

Evaluating the Effectiveness of agriculture development led to industrialization (ADLI) in Ethiopia

By

Daniel Jemberu

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

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Professor Jong-Il You

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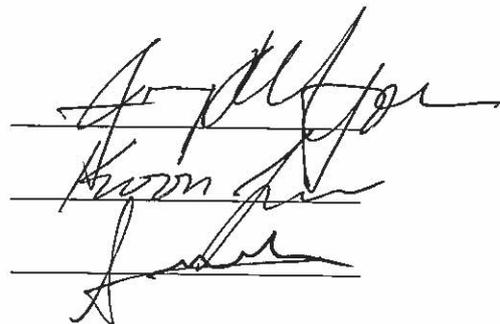
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Three handwritten signatures are written on three horizontal lines. The top signature is the most prominent and appears to be 'Jong-Il You'. The middle signature is 'Kwon Jung' and the bottom signature is 'Siwook Lee'.

Approval as of December, 2014

ABSTRACT**Evaluating the Effectiveness of agriculture development led to industrialization (ADLI) in Ethiopia****By**

Daniel Jemberu

A sound and robust policy measure is the essence for the development of one's economy, to achieve industrialization, and thus lift many out of poverty. Ethiopia has followed Agriculture development led to industrialization (ADLI) as a leading and overall national economic framework strategy to fight poverty, and attain industrialization in the long run since 1991. The policy strongly consider that, small holder farmers in the agriculture sector can generate wealth and transform the economy to the next phase ,thus, government has followed unbalanced growth strategy ,and allocate most of the resource to rural development. The purpose of this paper was to evaluate and analyze the effectiveness of the policy interims of its performance for the last decades, whether it has achieved what had been anticipated and promised from this policy and strategy.

Specific objective were to identify key impediments to implement the policy and offer recommendation for further improvement. The paper has used qualitative and quantitative approach for the objective to be done. The paper find that, Agriculture has a significant positive impact to the industry sector. However, Industrialization in Ethiopia still has been very slow interims of structural transformation .The paper argued that, the policy should have to be more concretized and should addresses implementation problem to bear the anticipated goals in time and compatible with today's dynamic global setting. policy options and problems were discussed: Deficient implementation, creating room for market, and building competitive capacity. In addition, the report recommends that, the government should follow balanced growth approach, thus give also emphasis as equal priority as agriculture to other important factors of development to achieve industrialization specially the private sector.

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Dedicated to Alem Abera

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Selected Acronyms

- ADLI: Agricultural Development Led Industrialization
CIA: Central Intelligence Agency
CPI—Consumer Price Index
EEA: Ethiopian Economic Associations
EIA: Ethiopian Investment Authority
FDI: Foreign direct investment
GDP: Gross Domestic Product
IMF: International Monetary Fund
LDCs: Least Developed countries
MOFED: Ministry of Finance and Economic development
NBE—National Bank of Ethiopia
OECD: Organization for Economic Cooperation and Development
PCI: Per capita income
PPP: Purchasing power parity
SNA—System of National Accounts
SSA: Sub-Saharan Africa
USD: United States dollar
VAT—Value-Added Tax
WB: World Bank
WTO: World Trade Organization

Chapter 1: Introduction

1.1: Initial words:

Industrialization is the evolution of transform from a basic agrarian economy to an industrialized state. The first industrialization occurred in Britain, then later appeared in other European countries, North America, and Japan from Asian. Recently, most developing countries have also experienced rapid industrialization for the last decade's years. There are a lot of alternative attempts to explain the determinants factors and development strategy for these late industrialized countries.

No doubt that changing first state economy to the next level requires a commitment, scarification and a firm will. Almost all developed countries had paid the cost to get all the advantage of industrialization. It is the basis of sustainable economic development, the way to increase production, means to eliminate poverty and making a country a wealthy, physically powerful and defensive. Here the question is why still developing countries lack the ability to transform their economy into the next phase.

Most sub-Saharan African countries take measures to transform their economy and to increase the growth and share of industry for the last decades on the basis of agriculture as source of income, saving, revenue and raw materials for the industry sector. The arguments that has taking agriculture as a leading sector is, the Urban bias argument¹, agriculture is being a livelihood to majority of the population, comparative advantage of these countries in agriculture, and lack of financial and skill human resource constraints to allocate to the industry and tertiary sector,. Contrary, there is ongoing debate that whether unbalanced agriculture based development is effective growth strategy to attain industrialization.

Despite, many constrains in the agriculture sector such as, still the sector depend on rain and traditional subsistence farming, land tenure security, Terms of trade and volatility of price of agriculture products in the international market, the Ethiopian government also took agriculture as a leading growth strategy to

¹ Refers to political economic argument, mainly by Michael Lipton in 1977, argued that poverty endure because of development policy and strategy designed by and for people in urban areas.

achieve industrialization and agriculture will continue to play major role and hope to the national economy in this era of globalization.

1.2: Statement of the Problem

It is well known that, Ethiopia is endowed with large number of working age population and large number of small holding potential cultivated land. No doubt that, Ethiopia has been experienced a remarkable double digit 10% average economic growth for the last consecutive years. But, wide social, economic, and political indicators place the country among the poorest state in the world.

