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THE IMPLICATIONS OF AN AGRICULTURAL DEVELOPMENT-LED INDUSTRIALIZATION (ADLI) STRATEGY TO THE ETHIOPIAN ECONOMY: AN ARGUMENT ON SELECTED ISSUES

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Acronyms and Abbreviations

ADLI	Agricultural Development-Led Industrialization
AFIRST	Agriculture First
AGDP	Agricultural Value Added
AMC	Agricultural Marketing Corporation
ATRICK	Agricultural Trickle Down
BBC	British Broadcasting Corporation
CADU	Chilalo Agricultural Development Unit
CSA	Central Statistical Authority
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GR	Green Revolution
HYIT	High Yielding Improved Technology
HYV	High Yielding Variety
IPE	Industrial Public Enterprises
ICOR	Incremental Capital Output Ratios
IGDP	Industrial Value Added
ITRICK	Industrial Trickle Down
LEIA	Low External Input Agriculture
MLSI	Medium and Large Scale Industries
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOI	Ministry of Industry
MVA	Manufacturing Value Added
PMAC	Provisional Military Administrative Council
SGDP	Services Value Added
SSI	Small Scale Industries
TGE	Transitional Government of Ethiopia
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization

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CHAPTER I
INTRODUCTION

1.1 Statement of the Problem

The development problem of contemporary developing countries of the world is to transform their agrarian society into an industrial one. Such economies are predominantly characterised by subsistence or near subsistence production structures. Ethiopia is one of the least developed countries of the world. The economy of the country has been in crisis since the 1960's. This may be demonstrated by the economic indicators such as growth rates of the Gross Domestic Product (GDP) and per capita income, saving and investment rates, balance of payments situation, government revenue and expenditure structures, etc. All of these indicators show that the present state of the economy is unhealthy. Unfortunately none of the sectors seem better-off. Agriculture as the engine of the economy has not only stagnated but at times declined seriously. Some expansion was observed in industrial development but since it is constrained by structural bottlenecks its role in the economy is limited. The services sector on the otherhand has increased. But the expansion of the latter without a concomitant development of the goods producing sectors, i.e, agriculture and industry does mean little to the economy.

There has been a growing criticism now that one of the problems in the country is lack of appropriate development strategy. Particularly the last governments policies have hampered whatever potentials the economy had to develop. Although the adverse impact of ill-conceived policies is not disputable no one dares to conclude that they are the sole factors for the country's low level of development. Others like natural, economic and social forces did also contribute to the worse.

The Imperial government's Export-Led growth and the military regime's Import-Substitution-Industrialization (ISI) though brought improvement in the economy, from the point of view of their goal of creating a strong economy it can be said that they were not successful. Among other things, both of them share the same weakness of neglecting the agricultural sector.

The present Transitional Government of Ethiopia, partly learning from the mistakes of the past governments and partly from the experiences of other countries, adopted an Agricultural Development-Led Industrialization (ADLI) strategy which recognizes a balanced sectoral development. Given the backwardness of the agricultural sector, however, the initial stage of the strategy will emphasise on improving the productivity and production of the primary sector.

For a country like Ethiopia, where around 47 percent of the Gross Domestic Product and about 90 per cent of the exports are derived from agriculture and where more than 80 per cent of the population are making their living out of the sector, agricultural development is synonymous to national development.

In the last thirty years (1960-1990), the contribution of the agricultural sector to the GDP, decreased from 65 to 41 percent, that of industry rose from 12 to 17 percent, while the services sector showed a dramatic rise from 24 to 42 percent. This was not similar to what has happened in the early stages of development of the presently developed countries, where the development was desirable in that there was an economic transformation from an agriculture based economy to an industrialized one. In these countries even though both the agricultural and industrial sectors continue to grow the latter was developing at a much higher rate than the former. In the Ethiopian case, the lowering share of agricultural GDP was not caused by the transformation of the economy, i.e, by the growth of the non-agricultural sectors but rather it was due to the dwindling of its output. The above vividly shows how, in relative terms, the importance of the primary sector is declining.

The role of agriculture in the process of socio-economic development of a developing country like Ethiopia goes further than the provision of food for the non-agricultural population. It also should, among other things, provide raw materials for domestic industries, generate foreign exchange, release labour power to other sectors of the economy and most importantly create demand for domestically manufactured products. Especially in economies where the bulk of food items come from the primary sector, the importance of the marketable surplus of food occupies a special position in that process.

In the sixtieth and earlier the country was a surplus food producing and exporting one-as it used to be called the "Bread Basket" of the Middle East. Presently the productivity and or the production of the sector have declined to the extent that its production is even unable to satisfy the domestic food demand. This is accounted for by both natural and man made factors. However, it can be argued that the latter had a much more detrimental impact than the former. In spite of this poor performance of the sector, the development of the national economy remains dependent on the agricultural sector.

On the other hand, despite the recurrent drought which is hitting the country in unprecedented situation, the agro-ecological and climatic conditions of most parts of the country are very favourable for growing a multitude of crops especially food grains. Unlike most developed and developing countries the availability of land is not also a constraint. There are numerous lakes and rivers which could be used for irrigation and other purposes. Nowadays less

than 5 percent of the potentially irrigable land is actually irrigated. Most importantly, when this potential is matched with a hard working peasantry the prospect for its realization becomes even more apparent.

In summary, most agree that Ethiopia has an immense potential for agricultural development. But the reality today shows that the productivity of the sector is very low by all standards and its potential is under utilized. Why is Ethiopia starving while having? what is the riddle behind this? The major problem identified for research then is the existing wide gap between Ethiopia's agricultural potential and its present low level of output and/or productivity.

1.2 Objective and Scope

To enhance the development of the sector different approaches have been tried so far. To mention few from the recent past, export promotion, agrarian reform, agrarian cooperativization or cooperativization of agricultural production, state farming, agricultural market regulation, etc. None of these proved to be successful in breaking the vicious circle of agricultural underdevelopment. Under the 'food self-sufficiency' scheme, the years 1987-1989 were also declared national years of food self-sufficiency and resources were mobilized towards that strategy. Although the achievement was not as high as predicted (partly because of the drought), significant improvement was observed in terms of a rise in agricultural output. Then once more agriculture was neglected.

According to official documents released by the government the future development of the country will be guided by the ADLI strategy. Historical analysis indicates that in most countries the start of industrialization was dependent on the existence of a large over all agricultural surplus.

Although there might be no gap on the conceptual understanding and interpretation of ADLI there seems a difference on the actual system of implementing it. Some say that ADLI strategy should focus on the export sector. Others say the strategy is beneficial if it concentrates on the satisfaction of domestic food and other demands. Still others insist that the strategy should attempt in a balanced way both at the export sub-sector and the domestic market. The majority of them agree on the last approach.

The strategy adopted by the Ethiopian government also focuses on simultaneously developing the export oriented agriculture and the food producing sub-sector with particular emphasise to the former. Here even the expansion of industry is also considered a parallel activity.

Against this background, the objective of this piece of research is to attempt to make an-exante evaluation of the strategy under the Ethiopian natural, economic and political contexts. More specifically, the paper has grappled with and hopefully attempted to answer the following questions:

1. Why is the ADLI strategy chosen as the development strategy to Ethiopia?
2. What was the trend of the performance of the agricultural and industrial sectors in the past years? What does it mean to ADLI strategy?
3. How is the degree of linkages between agriculture and industry? Is it the type ADLI strategy is upto?
4. Under the framework of the strategy, How should sectoral development prioritization be formulated?
5. Can the strategy bring about significant change in the face of limited domestic resources?
6. How can the country's urgent and critical problem of domestic food production be tackled in the short-run?
7. What other bottlenecks need to be addressed for the successful implementation of the strategy?

1.3 Data Collection and Analysis

In this study, as much as possible an attempt is made to present relevant data and support the arguments forwarded. To this endeavour, largely secondary data were collected from Statistics, Journals, Radio broadcasts and other Documents. From literature and similar sources the theoretical background and research results of other country experiences are reviewed. Although it is not comprehensive primary data obtained in a field survey is also used as a case study in the analysis. The case study is basically concerned with the interview of farmers and extension agents (based on a questionnaire designed by the author of this paper) with the objective of assessing the over all environment of the farming activity in one of the best agricultural regions of Ethiopia. We believe that the information gathered in the field is instrumental in transparenting the needs of the farmers.

However, like many studies referring to Ethiopia, this also suffers from the inavailability of sufficient, detailed and coherent data. An attempt was made to construct input-output tables and to build a Computable General Equilibrium model (CGE). But due to the usual data lacunae all the effort was for no vein. Therefore we were forced to use a single and multiple regression and correlation techniques as our analytical tool. Besides distributional measures such as Lorenz curve and Gini Coefficients are calculated.

Generally this study is to be regarded as an introductory study indicating

present situations, future prospects, problem areas and when felt necessary giving suggestions for further investigation. In addition to the above mentioned problem of data scarcity, the available time and the broad problem area have made necessary to make the study general and explanatory. Even though animal products constitute about 20 per cent of the food supply, the scope of this paper is limited only to crop husbandry.

