



ST. MARY'S UNIVERSITY

**VIABILITY AND SUSTAINABILITY ASSESSMENT OF INDUSTRIAL
PARKS IN ETHIOPIA: THE CASE OF BOLE LEMI INDUSTRIAL PARK**

BY

ENDALKACHEW SIME DEGAGA

DECEMBER, 2020

ADDIS ABABA, ETHIOPIA



ST. MARY'S UNIVERSITY

**VIABILITY AND SUSTAINABILITY ASSESSMENT OF INDUSTRIAL
PARKS IN ETHIOPIA: THE CASE OF BOLE LEMI INDUSTRIAL PARK**

BY

ENDALKACHEW SIME DEGAGA

DECEMBER, 2020

ADDIS ABABA, ETHIOPIA

DECLARATION

I, the under signed, declare that this thesis is my original work, prepared under the guidance of Kurabachew Menber (PhD). All sources of materials used while working on this thesis have been duly acknowledged. I further confirm that this thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any type of degree.

Endalkachew Sime;

Signature:

ENDORSEMENT

This thesis has been submitted to St. Mary's University, school of Graduate Studies for examination with my approval as a university advisor.

Kurabachew Menber (PhD)

Advisor Name

Signature

Date

APPROVED BY BOARD OF EXAMINERS

As members of the board that examines the final MA thesis open defense, we certify that we have read and evaluated the thesis prepared by Endalkachew Sime under the title “*Viability and Sustainability Assessment of Industrial Parks in Ethiopia: The case of Bole Lemi Industrial Park*” and we recommend this thesis to be accepted, as it fulfills the thesis requirement for the Degree of Master of Arts in Development Economics.

Chairperson: _____ Signature: _____ Date: _____

Advisor: _____ Signature: _____ Date: _____

Internal Examiner: _____ Signature: _____ Date: _____

External Examiner: _____ Signature: _____ Date: _____

ACKNOWLEDGMENT

First, my praise goes to my almighty GOD for everything I have in life far beyond this. Then my appreciation goes to my wife RahelTadesse and my family for their uncountable supports. Next, my gratitude goes to my advisor, Kurabachew Menber (PhD) for his guidance, constructive comments and a welcoming attitude. Contributions of teachers and staff of SMU during the physical and virtual class sessions arranged due to COVID-19 were immense.

TABLE OF CONTENTS

List of Tables	VII
List of Figures	VIII
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem	2
1.3 Objective of the Study	4
1.4 Research Questions	5
1.5 Significance of the Study	5
1.6 Scope and Limitation of the Study.....	6
1.7 Organization of the Thesis.....	6
CHAPTER TWO	7
2. LITERATURE REVIEW.....	7
2.1 Concepts and Definitions.....	7
2.2 Overview.....	8
2.3 Theoretical Review	9
2.4 Empirical Review.....	10
2.4.1- The Role of Industrial Parks in Ethiopia's Industrial Strategy.....	12
2.4.2- Policy Directions and Contributions of Industrial Parks in Ethiopia.....	14
Fiscal Incentives.....	15
Non-Fiscal Incentives.....	15
2.4.3- Challenges of Industrial Parks in Ethiopia	18
2.4.4- Bole Lemi Industrial Park and its Current Status.....	18
2.5 Conceptual Framework	22
CHAPTER THREE.....	24
3. RESEARCH METHODOLOGY	24
3.1 Description of the Study Area.....	24
3.2 Types and Sources of Data	26
3.3 Methods of Data Collection.....	27
3.4 Sampling Design.....	27
3.5 Data Analysis Techniques	27
CHAPTER FOUR.....	29

4.	RESULTS AND DISCUSSION	29
4.1	Descriptive Results.....	29
4.2	Feasibility and Sustainability Analysis Results	35
4.2.1	Costs associated with Bole Lemi Industrial Park (BLIP)	35
4.2.2	Revenue Associated with Bole Lemi Industrial Park.....	37
4.2.3	Sustainability of BLIP.....	40
	CHAPTER FIVE	43
5.	CONCLUSION AND RECOMMENDATION	43
5.1	Conclusions.....	43
5.2	Recommendations.....	44

LIST OF TABLES

Table 2-1: Industrial Parks Developed and Under Construction by Industrial Parks Development Corporation (IPDC)	14
Table 2-2: Industrial Parks in Ethiopia with specialization and ownership	16
Table 0-1: Details of size and cost of constructions of BLIP phase 1 is shown bellow.....	19
Table 0-2: Utility consumption level.....	19
Table 0-3: The overall Environmental and Social costs associated with BLIP is indicated in the table below.....	20
Table 3-1: List of BLIP companies with country of origin and specialization	26
Table 4-1: Export performance of BLIP companies (2019).....	31
Table 4-2: Construction Cost of BLIP	36
Table 4-3: Environmental and Social Cost:.....	36
Table 4-4: Utility Cost of BLIP	37
Table 4-5: Labor Cost of BLIP.....	37

LIST OF FIGURES

Figure 0-1: Industrial Parks in Ethiopia.....	17
Figure 0-2: Service being provided to investors in BLIP	21

ABSTRACT

The world-acclaimed economic trajectory registered during the last couple of decades in Ethiopian economy has left the economy with lowest manufacturing sector contribution to GDP. As the Ethiopian economy goes the largest in the region, the demand for industrialization and structural transformation is critical need of the economy to sustain the growth trajectory. After taking Industrial Parks Development as a policy direction to catalyze industrialization, Ethiopia has embarked up on constructing Industrial Parks and more than 22 parks have been constructed in different parts of the country. The first Industrial Park in Ethiopia is a private one called Eastern Industrial Park constructed by Chinese investors in 2007. The first public Industrial Park, Bole Lemi Industrial Park (BLIP), was built at the outskirts of the capital six years back with a total cost of 2.7 bln. Birr. This paper assesses the viability and sustainability of this oldest Industrial Park in Ethiopia BLIP to come up with lessons both for further industrial park development efforts and a better conducive policy formulation inputs for the sector. Looking back to its six years journey using a Cost Benefit Analysis, BLIP's Economic and Social viability assessment looks feasible when its feasibility is assessed by considering both direct and indirect benefits. Assuming that the Park will have a life of 25 years; the social cost benefit analysis of the park showed that it has a pay Back period of 9 years and 3 months, a net present value of Birr 132,788,534.15 and internal rate of 10.70%. It implies that the project is somehow feasible from the government perspective though the return is not that much lucrative. This is because the rate of return is less than the lending rate of commercial Banks. Its financial analysis through looks not viable as its payback period is estimated to be 49 years while the Net present value and the Internal Rate of Return are estimated to be Birr -2,003,621,605.86 and -5.01% respectively. On top of working on its financial viability, as a government project meant to catalyze development, Economic, Social and Environmental feasibility and sustainability variables as assessed. As a recommendation, in detail with a recommendation that enhances viability and sustainability of BLIP in the future. Policy fine-tuning on competitiveness and productivity of IPs – facilitating for industrial parks to be developed and managed by private sector, with active participation of the domestic one is put forward. Besides, strengthening pre-feasibility and feasibility assessment before any public investments through a stronger Public Investment Management – PIM system is recommended on the other hand, blending the One-Stop-Services (OSS) systems of Industrial Parks with 'Innovative supports' of IPs designed through a sector-specific challenges of companies is recommended to improve service deliveries in IPs. The other key recommendation of this paper is on cautions IPs in Ethiopia should take when they specialize on specific sectors as

BLIP did on textile sector. As the 4th Industrial Revolution and a growing protectionism have been a challenge for the global textile industry, sector specialization in Industrial Parks development in Ethiopia needs to seriously consider global trends and future challenges of the specific sector and devise a relevant coping mechanisms. In boosting the competitiveness of BLIP, a proper companies has to be attracted and for that, a targeted approach of promotion and attracting an anchor companies needs to be done with a shift of focus from the current trend of attracting CMT (cut-make-trim) operating companies (which is the smallest form of business in the value chain) to an integrated companies that accumulate lines of profit margins in accumulated functions in the value chain.

Key words: Industrial park, Manufacturing, competitiveness, cost-benefit, structural transformation, feasibility, sustainability.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Economic growth has been the pursuit of mankind since the beginning of modern government and society. Methods and systems that assist growth have been used in different ways, of which Industrial Parks are part of these efforts. Industrial parks help to overcome business infrastructure constraints and barriers to firm entry into the markets. Industrial parks have the capacity to generate high productivity, stimulate innovation, promote investment and foster social inclusion and environmental protection (UNIDO, 2019).

According to Azmach (2019), the term “Industrial Park”, which is used interchangeably with the term “special economic zones”, encompasses a number of interrelated concepts, including Free trade zones, Free ports, Foreign trade zones, Export processing zones, Trade and economic cooperation zones, Economic processing zones and Free trade zones. There is multiplicity of names and forms of economic zones and definition vary across countries and institutions. Some countries made it purely a legal space sufficiently precise to exclude those that do not display the essential structural features that make it a zone (FIAS, 2008). Despite the many variations in name and form, all IP’s can be broadly defined as demarcated geographic areas contained within country’s national boundaries where the rules of business are different from those that prevail in the national territory (etal). These differential rules principally deal with investment conditions, international trade and customs, taxation, and the regulatory environment; whereby the zone is given a business environment that is intended to be more liberal from a policy perspective and more effective from an administrative perspective than that of the national territory (FIAS, 2008). With its overarching plan to make the country a manufacturing hub in Africa by 2025, the government of Ethiopia has been doing a lot on Industrial Parks with a focus on light manufacturing.

With a dedicated institution in charge called IPDC (Industrial Parks Development Corporation) established by proclamation no. 886/2015, Industrial Parks development is adopted as a strategy in Ethiopia to realize the ambitious development plan of industrialization on the manufacturing and agro- processing industries, and thereby accelerate economic transformation through attracting domestic and foreign direct investments.

The Government of Ethiopia has so far constructed and operationalized over 20 state-of-the-art industrial parks which are located along key development corridors- each with a distinct specialty in priority sectors (EIC, 2020).

Already operational, Bole Lemi is Ethiopia's first public industrial park developed by the Ethiopian government. An Export Processing Zone, it will be upon completion a "green" park, with more than 30 hectares of green areas being currently developed. Bole Lemi Phase 1 (156 hectares) has started operations in 2014, with all pre-erected factories already rented-out to 11 foreign private factories.

Bole Lemi Phase 2 (186 hectares) is currently going operational after being developed in collaboration with the World Bank Group, includes both serviced land and pre-erected factory sheds. In the future, a residential and recreational area adjacent to the site will also be developed (IPDC, 2020).

Considering all the huge investment it involves, Industrial Parks are expected to be economically viable. This paper tries to assess the sustainability of the first and oldest public Industrial Park in Ethiopia, Bole Lemi IP, with the intention of generating the necessary policy making inputs that contribute to efficient allocation of resources in Industrial Parks movement in Ethiopia.

1.2. Statement of the Problem

Industrialization is a core function in the poverty alleviation efforts of developing countries like Ethiopia. Industrialization generates employment, provides education for citizens, encourages advancement and innovation, and better utilizes resources. Therefore it is more than an engine of economic growth since it is the catalyst for the technological, financial and socio-economic transformation.

The catalyzing role of industrial parks in industrial development efforts of nations is extremely valuable when it is coupled with the concept and practice of sustainability, as it intends to develop economies with a minimal negative effects on the generations to come.

According to Mike, M. and Judith, F. (2014), generally speaking Africa's industrialization process has been clearly weak and inconsistent with a declining share of manufacturing value added to GDP

at aggregate level.

With similar justification, UNIDO (2019) depicts that African countries are de-industrializing whereby the share of Industry to their GDP is decreasing through the last decade.

The main reasons for Africa's deindustrialization, according to Mike, M. and Judith, F. (2014), are challenges related to developing a conducive policies, in infrastructure development, in developing the necessary skills, in acquiring the relevant technological capabilities and access to capital.

Yichalework A. (2019) argued, by referring ECA & AUC (2013) that, the share of manufacturing in Africa's GDP has remained at around 13% between 1980 and 2010, compared to 31% in East Asia, where labor-intensive industrialization has induced high growth and addressed challenges to job creation, poverty and inequality.