Table 1: Ethiopia: Basic Statistics

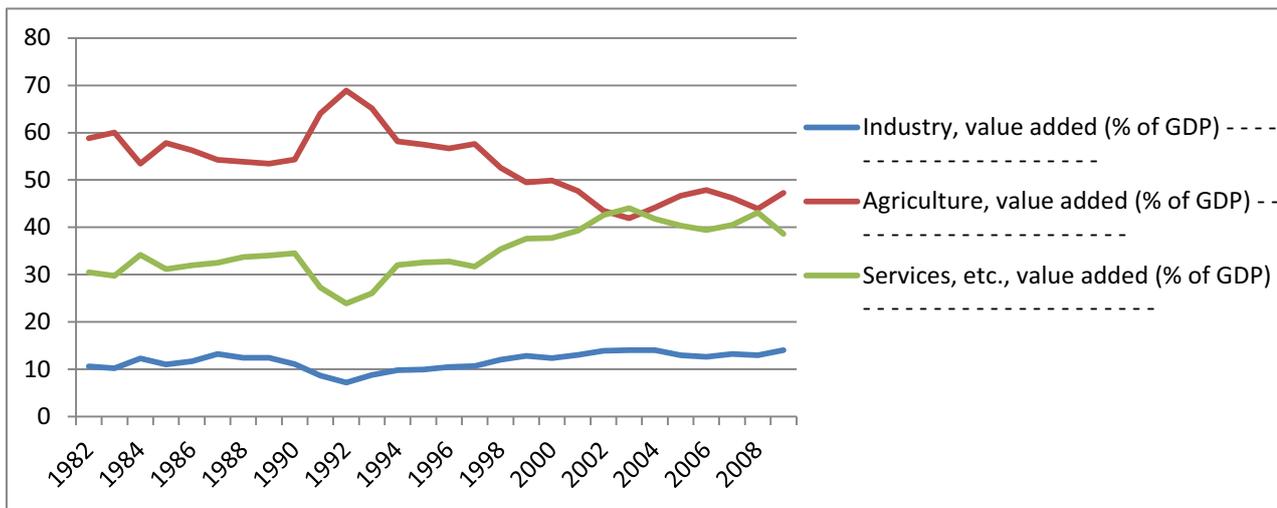
Descriptor	Units	Scale	2006	2007	2008	2009	2010
Gross domestic product, constant prices	Percent change		11.54	11.80	11.18	9.95	8.00
Gross domestic product, current prices	U.S. dollars	Billion	15.2	19.6	26.7	32.3	30.9
Gross domestic product, deflator	Index		140.8	164.6	214.0	263.1	289.3
Gross domestic product per capita, current prices	U.S. dollars	Units Billion	197.9	248.6	330.5	390.3	364.9
Private Final Consumption Expenditure	(as % of GDP)	s	83.2	80.8	85.0	85.4	86.2
Gross Capital Formation (Investment)	(as % of GDP)	Units	25.2	22.1	22.4	22.7	24.7
Exports of Goods and Services	(as % of GDP)		12.7	11.4	10.5	13.6	16.8
Imports of Goods and Services	(as % of GDP)		32	30.8	28.7	33	31.8
Average Exchange Rate (Birr/USD)	birr/USD	NC	8.79	9.24	10.42	12.89	12.9
Inflation, average consumer prices	Index		131.8	152.7	191.3	261.0	268.3
Population	Persons	Million s	76.6	78.6	80.7	82.8	84.8
General government revenue	Percent of GDP		18.4	17.1	16.0	16.3	16.5
General government total expenditure	Percent of GDP		22.2	20.7	18.9	17.2	18.1
General government net debt	Percent of GDP		57.1	30.3	28.0	28.1	31.3
Current account balance	U.S. dollars	Billion s	-1.39	-0.87	-1.50	-1.62	-1.2
Rate of gross Saving (as % of GDP)	Percent of GDP		4.6	8.7	5.2	5.7	5.2

Source: Authors' calculation based on IMF Data

To deal with the problems the government (new regime, 1991) took new policy actions include: controlled (centered) to market economy, liberalizing trade, flexible price control, exchange rate devaluation. But, most notably it has been adapting unbalanced agriculture development led to industrialization (ADLI) as an overall development strategy to achieve industrialization, and food

security and unemployment issue for the fast growing population since 1993. And the strategy assumes that stallholder farmers are the major actor to the pace of industrialization process in Ethiopia. Two policy problems discussed in this paper, which can be considered and identified as a missing components under ADLI implementation period: Lack of market space and competing capacity at different stage of the economy.

Figure 2: Ethiopian economy sectors share from 1982-2009



Source: Authors' Calculation based on World Bank Data

The strategy has not brought the likely goals and objective when we talk about Industry sector. Still the structural transformation in production and export is weak. The industry share remains within the range of 9-13%.the manufacturing production and exports are not based on advanced technology and are not capable of reduce the gaps of trade deficits. The efficient of small holder farmers is questionable, and the economy is still dependent on traditional subsistence farming and rain fed agriculture.

1.3: Objective of the Study

This paper has two objectives: the first will Evaluate the effectiveness of ADLI interims of its relation, and role of agriculture to the industry sector in order to answer the question, should the government continue, adjust or develop other more appropriate growth strategy?. Second deals with assessing the determinant factors to the pace of industrialization, helps us to identify the weak structural transformation of industry sector. What is lacking in the policy & strategy to achieve its objective & goals.

The following questions covered the major areas of evaluating the effectiveness of ADLI in Ethiopia:

1. What is the role of agriculture on the pace of industrialization?
2. What is the performance of agriculture and in Africa and Ethiopia?
3. What is ADLI, its frame work and theoretical argument?
4. What is the impact of agriculture to the industry sector in Ethiopia?
5. What are the major challenges to implement ADLI in Ethiopia?
6. What are the determinant factors of industrialization in Ethiopia?
7. What measures needed to make ADLI work and to pace of industrialization in Ethiopia?

1.4: Methodology of the Study

Qualitative approach

Reviewing literature on the role, performance of agriculture, and theoretical arguments behind ADLI are undertaken from previous available reports, books, and papers. Qualitative methods will be applied, using recent descriptive data from statistical reports, books, and also reviewing of literature will be made to evaluate the policy pertaining to its goals and objectives.

Quantities approach

-Trend analysis of macroeconomic time series data at national levels have been used to assess the pattern of selected variables using descriptive statistics such as growth and percentage share comparisons and multiple regressions. This econometric model also could helps to identify the impact and the strength link between the industry sectors with the agriculture. Agriculture will be the study and interest variable in the

model, but in order to deal with under specification and omitting important variable problem in our model, it is necessary to include other potential independent variable that will explain the industry growth. It further also helps to make additional recommendation to the topic.

Data sources

The paper entirely depends on secondary data, literatures, books, journals, and previous publications. Data sources came from various sources National Income Account Statistics, central statistics surveys and censuses pertaining to macro level time series data. In addition, both a social accounting matrix analysis and an input-output analysis are used to find out the impact and linkage of agriculture to non-agriculture sector.

1.4 Structure of the Thesis -

Chapter-2: Literature reviews; Deals with the literature review on Industrialization, economic development models and strategy, the role of agriculture to the pace of Industrialization.

Chapter -3: The performance of Ethiopian economy particularly agriculture and Industry sector. Defining ADLI, its framework and theoretical argument in Ethiopia?

Chapter -4: Descriptive statistical reports and empirical analysis approach to evaluate the policy.

Chapter -5: conclusion and recommendations.

Chapter 2: Literature Review

Introduction and Background

Economic development theories and policy

Major determinant factors of Industrialization (case of Korea)

2.1: Background

Nowadays, it is difficult to see industrialization and economic development separately. Industrialization is replacing basic agrarian primary sector to secondary, and tertiary one. Economic development deals with not only the increase of goods and services (GDP), but, also it contains development of well being of a society and sustainable economic growth. Those countries that achieved industrialization have experienced the highest level of economic development. Today, economist, policy maker and other scholars are using both concepts interchangeably.

On Journal of geography, fall 2000 report states, "As a country goes through industrialization or economic development it is possible to see a marked shift in the percentage of the labor force involved in the each of the five sectors². Non industrial states have most of their workers involved in the primary sector. When industrialization begins there is great growth in the secondary sector and the percent of workers involved in primary production decreases. With continued growth in economic activity the labor force shifts toward the third, fourth, and fifth sectors".

Economist, policy maker, and politicians have been developing and using economic development models to achieve industrialization to transform the economic structure to next phase. Now days, in order to develop the model, they consider factors other than the basic factors of production such as land, labor, and

².five primary sectors such as agriculture, fishing, forestry, hunting, and mining.

capital. Some of the factors are entrepreneur, technological innovations, institutions structure, and political ideology. But most importantly the overall development strategy will matter on the performance of industrialization.