1.4 Organization

In a paper like this, it is customary to explain first the relevant theoretical framework of analysis. This is presented in Chapter II. Theoretical analysis by itself is meaningless unless it is backed by practical experiences so as to capture the reality of any individual economy or the world at large. Chapter III serves this purpose and it is concerned with the reviewing of the documented experiences of other countries (with both successful and failure histories), and the lessons that are relevant to contemporary developing countries. Chapter IV overviews the performance of the economy as far back as the 1960's. This is particularly important since it will enable us to understand precisely the state of the economy. One of the critical problems for undertaking development activities is lack of finance. Besides, inefficient utilization of available resources is also a serious but usually overlooked problem in most countries. Therefore, in Chapter V an attempt is made to discuss both issues in connection to the financing of ADLI strategy. Here the sources of finance and the allocation patterns are given particular emphasise. In the present time, we believe that there are serious problems which are not yet acknowledged by the engineers of ADLI strategy in Ethiopia but which are hampering agricultural growth. This is taken over in an elaborated way in Chapter VI. As usual, in the final chapter, Chapter VII, the paper closes the discussion by summarising the above and drawing conclusions.

CHAPTER II. THEORETICAL FRAMEWORK OF ANALYSIS

2.1 Introduction

The theoretical framework of this paper is basically concerned with the inter-sectoral development priorities in the economic transformation process of contemporary developing countries, the interdependence between sectors and the role agriculture plays in that process. However, due to the available limited space the theoretical discussion will be selective and concise.

In the next section, the contribution of agriculture to the over all economy of LDC's will be discussed. Following this is a section which attempts to give a very condensed summary of the agriculture-vs-industry-first debate. Then comes the conceptual explanation of the Agricultural Development-Led Industrialization (ADLI) strategy. Strategies which put agriculture first in the process of economic development are also reviewed and compared here. Section 2.5 presents the interpretation of ADLI in the Ethiopian context. Finally the last section presents our points of departure from the planned methodology and process of implementing the strategy in Ethiopia. The essence of the paper is revolving around these points.

2.2 The Contribution of Agriculture to Economic Growth and Development in Less Developed Countries

The transition from a traditional agrarian economy to an industrialised one is a dynamic process that inevitably involves complex interactions among many economic as well as social factors (Hwa, 1989:106). Hwa argues that "the role of agriculture in the transition varies from country to country, conditioned by factor endowments, institutional arrangements, cultural background, historical factors, policy choices, etc. "(ibid).

Nevertheless, the voluminous empirical literature on the contribution of agriculture in the transition period of most of the developed and developing countries seems to indicate that the roles that agriculture plays in the process are many fold. Hwa has identified six major and interrelated roles as presented below.

1. Agriculture generates markets for industrial products, especially light industrial ones that have ready markets in the agricultural sector.
2. it provides food and agricultural raw materials for industrial processing;
3. it builds adequate food supplies that are crucial factor in sustaining price stability;

4. it provides exports to earn foreign exchange;
5. it supplies the non-agricultural sector with capital and labour;
6. in the case of a market-oriented economy, it eases the process of industrialization through the gradual accumulation of entrepreneurship and marketing capabilities in the agricultural sector (1989, 107).

The contributions in terms of supplying food, raw materials, exportables and the creation of demand for manufactures are especially important for the majority of developing countries including Ethiopia.

The Ethiopian case will be discussed in an elaborated form in the subsequent chapters but if mention is to be made at this stage, 'agriculture was, and remains for some time in the future, the backbone of the economy'. Its importance in terms of generating foreign exchange and food are exceptionally great. Although not very much expanded, industrial raw material production can be said is also well under way. But still there remains an untapped potential as far as domestically producing some of the presently imported primary industrial raw materials (like cotton and tobacco) are concerned.

Other benefits originating from the agricultural sector; such as generation of demand for industrial products, transfer of capital to the non-agricultural sectors and price stabilization; are very much connected to the overall growth and development of the sector. Thus, given the present low level of productivity and production of agriculture, it is understandable that its significance in these areas is very limited for most of the developing countries. If agriculture is to play these roles the premise is that, *ceteris paribus*, productivity and output should increase significantly so as to guarantee higher incomes for the farming population which in turn is supposed to initiate their demand for non-primary commodities.

One undisputable role of agriculture which, due to the weak economic base of LDC's, is not utilised by the other sectors is the Lewisian effect of labour supply[1]. In almost all low-income countries the agricultural labour stock or what Lenin called the agricultural reserve army is huge and what is lacking is the receiving sector(s).

But some argue that although there is huge labour force in the sector it can not be considered as surplus labour. The justification given is that, due to the seasonality of agricultural production and given the low level of technology & labour-intensiveness of the structure of agricultural production; labour is even at times, such as during the peak season, scarce let alone that

[1] See footnote number 2 on page 12 for explanation.

it is transferred as surplus to other sectors.

Similar arguments were put forward in the case of Ethiopia. It is true that there exists labour shortage in some parts of the country during peak agricultural seasons and this is overcome through labour migration from other regions. But this can not in any way lead to the conclusion that agricultural surplus labour does not exist in Ethiopia. Three justifications may support the latter argument.

First, the argument that there is no surplus agricultural labour is based on static assumptions that technological improvement is regarded as equivalent to the employment of heavy machinery and sophisticated improvements while even small modifications of the plough and other farm tools have proven to relieve the drudgery of agricultural labour. Second, little effort with regard to the provision of information and extension related to modern practices and proper timing of agricultural activities can help reduce the excessive demand for labour during such seasons. Thirdly, the very fact of the existence of inter-regional disparities in the size and ratio of agricultural population to farm land and difference in agricultural calendar has allowed the movement of casual labour from low demand areas to areas where there is a relative labour shortage. This in turn might mean that in some areas labour can be in excess of what is necessary. Therefore this excess labour can be transferred to other sectors. The obvious proof of the existence of agricultural labour is the huge rural-urban migration in the country. A decade ago, 4.4 percent of the growth rate of Addis Ababa's, the capital, population is estimated to be due to rural-urban migration (Mulatu, 1982).

The problem of most developing countries is not that there is no excess agricultural labour but rather that the non-agricultural sector is weak in itself to absorb this surplus labour and employ it productively. Ethiopia is no exception.

Generally, in LDC's most of the above listed benefits originating from the agricultural sector, are only future promises, if any. This is simply because such developments are influenced if not constrained by many factors, natural, social, political, international, etc. And these factors are often not as conducive to development as wished to be.

2.3 Agriculture-Led Development or Primordial Industrialization?

Development economics has been confronted with the problem of finding appropriate development strategies for the contemporary developing countries whose development process is often characterised by stagnation through time.

As stated by Saith (1989:171), the process of economic growth in the developing economies in the post-war period has been characterised by a persistence, and more recently probably by an intensification of rural poverty. The majority of these countries are 'muddling through' in what is commonly called the vicious-circle of poverty.

By comparison, many African and Latin American economies have almost definitely experienced a deterioration with respect to the incidence of poverty over the recent past, 1970-1980 (ibid). ILO studies also indicate that for Africa as a whole rural poverty has been increasing in the past 10 to 15 years (ibid). The situation in sub-Saharan Africa and South Asia is particularly serious. The explanation given to such retarded or at times negative growth is related partly to the recession in the agricultural export sector and partly to the structural adjustment packages imposed by the World Bank and the IMF on the developing economies (Singh, 1985 in ibid).

The persistence of poverty in general and rural poverty in particular in Ethiopia is very obvious. This is basically due to natural (mainly drought), political (lack of appropriate development policies and political instability) and external (the unfavourable international terms of trade) factors.

As was presented above the challenge now is not only how to alleviate poverty but in general also how to start the engine of growth of the developing countries like Ethiopia. There has been a long-time debate on choosing appropriate development strategies for these countries. The major one has been the controversial issue of choosing the order of development between sectors, i.e, agricultural-led development or development through primordial industrialization? In between these views, there are others who advocate that a proper balance must be kept between both sectors so as to strengthen domestic backward and forward linkages which will enable to efficiently utilize all internal potentials. Although there is considerable difference between the 'agri-first' theories and the balanced growth approach, since both schools of thought agree on a priori emphasise on agricultural development, which is the essence of this paper, and for the sake of convenience too, their paradigm is presented here altogether.

The proponents of both views have been vigorously defending their respective positions. People like Hwa (1989), Adelman (1989), Dobb (1967), Mellor (1973), Griffin (1973), and Mundle (1985) strongly argue that, for countries which are at their earlier stage of development agriculture-led development strategy is the most feasible means towards the achievement of sustainable economic development. And they support their argument by exemplifying both the success and failure histories of the development processes of the presently developed

countries. To avoid duplication, this historical analysis is presented in chapter 3 where country experiences are reviewed.

Others like Lewis (1954), Kaldor (1967), Hirschman and Marx, on the contrary, contend that the driving force behind economic growth is growth in the manufacturing sector. According to Kaldor, "fast rates of growth are almost invariably associated with the fast rate of growth of the secondary sector, mainly manufacturing" (Kaldor, 1946:7 in Syrquin, 1989:70).

The rationale for advocating industrialization-led growth strategies lies in that; (i) the rate of return to investment is higher in industry particularly manufacturing than in agriculture, (ii) the terms of trade in the world market is favourable for manufactures than is for primary products, (iii) unlike agriculture, industry is relatively less dependent on natural conditions (for example; drought, dew, rainfall, etc), (iv) industry generates more employment opportunities than does agriculture, etc.

What caused LDC's to adopt industrialization-led strategies? Particularly for newly emerging third world countries, Saith identifies six sets of such factors of which the major five are presented below. " First, a certain level of industrial capacity was felt necessary to fulfil the basic needs (such as health, education, housing, etc) of the population after independence. Second, and most importantly, industrialization was imperative if agricultural-oriented primary product exporting LDC's were to escape the negative impacts of the international trade and growth processes. Third, there was also a desire to domestically produce industrially originating modern agricultural inputs. The other factor is related to the euphoria of transforming the economy from the present agrarian based one to industry (since the productivity of industry is believed to be higher) so as to fulfil the dream of higher income and standard of living of the citizens. Fifth, partially for an ideological reason, the process of industrialization was viewed, with much justification, as forming the backbone of projected economic independence in the new era, where by the traditional economic relationships between the imperial country and the colony would be broken. The case for import-substituting industrialization across a broad front was non-negotiable." (Saith, 1989:193).

