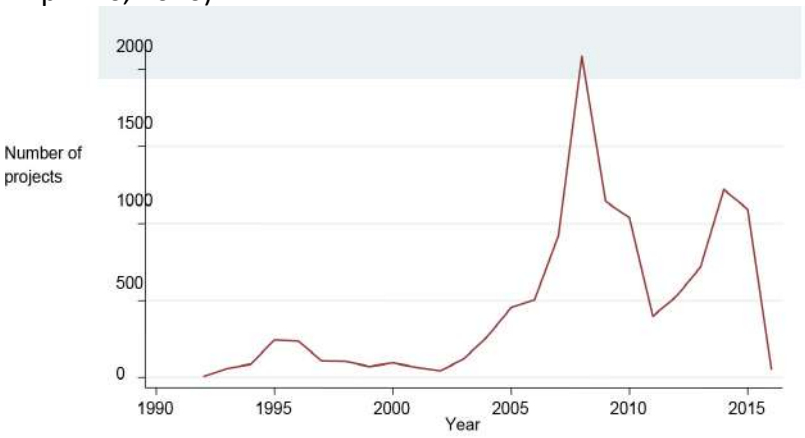
Investment Type	Implementation	Operation				Pre-implementation	Total
	No. of Projects	No. of Projects	Capital in '000 Birr	Permanent Employees	Temporary Employees	No. of Projects	No. of Projects
Domestic	609	1,767	6,590,388	46,773	452,953	8,462	10,838
Foreign	216	271	8,484,242	123,592	183,512	335	822
Public	5	1	4,220	878	1,000	2	8
Grand Total	830	2,039	15,078,850	171,243	637,465	8,799	11,668

***Source**: Ethiopia Investment Commission, 2016*

According to the data in the above table, a total of 11,668 agricultural investments were registered from 1992 to 2016. Of these only 2,039 have become operational with a total capital of Birr 15, 078, 851 and created 171,243 permanent and 637,465 temporary employments. Out of the projects which went operational, about 86.6% are owned by locals and the remaining by foreigners (See Annex 1).

More agricultural investment projects were registered in 2008/9 and sharply declined in 2010/11 as can be seen from the following figure. Some improvements were witnessed after the introduction of GTP-I when agriculture, including large-scale investment, was recognized as an engine of growth. However, the number of projects declined after 2014/15 perhaps due to delay in issuance of land.

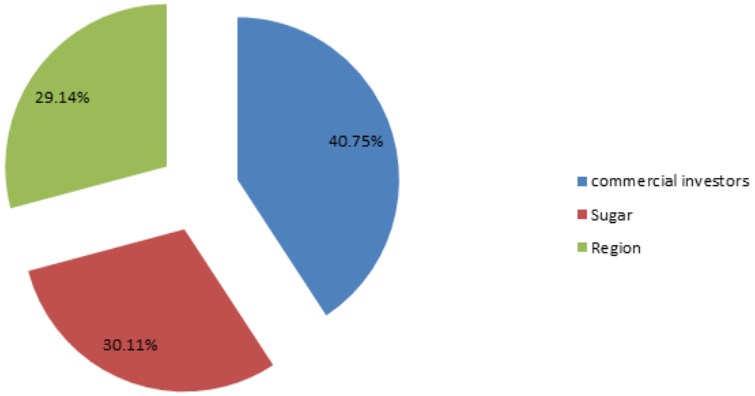
Figure 3: Summary of licensed agricultural investment projects by Year (July 22, 1992 - April 26, 2016).



Source: EIC, 2016

In Ethiopia, tremendous increment on total land area allocated for large-scale commercial farms investment has been observed over the past few years. About 1.11 million hectares of land was, for instance, allocated for commercial large-scale agriculture. Land is allocated in three main ways: by the federal land bank to commercial investors (this contributed about 453,372 hectares --- 40.75%), by the federal government to sugar producers (this amounted about 335, 000 hectares --- 30.11%), and land allocated by regional governments, i.e. about 29.14% of the total land area distributed to large-scale commercial farm investment (Habekiristos, 2016; CSA, 2015).

Figure 4: Percentage distribution of large-scale farming per hectare

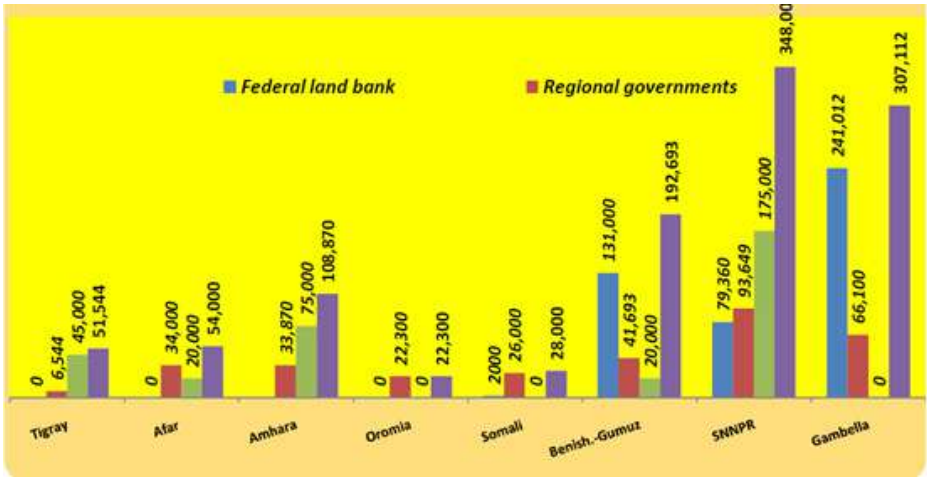


Source: CSA

With respect to the pattern of land area allocated for large-scale agriculture in regional states, the data reveal that Gambella, Benishangul-Gumz and SNNPR regional states,

ranked first, second and third by allocating about 348,009, 307,112, and 192,693 hectares of land respectively from the three sources. Out of all the regional states, the lowest land area allocated for large-scale commercial agriculture from all the three sources was reported by Oromia Regional State (Habekiristos, 2016).