2.2: Economic development thought and theories.

Before getting in to detail, it is important to highlight Economic school of thoughts from historical perspective. “There have been different and competing schools of economic thought pertaining to capitalism from the late 18th century to the early day. Important schools of thought are Classical economics, Marxian economics, Keynesian economics, neoclassical economics and New classical economics. There are other schools of economics as well. These schools of thought have developed over the years, and have fundamental disagreements with one another. Some people have observed that the schools of economic thought often reflect who is in power in the society, for example, communist countries hold to Marxian economics while in a capitalist country like the United States, the predominant school of thought shifts every few decades between Keynesian economics and Neoclassical economics (and sometimes New classical economics)”.

Traditional theories give emphases on human mode of production on the role of economic development and industrialization process. Karl max was one of popular ideologist and philosopher in 18th century, he explained in his writing which is called Marx's theories, about human mode of production, that human beings and their interact with the physical world to produce for consumption and a better life. He states out major characteristics mode of production starting from primitive, feudalism, socialism, communism, capitalism.e.t.c from the historical perspective³.

³ It is not the intention of this paper, so I won't explain more and in detail about these concepts.

In the other side, it is worth mentioning here about economic growth models before dealing with economic development concepts. Old schools of thoughts have made little distinction between the two concepts. The later one is, could be seen it as a long run process, which concern with total economic and social structural change.

Recently, academician defines Economic growth as an increment of goods and services, which concern with quantitative change of economic variables. Most growth models also consider factors such as, saving, labor, technological change, population e.t.c, that determine the growth of gross domestic product (GNI). Among well known major growth model are Harrod-Domar Model, Neoclassical Growth Model, Harris-Todaro Model, e.t.c. However, Economic development theories have a broad concept, concerned with structural change and quantitative change of economic and social variables. More closely related to characteristics and strategy for industrialization.

In general, there have been two schools of thoughts in economic development theories and strategy, that Economist, policy maker, and politicians adopted to achieve industrialization. The first one is, free market,/openness which is the current most popular development strategy. The second was protection/government intervention, which was most popular in the 1950's, and 1960' s. The two strategies could be classified as balanced or unbalanced development model.

Revising the strategy from historical perspective, industrialization first occurred in general Europe, particularly in Britain on the basis of innovation, then followed United States, Japan...recently the last

decades of the 20th centuries, some East Asian countries emerged. Today, many developing countries able to get in to part of industrialized world.

It is worth mentioning here that, not only we could say that development strategy is the solely important factor for industrialization from historical perspective. We should also consider countries context like petrol producing countries, which is natural driven industrialization and also the role of colonization. But most importantly we shouldn't forget also development strategy also aim to includes how to utilize resource especially natural resources endowment mentioned above.

In the other side, within the framework of economic development strategy, we have been noticed some observable overall policy taken by recently industrialized countries by the end of 20th centuries. Balanced and unbalanced growth model are adopted under the role of government intervention/protection or/and free market/oppenes.unbalanced growth model will take the main productive sector in the economy such as manufacturing, agriculture, service (tourism). Here what matter most is comparative advantage of the country from the global perspective?. I will focus on agriculture as the main productive and leading sector to the pace of industrialization, which is the main intention of the paper.

2.3: The role of agriculture to the pace of Industrialization

No doubt that agriculture has a potential to contribute to industrialization through providing row materials, source of income, government revenue, creating demand for agriculture input and foreign exchange, food security especially for most of developing counties where their economy depend on agriculture level.

Agriculture would play a major role especially for those countries, do have great comparative advantage in the agriculture sector. Ohno (2009) points out in his paper titled "Political Regime and Development Policies" that, "We do have historical examples in which agriculture grew relatively strongly prior to the

period of full-scale industrialization and provided resources for industrialization through taxation and foreign exchange earnings (for example, silk and tea exports in late 19th century Japan, rice and sugar production in Taiwan up to the 1960s, and the rice export tax of Thailand up to the 1980s)".

In the other side, papers showed that agriculture creates strong production linkages and stimulate demand in the development process. It has been first reason most low level develop countries adopt agriculture led and rural development to achieve industrialization. Increasing the productivity and the income of the agriculture sector will creates increase in demand of industrial output and release of like labor resource to allocate to the industry sector.

Again Many papers and researches showed that , beside the role to industrialization process, agriculture can contribute a significant role in fighting against poverty alleviation By increasing farmers income directly through the adoption of improved techniques which increases agricultural output and therefore their revenue, By increasing the assets farmers Switch from unproductive to productive savings (bank vs. jewelry) ,Enhanced property rights through land distribution/land reform Human capital=(education, health)and By generating non-agricultural employments a source of additional income.

2.4: The major determinant factors of Industrialization

Recall that, we said that Industrialization started in Britain on the basis of innovation. Then followed other industrialized countries as we observed nowadays in NICs. Many attempts and debate have been made for the determinants factors of these countries. Here we can take South Korea experience as a good model to get out important lesson from it and to answer our topic here. South Korea is one of the late industrialized countries, which has transformed her economy from basket case to power house. Korea was one of the poorer countries in the 1950's.the question here is how could Korea achieved this within a short period of time. There have been different attempts and explanation has made.

World Bank, *The East Asian Miracle* (1993), points out major factors that has made the miracle happened, what he called High-Performing Asian Economies (HPAEs) including south Korea has followed state development model which is high government intervention had made the miracle happen. These includes selective intervention in terms of providing incentives and credits, trade openness and technological transfer, strong macroeconomic monitor to stabilize the economy are among the major assertion made by the report.

Professor YOO, Jungho pointed out to his paper, engaging in the international market is the most important factor has made a big influence to industrialization process. “The result suggests that the rapid pace of growth and industrialization of NICs was mostly thanks to the large world market, the benefit of which was not available in the 19th century but waited to be tapped in the second half of the 20th century, Thus, if the experience of rapid growth and industrialization in East Asia is going to be called a miracle at all, it would be better to call it a “20th century miracle” than “East Asian Miracle.”

The Other factor mentioned is the competitiveness of Korea in the 1960's. The Korean export boom in the 1960's had introduced the first Korea competitiveness to the world. According to professor Jungho YOO, the monetary policy was the major factor for the expansions of export performance rather than the government intervention and market liberalization, in his paper, *How Korea's Rapid Export Expansion Began in the 1960s: The Role of Foreign Exchange* ‘three devaluations in quick succession in 1960 and 1961 that nearly eliminated currency overvaluation were the main reason for the beginning of the rapid export expansion’ (Yoo, 2008). but many scholars give emphasize the role of government for the export boom at that time. Rodrik wrote in his paper titled, “Getting Interventions Right: How South Korea and Taiwan Grew Rich,” the government intervention in removing what he called “coordination failure” so that expansion of domestic investment which then led to export boom. Amsden, assert that in her paper “Industrializing through Learning” emphasis government intervention in exchange rate and state subsidy what she called making price wrong so that to make more competitive in the international market.