Within the light of the current unequivocal bias in the terms of trade in favour of manufactures, some of these causality factors are believed to be justifiable even in the present time.

However, since Ethiopia has been neither a colonizer nor a colony the factors related to decolonization-driven industrialization are not relevant to the

country under study. Yet, two other factors seem worth mentioning as far as Ethiopia's recent industrialization motives are concerned. Because of the adoption of the socialist path of development after the 1974 revolution, the then socialist government felt necessary to curtail its economic ties with the capitalist world. This implied the case of an attempt to the substitution of industrial imports with domestically manufactured products. The rationale for such a choice was justified by the determination of the government to break the politico-economic dependency from the west which was seen as the ideological rival of the eastern bloc in general. The second factor refers to the ideological hang-ups of national pride and self reliance. What is also interesting here is that due to again ideological principles the major if not the only agent of the industrialization process was the state itself.

In a nut shell, Saith describes the drive to industrialization of the developing countries as:

> Common also across most countries was the perception, pegged sometimes to some shreds of theory, or simply floating on the buoyancy of hope, that such industrialization processes assisted by what Keynes called the power of compound interest, would soon banish the scourge of underdevelopment and rural poverty (1989:193).

Nevertheless, a recent analysis of Saith indicates that except for parts of Latin America, some Southeast and South Asian countries, in other countries in these regions as well as in large parts of Africa, the industrialization engine has been sluggish, or even stalled (ibid). The negative consequence of such a situation was not only the failure of industrialization but also the neglect of the agricultural sector and thus the forgone farm output.

Furthermore it is widely documented that the industrialization process of these countries was not cost-effective. This is supported by Saith when he writes, "the industrial process in the late African economies has proven to be exceedingly resource expensive, it has neither been self-financing nor self-sustaining and even apart from the negative contribution of low-capacity utilization, African industrialization is marked by exceptionally high incremental capital output ratios(ICOR)" (ibid). These higher ratios are attributed, among other things, to the need to invest heavily in weak infrastructure and other social services; the absence of an indigenous capacity and dependence on imported equipment and technology, the small economic size of the home market, and the absence of adequate local human skilled resource (ibid).

Therefore, the final conclusion of this analysis is that the failure is largely because of weak domestic capacities and thus industrialization-led growth, let alone to bring about the anticipated economic development through the Lewisian trickle-down effects[2], was even unable to support itself.

The counter-arguments forwarded by 'agri-first' advocates can be summarised as; (i) the rate of return to investment in agriculture is estimated to be not less than that of investment in industry (World Bank, 1982 in Adelman, et.al, 1989), (ii) the investment required is relatively smaller for agricultural development than the alternative industrialization, (iii) in terms of distributional impacts, for most of the developing countries, development in agriculture has a higher distributional dimension than industrial expansion, (iv) agriculture must be able to supply raw materials and food for domestic manufacturing enterprises since for sustainable development such enterprises are expected to be largely domestic raw material oriented.

Such a debate is still presently underway in academics so far as discussions related to the engineering of appropriate development strategies for developing countries are concerned. However what is commonly understood and accepted by most people is that there is no any universally recommendable strategy of development across the board. Countries are different in their resource endowments, institutional capabilities, natural environment, location, etc. and accordingly so different should their development strategies be. This does not, however, mean that all contemporary developing countries should necessarily follow dissimilar paths of development and ones experience can not be a lesson to the other.

Agriculture is directly or indirectly linked to almost all sectors of any economy although the degree might differ from economy to economy or country to country. In most of the cases the linkage with the industrial sector is relatively a strong one.

As Hwa put it, usually the relationship between agriculture and industry is one of interdependence and complementarity (op.cit). Agriculture provides inputs (food and raw materials) to industry whereas industrial supplies of modern agricultural inputs, advanced technological innovations and consumption goods are meant for the primary sector. Many studies (for instance Hwa, 1989 and Mellor, 1973) have proven this interdependence.

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[2] In the Lewisian Trickle-down theory of development, agriculture is only expected to supply labour to industry where as the later in return sends capital, improved technology & consumption goods in the opposite direction so as to initiate the growth of the former. See Saith (1989) for more explanation and critics.

In a cross-country study of eighty-seven countries for the 1970's, for example, Hwa found that the growth rate of agriculture has a statistically significant influence on the growth rate of industrial production which confirmed his hypothesis that countries with the above-the-norm performance in industry are also those associated with the above-the-norm performance in agriculture over the development process that is manifested through a continuous rise in per capita income (ibid).

The work of Hwa additionally revealed that growth in agriculture further induces productivity increases and, therefore, facilitates overall economic growth. In this regard, the contention of Mellor (1989) is not different when he says, " Developing countries must turn to agriculture if technological change is to play a major role in their growth."

Despite the dominant position occupied by agriculture, many of the LDC's have given little attention to rural development in general and agriculture in particular. The natural outcome of this has been the fall in agricultural productivity and output causing food shortages and over all imbalances in the macro-economy; of savings, balance of payments, etc. In countries like Ethiopia, the impact of such a short fall was very detrimental in the past years.

To the endeavour of economic development of the developing world the arguments in favour of a simultaneous development of both agriculture and industry seems to be attractive. This can be justified by the fact that, first, historical analysis indicates that there is a mutual interdependence between agriculture and industrial development, and second, given the present differential and segmented world trade environment, the drive to industrialization still remains valid on the part of developing countries if they are to be a-not-always price taker in international business.

In contrast, the idea that industrialization can succeed with out a priori or concurrent existence of productive agriculture is however, groundless and unacceptable. Even the concept of simultaneous development has to be refined so as to indicate that given the present low level of agricultural productivity, it is necessary to be a little bit biased in favour of agriculture at the beginning of the process.

> While the imperative need to generate surplus from agriculture is not denied, the argument is that a surplus must be produced before it can be extracted (Eshetu, 1990a:90).

This point was also emphasized by Adelman when she says,

> While we believe that in the long run agriculture and industrial expansion must be in balance, several strands of research indicate that an optimal development pattern in the next decade will require unbalanced investment strategies (1989:320).

This is what in this paper is referred to as an Agricultural Development-Led Industrialization (ADLI) strategy. Yet, as Eshetu warns us, "it would be unwise to relegate the development of industry to the very long-run, as many 'advocates of agri first' seem to propose" (ibid).

2.4 ADLI and its Synonyms

The concept of Agricultural Development-Led Industrialization as a development strategy is not something that emerged at one point in time. In the past, though the development paths of many of the developed countries was not given such a name, it is evident that the actual process was similar to what we now call ADLI strategy.

2.4.1 What is ADLI, its essence and rationale ?

To our knowledge the name for this strategy was first coined by Irma Adelman (1984). Accordingly, the essence of the strategy was explained by Adelman as quoted below.

> The essence of the ADLI strategy lies in shifting a greater share of total investment to the agricultural sector, with a view to improving agricultural productivity. With in the agricultural sector, the emphasis is on food production rather than on export crops, and on medium to small owner-operators rather than on large farms, plantations, and estates. The rationale for these choices is partially in terms of induced growth effects and partially in terms of distributional consequences (1989:322).

Theoretically ADLI is supposed to bring about development in a country through, initially increasing productivity and thus production in agriculture and then extracting the surplus produced to finance industrial projects or in general the future industrialization process. The basic premise of this strategy, therefore, is first to ensure an increase in agricultural productivity so that the sector is able to produce agricultural surplus which can be transferred to other sectors.

The main reasons for the favourable result of ADLI strategy for the contemporary developing countries were explained in the afore mentioned work

of Adelman et.al and is presented in this rather long quotation:

> (1) the strong domestic linkages of agriculture with manufacturing, through both the demand and the input sides, lead to high domestic demand multipliers for agricultural output; (2) investment in agriculture is less import intensive and more labour intensive than investment in industry and so is agricultural production; (3) the rate of return to investment in agriculture is high, equal to, or exceeding that of investment in industry as indicated in the World Bank study devoted to agriculture (World Bank, 1982); (4) as long as the agricultural sector is poorer than the urban sector, policies that raise the incomes of farmers improve the domestic size distribution of income (1989:321).

Before we make a bird's eye view discussion on the debate whether or not the crux of the matter lies in the production of agricultural surplus, it seems logical here to explain what is meant by an agricultural surplus as used in this paper.

The concept of agricultural surplus was interpreted differently by different scholars. For example, Ranis and Fei consider agricultural surplus to be 'the difference between the truckloads of food and raw materials delivered to the industrial sector and the industrial goods sent in the opposite direction', while the second concept of agricultural surplus refers to 'the net flow of funds out of agriculture in the form of private savings transfer (net) or the excess of government revenues collected from agriculture over and above public expenditure in agriculture' (Mundle, 1985:51). Mundle termed the first as trade surplus and the second as savings surplus.

The terminology used by Nurkse is also similar in that he distinguishes between a marketable surplus and an investible surplus (in Eshetu, 1990b). The former refers to 'the amount of agricultural produce that is marketed' while the latter is concerned with 'the act of saving in the farm sector'. Both can occur independently as much as they can exist together. Besides, marketable surplus might yield investible surplus but not vice versa. But in developing countries, the linkage between the two is strong. Thus in this paper we will be concerned in both senses of the notion of agricultural surplus, namely marketable and investible surpluses.