Industrialization and manufacturing practices in Ethiopia shares similar challenges as part of the continent. Industrial parks being the key drivers of Industrialization in Ethiopia, it faces critical challenges related to Absence of Coordination in Government Institutions and Park management as well as with lack of Operational Know-how (Yichalework A., 2019).

Compared to the level of resources IP initiatives are attracting in Ethiopia and the policy attention given, number of researches conducted on its challenges are minimal. Assessing the overall performance conditions of individual IPs in Ethiopia generates a valuable and practical information that could help in a better management and development of IPs in Ethiopia. With this in mind, this assessment of viability and sustainability of the oldest public IP in the country, which is the first of its kind, contributes in filling the knowledge gap in the sector.

This viability assessment exercise of an IP, which is already operational, is vital since it can generate stronger findings as it is done based on performance reports than planned predictions and forecasts.

Ethiopia's Industrialization efforts are in its starting stage. This is explained by the contribution of the Industry sector to GDP, which is around 17% according to government report (PDC, 2019) and less than 10% (WB, 2017) according to the World Bank. With all the measures, industry's contribution to Ethiopia's GDP is much lower than expected since the economy is growing by double digit for almost a decade and half till recent years in a row, according to PDC (2019) and IMF (2020) and WB (2020).

Structural transformation, which puts leading growth contribution role on Industry, is a priority of the current service-driven economy of Ethiopia. And Industrial Parks comes at the heart of the industrialization and structural transformation efforts of Ethiopian Economy (PDC, 2019).

So insuring viability in its Industrial Parks investments is a critical factor for a successful industrialization and structural transformation efforts of Ethiopia.

Since the 1960s, an increasing number of countries have embarked on the road to promote industrialization and economic restructuring through industrial parks. For developing countries, industrial parks can maximize resource integration for limited production factors within a certain spatial scope (UNIDO, 2018).

The establishment of industrial parks has undoubtedly helped put Ethiopia on the radar of foreign companies and FDI inflows have been on the rise ever since. The gap between overall figures and FDI inflows attracted to the zone is substantial (et.al).

With this view, assessing the viability and sustainability of Bole Lemi IP, with its longest operation period gives a better decision inputs contributing to the growth of more IPs in Ethiopia. The assessment done in the literature review of this paper shows that there is no study conducted to explicitly show BLIP's feasibility and sustainability. Instead, there are four studies conducted on related issues. The first one is the study conducted by Ministry of Industry entitled "Environmental and Social Impact Assessment on Bole Lemi Industrial Zone". The second one is entitled "Environmental Impact Assessment of Bole Lemi Industrial Park" The third one is the study conducted on Assessing the Performance of Industrial Parks in Ethiopia: the case of BLIP, Eastern Industrial Zone, and Hawassa Industrial Parks by Fesseha, G. and Bizuayehu, F. in the year 2019. And the other one is a research conducted by Yichalework A. (2019) conducted under a title of " Opportunities and Challenges of Industrial Park Development in Ethiopia: Lessons from Bole Lemi and Hawassa Industrial Parks". All the four studies have contributed for this paper as cited as sources throughout this paper. But as this research explicitly focuses on the feasibility and sustainability of BLIP, it is done for the first time.

This study has the aim of assessing the viability and sustainability of BLIP. The findings of this study are expected to contribute a policy input on how allocation of resources in Industrial Park development has to be made.

1.3.Objective of the Study

1.3.1- General Objective

Ethiopia's desire to expand its industrial parks deployment is to enable the manufacturing sector to contribute to 20 per cent of Ethiopia's GDP and 50 per cent of the export volume by 2025. Developing industrial parks is part of the Ethiopian government's plan to make it a manufacturing hub in Africa, These ambitious goals has to have mechanisms that assists optimal allocation of finances which comes through debts. Industrial Parks, with all its immense benefits, is an expensive initiative especially for capital scarce economies like Ethiopia. Therefore; it investment has to be guided with a strict viability procedures since the opportunity cost of the resource we allocate is higher. Therefore, the general objective of this study is assessing the viability and sustainability of Bole Lemi Industrial Park.

1.3.2 Specific Objectives

More specifically; this study will try to address the following specific objectives:

- Assess the economic, social and environmental viability of BLIP
- Conducting qualitative assessment on the sustainability of BLIP

1.4 Research Questions

The study tries to address the following questions in line with the general and specific objectives of the research.

- 1- Was a pre-feasibility and feasibility assessment done before the investment of BLIP?
- 2- How did the site selected?
- 3- Is BLIP economically, socially and environmentally viable?
- 4- Is BLIP sustainable?

1.5 Significance of the Study

Ethiopia is the second largest country in sub-Saharan Africa (SSA) in terms of population and about the fifth largest economy in the continent. According to UNIDO (2018), Ethiopia is undergoing significant structural and economic reforms, and experienced high growth averaging 10.5 per cent a year from 2005/06 to 2015/16, which is twice compared to a regional average of 5.4 per cent. And in recent years, through the growth rate went slower, it is still on average higher than the average growth rates registered in SSA countries (PDC 219). Higher economic growth brought with it positive trends in poverty reduction in both urban and rural areas. In the year 2000, 55.3 per cent of Ethiopians lived in extreme poverty. Poverty was sliced through the economic trajectory, however, it is still among the lowest income countries (UNIDO 2018).

The government implemented the 2nd phase of its Growth and Transformation Plan (GTP II). GTP II, which is just ended, aimed to sustain developing physical infrastructure through public investment projects, and to transform Ethiopia into a global manufacturing hub. Growth targets include an annual average GDP growth of 11 per cent which is consistent with its manufacturing strategy, and a 20 per cent growth rate for its industrial sector (World Bank, 2017).

Industrial Park Investment is an expensive initiative for capital scarce economies like Ethiopia. Its investment is primarily based on foreign debt, which needs a huge foreign currency generation for its repayment.

That is why there are numerous techniques and procedures to guide its decision and operation. One of the prominent tools is UNIDO's International Guideline for Industrial Park.

According to this guideline, Industrial park development involves careful planning and oversight. The principle steps in planning an industrial park include: Business case formulation, including pre-feasibility studies; Pre-Identification of a shortlist of suitable park sites; detailed feasibility analysis of the selected site; and financial structuring and agreement with financial backers.

Therefore, it is vital for countries like Ethiopia to see IP related investments critically. This paper tries to assess the viability of one of the functioning IPs in Ethiopia which was constructed before all, and operating relatively in full capacity. Assessing an already invested IP has a significance of generating a learning lesson for the upcoming IPs as well as considering corrective measures for the other existing IPs. On top of that, the findings of this paper might be used as an input for the second phase of Bole Lemi IP, which is under construction, according to EIC.

1.6 Scope and Limitation of the Study

This study finds out whether BLIP is sustainable in terms of Economic, Social and Environmental parameters. This research does not assess viability of Industrial Parks in Ethiopia, nor other leadership and management aspects of BLIP.

In the presence of more than 20 IPs in Ethiopia and many more to come, analyzing one IP might be seen as the limitation of this research exercise the researcher acknowledges, in terms of generating a representative policy inputs. But by legitimate reasons of the current COVID-19 imposed conditions as well as other technical reasons, this research is delimited to the oldest and the largest IP located in Addis Ababa, in a way analyzing this historical IP could potentially describe the possible situations of other IPs.

1.7 Organization of the Thesis

This thesis is organized in five chapters. The first chapter is the introductory part which gives background of the study together with the statement, the objective and the research question of the thesis with its scope and limitations. Then the second chapter comes with a broad literature overviews which explain theoretical and empirical reviews together with concepts and definitions that clarify key elements in the thesis. Chapter three explains the methodological part of the paper which starts by describing the study area and continues explaining the types, sources and analysis methods of data used in the study. Chapter four discusses results and discussions of the research and chapter five come up with conclusions and recommendations, which is the very important part of the thesis.

CHAPTER TWO

LITERATURE REVIEW

1.2 Concepts and Definitions

The Revised Kyoto Convention of the World Customs Organization defines free zones as “a part of the territory of a Contracting Party where any goods introduced is generally regarded, insofar as import duties and taxes are concerned, as being outside the customs territory”.

Using industrial parks for economic reason has a long history and dated back as early as 1704 in Gibraltar, 1819 in Singapore, and 1848 in Hong Kong (Zhang & Ilheu, 2014). These early parks 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). However, in its modern design and aim, in the United States of America, the first modern industrial zone⁴ is said to have been established in Brooklyn, New York's Navy Yard in 1937. Then, the concept initially expanded after the Second World War with the establishment of the first modern industrial zone⁴ in Ireland (Shannon) in 1959 and immediately followed by Puerto Rico (Mayaguez-the first modern zone in developing countries) in 1962 (Zhang & Ilheu, 2014, Guangwen, 2003; Stein, 2009). In Latin America, zone development began in the mid-1960s, first in Colombia, which established the Barranquilla Zone in 1964; then in the Dominican Republic, which established the La Romana Zone in 1965.

Industrial Parks allow countries to focus in particular sectors with their scarce resources with the view of building economic competitiveness which ultimately help them in coping with global competition and building resilience to shocks. The modern industrial parks focus on providing an internationally competitive business environment with improved infrastructure, sophisticated communications, reliable power, efficient customs operations and many more better services. In general, successful IPs lead to two main types of benefits: static economic benefits such as employment generation, export growth, government revenues, and foreign exchange earnings and dynamic economic benefits such as skills upgrading, technology transfer and innovation, economic diversification as well as productivity enhancement of local firms (Zeng, 2010).

When we see the Ethiopian context, the formal consideration of Industrial Parks as a policy instrument has come up with the two national development plans called Growth and Transformation Plan one and two (GTP 1 and 2).

As stated by Yichalework A. (2019), Ethiopia's decade-long double digit economic growth registered during the years 2004 to 2014 was impressive among the Sub Saharan African countries. In order to sustain the growth momentum and further induce industrialization, the government of Ethiopia has considered the private sector as the engine of economic growth and the driver of structural transformation that primarily intends to an economy with modern and productive agricultural and industrial sectors that would ultimately take the country to a middle-income status by 2025 (Zeng, 2015; MoI, 2015). With this view, the Government of Ethiopia adopted the following key anchor principles in setting up legal frames and diversifying IPs in Ethiopia.

Specialized Parks: Enhancing economy of scale and efficiency through the development of specialized/clustered industrial parks that are dedicated to priority sectors such as Apparel and Textile, Leather and Leather Products, Pharmaceuticals, Agro-processing, etc.

Export-oriented: Government provision of industrial park incentives and support measures targeted at increased export performance and competitiveness.

Skills development and competitiveness: Creating and developing a pool of trained industrial workforce & enabling environment for skills attraction & retention which will lead to enterprise competitiveness.

Vertical integration: Enhancing backward and forward linkages in the economy.

Sustainability: Maintaining high environmental standards through the utilization of environment-friendly technologies, zero liquid discharge systems, and other socially sustainable facilities such as housing accommodations for staff through various loan schemes.

1.2 Overview

In summary, this literature review tries to review on the directly or indirectly related works done before. Even though a lot has been done in the area globally, literatures found in Ethiopian context are very limited. The reason for this could be industrialization and industrial parks are a recent phenomenon in Ethiopia.

The general overview of related literatures tells us that regardless of the immense advantages of industry parks to countries economy; it goes with a lot of problems and challenges. There are different challenges that impede or hinder the operation of industry parks especially in developing

countries. As identified by various studies, the major challenges that hinder the operation of the sector mostly associated with the following areas: market, bureaucracy, language and cultural difference, infrastructure, technology, information access, and etc.

As stated by Selam G. (2017), SydeTurab H. (2012) studied the major constraints faced by Punjab industry parks, Pakistan. Accordingly, they find out four main constraints: Electricity, Inadequate workforce, access to raw material and corruption. Ebrahim K. (2017) investigated the main challenges based on the low level of basic services and infrastructure, delay at the visa, customs and clearance process at the airport, negative impact because of high competitiveness.

2.2.Theoretical Review

The concept of industrial park can be dated back to the industrial revolution of the 18th century during which countries formed industrial areas to facilitate industrialization (Alebel, B., Mulu, G., Girum, A. &Berihu, A., 2017).