Chapter -3: The Ethiopian Economy and Defining ADLI

The performance of Agriculture in Africa and Ethiopia

The performance of Ethiopian economy particularly agriculture and Industry sector.

Defining ADLI, its framework and theoretical argument in Ethiopia?

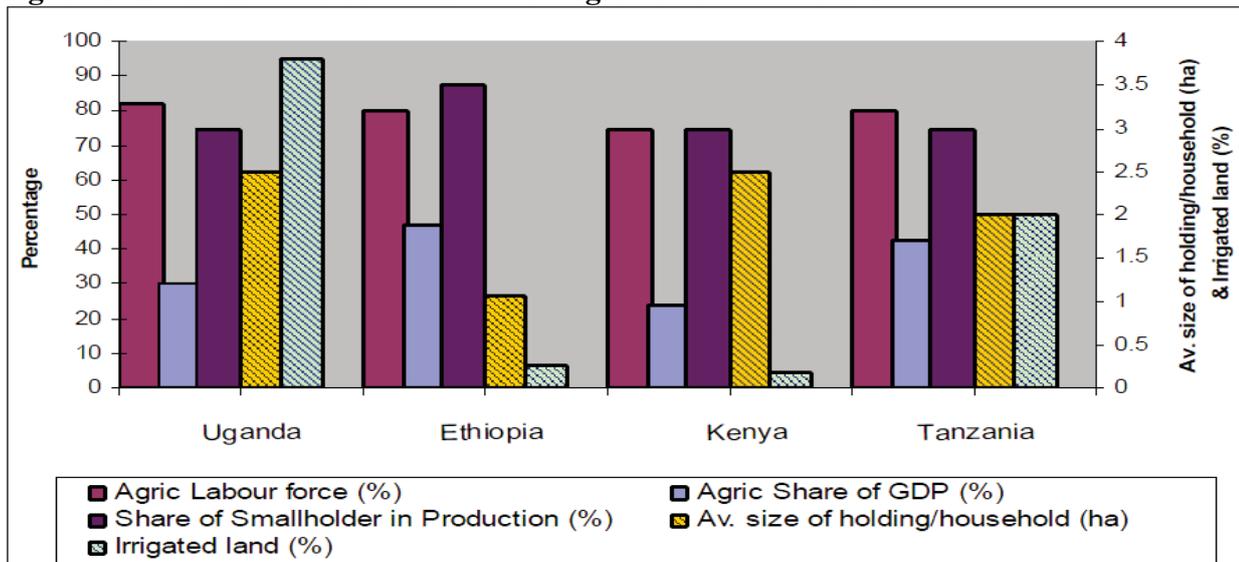
3.1: The performance of agriculture in Africa and Ethiopia

Agriculture took the lion share of the economy in most sub-Saharan African countries including Ethiopia.

United Nations Economic and social council (2007), in its Africa Review on Agriculture and Rural Development reports, “Agriculture is the backbone of Africa’s economy. About 70% of Africans and roughly 80% of the continent’s poor live in rural areas and depend mainly on agriculture for their livelihood. The sector accounts for about 20 % of Africa’s GDP (ECA, 2004), 60% of its labor force and 20% of the total merchandise exports (CAADP, 2003). Agriculture is the main source of income for 90% of rural population in Africa (ECA, 2005)”.

Smallholder farm is the other salient feature of African agriculture, which is source of 80 % production, and 90% of employment. Salami (2009) points out in his paper titled “Smallholder Agriculture in East Africa”, Over 75 percent of the total agricultural outputs in the four countries: Uganda, Kenya, Ethiopia, and Tanzania- are produced by smallholder farmers with farm sizes of about 2.5ha on average, producing mainly for home-consumption, and using traditional technologies. Limited commercial and semi commercial production also occurs. Besides, less than 4 percent of total land area is irrigated. Based on FAO and AfDB report, he showed the share of smallholder farmers in terms of production and labor force share for four east African countries.

Figure 2: Economic Contributions of the Agricultural Sector in 2007



Source: AfDB (2009) and FAOSTAT (2009).

Productivity

Increasing productivity is a major factor for the structural transformation and to allocate resource to other non-agricultural sectors. But, African’s agricultural productivity is very low compared to other continents performance.

Until recently, the African agricultural landscape was characterized by sluggish growth, low factor productivity, declining terms of trade, and often also by practices that aggravated environmental problems. Since the late 1970s to mid 1980s, many African countries have implemented macroeconomic, sectoral and institutional reforms aimed at ensuring high and sustainable economic growth, food security and poverty reduction. Some recent agricultural growth accelerations notwithstanding, the sector’s growth remained insufficient to adequately address poverty, attain food security, and lead to sustained GDP growth on the continent (Dessy et al., 2006 and World Bank, 2008).

Again Salami (2009) points out that, agriculture productivity in most African countries interims of yield per hectare and value added per worker which is less than half what world average yield per hectare and value added per worker produced.

3.2: The performance of Ethiopian economy

No doubt that, Ethiopia has registered a double-digit growth for the last consecutive years. There are a lot of improvements has showed in many economic sectors namely, construction, health, education e.t.c. However, the economy still explained by basic subsistence agriculture. still Agriculture took the lion share of the economy. beside, 85% of working force and 75% of export also explained by agriculture sector.

3.1.1-Review of political and economic development from historical perspectives

The performance of the Ethiopian economy mostly explained and has been determined by natural phenomena and political influence. Here we will try to revise the topic looking from the Imperial Regime (1950-1974), then Military (Derg) regime (1974-1992), finally will see the current regime since 1993.

The Imperial Regime (1950-1974)

Has had experience of an absolute monarchy. Feudalism was the major political and social system, adopted during the imperial regime. Like the state of early development most of African, Latin America, and Asia countries, policy maker at the imperial regime also adopt market economy with capitalist mode of production. Export promotion –Import substitution that was a famous policy strategy for industrialization. Beside, they encourage urban-based model and FDI as part of the main pillar of development strategy. However, the economy was explained by immature market economy that lacks major determinant factors of market economy. Worth mentioning here, the silent feature of the regime is land ownership, which was monopolized by landlord tenants assigned by the king based on ethnic group. It had been creating a frequent challenge and violence from students' revolutionist, politician, and other social right activities.

Military (Derg) regime (1974-1992)

After the military junta took power, made a paradigm shift from the feudal system to Marxist Military government system. Following the collapse of imperial system, derg nationalized all private property including industries and large commercial farm. “The government revolution plan was designed to destroy what is called “barriers to development” that is named as being imperialism, feudalism and bureaucratic, capitalism. The Derg become a repressive totalitarian autocracy, and violated human rights. Its economy reached a point of collapse by being overstressed by long wars and drought and misguided economic policy” (APRM, 2008)

The current regime since 1993.