Coming back to the discussion we postponed in the earlier pages, while some (for instance Dobb, Griffin, etc) appreciate very much the relative importance attached to the agricultural surplus in the industrialization process others

(like Mundle) argue that surplus production is not that much a decisive factor to influence industrial processes. Dobb argues that, " Now if there is any factor to be singled out as the fundamental limiting factor upon the pace of development, then I suggest that it is this marketable surplus of agriculture: this rather than the total product, or productivity, of agriculture in general" (Dobb, 1967:78). To the contrary of the above, Mundle contends that, "in transitional economies industrial growth depends not so much on the size of the agriculture surplus but rather on the rates of productivity growth and population growth in agriculture via their effects on the size of the home market for manufactures" (Mundle, 1985:49). The basic difference between these two ideas is that the first gives much weight to the supply side of agricultural development impacts while the second is convinced on its impact on the generation of demand for manufactures.

Surplus generation and productivity growth are not mutually exclusive but rather they are mutually reinforcing & highly interrelated, though the achievement of one may not always guarantee the fulfilment of the other. The most important point that need to be underlined here is that both appreciate the importance of agricultural development as a prerequisite for successful industrialization.

According to Mellor (Johanson and Mellor, 1961), if agriculture is to serve as a primary engine of economic growth, three conditions must be met: (i) agriculture must be a major sector of the economy so that it can have a significant aggregate effect (this condition is fulfilled in virtually all low-income countries), (ii) agriculture must grow on the basis of cost-reducing technological change and, (iii) finally the rate of growth of demand for labour must be accelerated as agriculture faces a potentially difficult problem in playing a major role in economic growth because the demand for its goods is inelastic (Mellor, 1989). Contemporary developing countries unanimously fulfil the first condition. The problem lies in lagging to achieve the second and last qualifications.

It is crystal clear that there is a strong positive linkage between technological improvement and agricultural development. This was beautifully explained by Mellor as:

> If growth driven by agriculture is to fit in that classic mould, then research to increase factor productivity is needed. That, this is possible is well demonstrated by the 'Green Revolution' (Mellor, 1976).

2.4.2 Synonyms to ADLI

Although the context of the analysis is related to poverty alleviation, Saith distinguishes two agricultural development strategies which in most respects are believed to be synonymous to what is called ADLI strategy. He termed the first as Agriculture trickle-down (ATRICK) and the second as Agriculture First (AGFIRST) (op.cit.). According to the author, ATRICK, which is a reformulation of the industrial trickle-down (ITRICK), argues that even within the prevalent inegalitarian institutional and property-ownership structures that characterise most developing countries (especially in Asia and Latin America), growth of agricultural GDP would trickle-down and remove rural poverty (Ahluwalia, 1978 in Saith, 1989). Here the interesting point to our main objective is that agriculture takes the central theme and is considered as a pivot in the process. It's other similarity with ADLI strategy is related to the importance accorded to industrialization. In this regard Saith states that, "unlike the ITRICK version which gave a passive role for the agricultural sector, ATRICK admits that agricultural growth might itself be contingent upon a certain rate of industrial expansion" (op.cit).

The basic difference between AGFIRST (which is an off-shot of the latter) and ATRICK is that the first does not consider any trickling-down effects. Poverty alleviation is not the concern of the model rather it is interested in agriculture development perse which is asserted to be ultimately necessary to serve as an engine for industrialization. From the point of view of sectoral development prioritization, therefore, it may be possible to say that AGFIRST and ADLI are more or less the same.

2.5 ADLI strategy in Ethiopia

As was indicated in the Economic Policy of Ethiopia for the Transition Period[3], the basic and long-run objective of the policy is to replace the presently weak and volatile economic base with a more steady and robust economic structure through stimulating higher productivity of the peasant sector and through industrial expansion which can largely make use of domestic raw materials and labour (TGE, 1991).

To this endeavour the government officially adopted ADLI strategy as the economic development strategy of the country as of August 1993. Besides, it is explicitly stated that, 'through ADLI, both agriculture and industry are understood to develop mutually and inter-dependently' (TGE, 1992).

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[3] Since the fall of the military government in 1991, the present government is ruling the country, despite the fact that elections are not undertaken yet. Due to this it gave itself the name of the 'Transitional Government of Ethiopia' (TGE).

Four reasons are given to the choice of ADLI among alternative development strategies:

1. In one way or another the strategy encompasses the majority of the population,
2. It is based on domestic resources and inspires self-reliance,
3. It attempts to bring about a fundamental change in the orientation of the economy, and,
4. other strategies like import substitution industrialization, export-led growth, etc, have not been successful in the past (ibid).

However, the first and second justifications seem not very convincing. Because, if coverage is to be a criterion, the ATRICK version is superior to ADLI, not only due to the fact that it has equal if not more orientation to the overwhelming majority of the population but also it is very much concerned with their well being through accounting the systems of resource distribution.

These do not, however, create a fallacy of ADLI strategy in Ethiopia. By and large what might be called-for is a reformulation of the strategy. Almost all of the justifications for the favourable future results of ADLI strategy presented in sections 2.3 and 2.4 are applicable to Ethiopia. Moreover, choice is relative and admitting the limitations the very simple logic of the absence of better alternatives can also be considered as one determining factor for recommending the strategy to the country.

The future desirable development direction for the country is envisaged to be the type where industry and services should be the leading sectors in both production and creation of employment opportunities. Consequently, the relative contribution of agriculture is expected to decline through time although it is still necessary that it has to continue growing at a rate sufficient enough to meet all agricultural output demands. The prospect laid on the industrial sector especially manufacturing is paramount. This structural transformation of the economy is, however, understood to be a very gradual and painful process. What is more, the strategy revolves around productivity improvement of smallholder agriculture and industrialization based on utilization of domestic raw materials with labour-intensive technology (Tegegnwork, 1993:72).

Tegengwork summarizes the salient features of the strategy as interpreted in Ethiopia:

> It visualizes export-led growth which feeds into an inter-dependent agricultural and industrial development. Exports, be it agricultural or mineral, initiate growth thereby producing the means for a process of an inter-dependent agricultural and industrial development (or ADLI) which increasingly becomes a self-generating process of development. Hence the strategy has two layers; an outer crust of export-led growth and an inner core of ADLI (1993:72).

But it is not clear whether ADLI strategy has an export component in its specifications or export-led growth stands by its own besides the former. Almost all the documents describing the strategy in Ethiopia consider exports as components of ADLI strategy at one time and treat them separately at another. Plainly speaking, we believe that export promotion is part & parcel of the strategy.

According to the document[4] released by the government, the strategy with respect to agricultural development is to be implemented in three subsequent stages. In the first stage, attention will be given to the use of improved varieties (or commonly known as high yielding varieties, HYV) and replacing adaptable modern farming practices for the traditional ones. The second stage, in addition to the intensive use of chemical fertilizers and pesticides, focuses on infrastructural developments such as the construction of small-scale irrigation and rural roads. At the final and higher stage where industrial expansion is also expected to be well underway, the emphasise is to shift the excess agricultural labour to other sectors so as to increase the per capita land holding which is ultimately supposed to create favourable conditions to raise agricultural labour productivity (op.cit). Stages one and two attempt to increase agricultural productivity and output with the prevailing structures while the complete economic transformation is to take place at stage three.

The planned investment programme shows prioritization in the order of, the export sector (agricultural, mineral, industrial and tourism), agriculture (food self sufficiency, industrial raw material production, natural resources development) and industry & infrastructure (small-scale industries & services construction works).

[4] It refers to the document where Ethiopia's Economic Development strategy is presented (See TGE, 1993).

2.6 Points of Departure

Time and again it has been stated that agriculture forms the nucleus of the Ethiopian economy. Hence, for a healthier and sustainable economic development the necessity of a priori development of agriculture is not questionable. Nor is the choice of ADLI as a viable strategy disputed. If agriculture is to play the pivotal role in the Ethiopian economy it is best done through ADLI strategy than through other development paths. Thus the adoption of such a strategy in Ethiopia is quite appropriate.

In spite of this, in this paper it will be argued that the envisaged methodology for the execution of the strategy and the formulated programmes of activities and investments are not in harmony with the presumptions and preconditions of the strategy and, therefore, would not bring about or would delay the anticipated significant improvement in productivity and production in the economy in general and in agriculture in particular-the relationship between the two understood.

This paper departs from the Ethiopian planned system of implementing the strategy (as was shortly summarised in section 2.5 above) in three main points: (i) the idea of financing ADLI strategy on domestic resources, (ii) the identified stages of implementing the strategy, (iii) the lack of acknowledgment of political problems even at present,

Methodologically, when a grand work like formulating a development strategy is being conceived the importance of historical and situational analysis, in this order, is crucial. Therefore for a strategy which bases itself on agricultural development, the initial step would be to examine the performance of the sector in the past and understand its bottlenecks. This is what is virtually lacking in the case at hand, unless we say alternatively that the problem is not a lack of awareness of agricultural problems on the part of policy makers but rather what is lacking is a genuine effort.

There is a fairly considerable literature on the problems of agricultural development in Ethiopia. These agricultural problems as largely quoted in government documents are not only natural, economic and/or technical and social in nature. Tantamount to these, there are also economic and/or technical and political factors which exert considerable influence on the sector. Some of the past government's policies (for example the price policy), which were very detrimental to agricultural development have been abolished recently. As is usually said, 'well begun is half done'. But there are still other policies which need to be addressed in the shortest possible time. The most pressing ones are the economic and/or technical and political factors.