Depending on sources of resources and types of operation, Industrial Parks can be classified into endogenous resource park, exogenous, and or mixed Resources Park. Industrial Parks are also characterized by park specialization, ownership and land. For example, science & Technology Park, Research Park, eco-industrial park or export processing zone, free trade zone are types of specialized parks.

In terms of ownership, parks may be developed and/or operated by public, private or public – private partnership. Parks may also characterized by land on which they developed. They could be ‘brown’, if the park is established on existing but disused facilities of former companies or ‘green’ if developed in a new area. Eco-industrial parks are a variant of industrial parks that strive for high environmental, economic, and social benefits, as well as business support (etal).

According to Kaplinsky (1993), the rationale for industrial parks establishment has traditionally been twofold. First, the provision of functional infrastructure is much easier to plan in a geographically limited space, particularly for delivery-constrained governments. Second, the concentration of firms can provide significant spillover effects both inside and outside the park: information spillovers, including knowledge and technology; the specialization and division of labor among enterprises; the development of skilled labor markets; and the development of markets around the parks.

According to UNIDO, the 2030 Agenda for Sustainable Development recognizes the importance of inclusive and sustainable industrialization and the infrastructure that supports in eradicating poverty.

However, premature de-industrialization has also become increasingly noticeable in Africa, with manufacturing having a decreasing share of the gross domestic product (GDP).

By delivering public goods and the accompanying policy interventions in support of investment, industrial parks have acted as a catalyst to facilitate industrial development.

It should be noted that industrial parks also contribute to Sustainable Development Goals through promoting socially and environmentally responsible industrialization within the parks themselves, as well as by demonstrating what is possible to the rest of the country.

In this broad context, a number of trends have been shaping the future of industrial parks. Firstly, the increase in the number of industrial parks since the early 1990s has created competition to attract investment and pressure to offer ever better services. Secondly, increasing urbanization and the growth of residential and mixed-use areas in or adjacent to industrial parks has created pressure to better integrate them into their broader urban context. Thirdly, better management of environmental externalities in recent years, particularly in the context of increased awareness of climate change, has become an increasingly significant factor in business operations and decision-making for 'green growth' and resource-efficient 'circular economy' business models. Fourthly, the digital transformation, particularly in technologies related to Industry 4.0, presents opportunities and challenges for enterprises that actively embrace the trend and make an effort to stay abreast of the productivity gains.

2.3 Empirical Review

As stated by Selam G. (2017), the global experiences in Industrial Parks depict 8 benefits can be drawn from successful experiences of different countries. These benefits are investor friendliness, alignment between government and public sector, capital independence, political robustness, efficiency, transparency, financial stability and risk management. These benefits are described briefly as follows.

a) Investor Friendliness

Investor friendliness relates to the ability to act as a facilitator to potential and current investors as a one-stop shop (e.g., issue operating licenses and submit proposals on investor-friendly schemes to government agencies). A statutory body rates higher than a corporation on this dimension, thanks to connections made easier with other government entities. But a combined

entity still rates higher overall as it also brings the marketing capabilities of a corporation.

b) Government and Public Alignment

Government and public alignment relates to how federal and state governments have input into the entity's direction and functions, and how the park's governing entity can protect the interest of the public and align with the country's strategy. A statutory body rates higher than a corporation on this dimension, however the combined option rates higher overall. It is less likely to fall prey to political interests than a statutory body, even when the government has shares in the corporation itself.

c) Capital Independence

Capital independence captures how the entity can secure sufficient capital outlay for development activities. There is a need to balance capital independence on one hand, and government and public alignment on the other. At the outset, a statutory body will be completely reliant on government funding for both development and administration of the park, while for a corporation most of the initial fund raising occurs through debt financing with relatively low government capital injection. The statutory body rates lowest on this dimension.

d) Political Robustness

Political robustness measures how independent the governing entity is from political influence. Politicians might have more influence over a statutory body than a corporation, in terms of elections and composition of a board of management. Also, for a statutory body, politics are key to securing a budget from the government for the administration and development of a park, making it tributary to political ups and downs. As such, the corporation is the best governance option in this regard.

e) Efficacy

Efficacy has to do with the expected agility of the governing entity in the daily operations of the park. Overall, a corporation driven by a commercial mindset will be more efficient than a statutory body which remains a government agency, but a combination of the two will still prove superior as the statutory body will help the governing entity deal with the various other agencies in a way that the corporation cannot.

f) Transparency

Transparency indicates the degree to which the financial statements, internal processes and controls can be audited and scrutinized externally. Whereas a corporation is bound by the country companies' act and its operations are largely transparent, a statutory body is bound by its

legislative assembly's rule and subject to the audit of an auditor general or a parliamentary public account committee. Yet a corporation is easier to control and enforce audits on than a statutory body.

g) Financial Sustainability

Financial sustainability relates to how much government funding is required, and whether the governing entity can generate enough revenue to sustain itself in the future. While a statutory body is not incentivized to be financially sustainable, it is also not susceptible to bankruptcy and can always be shored up by additional government funding as long as political will is there. Sustainability is important to investors on the park as they do not want to see the services they expect to be discontinued. On this dimension, the statutory body remains the better option.

h) Risk Management

Risk management measures the ability of the governing entity to manage risk and issues that might impact the industrial park, and how they are mitigated. The ability to influence and to compel government and private entities need to be balanced with the agility in responding to market. A corporation will manage risk in a way that a statutory body will not, but a combination of the two will again prove superior as the statutory body will give the governing entity the power of influence over other government agencies.

2.4.1- The Role of Industrial Parks in Ethiopia's Industrial Strategy

In framing the role and importance of Industrial Parks in Ethiopian economy, we find two documents that dictated related efforts in the area, the Industrial Development strategy (IDS) and the Industrial Parks Development Proclamation.

Based on the critical demand of industrialization in the economy, the Industrial Development Strategy (IDS) of Ethiopia was developed in 2002/03 considering government's broad development vision known as Agricultural Development Led Industrialization (ADLI). ADLI comprises four key principles in strong linkage between industry and agriculture, export oriented sectors to lead industrial development and be given preferential treatment, labor intensive sectors to be given priority to exploit comparative advantages and public-private partnership as a strategy to recognize the private sector as engine of growth, while government assuming leadership and coordinating role. It also distinguishes the 'rent seeking' and 'developmental' private sector vows to curtail the former and promote the latter.

The IDS identifies two approaches in engaging the private sector to the industrialization process. Creating conducive environment for the private sector to grow and providing a direct support to selected industries.

a) Creating conducive environment for the private sector to play its key role in the industrial development.

The Ethiopian industrial sector is subjected to various deep-rooted obstacles and the private sector is at its infant stage. The IDS aims to address these obstacles by way of creating conducive environment for the private sector across the economy. In this regard, it gives due emphasis to specific areas like creating favorable situation to develop enterprises, creating stable and favorable macroeconomic environment, creating modern and development-oriented financial system, providing sustainable infrastructure, developing industrial zones in urban areas with the required infrastructure, human capital development, creating efficient administration to support development and creating efficient dispute resolution system.

b) Providing direct support and guidance

The second mechanism of engagement is providing direct support and guidance to investors in priority industrial sub-sectors. Textile and garment; meat, leather and leather products; agro processing; construction; and micro and small enterprises (MSEs) were considered priority sectors in the initial industrial policy document formulated in 2002/03.

This list of priority sectors has been updated through time and more industries were added to the list. For example, the sugar industry and flower and high-value fruits and vegetables were added in the PASDEP (Plan of Action for Sustainable Development and Eradication of Poverty) period (2005/06-2009/10); and the metal and engineering and chemical and pharmaceutical industries in the GTP(Growth and Transformation Plan) period (2010/11-2014/15).

The other decisive legal document that influenced the overall activities related to Industrial parks in Ethiopia is the proclamation enacted in the year 2015. The Industrial Parks proclamation of Ethiopia (Industrial parks proclamation 886/2015) puts the following objectives of industrial parks establishment:

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

The targets and accompanying government support for the selected sectors were explicitly stated in these successive five-year development plans. Accordingly, the government provided

extensive support that includes economic incentives, capacity building, establishment of industrial zones, and direct public investment (IDS 2015, Mulu G., 2013).

2.4.2- Policy Directions and Contributions of Industrial Parks in Ethiopia

With the vision to make Ethiopia a leading manufacturing hub in Africa by 2025, the Government of Ethiopia had placed a high focus on industrial park development and expansion. The Government of Ethiopia has so far constructed and operationalized over 20 Industrial Parks which are located along key development corridors – each with a distinct specialty in priority sectors (EIC, 2020).

Table 0-1: Industrial Parks Developed and Under Construction by Industrial Parks Development Corporation (IPDC)

Name	Location	Land size	No. of shades	Types and No. Of Shades				Status
				11000 m2	5500 m2	3000 m2	Other type in M2	
Bole lemi –I	Addis Ababa	172	20	10	10		-	Operational
Bole lemi –II	Addis Ababa	181	2 shades & Serviced land	1	1	-	-	- Ready for sublease
								- Service land available
Kilinto	Addis Ababa	279	Serviced land				- Ready for sublease	
							- Service land available	
Hawassa Phase- I, Cycle -I	Hawassa	140	37	12	22	-	3 special sheds (39,680 m2)	operational
Hawassa Phase- I, Cycle -II	Hawassa		15	5	10	-	-	operational
Adama	Adama	120	19	6	9	4	-	- operational
								- Factory sheds available
Dire-Dawa	Dire-Dawa	150	15	5	6	4	-	- operational
								- Factory sheds available
Mekelle	Mekelle	75	15	5	6	4	-	- operational
								- Factory sheds available
Kombolcha	Kombolcha	75	9	2	7	-	-	operational
Jimma	Jimma	75	9	-	4	5	-	operational
Bahir-Dar	Bahir-Dar	75	8	-	8	-	-	operational
Debre-Birhan	Debre-Berhan	100	8	-	8	-	-	- operational
								- Factory sheds available

Source: IPDC, 2020.

These Industrial Parks are with the following facilities, according to EIC’s reports.

One-Stop Service(OSS): Processing & issuance of investment permits, issuance of business licenses, commercial registration certificates, issuance of work permits, registration of trade or

firm name, agreements, issuance of tax identification number, authorization of MoUs, issuance of customs duty exemptions, customs clearance in IPs, banking services, etc.

Dedicated power sub-station, waste treatment facilities, housing facilities, health stations, fire brigade and Security services are the other facilities and services being provided by BLIP.

On top of the above facilities, Industrial park developers and enterprises benefit from a special tax and other financial incentive packages that is coupled with efficiency-enhancing facilitation support and investment protections. During operations, Industrial Parks in Ethiopia are entitled for the following Incentives, according to EIC.

Fiscal Incentives

Income tax exemption period: Any industrial park enterprise is eligible for an income tax exemption period averaging 8-10 years, where IP developers will receive up to 15 years.

Loss carry forward: If an investor incurs a loss during the income tax exemption period, he/she is allowed to carry the loss forward for half of the income tax exemption period after the period expires.

Export tax exemption: With the exception of hides and skins all export products are exempt from export tax.

Exemption from customs duty: Capital goods, construction materials, spare parts, vehicles, raw materials for export and personal effects can be imported free of customs duty.

Export credit guarantee scheme: Exporters can benefit from the export credit guarantee scheme, which is presently in place in order to ensure an exporter receives payment for goods shipped overseas in the event the customer defaults, reducing the risk of exporters' business and allowing it to keep its price competitive.

Franco valuta: Franco valuta import of raw materials is allowed to enterprises engaged in export processing.

Non-Fiscal Incentives

Guarantee against Expropriation: Guarantee against measures of expropriation or nationalization. It is the payment of compensation corresponding to the prevailing market value of investment property in case of expropriation or nationalization for public interest.

Repatriation: A foreign investor can freely repatriate in convertible foreign currency profits and dividends, principals and interest payments on external loans, proceeds from the sale or liquidation of an enterprise as well as compensation paid.

Foreign currency retention: Exporters are allowed to indefinitely retain and deposit in a bank account up to 30% of their foreign exchange earnings. They can also make use of the remaining 70% balance within 27 days as it is.

No export price control: No export price control is imposed by the National Bank of Ethiopia.