Figure 5: 1000 hectares and above total land area allocated for large-scale investment by the federal land bank

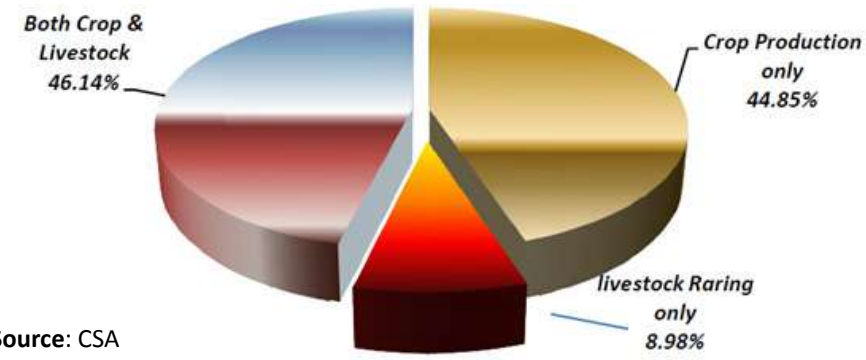


Source: CSA

According to the 2014/15 annual Large and Medium Scale Commercial Farms (LMSCFs) Sample Survey, which covered a total of 3,019 large-scale commercial farms, Tigray region had the highest number of farms with 840 (27.82%), followed by Amhara region with 832 farms (27.56%), and Oromia region with 535 farms (17.72%). Conversely, Somali and Harari regions as well as Dire Dawa Administration had 37 (1.23%), 10 (0.33%), and 23 (0.76%) farms, respectively.

Out of the above mentioned large- and medium-scale commercial farms sampled at country level 44.85%, 46.14%, and 8.98% are engaged in crop production, livestock rearing/animal husbandry and mixed farming (i.e. crop production and livestock rearing) in that order (See Figure 6).

Figure 6: Percentage distribution of types of agricultural production of commercial farms in 2014/15



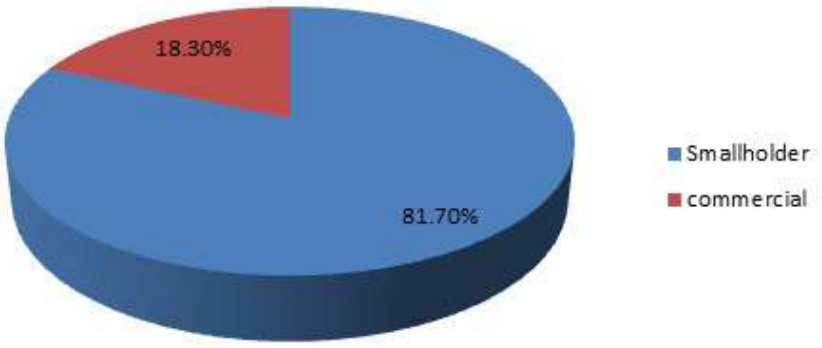
Source: CSA

A survey conducted by the Central Statistical Agency in 2014/15 shows that grain crops, vegetables, root crops, fruits, and cash crops covered about 625,582.25, 7,192.95, 1,675.63, 8,204.21, and 336,555.71 hectares of land respectively; i.e. about 63.78%, 0.73%, 0.17%, 0.84%, and 34.31% of the total cropland area developed in the country. From the cropland cultivated, about 12.16 million quintals (16.96%) of grain crops, 0.89 million quintals (1.10%) of vegetables, 0.30 million quintals (0.37%) of root crops, 1.04 million quintals (1.27%) of fruits, and 66.47 million quintals (81.81%) of each crops was harvested by commercial farmers in 2007 E.C/ 2014-15 *Meher* season.

Contribution of Large-scale Farming to National Production

Despite the gradual increase in production and the contribution of commercial farms to the country level gross volume of crops in the past three decades, the share of 2014/15 LMWCFs' total estimated production was relatively low, accounting 18.30% vis-à-vis the 80.70% contribution of smallholders to the country total.

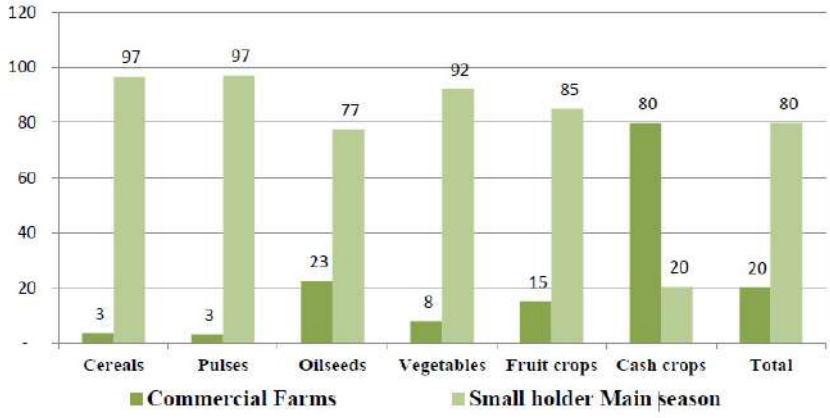
Figure 7: Major crop share of medium and large-scale farming production from the national output in 2014/15



Source: CSA

Except for cash crops where LMSCFs produced 74.34% of country total, thus dominating the smallholders' production which was reported to contribute only 25.66% to the total production in 2014/15, the estimated production of grains, vegetables, roots and fruits was 4.3%, 13%, 0.55%, and 22.79% respectively; while the estimated crop production of smallholders for same crops was 95.7%, 87, 99.45, and 87.21 in that order.

Figure 8: Percentage share of production of commercial and smallholder farms in the main season



Source: CSA

IV. The Contribution of Mechanized and Large-scale Farming to the GTP and the Development of Agro-industry

4.1 Large-scale Farming and Agro-processing in the Growth and Transformation Plan

The Ethiopian government's five-year Growth and Transformation Plan (GTP) summarizes the country's economic development vision that maintains agriculture as a major source of economic growth through intensification of the commercialization process involving smallholder farmers and large private commercial farms. The endorsement of this plan by the parliament in November 2010 has also opened the sector to foreign investment. To this day, the GTP has given much emphasis on the scaling up of best practices with the intension of bringing the productivity of the average farmers closer to that of the best farmers. To do so, expanding irrigation coverage and shifting to production of high value crops to improve income of farmers and pastoralists as well as complementary investments in market and infrastructure development have also gotten the necessary emphasis. In general, GTP I had identified the following three priorities: to intensify productivity of smallholders; to strongly support the intensification of market-oriented agriculture; to promote private investment (Robinson et.al. 2012).

GTP II has also given due attention to the development of commercial large-scale agriculture and its linkage with agro-processing industries. To that end, the government has created enabling conditions to encourage domestic and foreign investment. To accelerate the progress, the government has invested heavily on infrastructure, rural finance, research, access to improved technology, market development, and agricultural extension services, promotion of cooperatives and education programs, and establishment of agro-processing industrial parks, among others.

In line with this, the Second Growth and Transformation Plan (GTP II) envisages:

- Making agro-processing products and light manufacturing the main export revenue generating sectors;
- Registering annual growth of 29% in export revenue;
- Achieving annual growth of 24% in the manufacturing sector;
- Increasing the contribution of the manufacturing sector to export revenue from the current 10% to 25%; and
- Supporting regional states and administrative cities to develop international standard industry parks.

Indeed, agro-industrial processing is believed to play a vital role given the high promises in the linkage with development of agriculture sector. To increase production and productivity of the agricultural sector, agricultural value chains are vital for the success of agrarian economies and to advance the incomes of rural population and large-scale farms as well.