The first point of departure is related to the source and magnitude of finance for the strategy. Contrary to the visualization of the plan, the idea of financing ADLI strategy solely from domestic resources is questionable. Recent studies on the subject indicate that, particularly for African countries, the estimated investment requirement can not be obtainable from domestic sources and should be drawn from abroad[5]. Unless the scope of the strategy is to be scaled down and consequently so will its output, the investment requirement of the development process is huge. This makes it impossible to augment all the required investment from domestic resources.

Although, we lack the detailed investment programme under this strategy the investment priority setting, as indicated in the document (op.cit), seems also a bit in paradox. On the one hand it is attempted to expand the coverage of the sectors which will receive the bulk of investments. But on the face of limited resources, this will bring about a shallow rationing of investment finance among the sectors. The larger the coverage of investment sectors and areas the smaller the proportion allotted to each and thus the less significant will be the overall result.

The stages identified in section 2.5 also deserve commenting and form our second point of departure. Although it is understandable that development is a long process and requires stage-by-stage action, it is also clear that highly fragmented works, like the formulated stages for implementing ADLI strategy, will not yield the anticipated results. The stages formulated are simplistic and not based on situational analysis. Two points will suffice to explain this.

Firstly, leaving aside the other areas for the time being, the highlands of the country which supported life (human and animal) for more than 3000 years are now highly exhausted. Agricultural production is dwindling from year to year. Because of the low resilient[6] nature of Ethiopian soils the level of soil depletion and degradation is not explicit. But experts found that the damage has been severe. Therefore, before the limit is reached where all land is converted into agriculturally unproductive land, immediate correction measures are needed. Conservation measures are on the top of the list of such measures. Use of fertilizers, both chemical and biological (natural) are also recommended to maintain or upgrade the fertility level of the soil and consequently increase production per unit area. Under this situation postponing the use of fertilizers to the second stage can not be justified.

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[5] See Adelman et.al., (1989:332-336).

[6] See section 4.2.1 of this paper for an elaborated explanation.

What is more, it is not clear how one can know the demarcations between the stages particularly stages one and two. Nor are the criteria - time, level of physical output, etc. explicit to indicate the completion of one stage and the beginning of the next.

Secondly, HYV and fertilizers or other agricultural inputs for that matter are mutually supporting for better yield. But as conceived in the programme, the use of HYVs is included in the first stage while fertilizers & pesticides are relegated to the second. Technically speaking this is not a good combination. It is not to say that both can not be separately applied. Rather it is to emphasise the fact that their co-existence brings much more yield and production than otherwise. Even in Ethiopia the use of HYVs with out fertilizers do not give satisfactory yield[7].

The third point of departure has to do with political variables. The political factors are twofold, namely, the adoption of appropriate development policies which would provide additional impetus to the strategy, and political stability. After three years of new economic reform and adjustment, the core agricultural problem in the country, the system of land tenure, has not yet been solved. Many studies have proven the existence of positive correlation between agricultural productivity growth and an existence of a secure land tenure system. Other policies such as regionalization and decentralization, agricultural credit, organizational issues, etc. are also far from being sufficiently conducive to productivity growth in the sector.

Without political and economic stability no meaningful and sustainable development, not only in agriculture but practically also in all sectors of the economy, can take place. Ethiopia is not the only country having political difficulties for a long time but it is among the few exceptions that is not solving political questions peacefully. There has not been a tradition of peaceful settlement of political differences in the past.

[7] In a survey conducted in 1992 under the auspice of the International Livestock Center for Africa (ILCA) around Debre Birhan (North Shewa), in which the author of this paper has contracted the field survey, it was found out that most of the farmers responded affirmatively when they were asked whether they have got higher yields when they used the proper packages of agricultural inputs, namely, HYVs, fertilizers and the Broad Bed Maresha (BBM), a plough.

CHAPTER III

Agriculture Driven Development - A Synopsis of Historical Evidence and Lessons for Contemporary Less Developed Countries

3.1 Introduction

In this chapter two very important and relevant issues will be discussed. The first which is presented in section 3.2 reviews the experiences of other countries whose success in industrialization is attributed to their early agricultural development. Following this the lessons that the presently developing countries would learn from the success stories are analyzed in section 3.3.

3.2 The Experiences of Other Countries

No subject has such a rich literature as do agriculture and rural development. From the early era of emergence of development theory up to the present time countless works have been done on the theoretical and practical development processes and contributions of agriculture to economic growth. Historical analysis indicates that agriculture has been the corner stone of the development process in practically all of the presently developed countries. Thus, to avoid over-stressing the obvious, we shall not go into a detailed review of the experiences of countries. Rather reviewing the literature for few highly exemplary countries such as Taiwan, Japan, Western Europe, and India, and in a very concise manner is believed to suffice to our purpose.

One of the latest countries to attain a successful industrialization and thus development through an agricultural led growth is Taiwan. For Taiwan, among many writers like Griffin (1979), Mellor (1973), Ishikawa (1988) have independently and at different times, stated two common facts. First, that agricultural surplus has been the source of finance for its industrial development and second, strong government intervention was involved in the process of surplus extraction. The major means of resource transfer in Taiwan was direct tax on inputs (such as payment of fertilizer credit in kind) and output (for instance sugar cane in the pre war period and rice in the post-war era (Mellor, 1973).

Taiwan's agriculture was not only a source of supply but also a potential buyer of non-primary commodities. Indicating the role agriculture played in the demand side, Mellor wrote that, "in the technologically dynamic period of the 1920's, when, for example, the new ponlai rice varieties were introduced and fertilizer use was increasing rapidly, purchases of commodities from non-agricultural sectors by the agricultural sector more than doubled" (ibid).

Including Mundle (1985), the afore mentioned writers also documented the development process of another early successful country, Japan. But unlike for Taiwan, there is a gap in acknowledging agricultural surplus as a source of growth for Japan. For instance, Mundle argues that "savings surplus from agriculture was clearly one source of finance for the non-agricultural sector but it was not the only source nor even the major source of financing industrialization". More or less the same was contended by Mellor when he says,"it is generally agreed that Japan provided the major portion of the capital for the early stages of its economic development by resource transfers from the agricultural sector" (ibid). As far as the mechanism of surplus extraction is concerned, the net out-flow from agriculture was the result of the working of market forces (Ishikawa, 1988).

The other account of Japan's development process is the one forwarded by Eshetu. The impressive gains in agricultural productivity made possible by the Meiji reforms were siphoned off by heavy land taxes to finance industrial & military activities (Eshetu, 1990b). Industrialization was also further facilitated by the low wages of industrial workers and by a deliberate policy of inflation. According to Mellor, direct investment by landlords in the non-agricultural sector, and land taxes were used as mechanisms of channelling resource transfer (ibid). Acknowledging agriculture's role in the price stabilization system of Japan, Saith wrote that, "raising industrial wage costs - which would have been exceedingly damaging for the international competitiveness of Japan's export-led industrial sector - were then pre-emptied by the systematic development of Taiwan (and to a lesser extent, Korea) as an 'agricultural province(s) of Japan'" (op. cit). Grossly, all of these authors acknowledged agriculture for its role in Japan's development process, which has now become one of the seven highly industrialized countries (G7).

In his historical illustrations, Mundle related a priori agricultural development to a success in consequent industrialization for some of the West European countries (ibid). Accordingly, the early success of England and failure stories of France and Italy are traced not due to their weak industrial basis but rather because of the economies dependence on imported food and other agricultural commodities from backward agriculture of other countries. As it was documented, the experience of the Dutch is also interesting. Mundle stated that until the advent of the English industrial revolution, the Dutch industry (shipping, cloth, paper, brewing, bleaching, baking and construction) was by far the most advanced in Europe. During the early seventeenth century the Dutch industry was flourishing while the industry of France and Italy was collapsing. Like the latter countries, however, Holland was also dependent on external trade for both industrial and

subsistence consumption on backward East European countries. The tragedy occurred, as observed by the author, when the prices of imported grain started to rise sharply in the later half of the eighteen century and as a result the Dutch industry started to collapse too (op.cit).

Similar experiences have been recorded in other parts of the world. Nevertheless the case of the former Soviet Union is peculiar. In this country, agriculture has been highly squeezed to finance the industrial sector. What distinguishes this case from the above is that the process was guided through central planning where government control was strong. Besides, agriculture was dominated by cooperative forms of organization which made it easier to extract what ever surplus produced.

The last short story is that from a developing country, India which is struggling to escape the Ricardian growth trap[8]. According to Saith, "industrialization has been accorded unambiguous primacy in India and even the pre-independence so-called Bombay plan demonstrated the extreme importance that national political leaders as well as the leading capitalist industrialists attached to rapid industrialization" (1985:4). Saith in another work further observed that agriculture had not really been regarded as a potential source of surplus for the financing of industrialization (1989:213).

To make a long story short, the industrialization process in India was viewed as being virtually independent of the conditions of agriculture. The achievement in the level of development of both the national economy and the industrial sector was, however, far below satisfactory. Different factors are accountable for such a performance, the weak level of development of the agricultural sector of course being among the major ones. Thus, presently the country has once again turned its face to the primary sector and is striving hard towards agricultural and rural development. For India, the direction of resource transfer is in the reverse, from non-agriculture to agriculture. As Mellor put it, "the recent experiences of India in contrast to the above successful countries illustrates the special problems of development in contemporary low-income countries" (op.cit).