Right to Own immovable property: Foreign investors have right to own a dwelling house and other immovable property required for the investment.

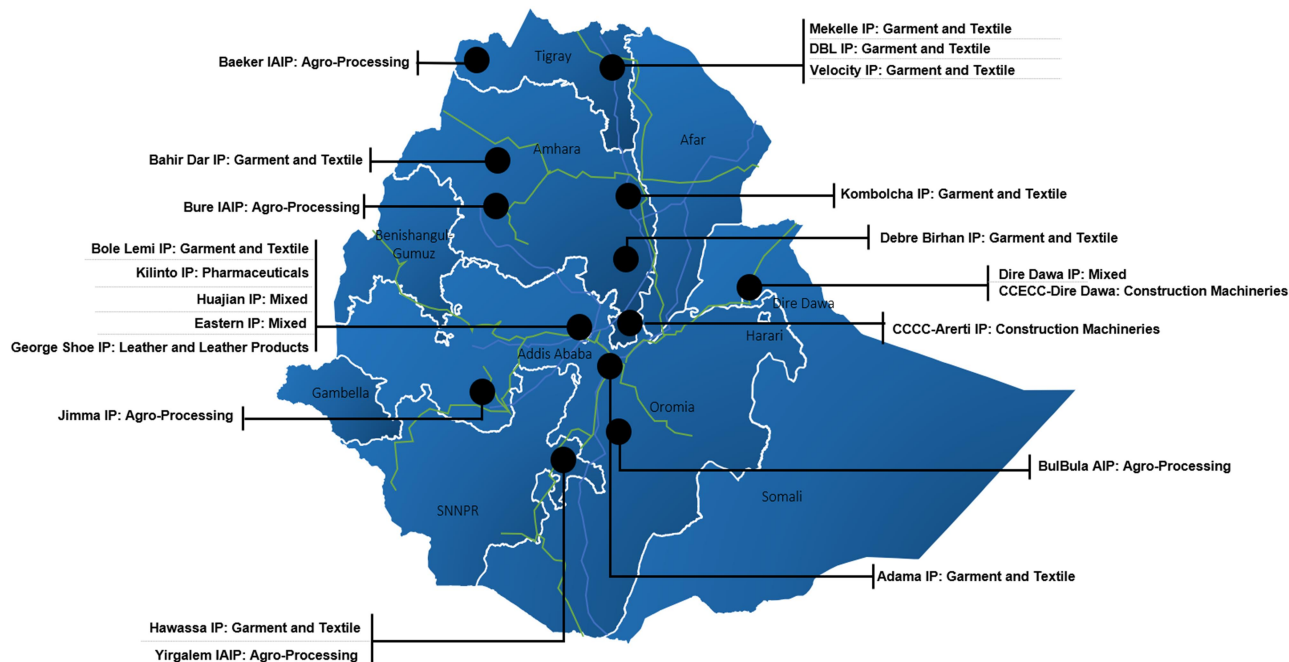
Streamlined and expedited procedures: Enterprises entering parks receive expedited procedures in terms of licensing, permits, registration certificates, tax identification number, and customs clearance. Currently, there are about 20 IPs in Ethiopia with the following details.

Table 0-2: Industrial Parks in Ethiopia with specialization and ownership

Specializations	Government-owned	Privately-owned
Textile & Apparel	7	2
Leather & Leather Products	1	-
Pharmaceutical	1	-
Agro-Processing	5	-
Mixed	2	2

Source: EIC, 2020.

Government efforts in developing IPs in Ethiopia looks bearing fruits and number of IPs are growing from time to time. One of the special features of the growth of IPs in Ethiopia is its special distribution. At the beginning of IP development in Ethiopia, the concentration and focus was in and around the capital Addis Ababa. But through time, as we can see from the following diagram, geographical locations of IPs is getting diverse to the regions and cities based up on identified growth corridors.



Source: PDC, 2019

Figure 0-1: Industrial Parks in Ethiopia

When we see the contributions of IPs in Ethiopia, we can see it in the recently changing GDP make-up of the economy. In recent years, especially with the event and special focus on IPs, the contribution of manufacturing to Ethiopia's economic growth keeps increasing. The real GDP grew by 8.0 per cent in 2015/16, which was driven by the services and industry sectors, growing by 8.7 per cent and 20.6 per cent respectively. In 2016/17, GDP is estimated to have grown 9 per cent, owing to the recovery in the agriculture sector and 16 per cent industry growth (power generation, construction).

However, the manufacturing sector still constitutes the lowest share of national economy and the service sector remains the leading contributor to real GDP growth. Trade, hotels, transport and communications led growth within the services sector. Public administration, real estate activities and financial intermediation also propel the services sector. Domestic credit increased by an estimated 27.1 per cent in 2015/16, slightly below the 31.5 per cent recorded in 2014/15, also boosting the services sector (UNIDO, 2018).

2.4.3- Challenges of Industrial Parks in Ethiopia

Developing IPs requires a wide ranging works that involve different stakeholders, from the government to grass root communities including international entities and the private sector which comes as at the center of operation.

According to UNIDO, Skilled work force and labor relations, Efficiency of logistics, Financing sources to be diversified, utilities to be facilitated, Foreign exchange controls to be relaxed, are among the major hurdles Industrial Parks in Ethiopia are facing.

2.4.4- Bole Lemi Industrial Park and its Current Status

As part of the two consecutive five years Growth and Transformation Plans, the Ethiopian Government has been, giving emphasis on Industrial Parks in its efforts of a faster and sustained economic development.

According to the Industrial Zone Development Project (IZDP), a joint initiative of the Government, the International Development Association (IDA) of the World Bank, the establishment of Industrial Parks in potentially suitable towns and cities of the country has been found as the best option to promote industry development in the country. The Government has therefore identified five IZDPs sites in the cities of Addis Ababa, Awassa, Kombolcha and Dire Dawa. Bole Lemi Industrial Development project is one among the identified sites in the city of Addis Ababa.

The development objective of the proposed IZDP is to contribute to job creation by attracting investments and improving enterprise competitiveness in the targeted industrial zones (IZs). This will be achieved by:

- (i) Strengthening institutional and regulatory framework for Industrial Zone development, and capacity building;
- (ii) Supporting industrial infrastructure development of Industrial Zones; and
- (iii) Enhancing Industrial Zone linkages to small and medium enterprises (SMEs) through targeted interventions. Bole Lemi Industrial Park (BLIP), the first public Industrial Park in Ethiopia, is located in the southwestern part of Addis Ababa City administration in Woreda 11 of Bole Sub-city on the way from Goro roundabout to Summit Area. BLIP is bounded by two rivers (Lemi and Weji) which drain to Big Akaki River.

BLIP is a public investment constructed by Industrial Park Development Corporation (IPDC), a government organization in charge of Industrial Parks in Ethiopia. It has two parts, phase one and two; the first phase went operational in the year 2014 after being constructed on a total land size of 177 Ha. And the Second phase is under construction on a land size of 176 Ha.

Table 0-3: Details of size and cost of constructions of BLIP phase 1 is shown bellow

No.	Type	Size in m. sq.	Est. cost	Completion year
1	Shades	165,000m ²	900,000,000ETB	2014
2	Offices	4929	40,000,000ETB	2014
3	Residents		75,000,000 ETB	On progress
4	Water treatment facilities	15,024M ²	60,000,000 ETB	2017
5	Power centers	791	800,000,000ETB	2014
6	Parking and roads	60,684M ²	274,000,000 ETB	2014
7	Fences	7.4	130,000,000ETB	Not completed

Source: BLIP, 2020.

Since the overall construction is a new one, there is no significant amount of maintenance cost related with the above facilities. As shown in the BLIP-filled questionnaire, the annual average total cost of utilities including the 11 factories operating in BLIP is shown below.

Table 0-4: Utility consumption level

No.	Types of utilities	Annual total cost estimates for the IP including the factories	Since the year
1	Electricity	38,000,000ETP	2014
2	Water	8,000,000 ETP	2014
3	Communications	14,000,00, ETP	2014

With regards to the labor cost, BLIP currently has 47 administrative and technical staff that administers the Industrial Park, according to the information given by BLIP. The total annual average salary and benefit cost of labor is around 420,000ETB. BLIP is a specialized IP for Textile & Apparel and Leather & Leather Products. The operational part (phase one) of BLIP has a full capacity of employing about 18,000 workers. There are a total of 11 companies engaged in Garment and Leather products manufacturing. The details look the following: four from India: Jay

Jay, Ashton, Arvind and Vests; three from Korea: Shints ETP, Ever top and KEI; four from China: Goerge Shoe, LyuShotauo, New Wide Garment and SUMEC (Goerge Shoe and Lyu produces leather Products).

Table 0-5: The overall Environmental and Social costs associated with BLIP is indicated in the table below.

No.	Description of Activities	Unit	Quantity	Unit Cost (ETB)	Total Amount (ETB)
1	Compensation for Housing	House	93	100,000	930,000
2	Compensation for Agricultural production (10 yrs)	Ha.	750	14,400	10,800,000
3	Skill Trainings	Individual	100	3,000	300,000
4	Restoration of Ecology (physical and biological measures to establish buffer zone)	Lump sum			3,000,000
5	Establishment of Buffer Zone around BLIP				2,000,000
	Total				17,030,000

Source: MoT, 2014

One Stop Services (OSS) in BLIP: OSS is a coordinated service provision system that BLIP organized to provide an efficient services for factories located in the park. The following are components of the OSS in BLIP.

The process of registering foreign capital involves submission of application by the investor to EIC branch together with the custom declaration, EIC branch sends a letter to National Bank with a copy of the business license, TIN and license investor number then the national Bank registers foreign capital of the investor.

In getting income tax holiday, the investor submits a letter to EIC branch, EIC branch makes verification of the investor's letter, EIC branch sends a tax exemption letter to ERCA branch attaching a copy of the business license of the investor, and then ERCA branch makes final decision.

For customs duty exhumation privilege, the investor submits application to EIC branch, EIC branch makes verification of the application and sends a letter to ERCA branch, and then ERCA

branch makes final decision. Controlling capital goods incoming to BLIP is also the duty of ERCA.

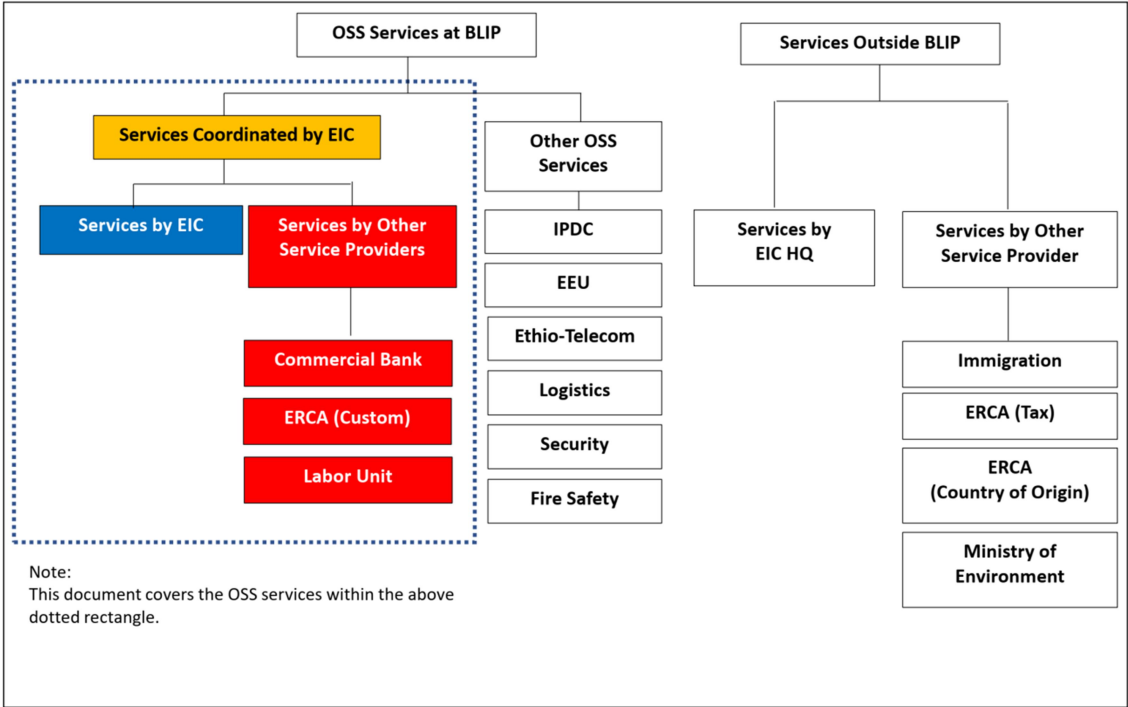
In issuance, renewal and cancelation of Work Permit for expatriate, the investor submits application to EIC branch together with necessary documents, if the application is accepted by EIC branch, the investor pays fee of 2,000 ETB per person at the bank to finalize the service delivery.