4.2 The Contribution of Mechanized and Large-scale Farming to Agro-industry

The role of agriculture in development has been reappraised and revalued from the point of view of its contribution to industrialization and its importance to harmonious development, political and economic stability. This means that the deployment of resources in agriculture has become increasingly responsive to market forces and increasingly integrated in the network of industrial interdependencies.

Agro-industries are a component of the manufacturing sector where value is added to agricultural raw materials through various processing and handling operations. In most developing countries, agro-industries are dominant in terms of their contribution to value added in manufacturing (FAO, 2011). This sub-sector can promote industrialization and urban employment, break "productivity gap" of development, reduce food costs and supply uncertainties and improve diet. Food processing, through value addition, is a source of income and increases demand for raw materials, i.e., promotes crop production while enabling food to be transformed from a raw commodity (from the farm) to the table, hygienically. Thus, agro-business can be instrumental in attracting investment to rural areas and driving rural industrialization and economic structural transformation as locational advantages will in most cases demand that food processing (value addition) on bulk products is best carried out where the raw materials are produced. Investments in agro-industries are also known to have significant multiplier effects through their backward and forward linkages along the value chains. Increases in per capita incomes, higher urbanization and growing numbers of women in the workforce have led to greater demand for processed foods, further propelling the importance of agro-industry development. Uniquely situated between raw and natural sources of supply and the dynamics of food and fiber demand, agro-industries enhance food security by reducing post-harvest losses and extending the shelf-life of food and fibers for the rapidly increasing urban poor (ECA, 2015).

In this regard, the agricultural policy of Ethiopia also acknowledges the key role the private sector plays in the development of large-scale farms. As a result, the government has created enabling conditions to encourage domestic and foreign investments.

In line with this, the Second Growth and Transformation Plan (GTP II) envisages making agro-processing industry and light manufacturing the main export revenue generating sectors. Given the high promises in the agriculture sector, agro-processing is indeed vital as it opens much wider room for investment (Eshetu, 2016). Hence, the role of large-scale farming contributes a lot to the agro-processing industry in the country by providing raw materials. Similarly, agro-industrial development can make a significant contribution to the transformation of agriculture, and by extension to rural and national development. Vibrant agro-industrial activities can expand the markets for primary agricultural products, add value by vertically integrating primary production and food processing systems, and minimize post-harvest losses.

The development of agro-industries has also many beneficial feedback effects on agriculture itself. The most direct one is, of course, the stimulus it provides for increased agricultural production through market expansion. Often the establishment of processing facilities is by itself an essential first step towards stimulating both consumer demand for the processed product and adequate supply of raw material. The provision of transport, power, and other infrastructural facilities required for agro-industries benefit agricultural production. The development of these and other industries provides more favourable atmosphere for technical progress and acceptance of new ideas in farming.

4.2.1 The Role of Agro-processing Industry in Ethiopia

Agro-industrialization has widespread and profound impacts on both micro and macro levels. These include contributions to the overall economic development alongside changes in rates of poverty linked to the scale and distribution of changes in employment and per capita incomes among those whose livelihood is linked to the agro-food economy. These processes also encompass the quality, availability and price of food and non-food products, plus impacts on natural resources and the environment, and socio-cultural implications, among others (FAO, 2011). Thus, we might reasonably expect gainers and losers from processes of agro-industrialization, such that there are likely to be significant distributional consequences of the emergence of an agro-industrial sector. Specifically, the following major contributions of agro-processing industries are discussed in short.

4.2.1.1 Employment Creation and Income Generation

Agro-industry has the capacity to absorb a vast amount of manpower in the primary and secondary levels of production. Due to the seasonality of agriculture, a production season may experience high and low demand for labour on the farm. After harvesting, however, the processing industry can absorb a whole lot of manpower thus creating jobs for the unemployed and generating income for their livelihood. The development of these industries would relax wage-goods constraints

to economic growth by enhancing the supply of products. In this context, there is a need for improving the capacity of agro-industries to harness backward linkages with agriculture and allied activities in order to efficiently convert part of the output to value added products acceptable to the domestic and international manufacturing sectors. This would generate employment opportunities for different types of skills through food processing, packaging, grading and distribution. At the same time, this will transfer size margin to farmers through market linkages, considering the importance of agro-processing industries in the development perspectives of overall development in general and realizing the expected role of expanding this sector for achieving increasing employment opportunities and income level to overcome the emerging challenges of unemployment and poverty in rural areas.

4.2.1.2 Promotion of Socio-economic Development

Strong synergies can exist between agro-industry, agriculture and poverty alleviation. Agro-industry provides capital and services for farmers (e.g. seeds and equipment, training, production and market information), promotes entrepreneurship, raises demand for agricultural products and connects farmers with markets through the handling, processing, marketing and distribution of agricultural products. As a result, productivity and quality of agricultural production, farm returns, and economic stability for rural households, food security and innovation throughout the value chain can be enhanced.

4.2.1.3 Curbing of Migration and Fostering Economic Sustainability

The dense population of urban areas can be mitigated by adequately developing economic activities in rural areas. Making agriculture lucrative for the rural inhabitants will curb excess migration and foster economic sustainability.

4.2.1.4 Integration into Global Market

Most of what we produce is consumed in the country with only a little portion being exported. This is due to the fact that we barely produce enough to meet our local demand, which in turn fosters importation of supplementary products.

4.2.1.5 Improving Food Self-sufficiency

Food security is more complex than not having sufficient food to eat. It is more about having access to safe and nutritious food. Agro-processing can enhance the food security agenda by reducing food losses, increasing food availability and improving access to food. But the vast majority of the development strategies undertaken to improve food security in most developing countries have concentrated on increased

food production and the role that agro-processing can play has not received sufficient attention.

The potential for agro-industrial development in the developing countries is largely linked to the relative abundance of agricultural raw materials and low-cost labour in most of them. The most suitable industries in such conditions are those that make relatively intensive use of these abundant raw materials and unskilled labour and relatively less intensive use of presumably scarce capital and skilled labour (UNDP, 2014).

Many of the industries using agricultural raw materials have in fact those characteristics that make them particularly suitable for the circumstances of many developing countries. Where the raw material represents a large proportion of total costs, its ready availability at a reasonable cost can often offset such disadvantages as a lack of infrastructure or skilled labour. Furthermore, for many agro-industries, a small plant may be economically efficient, which is another important factor in developing countries where the domestic market is limited (FAO, 2010).