The above review has revealed that agriculture has paid dearly to the development of industry in almost all of the cases. It is naive, however, to conclude that success to development is solely a function of growth in agriculture. Development is a complex process thus unitary factors like

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[8] The Ricardian Growth Trap Model refers to the tendency of the agricultural sector, which is under the grip of the law of diminishing returns, impeding the intended growth of the emerging industry sector and sooner or later bringing the economy into a stationary state (Ishikawa, 1988:303).

agricultural and rural development are but one among a set of determinants. In recognition of this fact particularly for the newly industrialized countries, Saith states that,

> In this success, the contributory role of historical timing, pre-development experiences, structural, ecological and geo-political factors were critical, and provided a uniquely favourable, even if fortuitous, conjuncture which could launch such successful industrialization (1989:206).

3.3 Lessons for Contemporary Less Developed Countries'

Dissenters might question the value and relevance of historical patterns of development for today's developing countries. Nevertheless, except for the precaution that such analysis requires careful interpretations and situational analysis there are hardly any facts which refute the significance of these experiences for the LDC's.

What should the developing countries in general and Ethiopia in particular learn from the experiences of these countries? The lessons are many and are more or less in line with the argument of chapter 2. Eshetu identifies five main points which we believe are worth summarizing.

1. The first lesson concerns what Sutcliffe calls the "iron laws of industrialization". The simple but crucial fact is that you can not bring about any meaningful industrialization without substantial industrial investment. And industrial investment requires the generation of surplus, whatever its origin might be.
2. Even in the countries in which agriculture was squeezed to finance industrialization, the industrial sector in its own turn made significant contributions to raising agricultural productivity through the provision of modern inputs such as farm machinery and fertilizers.
3. Thirdly there is the crucial role of technological progress as both an instrument and a product of industrialization.
4. The fourth lesson is the indispensability of some social force to provide leadership to and carry through the industrialization drive.
5. Lastly, there is the crucial question of the market. In any case, whatever may have been the relative importance of foreign and domestic markets, no meaningful industrialization can take place in the absence of an adequate market (1990b:240-242).

Nevertheless, the situations within which the present developing countries are found are different from the conditions that prevailed during the early days

of development of the developed countries of today. Specifically, contemporary realities of the third world are different with respect to:

1. the low level of development of agriculture so as to limit surplus production and consequently mobilization,
2. weak domestic industrial base which forced LDC's to depend on foreign technology, which is both expensive and often inappropriate. This also had negative impacts for indigenous capacity building. Although there are arguments which state that the developing countries have benefited from research & development (R & D) of the west without sharing the costs-the so called 'late-comer advantage', it is apparent that the long-run dependency structures with its negative implications out weigh the former.
3. what Eshetu described as the 'social force' capable of providing leadership to the industrialization effort is lacking in the present developing countries. Neither the predominance of the state nor foreign capital were able to show up the desired leadership qualities which help materialize the given objective.
4. the availability of markets with effective demand is also another area of dissimilarity. While internally low levels of income and highly skewed patterns of income distribution restrict the size of the market, adverse conditions of international trade hamper any chance of the developing countries for penetrating the world trade for manufactures.

Due to these and other constraints and what ever efforts were made the positions of the developing countries have shown a worsening trend rather than a betterment. As Eshetu put it:

> In general, therefore, the dice are loaded against the underdeveloped countries. In spite of various experiments with import substitution, export promotion and regional integration and in spite of repeated appeals for trade preferences and for a new international economic order, the problems have persisted with a disconcerting tenacity (1990b:244).

The same observation was made by Saith when he contends:

> It is arguable that the structural conditions with in which the poor countries have to develop now are more difficult than those which faced the advanced economies in their early growth phase (1985:7).

On the question of replicability; let alone a development process which covers the whole of the economy, the smaller 'project approaches' of the past as

community development, integrated rural development etc. have proven that replicability in its real sense is a rare phenomenon, if at all. Therefore any effort to industrialize through duplication is doomed to failure.

> To be sure, no country in the third world today can or need replicate these experiences, (**as argued above**) for the reality is altogether different. But a proper appreciation of the historical features of industrialization will make possible a better understanding of the problems of today (Eshetu, 1990b:240 my addition).

The author supports the line of thinking which advocates the idea of domestic capacity building with both domestic and foreign resources. To this endeavour starting the process from the primary sector is the best and may be the only option. How could this be done? The quotation from Mellor, it is believed, will partially give answer to this question and at the same time will serve as a concluding remark of this section:

> The successful cases of net transfer of resources from agriculture have had a basis for repressive extraction of a surplus from agriculture through a wealthy land-owner class, a strong state operating through collectives, easily taxed major agriculture exports, a technologically progressive agriculture which generated large additional surpluses, or a combination of these. **For most of contemporary low-income countries, the route of technology change in agriculture may be the feasible one** (1973:110, my emphasis).

CHAPTER IV
THE ECONOMY IN THE PAST - AN OVERVIEW

4.1 Introduction

This chapter basically attempts to give an overall picture of the performance of the economy in the past years. Besides, an effort is made to make a comparison of potentials and actual performances. For doing so the sectoral analytical approach will be largely used but at times when felt necessary both spatial and temporal dimensions will be included. For the reasons of both relevance to the study and simplicity of presentation, the economy is divided into two broad sectors, namely agriculture and non-agriculture. In the non-agricultural sector the focus is on the activities which are sometimes classified as 'productive sectors'. This is to say that the orientation is to industries particularly manufacturing ones.

With regard to the organization of this chapter, first the primary sector is treated. Then section 4.3 presents a review of the non-agricultural sector. Following this the performance of the export sub-sector will be discussed. As is well known the bulk of Ethiopian exports are originating from the agricultural sector and only few are from manufacturing. But the need for presentation of the exportables in a separate section is simply because of its peculiar importance to the national economy as a source of the scarce foreign exchange. Section 4.5 attempts to look at the degree of linkages between agriculture and industry and its implications to the ADLI strategy.

4.2. Agriculture

As was mentioned in the introduction chapter, Ethiopia is predominantly an agrarian country. The share of its active population engaged in agriculture is among the highest in both the world and Africa. But as in most less developed countries, the relative contribution of agriculture to the GDP is lower. In statistical expressions, while about 80 percent of the labour force is actively employed in agriculture the contribution of agriculture is well below 50 percent of the GDP. This is a clear indication of the low level of productivity of the sector. Despite this, the importance of agriculture in the development of the national economy is outstanding.

Agricultural production in the country is largely based on rainfed farming. Both in the past and present Ethiopian agriculture is also characterized by the dominance of small holder peasant agriculture which accounts for about 98 percent of the cultivated land and over 95 percent of the output. Even during the past socialist regime when collective farming was favoured over

smallholder peasant farming, the highest proportions in both area and production were associated to the latter.

Various production systems are found in the country mainly mixed farming, semi-pastoral, pastoral, fisheries and even hunting and gathering (Annex 1 Maps 2 & 5). Of the total agricultural production; crop production is estimated to contribute around 60 percent, livestock 30 percent and forestry about 7 percent of agricultural GDP. Within crops, cereals account for some 55 percent, coffee 17 percent, pulses 8 percent while others including industrial crops, sugar, cotton, vegetables and ensete (root crop) contribute the remaining 20 percent (Asres, 1994). Another attribute of Ethiopian agriculture is the possibility of two or more harvests a year. This is made possible because of the two rainy seasons, *Kiremt*, the main rainy season (from June to August) and *Belg* the small one (from February to mid of May) with out irrigation.

4.2.1 Potentials and Threats

Without even going further to the past (until the beginning of the 1960's) when Ethiopia was considered as the "bread basket of the middle east", many recent studies (for example Singh, (1987, Ghose, (1985), Kloos, (1990), Asres (1994)) have shown that Ethiopia has a considerable potential for agricultural development. Asres states that:

> Compared to many other African countries, Ethiopia is considered to have an adequate natural resource base to develop its agriculture and feed the growing population. Around 66 percent of the area is considered potentially suitable for agricultural activities of which presently only 14.8 percent is cultivated and 41 percent used for grazing and browsing (1994:410).

Agricultural production, among other things, is determined by the availability of conducive climate, adequate land and fertile soils, availability of sufficient usable water (rainfall or irrigation) and the know-how of the agricultural workforce.

The one general attribute of the Ethiopian agriculture resource base is its climate where precipitation is the major determinant of the pattern of agricultural production. Thanks to climatic conditions, Ethiopia already grows or can grow a wide range of different agricultural products for both food and raw materials to meet the needs of potential industries (Singh, 1987:11 and Abebe, 1989). Singh also wrote that, "in general Ethiopia's rainfall is adequate for agriculture except in the semi-arid and arid zones" (ibid). The

agro-ecological and climatic conditions of most parts of the country are very favourable for growing a multitude of crops especially food grains (Annex 1 Map 3).

Depending on the influences of altitude and climate, four climatic zones are identified in Ethiopia:

1. a mountain zone called *'Wurich'* comprising areas about 3800 meters above sea level where a high rainfall throughout the year precludes cultivation. The average temperature in this area is 14^0C.

2. a cool zone called *'Dega'* is marked by altitude between 2400 to 3800 meters and temperature ranging from 10^0C to 18^0C. Here the conditions are favourable for growing cool temperate cereals like wheat, teff (Ergotis) and barley.

3. a temperate zone called *'Weina Dega'* with average temperature between 16^0C and 20^0C and altitude between 1800 and 2400 metres where in addition to the crops grown in the cool zone, maize, sorghum and millet come into prominence. In the south-west, rainfall is high and hence coffee and ensete plantations are also found.