In transfer of Capital Goods within BLIP, the transferor pays duty for the capital goods at hand in advance to transfer the capital goods before both transferor and transferee appear to EIC branch to conclude an agreement on the capital goods. In due course, EIC branch makes verification of the investor’s letter and agreement, EIC branch sends a letter for transferring capital goods to ERCA branch and ERCA branch provides declaration and issues the transfer certificate.

Other services of OSS includes Issuance of Bank Permit for Export of Goods through Cash Against Documents (CAD) and Letter of Credit (L/C) and Issuance of Bank Permit for Import of Goods.

The overall summary of the OSS service is shown below.

Services being Provided to Investors in BLIP



Source: MoI, 2014

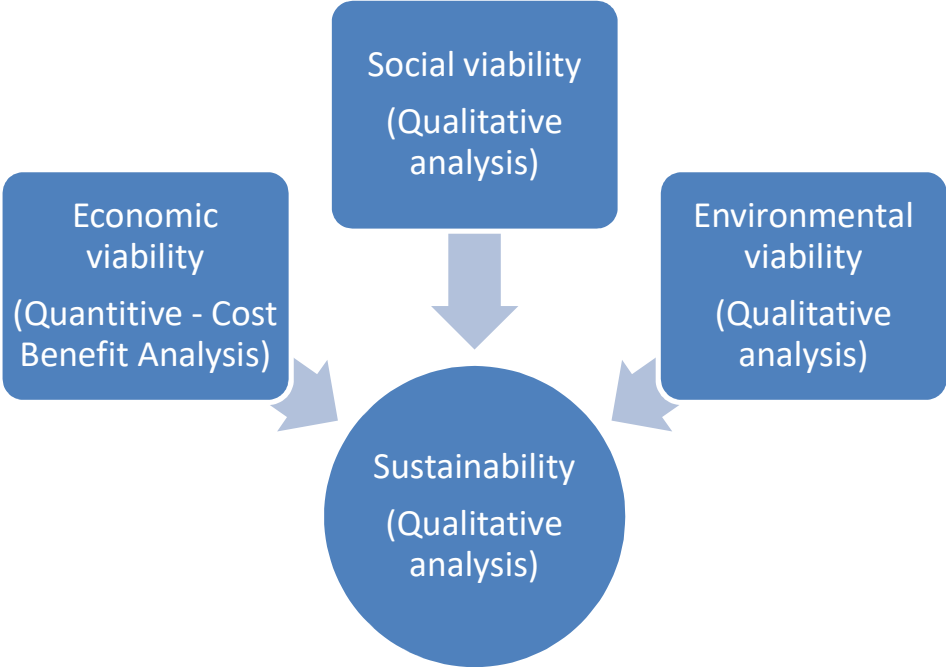
Figure 0-2: Service being provided to investors in BLIP

According to Enterprise Partners, Supply and retention of human resource at the convenient quality, quantity and time has been a challenge for factories located in BLIP, with a high turnover rate that ranges 40%-70%. Most companies reported as operating under their capacity. On average, cost incurred to recruit replacement operators has been reported up to ETB 8000. Total production of BLIP factories is 40% below plan. Major challenges reported for under production include shortage of market, low worker skill, and turnover. And Machinery Utilization rate of BLIP averages around half (50%). Reasons for low utilization are low level of skill of workers, high workers turnover and shortage of sustainable market orders.

2.3 Conceptual Framework

The economic, social and environmental viability of BLIP together with its sustainability analysis is done with a combination of both quantitative analysis, specifically cost benefit analysis, and qualitative analyses.

The following diagram is used to visually explain the key concepts or variables considered in the study.



In calculating the cost and benefits in the economic viability, the following costs and benefits are considered.

Under the cost category;

- Cost of land
- Cost of construction
- Cost of work force
- Cost of capital
- Cost of utilities
- Costs associated with waste management (solid and liquid)
- Costs associated with protecting the environment

Under the benefit category, the following revenue elements are considered.

- 1- Annual income from rent of shades
- 2- Other related benefits

The contribution of BLIP to employment generation, foreign currency generation and tax revenue is also considered.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Description of the Study Area

This study is to be conducted on Bole Lemi Industrial Park (BLIP), the first public Industrial Park in Ethiopia, located in Woreda 11 of the Bole Sub-City under Addis Ababa City Administration on the way from Goro roundabout to Summit Area. The local name of the site is Lemi Gossu, and it is geographically located between latitudes of 8.971550 to 8.981722°N and longitudes of 38.856808 to 38.865088°E.



Source: Yimam and Mohammed, 2020.

BLIP is a public investment constructed by Industrial Park Development Corporation (IPDC), a government organization in charge of Industrial Parks in Ethiopia. It has two parts, phase one and two; the first phase went operational in the year 2014 after being constructed on a total land size of 177 Ha. And the Second phase is under construction on a land size of 176 Ha. PLIP Phase 1 has a total of 22 factory shades of two types. Those shades with a floor size of 5,500 meter square (11 in quantity) and those shades with a floor side of 11,000 meter square (11 in quantities).

BLIP is a specialized IP for Textile & Apparel and Leather & Leather Products. The operational part (phase one) of BLIP has a full capacity of employing about 18,000 workers. According to Ethiopian Investment Commission, the industrial Park has 20 sheds (10 sheds of 5500 m² and the remaining 10 sheds with a size of 11,000 m² each.

According to Fesseha and Bizuayehu (2019), the 11 companies operating in BLIP is generating 2 million USD on average per month.



Source: BLIP, 2019.

Companies operating in BLIP and the type of products they are producing are listed as follows.

Table 0-1: List of BLIP companies with country of origin and specialization

Company Name	Country of Origin	Products
Nitton Apparels Manufacturing Plc	China	Garments
Shints ETP Garment Plc	South Korea	garments
Ashton Apparel Manufacturing Plc	India	garments for export
Arvind Lifestyle Apparel Africa Plc (ANF GULF)	India	Garments
LyuShoutao Factory Plc	China	Leather products (including gloves)
Jay Jay Textiles Plc	India	wearing apparel (including sportswear)
KEI Industrial Engineering Consultancy Plc	US/South Korea	Garments
New Wide Garment (Ethiopian Branch)	Taiwan	(including
George Shoe Ethiopia Plc	Taiwan	Leather Shoe
C & H Garments Plc (M &M Garments Plc)	China	wearing apparel (including sportswear)
Vest is Garment Production Plc	India	Garments

Source: Fesseha G. and Bizuayehu F., 2019.

3.2 Types and Sources of Data

This study uses secondary data from BLIP, IPDC, EIC, MoTI, PDC, MoF, CSA and other relevant institutions, and primary information through interview and observation. Pre-investment studies, investment information and data, operational time series data of BLIP shall be collected for the years BLIP went operational (year 2014) up to the current year.

Whenever inconsistent data and information found from sources, maximum care is taken the inconsistency not to affect analysis done, triangulation is one of the techniques used to do that.

3.3 Methods of Data Collection

Questionnaire is used as a main source of information together with interview and physical observation. Focus Group Discussions (FGD) and Key Informant Individuals (KII) are also used as methods and sources of data collection.

3.4 Sampling Design

This study evaluates the overall six years operations of BLIP starting from the year it went operational up to its 2019 performances.

3.5 Data Analysis Techniques

The core objective of this paper is to assess the economic, social and environmental feasibility and sustainability of BLIP. In assessing the feasibility and sustainability of BLIP one of the feasibility factors that need to be assessed is economic feasibility. We can assess economic feasibility by doing the cost-benefit analysis, as well as using financial techniques, such as time value of money or break-even point analysis. Since BLIP is a policy instrument meant to catalyze industrialization in the economy, financial techniques might not fully capture the measurement yardsticks that we adopt to assess feasibility. Therefore we use the cost-benefit analysis.

A cost-benefit analysis (CBA) is the process that enables us to measure the benefits of a project decision or taking action minus the expenses associated with taking that action. A CBA involves measurable financial metrics such as revenue earned or costs saved as a result of the decision to pursue a project.

As to analyzing the data associated with the costs and the benefits, it is necessary to establish a reference framework, i.e., a set of goals against which specific variables to measure along with key performance indicators (KPIs).

A variety of indicators are available for assessing the economic, environmental and social aspects of Industrial parks (IP). The sustainability assessment task over Industrial Parks should overcome an important task at the beginning of the study: to select indicators. And the proper process of selecting the appropriate KPIs needs a first step of characterizing the types of KPIs that fits our objective.

According to Derek (2011), the following seven point's helps in characterization of our KPIs, this is the base of our selection.

1. Choose KPIs that are key KPIs that will generate the biggest impact.
2. Choose KPIs that are measurable
3. Choose KPIs that regularly change
4. Consider industry specific KPIs
5. Choose only a few KPIs
6. Choose KPIs that are meaningful to the objective of the study
7. Choose KPIs that connect to the core business strategies.

Some examples of these indicators are Value Added (economic), Ozone Depletion (environmental), and Income Distribution (social).

There are also integrated indicators grouping two or more of these single indicators. For instance, Eco-efficiency includes one economic indicator and three environmental indicators (raw material consumption, energy consumption, and CO₂ emissions) (Park & Behera (2014)).

Other tools used to analyze and to assess the sustainability level of industry are Life Cycle Analysis (LCA) and Material Flow Analysis (MFA). LCA is an analytical tool for a systematic evaluation of the environmental impact of a product (or services) on its completely life cycle (Chertow (2008); Curran (1996)). It offers a quantitative comparison between different alternatives of product design in order to analyze each of them and to select the best one. MFA is similar tool to LCA, and is based on methodically organized accounts in physical units and the principle of mass balancing (OECD (2008); Sendra et al.(2007)). The use of this tool can provide an integrated view of the economy and the environment; capture flows that are not used and produce a relevant impact; and reveal how flows of material shift among countries and within countries.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Descriptive Results

An interview with the General Manager of Bole Lemi Industrial Park (BLIP) revealed that there is no a full-fledged feasibility study conducted before the investment, except some project proposals, assessments and paper works related to the financing requirements from international partners. The decision of establishing BLIP was done in the year 2011 by the former Prime Minister Meles Zenawi after visiting South Korean similar experiences and the primary intention was to attract South Korean investors.

During the construction of the phase 1 project, about 17 local contractors participated with the intention of giving chances for local construction companies which actually contributed for a low performance on the construction works. Then a decision was made to give all the corks to one company, which has improved the performance significantly.

According to the manager, after the construction of the first phase which covers five shades completed, shade space rental price was decided by the government at 1 USD per meter square and the first company to rent was George Shoe, who took shade 1 and 2. Then additional 15 shades constructed making the total shades of BLIP to be 20.

Currently, we see two types of shade rental prices in BLIP, 1USD and 1.25USD per meter square per month. The majority of the companies are paying 1.25 USD; only one company which entered at the beginning is paying the 1 USD rates, which is subject to a revision. Therefore, we can consider 1.25USD as the current official rate served since BLIP went operational.

There are 11 companies coming majorly from China, India and Korea, employing 18,571 workers in December, 2019, right before COVID-19.

One of the advantages of BLIP as a pioneer industrial park in Ethiopia is to facilitate for foreign companies to have a first-hand experience on the potential Ethiopia has for future business expansion. The case in point is the first private company rented in BLIP, George Shoe, after operating at BLIP for more than five years, is constructing its own private Industrial Park in Oromia Regional State around Mojo area, which is a big leap both for the textile sector and Industrial Park business in Ethiopia.