V. Legal framework, Policies and Strategy of Mechanized and Large-scale Agricultural Investment in Ethiopia

Ethiopia has undergone major political changes over the past four decades. The country moved from a feudal system that upheld tenant-landlord relationship to a socialist one (1975-1991) which abolished the feudal system and declared public ownership of land and distributed private lands to the tillers and to the current government that promotes market economy, although land is still under public ownership. Realizing the bottleneck of investment in Ethiopia, the government has introduced several new policy frameworks over time. Investment Proclamations have been amended several times in order to meet the demands of both domestic and foreign investors. Therefore, it is important here to discuss the main policy frameworks related to the governance of large-scale land acquisitions in Ethiopia.

5.1.1 The Investment Proclamation of Ethiopia

Ethiopia's Investment Proclamation encourages both domestic and foreign investors (articles 13 and 14, Proclamation No. 373/2003) to enhance the economic development of the country and to improve the living standard of its people. In this regard, investors working in large-scale agriculture are entitled to incentives like exemption from income tax and customs duty, according to the Federal Investment Regulations

No. 84/2003 and 146/2008. Exemption from income tax for five years is applied when an investor exports at least 50% of his/her product or supplies 75% products or services to exporters. This income tax exemption could be extended up to seven years by the Investment Board or for more than seven years upon the decision of the Council of Ministers.

The Investment Proclamation was replaced by Proclamation No. 769/2012: A Proclamation on Investment and Council of Ministers Regulations No. 270/2012 in September 2012. The major changes with respect to the agricultural sector include the following:

- All areas of agricultural investments are open to foreign investors;
- Areas of Investment Allowed for Foreign Investors: (Article 4 of the Regulation);
- Capital requirement for foreign investors decreased, depending on the ownership of the investment.

Any foreign investor is allowed to invest in the country by allocating a minimum capital of USD 200,000 for a single investment project. The minimum capital requirement for a foreign businessperson investing jointly with domestic investor(s) is USD 150,000.

The minimum capital required of a foreign investor investing in architectural or engineering works or any other area related to technical consultancy services, technical testing and analysis or in publishing is USD 100,000, if invested independently, and USD 50,000 if executed jointly with domestic investor(s).

5.1.2 Land Administration and Ownership

Ethiopia has at present a federal structure that allows considerable autonomy to the regional states and decentralized decision-making up to the lowest level in political, economic and social spheres, including for administration of land. According to Article 40(3) of the Federal Democratic Republic of Ethiopia/FDRE Constitution, land ownership is exclusively vested in the State and in the peoples of Ethiopia. Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or other means of exchange (FDRE, 1995). Private investors and organizations have, however, the right to use land on lease or rental basis through legal processes. An investor has the right to hold land either on lease or rental basis. The constitution was also made into law by Federal Rural Land Administration and Land Use Proclamation No. 456/ 2005 that made land sale illegal and reassured ownership of rural land by the state (ibid).

Rural Land

Land lease by farmers is allowed as far as registration and approval is given by the

regional agriculture bureau. Renting of private holdings differs from region to region. For example, farmers/pastoralists in Oromia Regional State are allowed to rent out up to 50% of his/her holding to another farmer for a period of three years or to a private investor for about 15 years where the price will largely depend on the agreement of both parties, though it must not be less than the floor rate set by the government. The rental rate of rural land for agricultural purposes has been set based on the development level of the zones and distances from main all-weather roads. However, the regional government cabinet can provide land for this purpose by negotiation. Article 10, Proclamation No.130/2007 of Oromia, sets the duration for traditional farming three years and fifteen for mechanized farming. Nonetheless, the agreement is valid only if approved by the concerned rural land administration bureau of the regional state. Rural land can be held on rental basis from 20 to 45 years, depending on the type, magnitude, and location of the project.

5.1.3 Licensing, Registration Services and Lease

Licensing, registration services and lease are rendered by the Federal and Regional Investment Commission to the following categories of investments:

1. Investment made by a foreign investor;
2. Investment made by a foreign national permanently residing in Ethiopia and taken for a domestic investor;
3. Joint investment between domestic and foreign investors;
4. Investment made by public enterprises.

5.1.4 Environmental Policy of Ethiopia

Proclamation No. 299/2002 gives to the Ethiopia Environmental Protection Authority the mandate to undertake any Environmental Impact Assessment/EIA before the implementation of any development activities in the country (EPA, 1997). The assessment considers physical, biological, social and economic impacts situations (EPA, 1997). Therefore, no person shall begin any large-scale farming project that requires environmental impact assessment without the permission and authorization from the Environmental Protection Authority or from the relevant regional environment agency.

5.1.5 Investment Incentives for Large-scale Farming

Incentive packages for eligible investors involved in new large-scale agriculture enterprises and/or expansions of areas of investment are specified in Regulation No. 270/2012 of the Council of Ministers.

To encourage private investment and promote the inflow of foreign capital and technology into Ethiopia, investors (both domestic and foreign) that engage in

eligible new enterprises or expansion projects such as agriculture, agro-industries, and commercial farm investors are granted 100% exemption from the payment of import customs duties and other taxes levied on all capital goods including plant, machinery and equipment as well as spare parts worth up to 15% of the total value of the imported investment capital goods, provided that the goods are also exempt from payment of customs duties. Similarly, an investor granted with a customs duty exemption will be allowed to import capital goods duty-free indefinitely if his investment is in manufacturing and agriculture sectors; but for five years if his investment is in other eligible areas. Investment capital goods imported without the payment of custom duties and other taxes levied on imports may be transferred to another investor enjoying similar privileges.

Any investor who establishes a new enterprise in the emerging regional states and faraway places from Addis Ababa --- places such as Gambella and Benishangul-Gumuz regional states --- are entitled to an income tax deduction of 30% for three consecutive years after the expiry of the income tax exemption period. In the same manner, an investor who expands or upgrades his existing enterprise and increases in volume at least by 50 percent of its attainable production or service rendering capacity or introducing a new production or service rendering line at least by 100 percent of an existing enterprise is entitled to the income tax exemption (EIC, 2015).

Besides, non-fiscal incentives given to all exporter investors who produce export products will be allowed to import machinery and equipment necessary for their projects through supplier's credit. Also, business enterprises that suffer losses during the income tax exemption period can carry forward such losses following the expiry of the income tax exemption period for half of the tax exemption period and any remittance made by a foreign investor from the proceeds of the sale or transfer of shares or assets upon liquidation or winding up of an enterprise is exempted from the payment of any tax (ibid).

VI. Challenges and Prospects of Mechanized Farming and Agro-processing Industry in Ethiopia

6.1 Challenges of Mechanized Farming in Ethiopia

Even though Ethiopia has large unutilized land which is suitable for large-scale agricultural cultivation, the country has not benefited much due to different factors. Moreover, despite the large amount of agricultural land given to domestic and foreign investors, large-scale farming provides only less than 5% of total agricultural output (CSA, 2011). As a result, large-scale commercial agriculture has not attained the desired goal. The factors attributed to be the causes of these and some of the major challenges of mechanized and large-scale farming in the country are discussed below.