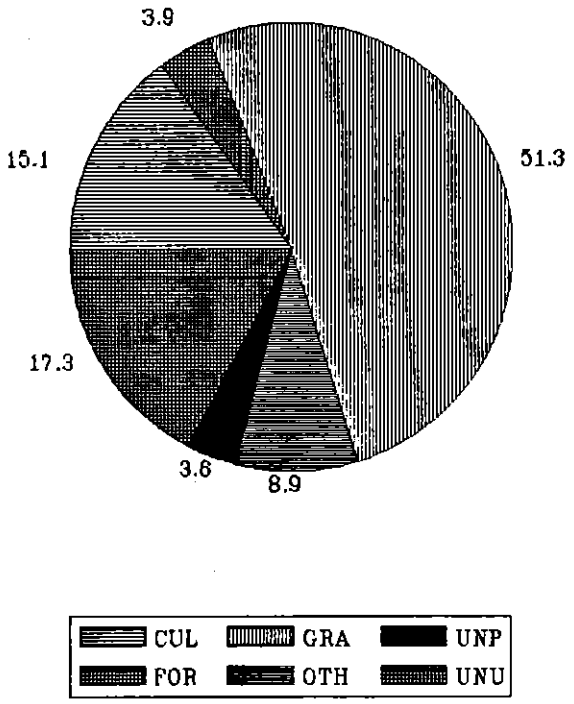
4. a hot zone called *'Kolla'* covers those areas below 1800 metres and has an average temperature of about 20^0C. In this zone the rainfall is low and cultivation is based on irrigation. Tropical and semi-tropical crops are cultivated here. (Singh, 1987). The spatial distribution of the crops is presented in Annex 1 Map 3.

The Ethiopian Highland Reclamation Study documents indicate that the highlands of Ethiopia (above 1500 metres) host about 88 percent of the total human population, 60 percent of livestock, and account for about 90 percent of the land suitable for rainfed agriculture (in Daniel, 1990). This study, which is considered to be the most extensive land evaluation study ever carried out in the country has identified three zones in the country in relation to its suitability to agricultural production.

The High Potential perennial (HPP) zone, in the south & west, has high rainfall and high potential for perennial crops like coffee. The High Potential Cereal (HPC) zone in central Ethiopia has medium rainfall and the most fertile soils. The Low Potential Cereal (LPC) zone in northern, north central and eastern parts has low rainfall, is drought prone, has the most degraded soils and is most deforested (ibid).

The present land use system (fig. 1)[9] shows that, cultivated land amounts to only 15.1 percent of the total area of the country, whereas a huge land mass of about 51.3 percent is left for grazing and browsing. Besides, the land classified as "unproductive" which consists of swamps and marshes covers 3.6 percent of the area of Ethiopia. Hence alongwith the intensification of the present cultivated land, the direction for future area expansion points to these areas. But the prospect for developing the grazing and browsing land should take into full account of the huge livestock resource of the country. Development of the swampy and marsh areas, on the other hand, seems feasible in the short run though it might require some investment for drainage and other facilities.

Fig 1. Major Land Use Systems in Ethiopia
(percentages)



CUL - cultivated land GRA - grazing land UNP - unproductive
FOR - forest land OTH - others UNU - unutilizable
Source: (in Asres, W. 1994)

Despite inter-and intra-regional variations, the Ethiopian soil is generally

[9] Note that these figures are slightly different from the ones given by Asres (1994).

regarded as fertile for agriculture particularly for crop production (Singh, 1987:24). Nevertheless the age old cultivation coupled with other natural & man-made factors have reduced this potential (Annex 1 Map 4).

Ethiopia is endowed with a large water resource base. There are numerous rivers and lakes which run throughout the country and the country is divided by 14 large and medium water shades. The annual volume of water flowing on these water shades is estimated to be 115.1 billion cubic meters of which about 75 percent drains to the Sudan, 15 percent to Kenya, 6 percent to Somalia and 1 percent to the Red Sea (PMAC, 1984). This means only 3 percent is left inside the country.

Surprisingly, the beneficiaries of the resource remained the neighbouring countries. For example, the Blue Nile river on which the very agriculture of the Sudan and Egypt is based is not used for any agricultural use inside the country while it is generously carrying away the country's fertile soil alongwith the water. The basic reasons for such ignorance from the Ethiopian government side so far have been economic and technological constraints. None the less, recently the political factors have been placed at the top of the list.

The two major uses through which the Ethiopian agriculture would have benefited from such a resource base are fisheries and irrigation. According to Asres, despite the substantial fishery potential in the country, current annual production is about 4000 MT per year which is equivalent to a consumption of about 175 grams per person per year (op.cit).

The irrigable land potential of the country is not yet exactly known. Different estimates give different figures, often with big gap between them. According to Gedion, the range for the various estimates is between 1.8-3.5 million hectares out of which in 1989 only about 140,000 ha or roughly 5 percent of the potential was actually irrigated (Gedion, 1989, in Kloos, 1990:22). Another estimate of the Ministry of Agriculture (MOA) shows a higher figure. The MOA estimated that the country's potential for small-scale irrigation alone is about 200,000 ha. and medium to large scale irrigation mainly in the lowlands is around 3.5 million ha.(Asres, 1994). Despite such wide gap, one fact is evident - that Ethiopia has a substantial irrigation potential. Of the presently irrigated agriculture, the proportion devoted to small-scale peasant and large-scale commercial irrigation is found to be almost equal.

FAO estimates indicate that, for Ethiopian agriculture, small-scale irrigation can increase agricultural production by about 5 percent (FAO, 1986). The

calculation of Hewett which includes both large and small-scale irrigation schemes, raises the irrigation-driven incremental output significantly. According to him, crop yields may be increased between 5-40 percent under irrigation for different cereals and pulses (Hewett, 1989 in Kloos, 1990). This was further supported by Kloos's testimonial of the situation during the drought year, when he said, "the emergency type irrigation programme implemented by the government during the 1984/85 famine appears to have increased food production in some localities" (ibid). In a nut shell, whenever advancement of the Ethiopian agriculture is envisaged, the country's irrigation potentials are seldom ignored.

But irrigation is not without its problems. Firstly, it requires huge investment and for weak economies like Ethiopia, extensive work to cover the country is unlikely especially in the short run. However, leaving aside those areas where heavy construction work is required for irrigation development, in others, significant output rise can be achieved through encouraging and supporting the traditional peasant irrigation practices. Secondly, irrigation requires careful management. In this regard there is enough experience in the large commercial farms. Particularly the salinity problem which was attributed to poor management practices as observed in the farms found in the Awash Valley should be a good lesson for the future.

The size and quality of the agricultural labour force should also be considered as a potential resource for Ethiopia's agricultural development. Accumulated agricultural knowledge through age old cultivation experience, hard working nature, ability to adjust to natural conditions, hardship resistant, etc are few of the characteristics that distinguish the Ethiopian peasantry from others.

The country's potential is not limited to crop husbandry. Its livestock resource is also enormous. Ethiopia, with about 27 million cattle, 15 million sheep and goats, 24 million equine, 20 million poultry and 4 million camels stands first in Africa and ninth in the world in livestock population.

Above an attempt was made to give a general description of what are considered as Ethiopia's agricultural development potentials. But these potentials are only future promises, if any, and for agricultural development to materialize it requires efficient utilization of these potentials. However, in parallel to the potentials there are also threats which hamper productivity growth to take place in agriculture. The threats to agricultural development in Ethiopia are multitude in magnitude and alarming in effect. Among the most frustrating calamities are; the recurrent drought and land and forest degradation.

The studies of Pankhurst (1990), Mesfin (1986), Dessalegn (1991), Webb et.al. (1992) and others have shown that the Ethiopian history is punctuated by drought and, as a consequence, in most of the cases by famine. But in all accounts, Ethiopia has experienced its extremely damaging draughts in the last two decades, particularly the one in 1973/74 and the latest in 1984/85. These two droughts have cost Ethiopia many lives and resources. Especially the latest drought was very detrimental in its natural environment degradation effects.

The other threat is related to natural degradation where the forest cover and soils are at stake. Following India and Colombia, Ethiopia is the third country in the world where sever cases of soil erosion exist (Fisseha, 1994:378). The annual soil loss of Ethiopia is estimated at 1.5 billion metric tons and has resulted in decreased soil fertility and declining agricultural production (Hurni, 1986 in Alemneh, 1990). Besides, the forest resource of the country which was estimated to cover about 40 percent of the total area at the turn of the century has now dwindled to a mere 3.9 percent (fig.1).

The impact of desertification in Sub-Saharan Africa is particularly severe, as 85 percent of all rangelands (542 million hectares), 80 percent of all rain-fed crop land (114 million hectare) and 30 percent of all irrigated land (40 million hectare) are at least moderately desertified (Tolba, 1986, in Alemneh, 1990).

Ethiopian soils are less resilient in nature. In his comparison of the level of land degradation between the highlands of Ethiopia where cultivation has been going on for more than 3000 years and Northern Thailand, Hurni (1983) found out that in the former case there was a fairly low rate of soil loss but the cumulative loss and slow rate of natural soil formation have both served to produce very serious land degradation. In Northern Thailand, however, with higher rates of soil loss, the local land management system has 'compensated' for this and the capability of the land, in which soil formation is more rapid than in Ethiopia, is maintained (Hurni, 1983 in Blaikie, 1987).

The cumulative effect of such a soil degradation is a decline in agricultural production which is estimated to be as much as 2 percent per year (Constable, 1985, Hurni 1988 in Daniel, 1990). In Ethiopia, there are three predominant human activities invariably identified as contributing to the vicious cycle of environmental degradation, drought and famine; these are overgrazing, overcultivation and deforestation.

World Commission on Environment and Development (1987) has succinctly stated that, "poverty is a major cause and effect of global environmental problems".