BLIP has allocated 30 ha of land for green space. Family members of displaced and resettled households are employed to develop this green area. Creating jobs for resettled families in BLIP,

with other diverse support efforts, has contributed significantly for the stability of the resettled community.

BLIP is also facilitating spaces for private companies to build houses for their employees. A Korean company called SHENTS has got 3.2 ha of land and constructed residences for its 4,500 workers, and SHENTS is planning to raise number of housing beneficiaries of its employees to 9000.

After getting a lesson on challenges of raising enough finances on phase 1, there was a change of strategy on BLIP phase 2 that encouraged private companies to build the shades by themselves.

BLIP has a waste water treatment plant with the capacity of 61,000 lit per day. The three major feasibility measurement goals of BLIP are: Job creation; foreign currency earning and technology transfer.

The technology transfer has three dimensions: skill transfer to local workers, acquiring a well-established working systems and getting modern machineries.

In implementing the above there goals, BLIP links its foreign companies with organized local Micro, Small and Medium Enterprises (MSMEs) for outsourcing parts of operations and parts of export products.

On the other hand, the skill retention among local factory workers is meant to organize the local workers as MSMEs and support them to have their own factories. According to the manager, BLIP could not go far on this aspect of organizing the trained workers to have their own manufacturing units because of different reasons, which needs further investigation.

BLIP uses more than 400 buses to transport its workers from different directions. The canteen service that supplies food and drinks for workers at reasonable price is the other economic activity that supports the job creating goal of BLIP. There are also youth's associations that collect the voluminous wastes from the garment factories, which engages large number of families resettled from the current location of BLIP.

The majority (about 80%) of the 18,000 employees of BLIP are less literate (8th grade or 10th grade).

In terms of generating foreign currency, BLIP's export performance in the year 2019 looks the following.

Table 0-1: Export performance of BLIP companies (2019)

No.	Name of Companies	2019 Export in USD
1	New Wide Garment Ethiopia	2298450
2	George Shoe Ethiopia Plc.	6791438
3	Arvind Lifestyle Apparel Africa Plc.	9089888
4	Vestis Garment Production PLC	135212.6
5	Jay Jay Garment Plc.	10217294
6	LyuShoutao Factory Plc.	10352506
7	Ever Top	651971.2
8	C & H Garments Plc.	130378.5
9	Shints ETP Garment Plc.	782349.6
10	KEI Industrial EngineeringPlc.	0
11	Ashton Apparel Manufacturing Plc.	2832024
	Total:	43,281,511.9

The government of Ethiopia has secured US\$ 103 million export earnings from products manufactured (textile, apparel, shoes and other leather product) in industrial parks over the first nine months of its fiscal year started July 8, 2018. The performance has increased by 40 percent compared to last year some period, according to Ethiopian Investment Commission and this is 70% of the country's export earnings target expected from IPs (New Business Ethiopia, 2019).

When we see the export performance of BLIP, on average its yearly export earnings falls around 50 mill USD, except the year 2019 where the impact of COVID-19 reduced its annual export performance to 43.3 million USD (Table 4-1).

As industry, Textile and Apparel is a 'migrant' industry, it has been migrating throughout the last century from Europe to the US then to Asia and currently to Africa following a cheaper cost of production, a better availability of raw material resources and relatively lose control on environmental pollution.

But currently, counter forces that can potentially reverse this trend of migration are emerging. There forces are disruptive technologies in the labor and environmental protection areas. Smart machines and robotics are substituting workers in labor intensive industries. Sustainable textile is growing in the dyeing and printing functions of global textile industry. It enables the dyeing and printing processes without or minimum water, contributing to a significant reduction in pollution.

On the other hand, protectionism is growing from time in developed countries like the US. Creating new jobs and protecting the existing ones for citizens is becoming a concern in the western developed states, which are the largest buyers of textile products from developing countries with the highest per capita consumption.

Therefore, the cost-reducing disruptive technologies and the growing protectionism could perhaps reverse the migration pattern of the textile industry from the current potential host Africa back to Asia and to the developed countries.

So what is the fate of textile industries in developing states like Ethiopia? The findings of this research reveals that textile Industries in developing countries like Ethiopia should envisage accommodating mid-level technologies that can leverage its competitiveness and productivity limitations without entirely losing the large job creation benefit of the sector. High level technologies definitely gives a higher level of competitiveness and productivity of for the sector, as it needs a higher level of capital and it entirely makes not be benefit from creating jobs for citizens, as abundant labor is a comparative advantage of Ethiopian economy.

However, technology needs its own infrastructure; there should be enough attention for emplacing the necessary technological infrastructure. The ICT part built could be considered as a bit asset in this aspect, having more such infrastructures and making the best use of the existing services of the ICT park by assessing its power and connectivity interruptions could be taken as a low hanging strategy to fill the gap quickly.

According to the manager of BLIP, the dominant business model of factories in BLIP is CMT (Cut-Make-Trim), in which manufacturers cut the fabric, make the clothes as per the design, and trim them with the trimmings. Usually, the buyers provide the designs and raw materials. CMT accounts for the lowest form of garment manufacturing business in terms of accumulating profit margins by operating as many functions as possible in the fiber-to-fashion value chain of the textile industry. To make a better advantage of the sector, vertically integrated factories needs to be attracted to BLIP that operates as much functions from the fiber up to the final garment or final product of the industry. For that, a targeted approach of promotion and attracting an anchor companies needs to be done. Investors' attraction system has to make a shift in focus, from CMT operating companies to integrated companies.

To make the factories more productive, diversifying their lines of items more into high value textile products is the other option advised by the management of BLIP.

Protective textile is one of the product category mentioned by the management of the park that has a better local and regional growing demands. In general, sector-specific strategy is a crucial tool to develop the textile sector in Ethiopia, which sees all the details of the sector in a comprehensive manner.

BLIP, unlike other private Industrial Parks, which entirely focus on making profit, is both a profit oriented business entity as well as a policy implementer. Therefore, it is in the objectives of BLIP to address economic and social issues related to developing the industry for the benefit of the whole economy.

Locations of establishing parks in Ethiopia should pass through rigorous studies for the benefit of its overall competitiveness. BLIP is working on sustainability with Addis Ababa University and Ethiopian Chemical Engineers Association in areas of waste minimization.

BLIP has an average annual export target of 64 million USD. Intervention of other government organizations like MoFA and EIC are administrative decisions in managing of BLIP companies has shown a negative impact on meeting the above targets.

TO make BLIP more competitive, a joining company should pass through a rigorous review of its business plan, which is not the case up to now. Private Industrial Parks like Eastern Industrial Zone which is built by Chinese investors and located in Dukem, has a strong process of evaluating business plans of companies who applies to rent a space in the park. According to the management of BLIP, the Ethiopian Investment Commission (EIC), the government body who is in charge of BLIP and works on promotion and attracting investors, should implement this, as it tries to improve quality of investments and investors in Ethiopia.

OSS One Stop Service is one of the services BLIP provides for its factories. OSS includes the customs, banking, quality assurance and other related services producing companies might need for their business operations.

Attracting companies through promotion is the task of EIC, not IPDC according to the management of BLIP. IPDC collaborates in the works of the promotion by providing information. Unlike the private Industrial Parks, IPDC involves in the management affairs of factories.

Machinery maintenance is a critical problem in Ethiopian textile and apparel sector. The problem is related with the availability of spare parts and trained manpower, which is related to the infancy of the sector. To assist the competitiveness of the factories, there is a plan by BLIP to provide a machinery maintenance service for factories in a reasonable cost.

In general, BLIP is performing low in its attaining its export target. Linking local companies with the foreign one for skill and knowhow transfer is one of the policy objectives of BLIP.

In this regards, the technology transfer is happening well, but it is not being measured properly, as explained by the management of BLIP. World Bank is supporting some nine companies in linking them with foreign companies hosted in BLIP.

In terms of Environmental protection, BLIP is doing well. The Social activities being conducted by BLIP is also quite good. BLIP did not close because of COVID-19. No loss of jobs happened. There is a shortage of water in BLIP, and the management initiated bore hole to pull water using generators. There are speakers in the shades, in which awareness creation on different issues like COVID-19 is done through.

In collaboration with the United Nations Development Program (UNDP), BLIP is building a daycare for mother workers in the park. 500 meter square space is allocated and the entire development is being made by BLIP to serve all factory workers in the park. This helps productivity of factories by facilitating a better working condition for mothers working in different women-dominating garment factories of BLIP.

In terms of BLIP's economic feasibility, jobs creation is being done in a better way. Export performance on average reached 87% of its target. And the management of BLIP is working to reach 100%. Since BLIP was the first public Industrial Park in Ethiopia after the privately built Easter Industrial Zone, its construction and operation has given a valuable lesson learning for other Industrial parks like the Hawassa Industrial Park, which is performing better in all aspects. Areas of lesson learning include;

- In construction management – giving most of the construction works for one contractor rather than engaging different companies in diffract construction tasks
- On how to organize a better Fire safety system
- On how to in place a better waste water treatment facilities
- On how to organize a better Energy supply system,
- On how to facilitate a residential facilities for expats working in parks

These lessons have also contributed to the other industrial parks in the country, like Kombolcha and Mekele. Greening the compound is the assignment given for the resettles families, organized as enterprises.

There are more than 342 resettling households who have given compensation money and replacement land and re-settled in a place not far from BLIP. For re settlers of BLIP phase one project, the replacement location was without power and water infrastructure. Then in phase two, the re-settlement was done according to the the WB standard, in collaboration with them. Access road, housing design, location, schooling facilities, water lines, power supplies constructed

properly, BLIP has went far to make the basic facilities happen in the new compound in collaboration with the WB.

According to the manager, one of the activities BLIP engaged in to support the communities around is supporting the school expenses of children of the households. In the year 2019, BLIP has covered the total expenses of one school, which hosts students from these households. Uniforms, school bags, exercise books, pens, pencils and other related materials were supplied with a total cost of 3.2 million Birr. Health service was also facilitated in collaboration with Ghandi Hospital and Yekatit 12 Hospital. BLIP also provides workers uniforms by allocating more than half a million birr annually.

BLIP has also built a health center for the relocated households. In addition, BLIP has a service agreement with community health centers in the area (like Goro Health Center and Summit Health center) to provide health services for the list of households displaced from the project site.

There is a plan to develop bore holes for the relocated households to address their water problems, which is common in the area.

On top of that, BLIP is facilitating employment opportunities for the youth of the relocated households in areas like in treatment Plants and nurseries. The youth are also organized as association to take out wastes of garment factories to produce mattress and similar products. 60,000 seedlings were planted in the year 2019 by BLIP. There is a plan to build a car washing facility to be operated by the relocated households.

4.2 Feasibility and Sustainability Analysis Results

In assessing the feasibility and sustainability of BLIP, one of the feasibility factors that need to be assessed is economic feasibility. Cost benefit analysis is a better technique to do that, as it is explained in analysis techniques explanations under Methodology part.

4.2.1 Costs associated with BoleLemi Industrial Park (BLIP)

The major costs associated with the establishment of the BLIP are initial costs of construction, environmental and social external costs related to compensation of households and their rehabilitation; and the running costs related to utility consumption and administrative expenses such as wage for control and security staffs and the management.

Construction Cost: In the cost category, the major cost is the construction cost and the information collected from a filled questionnaire by BLIP is summarized as follows:

Table 0-1: Construction Cost of BLIP

Type of Construction	Est. cost ETB
Shades	900,000,000
Offices	40,000,000
Residents	75,000,000
water treatment facilities	60,000,000
Power centers	800,000,000
parking and roads	274,000,000
Fences	130,000,000
Total:	2,639,000,000

Source: BLIP, 2020.

Environmental and Social Cost: The overall Environmental and Social costs associated with BLIP is indicated in the table below.

Table 0-2: Environmental and Social Cost:

Description of Activities	Unit	Quantity	Unit Cost (ETB)	Total Amount (ETB)
Compensation for Housing	House	93	100,000	930,000
Compensation for Agricultural production (10 years)	Ha.	750	14,400	10,800,000
Skill Trainings	Individuals.	100	3,000	300,000
Restoration of Ecology (physical and biological measures to establish buffer zone)	Lump sum			3,000,000
Establishment of Buffer Zone around BLIP				2,000,000
Total				17,030,000

Source: MoT, 2014

Utility Cost: The annual and total estimates of the utility cost of BLIP are shown below.