6.1.1 Land and Related Challenges

Land acquisition is the most challenging in large-scale farming due to numerous reasons. The nature of agro-investment requires vast land with the necessary infrastructure, the most challenging factor in many parts of the country. The lengthy challenge at lower levels of government administration in identifying and providing land is the other problem.

Most land allocations recorded at the Federal Investment Commission are classified as involving "wastelands" with no pre-existing users. But evidence collected by in-country research suggests that at least some of the lands allocated to investors in the Benishangul-Gumuz and Afar regional states were previously being used for shifting cultivation and dry-season grazing. Therefore, critical observations are needed before allocating the so called "idle" or "waste" land as the terms might have been used to justify land allocations to investors (Darryl, 2010).

Resistance of local farmers to demarcation of boundaries with investment farmland in the area (Mogos, 2010; Rameto, 2011) is the other challenge. This might be because of the failure to take into account the population, land use and settlement pattern of the area when the investment land was prepared and leased to the investors. This creates considerable problem to accept the proposed land size by the indigenous community. Conflict may ensue as a result during demarcation, discouraging investors and also harming the sector.

The problem related to compensation for the land they lost due to investment is also a challenge. According to the Federal Land Administration and the Investment Policy and proclamation of the country, any individual or organ whose landholding is taken for public use shall have the right for compensation for the lost properties and benefits beforehand. Certificate of holding is the criteria for eligibility for compensation as per Article 2 (3) of Federal Proclamation No. 455|2005. Land certificates are not issued to all farmers in the country and as a result there are farmers that either have not been compensated or compensated inadequately, particularly in marginalized areas like Gambella Regional State (Mogos, 2010; Dessalegny, 2011).

6.1.2 Loan and Related Challenges

Though collateral is not an issue for obtaining a loan with the Development Bank of Ethiopia (DBE), most commercial farm investors have not been able to fulfill the 30% cash requirement. Furthermore, the red tape to get loan from DBE is a bureaucratic bottleneck that hampers the development of the sector. In addition, some investors do not use the loan they obtain from banks for the execution of the approved projects. They instead divert the loan to other businesses. In May, 2016, i.e.

when this research was underway, the Development Bank of Ethiopia had stopped providing loan for large-scale agricultural investments until problems in the sector are addressed. Among the problems the bank faced included the loan given to an Indian company called BHO. The company that supposedly engaged in large-scale farming in Gambella Regional State was offered 89 million birr loan, but disappeared after developing less than 3,000 of the total 27,000 hectares of land. The Development Bank of Ethiopia has provided 6 billion birr loan for investors engaged in the sector during the past five years (Walta Information Center, 2016).

6.1.3 Institutional Challenges

To boost the large-scale investment in the county there must be flow of information and data among stakeholders. In this regard, however, the link and information flow among farmers, investors and the concerned government offices is weak. There are inconsistencies in information and communication gaps among *Woreda* Investment Desks, *Woreda* Land Administration, the regional investment agencies and the federal investment commission. For example, the information available in the Land Administration Office may not be available at the investment desk and this creates difficulty in crosschecking the validity of data (CSA, 2015; Mogos, 2011; Dessalegny, 2011, Frehiwot, 2015). Overlapping of land has also happened due to information gap among the concerned bodies. Some 43 plots of land given last year have for instance overlapped. What makes this worse is that two of the investors were granted same land for which they borrowed money to develop (Walta, 2016).

The Ethiopian Agricultural Investment and Land Administration Agency (EAILA) has terminated issuance of investment land until problems related to overlapping in the granting of land, provision of loans and investors' capabilities and profiles are addressed. According to policy recommendations and available directives, one of the main objectives of the government in allowing large investors to the country is to benefit from knowledge transfer and develop infrastructure for the community. However, the contract agreements the investors sign with government and stakeholders do not oblige them to do so.

Also, the respective lower government staff have limited knowledge and are not fully prepared to properly handle commercial farm investors. They do not have the necessary knowledge and skill to appraise investment proposals and often fail to make objective comments. Investors are also requested to make "informal payment" at *woreda* level, which discourages investors from engaging as per their plan and with full capacity (Frehiwot, 2015).

Likewise, lack of monitoring, evaluation and assistance by the concerned government bodies are also challenges. Large-scale farms require technical assistance, including

improved seed, fertilizer and other farming inputs from government agencies. However, the lower level government bodies are not in a position to fulfill these requests. Even worse, some investors may simply stop farming after taking land and loan. For instance, the Indian company Karuturi received 100,000 hectares of land for mechanized farming in Gambella Regional State but managed to develop only 1,200 hectares.

6.1.4 Social Challenges

Though large-scale investment has lots of benefits to local communities in the form of creation of employment, technology transfer and infrastructural development, it also poses challenges to the community. The risks include loss of rights to smallholdings, communal land, forest, natural resources to especially poor farmers and women as well as exposure to increased food insecurity as land is devoted to food production for investing countries, increased vulnerability to land degradation and depletion of water resources, elimination of forests, and loss of biodiversity. In addition, indigenous communities may be resettled involuntarily thus causing a sudden break in social continuity and impoverishment of the people relocated. The resettlement may provoke changes that could dismantle settlement patterns and modes of production, disrupt social networks, cause environmental damage, and diminish people's sense of control over their lives (Darryl, 2010; Dessalegny, 2011).

Similarly, investment projects that transfer ownership or long-term use rights to the investor may undermine the formal or customary land rights of local holders. This can arise when formal law makes customary rights illegal or the formal law legalizes land rights that are inconsistent with or not recognized by customary law. This often occurs where the government considers the land to be state owned. Such conflicts were observed particularly in Gambella Regional State. Gambella is inhabited by several ethnic groups. The customary system of property relations among all groups is founded on communal ownership, and land certification and registration was not undertaken. For each of the ethnic groups, the land, natural resources and the ecosystem are vital. However, all the groups are now affected, in varying degrees, by the large number of investment projects that have mushroomed all over the region in the last five to six years (Dessalegny, 2011).

6.1.5 Environment Challenges

Proclamation No. 299/2002 has given to the Ethiopian Environmental Protection Authority the mandate to implement Environmental Impact Assessment (EIA). According to the proclamation, no person shall begin any project that requires environmental impact assessment without authorization from the Environmental Protection Authority or the relevant regional environment agency. This is of paramount importance in promoting sustainable development of the natural resources of

the country. However, the implementation is so poor that some investors have been clearing forests for planting and degradation of land is becoming a common phenomenon that challenges the sustainability of the sector (Mogos, 2010; Rameto, 2011).