After the fall of the derg regime the new party, The Ethiopian People's Revolutionary Democratic Front (EPRDF) had made a lot of reform, which is a paradigm shift from a central state controlled system to a free market. Followed the policy much state enterprise had liberalized to the private sector. Macroeconomic measures including devaluation of exchange rate, opening to the international market, flexible price control and market oriented strategy.

Most of the economic policy is frame worked under the umbrella of Agriculture development led to industrialization (ADLI). On the report of evaluation of the European commission's country strategy for Ethiopia wrote “The economic policies at the beginning of the period under evaluation were expressed in: (i) Ethiopia's Economic Policy during the Transitional Period (November 1991); (ii) An Economic Development Strategy for Ethiopia (February 1994), and the Ethiopian People's Revolutionary Democratic Front (EPRDF) Five Year National Development Programme 1995-2000 (May 1995). In addition, there have been annual Policy Framework Papers (PFPs) agreed with the Bretton Woods Institutions (BWI) since 1992. The main thrust of the economic policy was the policy of Agriculture Development Led Industrialization (ADLI). The transition document emphasizes the development of the private sector and progressive withdrawal of the public sector from productive activities. Key

components of the EPRDF's Programme included encouragement of the private sector in agriculture, transport and exports with support through land, training, technical advice and credit, as well as the provision of economic and social infrastructure such as schools, health posts, roads and clean water supply. The PFPs of the early to mid 1990s focused on macro-economic stabilization, reforms in investment and banking, and structural reforms including privatization of selected industries and opening of the economy to foreign investment”(*MWH,2004*).

3.3: ADLI, its frame work and theoretical argument

The ADLI strategy resulted as a synthesis of the Neo-liberal Washington Consensus Model and a critical examination of the State-led developmental Model pursued by Taiwan and South Korean. As narrated by the United Nations Economic and Social Council (ECOSOC), some of the distinctive features of ADLI include: Commercialization of smallholder agriculture through product diversification; a shift to higher-valued crops; , Promotion of niche high-value export crops; ,Support for the development of large-scale commercial agriculture, Effective integration of farmers with domestic and external markets; and tailoring interventions to address the specific needs of the country's varied agro-ecological zones. (UNECA,2007)

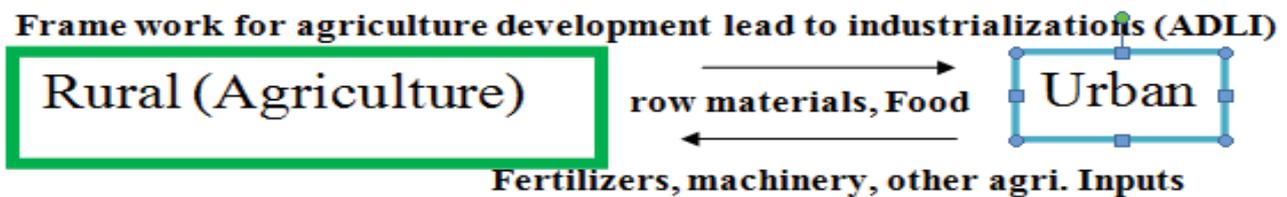
Based on ADLI document, objective of ADLI is to strengthen the linkages between agriculture and industry by increasing the productivity of small scale farmers, expanding large scale private commercial farms, and by reconstructing the manufacturing sector in such a way that it can use the country's human and natural resources.

“Ethiopia began transforming its agriculture in the mid-1990s after the EPRDF-led government formulated a development strategy centered on agriculture. The strategy, which is known as the Agricultural Development Led Industrialization (ADLI), sets out agriculture as a primary stimulus to generate increased output, employment and income for the people, and as the springboard for the

development of the other sectors of the economy. A ‘green revolution’-like intensification of smallholder agriculture was seen as central by the government in implementing the strategy” (Keeley and Scoones, 2000)

Agricultural Development led industrialization strategy of Ethiopia states that the growth in Agriculture will induce overall economic growth, through structural transformation, by stimulating demand and supply. Reflects the process of industrialization should build on domestic inputs .This strategy involves high public investment concentration towards the agriculture and continual increase in public spending (lulit,2010)

Figure 3:Frame work for ADLI



“On the demand side, expansion in agricultural activities will increase demand for industrial products (both agricultural inputs and consumer goods) produced by domestic industries. On the supply side, the agriculture sector can supply food to domestic market, raw materials to industries and export products” (Diao et al, 2007).

Theoretical argument

Arguments on the major challenges to implement ADLI in Ethiopia

Labor Force Growth:

Tsegaye (2009) points out in his paper titled “Labor Force Growth and its Effects on Ethiopian Rural Economy” that, “Government solution is to promote small holding through improved technological

inputs (chemical fertilizer, improved seeds, better cultural practices and expert support) and commercialization of smallholder agriculture. The focus of the government on smallholder agriculture emanates from the conviction that small scale farms, unlike big scale farms, do not need much capital. Small farm is efficient in a country with very low saving and limited availability of capital. The government believes that land and labor are excess and would be combined to produce more without the need for too much capital” (Zenawi, 2008).

The strategic thinking that small-scale farms provide employment and income to millions of people in rural areas is not working as desired. As we saw in this study the potential of small-scale farms to provide jobs for growing labor force is exhausted. Annually there is an addition of one million labor forces in rural area and the government, if pursued with its strategy must provide more land for new comers to create employment. But there is an acute land scarcity and the government cannot provide land to all new labor entrants. If the government continues business as usual there will be a growing agriculture involution. Farmers’ application of more labor to land than was optimally necessary in order to raise output leads to low agricultural labor productivity.

Declining farm size and tenure security

There has been a decline farm size in the rural area because of rural population growth Samuel (2009) points out in his paper titled “Intensification of Smallholder Agriculture in Ethiopia” that, “Smallholder agriculture in Ethiopia is not only facing tenure insecurity problem which the government has been struggling to address recently, but also declining farm size and high farm fragmentation, which again is partly attributed to the existing land policy. Agriculture is predominantly smallholder agriculture where over 85% of farmers cultivate farms less than 2 hectare. In 2000 cropping season, more than 87% of rural households operated farms less than 2 hectares; 64.5% of the total rural households operated less than one hectare; while 40.6 % operated farms of 0.5 hectare and less (CSA, 2002; Workenh, 2005). Such

small sizes of farms are fragmented on average into 2.3 plots. About 11% of farmers were reported to be landless in 2002” (EEA, 2002).

Although evidences show that productivity is higher for small farms than for bigger farms, “Ethiopian farms are extremely small to use modern technology and increase productivity and boost production. Especially the marketing surplus has diminished substantially over the last 7 years. Farm size declines from year to year because of the increasing rural population. Rural-urban migration is very low due to restrictive land policy and limited expansion of urban areas. Urbanization - measured by the proportion of people in urban areas is very low and does not change at all over the last couple of decades” (Woldehanna et. al. 2008).