Table 0-3: Utility Cost of BLIP

Types of utilities	Annual total utility cost estimates in ETB	Six years total (2014-2019) ETB
Electricity	38,000,000	228,000,000
Water	8,000,000	48,000,000
Communications	1,400,000	8,400,000
Total	47,400,000	284,400,000

Labor Cost: With regards to the labor cost, BLIP currently has 47 administrative and technical staff that works on managing the park, according to the information given by BLIP. The total annual average salary and benefit cost of labor is around 420,000ETB. This cost more or less can be considered as an annual admin labor cost of BLIP since its year of operation, 2014.

Table 0-4: Labor Cost of BLIP

Manpower	Qty	Total annual salary and benefits on average (ETB)	Year of employment (on average)	Total salary (yr.2014-019) ETB
Administrative and Technical staff including top management	47	420,000	6 yrs	2,520,000

4.2.2 Revenue Associated with Bole Lemi Industrial Park

The Benefits from the Industrial park establishment can be seen from two perspectives: One the direct benefit earned from rental of shades and the other is the indirect benefit associated with government tax and foreign exchange earnings; employment generation, labor productivity enhancement, contributions to social responsibility under takings and others.

Rental Income from Shades: With regards to the benefit, the major income BLIP earns is through renting the shades. As explained in the literature review, on average, the rental cost of shades remains 1.25USD per square meter since BLIP’s year of operation (2014). And almost all shades are occupied all the time since its year of operation. BLIP-I has a total of 22 factory shades with a total floor size of 181,500 square meters. The size of the shades is two types, the smaller type (with a floor size of 5,500 square meters) and the larger type (with a floor size of 11,000 square meters). There are 11 shades of each type, which makes the total number of shades 22.

Therefore, the annual estimate of BLIP’s income from renting shades is 226,875.000USD. The annual shade rental income of BLIP is estimated to be around 2,722,500 USD, which is equivalent to 103,455,000 ETB (with the app. current exchange rate of 1USD=38ETB).

Space size (sq. m.)	Unit price (USD)	Total annual rental Income (ETB)	Total rental Income (yr.2014- 2019)
181,500	1.25	103,455,000	620,730,000

Since the investment incentive package provides a tax holiday for companies, these companies are not paying taxes. Therefore tax income paid by companies cannot be considered as benefits from the park.

In summary the financial costs (fixed and variable incurred during the last six operational years of BLIP) together with the financial benefit (primarily rental income gained from renting the shades) looks like the following.

	Fixed	Construction	2,639,000,000
		Environmental and Social	17,030,000
	Running	Utility (yr.2014-2019)	284,400,000
		Labor (yr.2014-2019)	2,520,000
Costs in ETB	Total Cost		2,942,950,000
Benefit (Income ETB)		Shade rent (yr.2014-2019)	620,730,000

With the current trend, BLIP need at least 25 years to get back what is invested on the park (~2.6bln ETB) with such an annual shade rent income of 103,455,000ETB.

The financial feasibility analysis of the project assesses the viability of the project from the perspective of the project owner the IPDC. It only considers the viability of the park from the perspective of the expense incurred and the revenue generated by IPDC. The revenue generated by IPDC is the rent from the shades.

On the other hand the expenses include: initial construction cost, compensations and investment made to environmental and social destructions, utility costs as well as administration costs of the park. Based on the above facts collected from BLIP, the following cash flow table is depicted.

		2014	2015	2016	2017	2018	2019
Cost	1	2	3	4	5	6	7
Constriction Cost	2,639,000,000.00						
Social & Environmental cost	17,030,000.00						
Utility Cost	47,400,000.00	47,400,000.00	47,400,000.00	47,400,000.00	47,400,000.00	47,400,000.00	47,400,000.00
Administrative Cost	420,000.00	420,000.00	420,000.00	420,000.00	420,000.00	420,000.00	420,000.00
Total Cost	2,703,850,000.00	47,820,000.00	47,820,000.00	47,820,000.00	47,820,000.00	47,820,000.00	47,820,000.00
Direct Benefit							
Shade Rental Income		103,455,000.00	103,455,000.00	103,455,000.00	103,455,000.00	103,455,000.00	103,455,000.00
Indirect Benefit							
Profit earned by Enterprises		43,281,512.00	63,623,822.43	63,796,948.60	70,116,049.17	42,415,881.76	55,400,335.36
Income generated for workers		165,278,880.00	165,278,880.00	165,278,880.00	165,278,880.00	165,278,880.00	165,278,880.00
Tax holidays given to enterprises		28,210,921.23	29,621,467.30	31,032,013.36	38,084,743.67	39,495,289.73	45,137,473.97
Total Benefit	-	340,226,313.23	361,979,169.73	363,562,841.96	376,934,672.84	350,645,051.49	369,271,689.33
Net Benefit e	(2,703,850,000.00)	292,406,313.23	314,159,169.73	315,742,841.96	329,114,672.84	302,825,051.49	321,451,689.33
Cumulative net cash flow e		(2,411,443,686.77)	(2,097,284,517.04)	(1,781,541,675.09)	(1,452,427,002.25)	(1,149,601,950.76)	(828,150,261.43)

Source: own calculation.

Based on the above cash flow history considered for the last six years; the financial cost benefit Analysis showed that the park was not viable. Because the payback period is estimated to be 49 years while the Net present value and the Internal Rate of Return are estimated to be Birr - 2,003,621,605.86 and -5.01% respectively. Both are negative which implies the project should have not been implemented from private cost benefit analysis perspective.

However; such government projects are assessed from the perspective that they have a contribution to the overall economy as well as to the society. Its feasibility is assessed by considering both direct and indirect benefits. Assuming that the Park will have a life of 25 years; the social cost benefit analysis of the park showed that it has a pay Back period of 9 years and 3 months, a net present value of Birr 132,788,534.15 and internal rate of 10.70%. It implies that the project is somehow feasible from the government perspective though the return is not that much lucrative. This is because the rate of return is less than the lending rate of commercial Banks.

Therefore the government should adopt strategies that will enhance the returns from industrial Parks and make the longevity or sustainability of the Parks. If the life of the Park is below 25 years, it may not be even viable from social perspective.

4.2.3 Sustainability of BLIP

Speaking of Sustainability in the context we BLIP, we refer to the ability of the park to continue its mission explained far into the future, from policy perspective, economic perspective and from the perspective of the environment.

From policy perspective, we can see the critical role of Industrial Parks in the development of Ethiopia's economy in different legal and policy documents such as the Industrial Development Strategy (IDS) and a proclamation on Industrial Parks. For instance, Proclamation no. 886/2015 issued on Industrial Parks clearly stipulates its importance as follows:

“WHEREAS, it is necessary to accelerate the economic transformation and development of the country through the establishment of Industrial Parks in strategic locations to promote and attract productive domestic and foreign direct investment thereby upgrading industries and generate employment opportunity;

RECOGNIZING, the need to enhance export promotion, protection of environment and human wellbeing, economical land use and establishing and expanding planned urban centers.”

In the above proclamation, we see the recognition of the economic role of BLIP in terms of catalyzing economic transformation and development. This can be translated in the employment generation, foreign currency earning, the technology transfer through which local workers get skills working foreign companies and local institutions get business management and leadership knowledge working with the foreign investments hosted in the park.

Currently, BLIP is employing 8,571 workers in December, 2019, and it has the capacity to employ up to 25,000 workers, as a direct employment. Indirectly, BLIP has created an employment opportunity for the community living in the area as well as for the 420 households relocated because of the BLIP construction by making them work in the development of BLIP's 30 Ha. Of green area, by facilitating a business on the collection and outselling of garment wastes from factories and by facilitating employment for them in different working units of BLIP, such as waste treatment facilities. On top of the above indirect employment for relocated families, BLIP has created a business for more than 400 rented busses to transport workers from their residence areas to the factories in the park, which is a significant economic contribution.

In terms of foreign currency generation, BLIP is an export-oriented company by policy and on average, it generates 4.4 million USD per month. As its second phase of the project goes operational, the plan is to triple this export, according to authorities of the park.

In terms of technology transfer, BLIP's technology transfer has three goals, according to the manager. Skill transfer from foreign expats working in the park to local workers, acquiring a

modern working systems & procedures and getting modern machineries. In implementing the above there goals, BLIP links its foreign companies with organized local Micro, Small and Medium Enterprises (MSMEs) for outsourcing parts of products that the exporting companies are producing.

On the other hand, the skill retention among local factory workers is meant to organize the local workers as MSMEs and support them to have their own factories in the future, once they develop their capacity, which is happening now.

On top of the above economic benefits, BLIP has contributed in the overall successes of Industrial park construction and operations in Ethiopia, in which the construction and management of late industrial parks like Killinto, Hawassa, Dire Dawa, Combolcha and Mekele Industrial Parks. These lately constructed IPs have drawn best practices and experiences from the pioneer BLIP in the areas of how to organize a better Fire safety system that fits Ethiopian context, how to put in place a better waste water treatment facilities, how to organize a better Energy supply system, and how to facilitate a residential facilities for expats working in parks.

The extra support of BLIP for the productivity of its company's in terms of providing services difficult to get from the markets is the other factor contributed for its economic sustainability. For instance, Machinery maintenance is a critical problem in Ethiopian textile and apparel industry, a service through to get from the market. The problem is related with the availability of spare parts and trained manpower, which is related to the infancy of the sector. To assist the competitiveness of the factories, BLIP is facilitating machinery maintenance service for its 11 factories in a reasonable cost.

BLIP has also contributed for expansion of private Industrial Parks as the policy of the country is to extend private parks than the public industrial parks in the future. BLIP has assisted foreign companies to have a first-hand experience on Ethiopia's promising potential for their future business expansion where by promoting industrial parks in Ethiopia. The case in point is the first Industrial Park renting company in Ethiopia, George Shoe Inc., after operating at BLIP for more than five years, is constructing its own private Industrial Park in Oromia Regional State around Mojo area, which has a big role for the development of both the textile sector and Industrial Park business in Ethiopia.

The social contribution of BLIP is a new experience in promoting Corporate Social Responsibility of businesses to the society. BLIP is facilitating spaces for private companies to build houses for their employees. This contributes for the competitiveness of the companies while addressing the social challenges of housing problem on which workers suffering from in Addis Ababa. BLIP has

facilitated a 3.2 ha. Of land for a Korean company called SHENTS and it has constructed residences for its 4,500 workers, and SHENTS is planning to raise number of housing beneficiaries of its employees to 9000.

BLIP did not close because of COVID-19 and no loss of jobs happened. In such a low-paid society, sustaining jobs in such difficult times has a huge social impact in sustaining families.

With similar social support of the park, as there is a shortage of water in BLIP area the management initiated bore hole development to pull water using generators.

BLIP is also devising a better working facility for mothers working in the park. In collaboration with the United Nations Development Program (UNDP), BLIP is building a daycare for mother operators in factories. 500 meter square space is allocated and the entire development is being made by BLIP to serve all factory workers. This helps productivity of factories since gender wise, women dominates the workforce.

In terms of Environmental feasibility, As shown in Table 4-2, BLIP has invested 60 mln. Birr for Water Treatment Facilities with state of the art technology, which would have been too difficult to be constructed by individual enterprises. This waste water treatment plant has a processing capacity of 61,000 lit. per day, which protected the environment from the most polluting chemicals the textile industry uses.

On top of that, as shown on Table 3-4, BLIP has allocated 5 million birr for restoration of Ecology and establishment of Buffer Zone.

The 30 hectare of land dedicated for green area in the park is also contributing towards building a well sustained and conducive work environment on top of creating jobs for members of the relocated households due to BLIP construction site clearance.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Developing Industrial Parks is part of government's effort to catalyze industrialization in Ethiopia's economy to foster structural Transformation. As Industrial Parks Industry is not developed in Ethiopia, the commitment taken by the Ethiopian government to initiate the development of Industrial Parks can be taken as a right policy direction. Developing BLIP, the first public industrial park is the manifestation of this commitment.