VII. Challenges of Agro-processing Industry in Ethiopia

The role of agro-processing in promoting sustainable development is recognized in Ethiopia. However, the sub-sector faces many challenges, including constrained agricultural supply and low inclusiveness of the agricultural and food value chains to encompass smallholder farmers' interests. Developing strong and viable agro-industries requires a different mix of skills, policies and institutions. While agricultural education and training in Ethiopia has traditionally focused on increasing productivity on the farm, the role of agricultural education and training in fostering agribusiness growth is relatively underexplored. Private sector participation is crucial for the development of agro-industry in the country. In order to attract investors into the sub-sector, the government has to improve the business environment, strengthen roads and marketing infrastructure, enhance credit markets and resolve land tenure problems (FAO, 2014).

Specifically, the major problem of agro-processing in Ethiopia is lack of adequate indigenous raw material. A viable agro-processing cannot therefore be sustained as very few of these commodities are available in the required quantities throughout the year. One clearly needs to differentiate between seasonality of growth and availability of raw materials for processing. This constraint needs to be addressed by promoting large-scale farming to meet the demands of the processing sector for the utilization of indigenous resources. Constraints faced by producers of raw material include frequent droughts resulting in crop failure and high cost of production inputs (seed, fertilizer, chemicals etc.) resulting in decline in levels of production and hence shortage of raw material. This factor, together with the preceding one, could have a compounding effect, i.e. lack of funding and unfavourable borrowing conditions as well as lack of commercial farming skills.

In general, the growth of agro-processing industry is hampered by the following constraints:

- Difficulty in accessing foreign currency;
- Reduced demand for equipment as most clients fail to mobilize resources to acquire equipment;
- Limited transfer of technology from research;
- Limited access to working capital;
- Limited supply of infrastructure and power;

- Poor quality products, limited access to appropriate packaging material for processed products and lack of marketing skills;
- Inadequate support services from training institutions, private consultants, small enterprise advisors, research institutions and engineering workshops.

7.1 Prospects of Large-scale Farming and Agro-processing Industry

Ethiopia is endowed with abundant agricultural resources and has diverse ecological zones. The country has also strong legal framework that encourages mechanized and large-scale farming as a solution to food security and sustainable development. Since 2009 the Government of Ethiopia (GoE) has shifted its agricultural policy focus towards encouraging private investment (both domestic and foreign) in larger-scale commercial farms. Moreover, the country has adopted six years ago a five-year Growth and Transformation Plan (GTP), which gives special emphasis to the role of agriculture as a major source of economic development (MoFED, 2011). As a result, a new agricultural investment support agency called Ethiopian Agricultural Investment and Land Administration Agency (EAILAA) was established to boost productivity, employment, technology transfer, and foreign exchange reserves by offering incentives to private investors, managing and providing support for the regional offices with regard to agricultural investments. The government has welcomed investments in recent years by offering huge tracts of land at very low lease rates. Opportunities for investment exist in large-scale farming or in supplying agricultural inputs (machineries, fertilizer, seeds, etc). The government has prepared incentive mechanisms to promote large-scale farming and other investments. New investors engaged in manufacturing, agro-processing, or production of certain agricultural products and who export at least 50% of their products or supply at least 75% of their products to exporter(s) as production inputs are exempt from income tax for five years. An investor who exports less than 50% of his products or supplies products only to the domestic market is exempted from income tax for two years. Investors who expand or upgrade existing enterprises and export at least 50% of their outputs or increase production by 25% are eligible for income tax exemption for two years. An investor who invests in the relatively under-developed regional states, viz., Gambella, Benishangul-Gumuz, Afar, or Somali, will be eligible for an additional one-year income tax exemption. An investor who exports hides and skins after processing only up to crust level will not be entitled to income tax incentive.

With regard to loan, the Government of Ethiopia has established a special loan fund at the Development Bank of Ethiopia (DBE) and made available land at low lease rates. The best source for large-scale local finance is the Development Bank of Ethiopia, if the investment happens to fall among the so called “priority sectors”. The bank provides loans up to 70% of the investment for commercial agriculture, agro-pro-

cessing, manufacturing and extractive industries, specifically supporting export-focused ones. GoE also seeks to attract investors through incentives for priority export sectors: textiles/garments, leather, horticulture/floriculture, and agro-processing. Many Ethiopian goods are eligible for duty-free access to the U.S. market under the African Growth and Opportunity Act (EIC, 2014). In addition, the government has identified the potential farming types for large-scale farming investment in the regions, according to the 2014 Investment Guide of the Ethiopian Investment Commission. There exist a total of 11,545,902 hectares of potential land for a range of commercial farming activities in different regional states of Ethiopia as depicted in the following table.

Table 2: Identified potential large-scale investment

No.	Farming type	Area (ha)	Regional state
1	Rice	280,000	SNNP, Oromia, Amhara, Benishangul-Gumuz, Somali
2	Coffee	426,000	SNNP, Oromia, Amhara, Gambella
3	Maize	1,400,000	SNNP, Oromia, Amhara, Benishangul-Gumuz, Gambella , Somali
4	Horticulture	763,300	SNNP, Oromia, Amhara, Dire dawa
5	Rubber	200,000	SNNP, Gambella
6	Pulse	3,274,469	Tigray, SNNP, Oromia, Amhara, Benishangul-Gumuz
7	Oil crops	1,601,323	Tigray, SNNP, Oromia, Amhara, Benishangul-Gumuz, Gambella, Afar, Somali
8	Cotton	3,000,810	Tigray, SNNP, Oromia, Amhara, Benishangul-Gumuz, Gambella, Afar, Somali
9	Tea	150,000	SNNP, Oromia, Amhara, Gambella
10	Palm oil	450, 000	SNNP, Oromia, Gambella

Source: EIC, 2014

Furthermore, Ethiopia has many natural resources that can provide valuable inputs for light manufacturing industries serving both domestic and export markets. Among its abundant resources are cattle, which can be processed into leather and its products; forests, which can be managed for the furniture industry; cotton, which can support the garments industry; and agricultural land and lakes, which can provide inputs for agro-processing industries. The country has in addition abundant low-cost labor that gives it a comparative advantage in less-skilled, labor-intensive sectors such as light manufacturing.

Besides, the establishment of agro-processing industry parks in different parts of the country can be considered as the best opportunity to link agriculture with industry in a novel way. In line with the implementation of GTP II, the country has established four pilot National Integrated Agro-industrial Parks worth 30 billion birr in central eastern Oromia, southwest Amhara, eastern SNNP, and western Tigray. These agro-industrial parks will be linked with millions of smallholders for supply of inputs, regional administrations and towns to get support for developing standardized industrial clusters and parks for investors evolving from small to medium industries, hence

generating employment. According to officials, about 17 agro-processing locations have so far been identified. Industrial parks facilitate the creation of facilities which will be pooled by several firms located in the area. The benefits of pooled investment, access to technical information and tax exemptions, economic scale of operation and the setting up of essential services (such as power, water and waste disposal) are evident.