Production linkages

Tsegaye (2009) points out in his paper titled “Labor Force Growth and its Effects on Ethiopian Rural Economy” that, agriculture has weak forward and backward production linkages with the secondary sector (industrial sector). The agricultural sector in Ethiopia is very traditional and the demand for modern inputs is small and the small demand is to a greater extent satisfied by imports (such as fertilizer and insecticide). As a result agriculture is not contributing to industrialization as suggested by the policy framework. The Ethiopian agriculture is dominated by small holders in which substantial proportion of farm output is consumed by the producers themselves and little is left for marketing to be used as raw materials for agro-processing. Studies indicate that close to half of the Ethiopian small farmers are net buyers and produce mainly for own consumption indicating its weak link with the market and/or with the non-agricultural sectors. The growth of agro-processing industries is limited and many of the oil processing/producing industries had difficulty to obtain raw materials from the domestic agricultural sector over the past decade such as oil seeds and wheat. During bumper harvest, supply of agricultural products increases and become beyond the amount that could be consumed by the existing urban people

(although recently after 2003, this has been changed due to global shortage of food and inflation). Non-agricultural sector cannot use the surplus production for processing because they have not made required investment for agro-processing and the supply of raw materials from the agriculture is not sustainable and it is not huge enough to attract investment in agro-processing.

The Vulnerability of Agriculture

The poor agriculture performance can be explained in different including still lack the ability to feed its own population, employment creation, but most importantly its high vulnerable to climate change .for example

Zerihun (2009) investigate in his paper titled “A Major Constraints For The Realization of ADLI’s Targets?” that “GDP growth has mostly been the outcome of performance in the nonagricultural sector. Growth in the agricultural sector has not been stable compared to the manufacturing and service sectors. It has been extremely vulnerable to climatic variations. In the major drought years i.e. 1973/74, 1983/1984, 1993/1994, and 1997/1998 agricultural production declined by 1.2, 17, 4, and 10 percent, respectively. Severe drought was also reported in the year 2000 but its impact on agriculture is not yet made public. Good rain years such as 1982, 1986, 1992, and 1995, on the other hand, respectively brought a 13, 19, 6, and 15 percent growth in value added in agriculture. Most of the remaining years, which exhibited positive growth rates were years of recovery” (Zerihun, 2009).

Chapter 4: Data Description and Empirical Analysis

In this section we present our descriptive and econometric results. In the first sub-section we analyse and discuss the correlation between agriculture and industry growth rate. Next we estimate the impact and the strength link between the industry sector with the agriculture and other potential hypothesized selected variables also will be included (agriculture growth, investment, power supply, urbanization, per capital income, inflation, exchange rate, debit, and deficit. final section we will see the effect of agriculture to the industrialization as a source of raw materials and national revenue.

4.1-Empirical Approach

Results

A. Agriculture impact to the national GDP growth

The national GDP growth rates much depend on non-agriculture sectors rather than agriculture growth rate. i.e. services and manufacturing. See the above table.

Table 3: Average growth rate and average share of major sectors by regime

Item	(1950-1974)/Imperial Regime/		(1974-1992)/Derg regime/		(since 1992)/current regime/	
	Growth rate	share	Growth rate	share	Growth rate	share
Agriculture & Allied Activities	1.21	60.07	1.30	47.33	6.8	45.8
Total Industry	3.31	13.68	1.89	16.02	9.5	12.8
Manufacturing	5.19	4.34	2.86	7.11	7.9	5.2
Total Services	2.09	26.24	2.37	36.65	11.3	41.4
GDP @ Constant Basic Prices	1.04	100	1.66	100	8.7	100

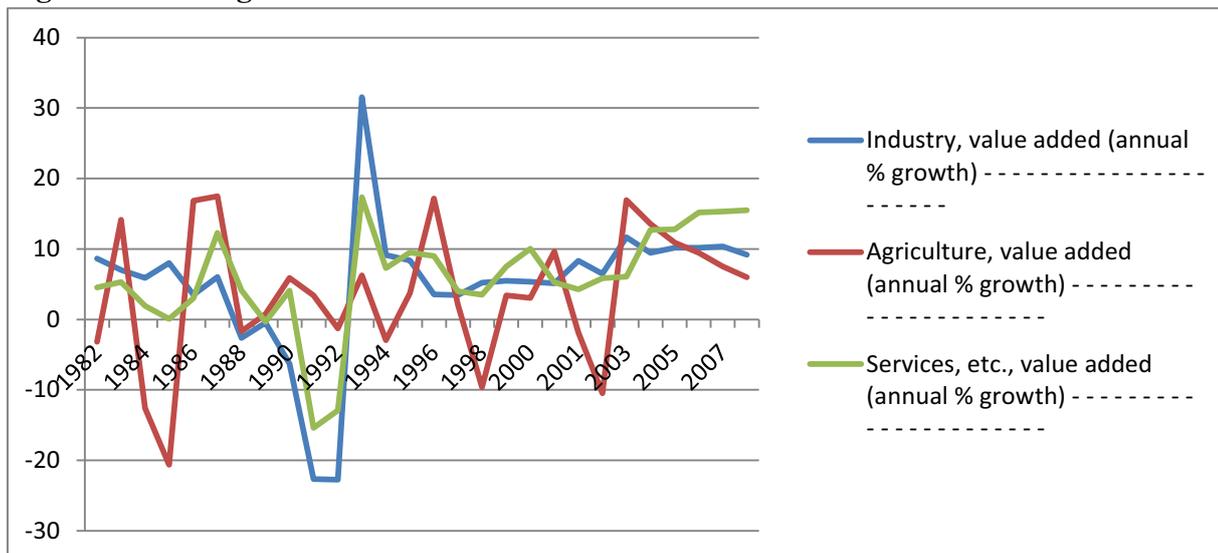
Source: Authors calculation based on MOFED data

Structural Transformation

One of the major objective of ADLI is to increase the industry sector specially the manufacturing sector in terms of growth, structural share of output and employment share in the economy in the long run .The following part analyze this sector, its share, growth,& production output over-period of time to evaluate the validity of ADLI

As table 3 showed, the growth & share of the manufacturing sector has been underperforming. Still the sector has experienced low implementation before and after the policy. Despite a higher growth rate has experienced during the policy, the share of the manufacturing sector remains 5% .The service sector has showed a tremendous growth rate and structural change in the economy, which supposed to be the industry sector.

Figure 3: Sector growth rate from 1982-2009



Source: Authors calculation

D.The impact of agriculture to industrialization as a source of Revenue

The other potential area that, agriculture provide resources to finance national industrial development through taxation. Based on time series fiscal data on national government revenue, agriculture has contribute only 2% of total revenue, which is very small compared to other countries who has

experienced industrialization in the course of, agriculture provided resources for industrialization through taxation.