With regards to the pre-feasibility and feasibility assessment of BLIP, there was a paper works which primarily focuses on fulfilling the requirements for soliciting funds and developing an action plans. Threes and similar paper works were after the decision was made to develop the park. But there should be an independent and prior paper works that dictate the decisions on developing or not developing the park. This early stage decisions on such huge and significant resource has to be guided by a strict pre-feasibility and feasibility studies.

Assessing the viability and sustainability of BLIP is vital to learn from experiences for the future development of Industrial Parks since we have a long way to go in industrialization. The financial and economic feasibility of assessment of BLIP is done using Cost Benefit Analysis and Cash Flow, so that can clearly see the net amount of cash and cash-equivalents being transferred into and out of BLIP. But since the purpose and the general context of developing BLIP goes beyond the financial reasons in to social and environmental factors, further qualitative assessment were done.

Our analysis shows that BLIP is not viable from the financial perspective. Considering the timing of its development in the overall Ethiopian economy where industrialization is in its infant stage requiring a huge government push to initiate growth, BLIP is not a project that should be evaluated just from a mere financial viability perspective.

Assessing BLIP in reference to its contribution to the overall economy as well as to the society, as discussed in the previous chapters, BLIP has contributed in employment generation, skill and technology transfer, foreign currency generation as well as nurturing industrial culture in the economy.

Besides, its social feasibility is assessed qualitatively by considering both direct and indirect benefits. Assuming that the Park will have a life of 25 years; the social cost benefit analysis of the park showed that it has a pay Back period of 9 years and 3 months, a net present value of Birr 132,788,534.15 and internal rate of 10.70%. It implies that the project is feasible from the government perspective though the return is not that much lucrative. This is because the rate of return is less than the lending rate of commercial Banks.

In making BLIP more viable, the government needs to adopt strategies that will enhance the returns from industrial Parks and make the longevity or sustainability of the Parks.

As a pioneer project, BLIP has contributed to a better construction management and facility improvement efforts of the late constructed Industrial parks (Killinto, Hawassa, Dire Dawa, Combolcha and Mekele Industrial Parks) - how to organize a better Fire safety system, how to put in place a better waste water treatment facilities, how to organize a better Energy supply system, how to facilitate a residential facilities for expats working in parks, . . .)

All companies operating in BLIP are foreign companies. Therefore we see a disconnection between the overall national direction of creating a strong private sector in Ethiopian economy and absence of any domestic private companies in BLIP.

The Ethiopian textile industry in general and BLIP as a textile-specializing Industry park in particular is expected to face challenges from Industry 4.0 and from the growing protectionism among developed economies.

The extra 'innovative' support of BLIP made for the productivity of its companies in terms of providing services difficult to get from the markets, for example machinery maintenance, has contributed for its economic sustainability since machinery maintain ace skill and spare parts is the critical bottleneck in the textile sector in which BLIP specializes.

5.2 Recommendation

Strengthening pre-feasibility and feasibility assessments:

Though such government projects like BLIP are not expected to be evaluated just by financial feasibility, it is vital to make sure that economic social and environmental feasibility assessments are done rigorously. Beyond the light assessments and paper works done to fulfill some financing requirements done on BLIP, an in-depth and rigorous pre-feasibility and feasibility assessment before investment should be taken as a critical processes for such investment so as to insure a proper allocation of resources in an infant and capital-constrained economy like Ethiopia.

Such an in-depth pre-investment assessments enables policy makers to foresee the possible economic-wide impacts of such projects in a way to give the necessary cautions for the related possible pitfalls the investment might involve. Such assessments also provide the necessary alternatives to select the proper site for such projects. There is a commendable step being taken by the Ethiopian Government currently, the new Public Investment Management (PIM) proclamation enacted is a case in point. Capitalizing on the proper, inclusive and rigorous implementation of PIM can address this gap.

Factoring-in global trends in sector-specialization of Industrial Parks:

Industrial Parks in Ethiopia are following the direction of sector specialization, which is a good thing in way of addressing sector-specific challenges and creating synergies. With the same fashion, BLIP is specializing on the textile and garment sector. In doing so, there is a need to seriously consider global trends and future challenges of the textile and garment industry globally so that BLIP can be viable and successful as an industry park. Since the global trends are the environment the individual companies of BLIP operates, the Industry park needs to know what kinds of challenges and opportunities are coming ahead to serve the sector.

For instance, the textile and garment industry in developing countries are facing a couple of global challenges in relation to the Fourth Industrial Revolution (Industry 4.0) and with the growing protectionism from the developed countries who owns the major markets of the industry.

As industry, Textile and Apparel is a ‘migrant’ industry, it has been migrating throughout the last century from Europe to the US then to Asia and currently moving to Africa following a cheaper cost of production, a better availability of raw material resources and relatively ‘loose’ environmental regulations. Sector-specialized Industrial Parks like BLIP are the best destination for such opportunities to host foreign investments. But currently, the above two factors (Industry 4.0 and protectionism) are triggering counter forces that can potentially reverse this trend of migration, by facilitating a better workmanship through using robots and by the growing policy attentions the developed states are giving to retain their own bulk production orders to be supplied by their local manufacturers. Smart machines and robotics are substituting workers in labor intensive industries. Sustainable textile is growing in the dyeing and printing functions of global textile industry. It enables the dyeing and printing processes without or minimum water, contributing to a significant reduction in pollution. On the other hand, protectionism is growing from time in developed countries like the US. Creating new jobs and protecting the existing ones

for citizens is becoming a concern in the western developed states, which are the largest buyers of textile products from developing countries with the highest fabric per capita consumption.

Therefore, the cost-reducing disruptive technologies and the growing protectionism could perhaps reverse the migration pattern of the textile industry from the current potential host Africa back to Asia and to the developed countries.

So what is the fate of textile industries in developing states like Ethiopia? The findings of this research reveals that textile Industries in developing countries like Ethiopia should envisage accommodating mid-level technologies that can leverage its competitiveness and productivity limitations without entirely losing the large job creation benefit of the sector. High level technologies definitely gives a higher level of competitiveness and productivity for the sector. But since high level of technologies are capital intensive and its job creation role is minimal, which doesn't go with the economic condition and interest of LDCs like Ethiopia.

Competitiveness and productivity of BLIP

The overall competitiveness and productivity of BLIP needs to strengthened. The following six (6) points can be considered as recommendations in improving its competitiveness.

- *Engaging the private sector* - to engage the private sector with a special emphasis to the domestic one, both in the development and management of IPs definitely improves the current low level of competitiveness and productivity of BLIP.
- *Improving ICT infrastructure* - technology needs its own infrastructure; there should be enough attention for emplacing the necessary technological infrastructure. The ICT Park built could be considered as an asset in this aspect, having more such infrastructures and making the best use of the existing services of the ICT park by assessing its power and connectivity interruptions could be taken as a low hanging strategy to address the ICT problems companies are facing quickly.
- *Promoting a better business model for BLIP companies* – As explained in the paper, the dominant business model of factories in BLIP is CMT (Cut-Make-Trim), in which manufacturers cut the fabric, make the clothes as per the design from buyers, and trim them with the trimmings. CMT accounts for the lowest form of garment manufacturing business as it involves few number of functions from the long fiber-to-fashion value chain of the textile industry. To make a better profit margin in the sector, factories needs to engage in as many functions and operations as possible in the value chain which grows from fiber level to garment level through yarns and fabrics. Vertically integrated factories needs to be attracted to BLIP that operates as much functions from the fiber up to the final garment products For that, a targeted approach of

promotion and attracting an anchor companies needs to be done with a targeted policy direction and tailored supports. Therefore the current Investors' attraction system has to make a shift in focus, from CMT operating companies to integrated companies.

- *Promoting product diversification* - to make the factories more productive, diversifying their lines of items more into high value textile products is the other option factories in BLIP should work on. Protective textile is one of the product category mentioned by the management of the park that has a better local and regional growing demands.
- *Guideline in selecting companies* - the other recommendation to improve the competitiveness of BLIP is to have a guideline that dictates the types of companies and investments to attract in to BLIP. TO make BLIP more competitive, companies should pass through a rigorous review of its business plan, which is not the case up to now. Private Industrial Parks like Eastern Industrial Zone which is built by Chinese investors and located in Dukem, has a strong process of evaluating business plans of companies who applies to rent a space in the park. According to the management of BLIP, the Ethiopian Investment Commission (EIC), the government body who is in charge of BLIP and works on promotion and attracting investors, should implement this, as it tries to improve quality of investments and investors in Ethiopia.
- *Strengthening 'innovative supports' of BLIP*—The supports BLIP is trying to provide for companies like providing training on machinery maintenance, which is a country-wide challenge the sector is facing is a kind of innovative support no one tried it before. Such tailored supports needs to be strengthened both by working systems and policy supports. Blending the One-Stop-Services (OSS) systems of Industrial Parks with 'Innovative supports' of IPs designed through a sector-specific challenges of companies could be considered as strengthening those supports by blending in to the existing systems.

In general, sector-specific strategy is a crucial tool to develop the textile sector in Ethiopia, which sees all the details of the sector in a comprehensive manner.

REFERENCES

Alebel B. Weldesilassie, Mulu Gebreeyesus, Girum Abebe and Berihu Assefa, (2017). Study on Industrial Park Development: Issues, Practices and Lessons for Ethiopia, Ethiopian Development Research Institute, Addis Ababa.

Derek, W. (2011). Smart KPIs for Sustainability Initiatives, www.EnvironmentalLeader.com.

ECA, AUC, (2013). Economic Report on Africa 2013—Making the Most of Africa's Commodities: Industrializing for Growth, Jobs and Economic Transformation. Economic Commission for Africa, ECA and AUC, Addis Ababa.

Ermias Wedajo Azmach (2019). Regulating Industrial Parks Development in Ethiopia: A Critical Analysis. *Beijing Law Review*, 10, 23-60. <https://doi.org/10.4236/blr.2019.101003>.

Enterprise Partners, (2017). Bole Lemi Industrial Park Human Resource Assessment, www.enterprisepartners.org, Addis Ababa.

FDRE Ministry of Industry, (2014). Environmental and Social Impact Assessment Report on Bole Lemi Industrial Zone, Addis Ababa.

Fesseha Mulu GEBREMARIAM and Bizuayehu Daba FEYISA, (2019). Assessing the Performance of Industrial Parks in Ethiopia, Department of Civics and Ethics Studies, Jimma University, Ethiopia.

FIAS, (2008). Special Economic Zones: Performance, Lessons Learned, and Implications for Zone Development, World Bank, Washington, DC.

Guillermo, V., Cristian, S., Felipe, A. and D'íaz, A., (2016). Sustainability Indicators for the Assessment of Eco-Industrial Parks: classification and criteria for selection, article in *Journal of Cleaner Production*.

Selam Gebyehu, (2017). The Challenges and Contributions of Industrial Park Development in Ethiopia: the Case of Eastern Industry Zone PLC, St. Mary's University School of Business, Addis Ababa Ethiopia.

The Federal Democratic Republic of Ethiopia (2015). Industrial Park Proclamation No. 886/20 15, The Federal Negarit Gazette, Addis Ababa.

United Nations Industrial Development Organization, (2019). International Guidelines for Industrial Parks, UNIDO, Vienna, Austria.

Kaplinsky, R. (1993). Export Processing Zones in the Dominican Republic: Transforming manufactures into commodities, World Development.

Xiaodi, H., Dejene T., Ciyong Z., Zhen W., Jie Z., Eneyew A., &Jaidev D.(2018). Industrial park development in Ethiopia, Case study report, Vienna.

Yechalework Asfaw, (2019). Opportunities and Challenges of Industrial Park Development in Ethiopia:Lessons from Bole Lemi and Hawassa Industrial Parks, Addis Ababa University College of Social Sciences, Center for African and Oriental Studies, Addis Ababa University, Ethiopia.

Yohannes Melaku Yimam and Liyla Mohammed, (2020). Evaluation of the Implementation of Environmental Impact Assessment in Bole Lemi Industrial Park: In The Case of Addis Ababa, Ethiopia, International Journal of Scientific Research, Research Paper, Vol.7, Issue.1, Addis Ababa.