In general, the following are the major prospects of large-scale farming and agro-processing in Ethiopia

- ✓ ***Rapid demand growth****:* Demand for agricultural commodities is expected to increase in the country due to a number of factors: (1) accelerated rates of income growth combined with high population growth rates and rapid urbanization; (2) import substitution opportunities arising from the large and growing food imports of many African countries; and (3) the growing food demand in the world.

- ✓ ***More favorable policies:*** The macroeconomic environment in Ethiopia has been changing dramatically since 1991 as reflected by low inflation, declining real interest rates, and market-determined exchange rates. Net taxation of agriculture has also fallen. All of these factors are additional incentives to agriculture. Most countries of Sub-Saharan Africa have endorsed CAADP, which calls for a minimum of 10 percent national budget to be allocated to agricultural development and for more favorable and inclusive sector policies toward agriculture.

- ✓ ***Improved business climate:*** Investments in basic infrastructure are given priority, and institutional reforms are underway to reduce administrative burdens on businesses and to combat corruption. Decentralization and the development of civil society have improved the ability of rural populations to participate in their own development works and defend their interests. This, in turn, is opening space for independent producer associations and business organizations.

- ✓ ***Establishment of agro-industrial parks***: Agro-processing industrial parks would go a long way in solving and tackling the lack of value chain and will add value to agricultural products destined for export. Each of the industrial parks will have initially up to eight rural transformation centers that would serve as pre-processing sites. The parks will incorporate companies engaged in exporting value-added agricultural products to the world market. The integrated agro- industry parks are set to be established at coffee, sugar, sesame seed, fruit and vegetable production sites. Therefore, these parks can be an opportunity to the development and the linkage of agriculture and industry.

- ✓ ***Increased incentives to invest in agriculture:*** Domestic and foreign capital is beginning to flow into African agriculture and related value chains as evidenced by the recent acquisition of land leases for food production, biofuels, and high-value agricultural exports. Foreign investment needs to be well managed, however, to ensure positive social and environmental outcomes.

VIII. RECOMMENDATIONS

To improve the role of mechanized large-scale farming in agro-processing development in Ethiopia, the following recommendations are forwarded to be considered by the concerned bodies.

1. Improve Mechanized land acquisition and administration systems: One of the major challenges for large-scale farming in Ethiopia is the red tape with regard to acquisition of land. Critical information gap exists among government organs regarding land investment. The flow of information and the mechanism through which communication is channeled remains unclear. Therefore, establishing a well-organized investment farm land administration system from the federal up to the local government level is very crucial to solve the problem in relation to land acquisition for large-scale mechanized investment.

In addition, land tenure is one of the most important issues in agriculture and which in many countries hinders investment in the agricultural sector. For a successful transition from subsistence farming to profitable and productive agriculture, land tenure must be secure and guaranteed by the state as well as by local customary laws and traditions. Even though there is formal rule and regulation with regard to land administration and acquisition in Ethiopia, conflicts have been observed between indigenous people and agricultural investors particularly in Gambella and Benishangul-Gumuz regional states. Therefore, the rule and regulation of the land management system needs to be revised in line with the constitution of the country and the local customary law such as communal ownership and land certification. This will give investors the security and confidence to invest in mechanization and other production enhancing inputs.

2. Encourage developmental private investment: The private sector must lead the way in many of the critical investments needed to drive agricultural commercialization. The business climate is especially important for commercial agriculture and for private input suppliers and agro-processing companies. Strong farmer organizations and vigorous private sector and civil society organizations are also vital. Moreover, there are non-operating farm investors who are not genuine but want to take

advantage of the system. Such investors are not productive even after securing both license and land. They are opportunists who abuse the incentive packages. Therefore, strong monitoring and follow-up mechanism are required to stop such problems.

3. Improve institutional and organizational arrangements for mallholder mechanization and agro-processing

As most of the farmers in the country are smallholders, they have to be organized and provided with institutional settings such as producer organizations to be able to access more opportunities for agricultural mechanization and agro-processing. The ability to access more sources and varied types of financing, the sharing of knowledge, better bargaining power, increased value addition and the opportunities to better use agricultural mechanization to realize its full potential will raise the level of improved commercial farming, and thus enable further integration into more modern agro-processing system.

4. Promote win-win approach for all stakeholders*:* Adopting win-win principle for all stakeholders is very essential. To avoid the "disaster" of promoting large-scale investment at the expense of small-scale farming, careful planning and a strategic approach among investors, the government, and local communities as well as designing and implementing projects in a manner that serves all interests, benefits rural communities is important. There should be effective reinforcement mechanism for environmental and social impact assessment at federal and local levels.

5. Expand basic infrastructure*:* Shortage of basic infrastructure is the main obstacle for investors in large-scale commercial farms as the farms are mostly available in the lowlands. Infrastructures such as transportation, information and communications technology (ICT), access to reliable supplies of key utilities, notably electricity and water, are however crucial for the development of agro-industries. Constraints in infrastructures thus influence cost, reliability of the physical movement of raw materials and end products, efficiency of processing operations, responsiveness to customer demands, etc. Therefore, expansion of basic infrastructure such as rural road and power is important to promote large-scale farming and agro-industry.

6. Link agriculture with agro-processing industry and provide access for capital: One of the major challenges to the development of the agro-processing industry in Ethiopia is weak linkage between the two sectors. Therefore, enhancing the linkage of these sectors will very much help to fully realize the transformation plan of the country.

Capital is the other main obstacle to investment in large-scale commercial farm and agro-industry. Though commercial agriculture is the priority of the Develop-

ment Bank of Ethiopia, it has turned out to be the riskiest venture for the bank. This lies behind the reason of the bank for fixing a 30 percent equity requirement for borrowers, together with a strong monitoring system. Foreign investors that have some machinery and other equipment are allowed to use that as equity, whereas local investors are not and must fully fund the 30 percent in cash. This greatly affects local investors as they often start with small capital. Therefore, some form of loan adjustment should be enacted to promote local investors.

7. Improve capacities of government institutions and sectoral linkage: The country has comprehensive policies and strategies; but many of these are not implemented efficiently and effectively. This is attributed mostly to lack of institutional capacity. The capacity limitations are observed at all levels, though the gravity of the problem is serious at regional and *woreda* levels. Thus, persistent capacity building training should be given especially to regional and *woreda* level experts.

Moreover, there are institutional gaps related to sector-wide linkages, relationships and synergies that affect the development of large-scale farming and agro-processing industries in the country. Specific issues include lack of communication among ministries and among ministries and regions, inadequate vertical and horizontal collaboration among zones, *woredas* and regions. Therefore, strong institutional linkage should be established among the various ministries, regions, zones and *woredas,* and the whole system needs to be better integrated and coordinated with clear lines of responsibility covering investment land acquisition and administration, etc., to promote mechanized farming and agro-processing industry in the country.

References

Babu, S. (2000). "Food and agricultural policies for the 21st century", Food Policy, 25: 105-109.