Table 3: government Revenue for selected year 1986, 2000, and 2007

	Value in thousands ET birr			percent of total revenue		
	1986	2000	2007	1986	2000	2007
Agricultural Income Tax	53.611	82.539	113.078	1.006	0.882	0.991
Rural land use fee	45.560	77.155	108.376	0.855	0.825	0.950
non-Agricultural Income Tax	5229.425	9196.904	11192.204	98.139	98.293	98.060
Total	5328.6	9356.6	11413.7	100	100	100

Source: Authors' calculation, based on MOFED data

D. Multiple Regressions

Specify the model

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon_{im}, \dots \text{eq (1)}$$

Where: Y = Growth rate for the output of the industry sector,

X1= Growth rate of Agriculture, value added (2000,Constant)

X2=Trade openness as a percentage of GDP

X3= Growth rate of Gross capital formation i.e Investment

X4=Electricity production and usage growth

By estimating equations (1) for the time series data starts from 1990-2010, we can obtain parameter estimates of the hypothesized selected variables including agriculture sector. (Figure 2.1 and Table 2.1). See fig 3;. The regression equation can be presented

$$Y \text{ (predicted)} = \alpha + b_2 X_2 + b_3 X_3 + \epsilon_{im} \dots \text{eq (2)}$$

Where: Y = Growth rate for the output of the industry sector,

X1= Growth rate of Agriculture, value added (2000,Constant)

X2=Trade openness as a percentage of GDP

X3= Growth rate of Gross capital formation i.e Investment

X4=Electricity production and usage growth

X4=Electricity production and usage growth

Table 4; OLS regression Parameter Estimates

R ²	0,701		
Adjusted R ²	0,621	n	20
R	0,837	k	4
Std. Error	7,098	Dep. Var.	INDUSTRY

ANOVA table

Source	SS	df	MS	F	p-value
Regression	1.772,1041	4	443,0260	8,79	,0007
Residual	755,7239	15	50,3816		
Total	2.527,8280	19			

Regression output

variables	coefficients	std. error	t (df=15)	p-value	confidence interval	
					5% lower	5% upper
Intercept	-5,9283	3,0808	-1,924	,0735	-6,1248	-5,7319
Agriculture	0,7146	0,3991	1,790	,0936	0,6891	0,7400
TRADE	0,2860	0,1061	2,696	,0166	0,2792	0,2928
INVESTMENT	0,1888	0,0932	2,025	,0610	0,1828	0,1947
ELECTRICITY	0,5806	0,4276	1,358	,1946	0,5533	0,6078

From table 4, the sample data support the research believes at 5% level of significance for trade 10% for Agriculture and Investment, more than 10% for Electricity.

Engaging in the international market (trade), investment and growth in the electricity sector have showed a positive impact to the industrialization growth.

A one-percentage growth in agriculture will increase the industry sector by 0.72-percentage point. The growth of agriculture has showed a positive impact on the industry growth at 10% level of significance.

Agriculture clearly has positive impact on industrialization in Ethiopia. One way to the other, to mention some, agriculture still will continue and contribute as a source of growth, employment, foreign currency, and raw material. Half of the economy still explained by agriculture, thus It is still relevant to adopt ADLI policy.

However, industrialization in Ethiopia has felt to achieve its goal in terms of structural transformation .Here the question is then why then still a challenge to shift from low productive sector to

high productive sector such as manufacturing sector. How can then possible to materialized ADLI.is there any missing policies or institutional issues. The next part will discuss, investigate, and analyze these questions.

4.2. Discussion and analysis

No doubt that, Ethiopia has registered remarkable economic growth after the adoption of ADLI.Agriculture also has contributed to the national economy through employment, source of raw material for the industry sector, 80% of export earning. Taking agriculture as a leading & priority sector in Ethiopia is not an option specially when you start at low level, and also majority of the population relied on it.

Next the paper discusses, deficient implementation as a major challenge to materialized ADLI , and two policy options, that should be synchronized and give emphasis under ADLI framework in order to achieve fast structural transformation.

Ethiopia in general and Africa in particular had failed to transform their economy since 1950,were conscious policy starts. Both the 1960's/70's government led /protectionist policy and open/free market policy of 1990's didn't work well for most of sub-sharan countries. However, successful industrialized countries had proved that the role of government and strong intervention policy by the sate specially at the transformation time were not an option but it was an indispensable process for their development, such as, western countries, Asian tiger, and China industrialization process.

4.2.1.Deficient implementation

Problem

Designing and adapting a national policy is one thing, but implementing to the ground need a strong commitment and implementation capacity. No doubt, Coordinate, follow up, evaluate, and monitor planned policies like ADLI requires national and regional level implementation capacity. According to government national implementation report, the major **Deficient implementation** problems since ADLI

introduce is related to lack of strong regulatory capacity at national, regional and sub regional level and lack of appropriate resources specially skilled human resource and infrastructure.

To enhance implementation capacity government and donors has adopted different strategy and reforms during ADLI period both national and regional level.

Mohammed in his paper titled, challenges and opportunities 2012 wrote, public sector capacity program which is funded by the World Bank and is intended to enhance the implementation capacity of the regional institutions as well as strengthen the democratization and decentralization process in the regions. The main components of the program include: civil service reform, district level decentralization program, urban management reform, justice system reform, tax system reform, and information communication technology improvements.

Government has done a lot to strength human capacity interims of expenditure in education; training and knowledge transfer from abroad. However, these challenges remain and continue to be major implementation problem.

Implementation capacity problem should also not only be addressed from the agriculture sector and Government. The private sector is crucial for the engine for transformation in the agriculture and manufacturing sector. Thus; it requires Public-private partnership and led industrialization. Rodrik (2007) attempts to develop a framework for conducting industrial policy that maximizes its potential to contribute to economic growth while minimizing the risk that it will generate waste and rent-seeking. According to him the right model for industrial policy is strategic collaboration between the private sector and the government with the aim of uncovering the most significant obstacles to restructuring and determining what interventions is most likely to remove them. Thus the emphasis should be on how to design a setting in which private and public actors come together to solve problems in the productive sphere, each side learning about the opportunities and constraints faced by the other. The right way of thinking of industrial policy is as a discovery process—one where firms and the government learn about

underlying costs and opportunities and engage in strategic coordination

4.2.2. Creating room for marketing

Problem

ADLI strongly believe that smaller holder farmers generates wealthy, thus can transform the economy .However, without sustainable market for each stage of production, it is difficult to think about wealthy. As the experience of most industrialized countries showed that, they could create huge domestic or external market for their strategic sector at least at the transition time. Limited access to market due to lack of information and infrastructure development are the major constraints for market space In Ethiopia, coffee and some oilseeds crops are considers as a strategic and successful agriculture products contributing through trade as a source of foreign exchange.

Secondly, Agriculture production and productivity has showed improvement under ADLI policy. However, majority of peasants are still subsistence traditional agriculture production methods. AS the same talking, despite improvement has showed in some selected manufacturing sector, still the whole sector is explained by underdeveloped.