Economic Commission for Africa (2015). "Agro-industry Development for Food and Nutritional Security in Southern Africa." South Africa.

Federal Democratic Republic of Ethiopia Central Statistical Agency (2015/16). Large and Medium Scale Commercial Farms Sample Survey 2014/15 (2007EC) Results at Country and Regional Level Volume VIII

Dale W. (1970). "Agricultural Development Strategies in Ethiopia" 1950-1970

Darryl V. (2010). Conference entitled "Subsistence Agriculture: Confronting Environmental Change and Social Justice," jointly organized by Haramaya University College

of Law's Environmental Policy Center and Social Justice Center, April 23-25, 2010.

Dessalegn Rahmato (2011). Land to Investors*: Large-Scale Land Transfers in Ethiopia.* Forum for Social Studies, Addis Ababa

Eshetu Hailemariam (2016). Taking Ethiopia's Competitiveness Forward with Agro-Industry Parks, Addis Ababa, Ethiopia

Ethiopia. Investment Commission (2016). Report, Addis Abeba
Federal Democratic Republic of Ethiopia (FDRE) (1995). Federal Democratic Republic of Ethiopia Constitution.

Federal Democratic Republic of Ethiopia. Environmental Impact Assessment Law, ProclamationNo.299/2002 .

Federal Democratic Republic of Ethiopia. Environmental Impact Assessment Directives issued in 2008, Directive No.1/2008.

Federal Democratic Republic of Ethiopia. Federal Rural Land Administration and Land Use. Federal Negarit Gazeta. Proclamation No.456/2005

Federal Democratic Republic of Ethiopia. Investment Proclamation No. 280/2007

Federal Democratic Republic of Ethiopia. Investment Proclamation (amendment), No 373/2003.

Federal Democratic Republic of Ethiopia. Investment Regulation No.84 /2003.

FAO (2011). Innovative policies and institutions to support agro-industries development, Rome, 2011

Habekiristos Beyene Haile (2016). Large and Medium Scale Commercial Farms Annual Survey, the Domino Effect of World Bank Intervention, Challenges and Innovative Approaches: The Experience of Ethiopia. Washington, DC.

Imperial Ethiopian Government (1970). Third Five Year Development Plan, (1968-1973), Addis Ababa, Ethiopia

Johnston, B and J. Mellor (1961). The Role of Agriculture in Economic Development. American Economic Review, 51

MoARD, (2009). Agricultural Investment Potential of Ethiopia. Ministry of Agriculture and Rural Development.

MoFED, (2010). Growth and Transformation Plan. Fedral Democratic Republic of Ethiopia . Ministry of Finance

Mrema, G., Baker, D., Kahan, D., (2008). Agriculture Mechanization in Sub-Saharan Africa: FAO, United Nations

Schejtunan, A,(1994). Agro-industry and changing production patterns in small-scale agriculture, Cepal Review;53

UNDP (2013). An Assessment of Operation and Performance of Commercial Farmers in Ethiopia

UNIDO, (2005). UNIDO Industrial Statistical Debates (Vienna: UNIDO)

Wilkinson, J. and R. Rocha(2008). The Agro-processing Sector: Emperical Review, Recent Trends and Development Impacts

World Bank, (2010). Rising global interest in farmland: Can It Yield Sustainable and Equitable Benefits

Annexes

Annex 1: Summary of Licensed Agriculture Investment Projects by Investment Type, Region and Status (July 22, 1992 - April 26, 2016)

Investment Type	Region	Implementation	Operation			
	No. of Projects	No. of Projects	Capital in '000' Birr	Permanent employ.	Tempo employment	No. of projects
Domestic	Addis Ababa	13	5	13,330	156	2
Afar	41	25	161,453	876	6,374	167
Amhara	54	336	787,804	6,730	93,801	2,672
B.Gumz	117	128	901,842	6,415	24,354	694
Dire Dawa	11	6	16,198	123	0	231
Gambella	2	5	41,541	2,139	4,268	158
Harari	6	6	19,628	148	22	67
Oromia	80	329	1,764,007	8,927	15,911	2,908
SNNPR	195	219	1,431,838	13,216	24,098	576
Somali	13	13	53,270	423	231	369
Tigray	77	695	1,399,478	7,620	283,892	437
Domestic Total		609	1,767	6,590,388	46,773	452,953

Foreign	Addis Ababa	7	11	195,556	739	304
	Afar	5	3	240,923	581	1,400
	Amhara	21	17	594,193	13,107	9,464
	B.Gumuz	12	6	120,204	250	2,139
	Dire Dawa					
	Gambella	2	5	309,662	399	2,500
	Harari	1				
	Multi-regional	28	22	922,532	81,479	103,995
	Oromia	106	170	5,320,907	21,669	40,152
	SNNPR	20	31	663,105	2,459	16,158
	Somali	6	1	15,000	2,000	2,000
	Tigray	8	5	102,160	909	5,400
Foreign Total		216	271	8,484,242	123,592	183,512

Annex 2:Summary of Licensed Agriculture Investment Projects by Year and Status July 22, 1992 - April 26, 2016

Year	Implementation	Operation				Pre-Implementation	Total
	No. of projects	No. of projects	Capital in '000' Birr	Perm. Empl.	Temp Empl.	No. of projects	No. of projects
1992	1	3	20,453	453	0	2	6
1993	10	28	94,672	1,195	3,175	20	58
1994	7	55	371,056	1,826	64,717	26	88
1995	7	169	460,543	5,254	115,265	71	247
1996	12	145	375,744	3,092	44,817	81	238
1997	16	40	219,676	1,513	1,789	51	107
1998	3	56	240,292	1,633	5,111	47	106
1999	7	45	248,016	1,287	3,960	21	73
2000	6	43	392,264	2,353	7,096	45	94
2001	9	33	477,367	2,190	7,390	24	66
2002	5	16	263,521	924	2,814	22	43
2003	17	44	910,560	5,830	9,908	60	121
2004	21	95	1,198,744	8,103	20,021	150	266
2005	45	127	990,142	4,953	37,027	282	454
2006	38	155	584,490	4,878	34,142	313	506
2007	107	229	1,720,434	91,312	165,714	587	923
2008	192	162	2,158,904	17,288	39,523	1,729	2,083

2009	63	122	1,514,061	6,817	21,910	959	1,144
2010	64	192	1,058,587	2,703	25,145	780	1,036
2011	29	64	486,372	1,619	8,246	306	399
2012	20	29	133,346	915	4,480	479	528
2013	29	27	286,103	1,292	3,580	662	718
2014	80	44	423,888	2,901	5,250	1,097	1,221
2015	42	116	449,616	912	6,385	935	1,093
2016						50	50
Grand Total	830	2,039	15,078,851	171,243	637,465	8,799	11,668

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