Lack of market space both of the farm gates & those in the manufacturing sector especially agro-processing industries is a major reason for under development of manufacturing sector and lack of modern agriculture practice. Lack of market for produced goods and service means lack of capital ,which in turn no incentives to have investment for information,technology,and modern agriculture inputs, which ultimately creates constraints for smaller holder farmers to produce desired standard for manufacturing sector in terms of quantity and quality.

Government should take the lead, thus play the major role by directly intervening or coordinating all stakeholder working on creating market for smaller holder farmers products, and creating linkage

between sectors through marketing.

There are a number of measures can be taken by the government to create market space for at each stage of production & facilitates, and linkage between agriculture and Industry. At domestic level it is needed to establish commodity exchange & commercial institution at regional level and farm gates.

These institutions will serve as an intimidator between the producer, and consumer in the country and global market, by providing information and investment finance & business development service to improve profit for producer .In addition they can work on related to marketing, marketing information, management, advertising, and distribution.

Secondly, Trade policy concerning import and export measures should be taken in a consistence base to create favorable environment for smallholder farmers to compete and integrate to domestic & external market. Engaging in the international market is a crucial factor today's hyper connected world to achieve industrialization. As many researcher agreed, the world market has tremendously increased for the last decades, which was not available before. Both import and export policy tools should be take. Export policy measures could be incentives, credits; priority should be given to access foreign exchange currency, and manipulation of exchange. Import policy measures could be tariff or non-tariff measures depending on the sector, commodity, and geography.

4.2.3.Creating competitive capacity

Problem

We are living in a hyper competitive and hyper connected world. It is not enough only to create conducive environment for market space measures such as mentioned above. Most developing countries are still challenged by internal capacity in terms of modern production, managing, & distribution of their produced goods and services to compete specially in the international market. Ethiopia is not different in this case, she is a victim of still under development of agriculture, industry,& service sector. Let alone competing in the global market, the domestic market also weak in terms of sectoral linkage ,thus this

also simply observed on trade deficit balance. More than 70% of domestic manufacturing inputs have been imported from outside market. Majority value added consumer goods also purchased from international market. Capacity problem clearly observed in production, managing, distribution, & marketing promotion.

Again ADLI as a policy properly address the comparative and the competitive capacity of the country in its framework. Specially industries that has a strong linkage with agriculture such as textile, leather and other agro processing industries. But didn't properly explain how issues dealt with given the big challenge of capacity problem faced in agriculture and industry sector.

Again the role of government is crucial, by intervening through policy guide and direct public investment. Civil society & donor cooperation also can play important role through expertise & financing government policy.

As the experience of most successful industrialized countries showed strong government intervention measures is mandatory at the transition time. To create at least a minimum standard of competitive capacity, government should aggressively invest in education, health, & public infrastructure such as port, roads, electricity, telecommunication e.t.c. The government of Ethiopia has make a good progress in this regard, but it is not relaxing stage.

Secondly, Industrial policy measures such as regulating and stimulating industries at each stage of industrial production, management, and distribution is needed. Areas of intervention and tools could be investment incentive through taxation and capital, technology policy, foreign direct investment (FDI), migration and labor policy are the major areas that government should workout to increase competitive capacity of the economy as a whole.

Chapter – 5 Conclusion and recommendations

5.1-Conclusion

- Despite, there are many constrains in the agriculture sector such as weak Structure mode of production and institutional configuration, Weak Rural-urban linkages, Terms of trade and volatility of price of agriculture products, the Ethiopian government (new regime, 1991) took agriculture as leading growth strategy to achieve industrialization. However the strategy has not brought the anticipated goals when we talk about structural transformation.
- The Ethiopian economy is still dominated by the agriculture sector; the structural transformation is weak. The industry share still ranges between 9%-12%.productivity is less than half of what world average yield per hectare and value added per worker produced in Africa in general and Ethiopia in particular. And the agriculture sector is still explained by still rain dependent and traditional subsistence farming.
- No doubt that agriculture has a potential to contribute to industrialization through providing raw materials, source of income, government revenue, creating demand for agriculture input and foreign exchange, beside food security and job creation, especially for most of developing counties where their economy depend on agriculture. However, the role of agriculture is not significant to the industry sector as showed from quantitative and qualitative analysis results above in chapter 4.
- Based on the evaluation of ADLI, The policy would be effective if the issues of marketing and competitive capacity were properly address under the policy framework.

5.2-Recommendations

- I, the writer of this paper also believe that, Ethiopia has a strong potential and comparative advantage in agriculture and taking agriculture as a leading sector to achieve industrialization. However, the government should develop and adopt a sound agriculture policy from best experience and reconsidering the major constraints mentioned here in this paper such as deficient implementation, property right related to land tenure security and low productivity of small holder farmers.
- High agriculture productivity plays a major role in structural transformation. and to allocate resource to other non-agricultural sectors as the case of Green revolution in India and other Asian countries. Thus, it had been Research based agriculture products and technological transfer.
- Government should also follow a balanced growth model rather than following rural based strategy and agriculture as a leading sector (ADLI) to achieve industrialization by encouraging non agriculture sector and urbanization.
- Engaging in the international market is also a good experience from the late industrial countries like South Korea, china and India, and will play major role on the pace of industrialization.

APPENDICES

APPENDIX A

Year E.C	year G.C	Industry(GR)	Agriculture(GR)	Trade as % of GDP GR	Gross Capital Formation (GR)(Investment)	Electricity consumption Growth
1983	1990/91	-30,5	-1,4	-12,0	-5,0	3,00
1984	1991/92	-5,0	1,5	-37,2	23,9	3,04
1985	1992/93	34,0	-0,2	66,0	98,4	3,87
1986	1993/94	8,2	1,8	30,8	13,2	5,85
1987	1994/95	8,9	4,8	15,3	29,7	5,11
1988	1995/96	7,5	6,7	-5,0	15,0	5,50
1989	1996/97	2,7	6,2	22,0	15,0	-7,35
1990	1997/98	0,1	-1,9	10,9	2,1	4,86
1991	1998/99	8,2	-1,7	5,8	7,7	3,64
1992	1999/00	3,6	0,6	-0,8	8,3	1,65
1993	2000/01	1,3	3,6	10,0	9,6	3,33
1994	2001/02	0,8	-1,2	3,9	1,6	9,67
1995	2002/03	6,6	1,0	14,1	39,3	4,84
1996	2003/04	12,8	6,4	8,8	11,4	6,58
1997	2004/05	10,6	13,5	-0,4	31,2	7,89
1998	2005/06	8,3	11,1	-11,2	33,5	8,85
1999	2006/07	10,3	9,2	-5,7	26,6	13,61
2000	2007/08	9,1	7,7	-7,2	34,5	4,85
2001	2008 /09	11,6	7,2	2,8	13,3	5,00
2002	2009/ 10	12,1	7,7	20,8	52,6	2,49

E.C-Ethiopian Calendar

G.C-Gregorian Calendar

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