Hence poverty alleviation is partly a solution for environmental degradation. Luckily there is enough evidence that famine are preventable. One such study made in Ethiopia by the International Food Policy Research Institute (IFPRI) argued that famine are generally preventable and there is no perfect correlation between drought years and subsequent food shortages (Webb et.al 1992).

Why we are concerned with the effects of environmental degradation is that for a strategy which assumes agriculture to play a pivotal role in process of national development, it should also give due emphasis to such critical threats as land and forest degradation which hamper agricultural production.

Given such a very general characterization of the Ethiopian agriculture, then what was the actual performance of the sector in the past years? This is what the next section attempts to examine.

4.2.2 Performance of the Sector

Based on the different kinds of soils, climate and altitude, different kinds of food and industrial crops are cultivated in Ethiopia. The major crops grown in the country are discussed in the customary category of cereals, pulses, oilseeds and others as follows.

The major cereal crops in the country are teff, barley, wheat, maize, sorghum and millet. Teff which is indigenous to Ethiopia is the dominant cereal crop and is also the staple food of the majority of the population. Of the pulses grown, chickpeas, field peas, horse beans, haricot beans, lentils and vetch are the main ones. Neug, linseed, fenugreek, rape seed, sunflower, groundnuts and sesame constitute the oil seeds produced in Ethiopia. From this category neug and castor beans are indigenous to Ethiopia and the former is the country's principal oil crop for both edible and non-edible purposes. Oil seeds in Ethiopia are very important as food, as raw materials and as export items (Singh, 1987).

While the industrial crops grown comprise sugar cane, cotton & other fibres (like kenaf, sisal, flux) and tobacco; coffee, tea and chat belong to the group of stimulants cultivated in the country. Intensive cultivation of sugar cane is possible on irrigated soil in the hot areas (ibid). But so far it is limited to plantations in the Awash valley which was initiated in the 1960's by the Dutch company HVA-Ethiopia.

Ethiopia is the original home of the coffee plant. There are different legends as to how the name was given, the particular area of origin, how people

developed the test, etc. But most historians agreed that, the name has been derived from Kefa, a province of Ethiopia where coffee has been a wild crop. The production of coffee shows a spatial concentration namely in the regions of Kefa, Illubabor, Wellega, GamuGofa and Harerghe. However established plantations of sizeable acreage are noticeable in Kefa, Sidamo, Harerghe, Arsi and Gojam (ibid).

Tests of Ethiopian coffee of different types have shown that the coffee is of high quality when properly harvested and processed, and Ethiopia can even compete with the best coffee producing countries in other parts of the world. Because of its beautiful aroma Ethiopian coffee is mostly used for blending purposes (ibid).

The available time series data for the years 1974-1991 (table 4.1) show that the average cultivated area, production and yield for the period were 5635.7 ha, 59834.6 Qt[10]. and 10.6 Qt/ha. respectively. For the time under reference, in their order; cereals, pulses and oilseeds accounted for 83, 13 and 4 percent of the total area and 87, 11 and 2 percent of the total production. While the highest production was registered in 1982 when 7.81 million tons were produced on 6.01 million ha with 12.8 Qts/ha yield, the lowest which was obtained in the drought year 1984 was 4.86 million tons and a yield of only 8.3 Qts/ha.

Except for barley, maize and sorghum for the rest of cereals, pulses and oilseeds the highest yield was obtained in 1990. For the first two it was 1987 and for the last 1979. But the data of 1990 looks a little bit exaggerated. This can be observed in fig.2 and table 4.1 where the yield for oil crops which remained on the average 4.4 q/ha for the whole period suddenly tripled to the level of 12.9 Qu./ha. in 1990 and subsequently fall to its trend level for the next year. Such a phenomenon, if at all, rarely happens, but not like the case at hand.

The average yields for cereals, pulses and oilseeds were 11.1, 9.2 and 4.4 respectively. Cereals yield relatively higher output per unit of land while oil seeds have the lowest yield level. The total food production growth rate for the period is calculated to be 2.2 per cent. By crop category, the growth rate for cereals was 2.2%, for pulses 1.9% and for oilseeds 4.68%. Given a national population growth rate of 2.9 percent, it is clear that domestic production can not afford to feed the whole population of the country. Comparison of indices of population growth, per capita food production and per

[10] Quintal (Q) is a widely used unit of weight measurement in Ethiopia where 1 Q is equivalent to 100 kilograms.

Table - 4.1

NATIONAL ESTIMATES OF AREA UNDER MAJOR CROPS AND PRODUCTION (thousands)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990*	1991
TOTAL AREA (HECTARES)	5400.5	5415.2	5200.6	5273.7	5475.4	6066.9	5678.3	5652.0	6088.2	5732.3	5861.8	5984.9	6110.1	6354.3	5742.4	5846.4	4815.8	4714.0
CEREALS	4450.5	4411.3	4305.0	4439.9	4615.5	5022.8	4711.9	4629.6	5029.2	4715.5	4814.8	4991.6	5220.9	5353.3	4890.8	4965.3	3898.6	3835.2
TEFF	1217.6	1440.4	1337.1	1304.0	1392.8	1513.8	1362.0	1331.6	1398.8	1317.9	1345.1	1296.2	1364.0	1400.5	1461.2	1127.0	1262.7	1351.2
BARLEY	762.0	545.4	711.0	797.0	836.8	909.8	830.9	810.4	908.0	796.3	828.1	926.6	952.1	894.9	958.5	912.1	550.7	593.4
WHEAT	765.1	536.8	548.4	492.8	511.3	486.7	536.3	681.9	714.0	625.6	660.2	778.5	718.4	774.9	647.6	605.2	487.4	538.5
MAIZE	749.1	732.7	762.6	849.4	910.1	870.8	735.5	652.5	819.7	820.9	946.7	865.0	1037.1	981.9	1021.1	1277.8	908.7	751.1
SORGHUM	751.1	777.6	746.9	763.0	726.4	1026.3	979.1	844.3	905.6	913.6	768.1	858.1	894.9	1016.0	627.1	738.3	489.1	431.3
OTHERS	205.6	378.4	199.0	237.3	238.3	215.9	268.1	305.9	282.1	241.2	266.6	267.2	254.4	285.1	175.3	205.1	200.2	179.8
PULSES	767.5	639.5	666.9	623.0	643.3	847.1	743.0	792.0	796.7	761.2	765.8	700.1	660.7	794.4	636.1	642.8	674.1	700.6
OIL CROPS	190.5	364.4	229.3	211.4	216.6	197.0	223.4	230.4	260.3	256.2	384.2	293.2	228.5	206.6	215.5	238.3	243.1	208.2
TOTAL PRODUCTION (QUINTAL	43572.9	52900.5	50669.9	45866.1	46303.7	74955.9	65605.3	62962.2	78053.6	63366.2	48552.9	54036.6	66840.2	71921.1	63758.1	68953.8	65921.2	[illegible]
CEREALS	37997.1	46980.9	43701.2	39853.6	40804.6	63965.6	56104.3	53935.0	67183.7	55268.3	43398.4	48199.9	60126.7	65132.1	57335.7	61511.1	53201.7	45671.4
TEFF	8479.2	10037.1	9944.8	10223.8	10838.0	14264.2	13121.0	10827.3	13716.7	10902.4	9132.2	9687.1	11021.1	10692.2	12177.2	10461.4	18044.7	11750.2
BARLEY	6248.5	5370.0	8945.6	6899.4	6967.7	10508.2	10751.8	9355.1	11688.4	8143.5	8421.8	9198.6	10371.9	13131.4	10181.6	10630.5	7113.8	7043.4
WHEAT	6989.0	5324.9	6052.1	4289.1	44879.0	5374.5	6132.3	7066.0	9166.1	6660.5	6756.2	7744.1	8206.3	8240.7	7999.4	7987.6	6995.5	7446.6
MAIZE	8408.4	13705.5	9478.1	9290.8	9816.3	15240.8	9482.5	11955.5	16029.5	15329.5	10878.0	10370.7	17428.9	19915.5	16886.9	20556.4	11589.3	12344.8
SORGHUM	6305.2	8755.4	7556.8	7075.0	6798.9	16431.8	14108.3	12065.0	13563.0	12018.9	5072.2	9045.5	10852.2	10319.5	8492.1	9728.1	6706.2	5479.0
OTHERS	1566.8	3788.0	1723.8	2071.5	1895.8	2146.1	2508.4	2626.1	3023.2	2216.1	2148.0	2213.9	2240.3	2832.8	1598.5	2147.3	2752.4	1607.3
PULSES	4994.6	4619.5	6245.0	5151.1	4700.6	10099.1	8480.4	8203.3	9654.1	7112.6	5119.4	4822.4	5809.3	5920.9	5637.4	6469.7	9586.3	6241.8
OIL CROPS	581.2	1300.1	728.7	861.4	799.5	891.2	1020.6	823.9	1216.8	985.3	1035.1	1014.3	904.2	868.1	785.0	972.9	3133.2	870.0
AVERAGE YIELD (QUI./HECT.	8.1	9.8	9.7	8.7	8.5	12.4	11.6	11.1	12.8	11.1	8.3	9.0	10.9	11.3	11.1	11.8	13.7	11.1
CEREALS	8.5	10.7	10.2	9.0	8.8	12.7	11.9	11.7	13.4	11.7	8.8	9.7	11.5	12.2	11.7	12.4	13.6	11.9
TEFF	7.0	7.0	7.4	7.8	7.8	9.4	9.6	8.1	9.8	8.3	6.8	7.5	8.1	7.6	8.3	9.3	14.3	8.7
BARLEY	8.2	9.8	12.6	8.7	8.3	11.6	12.9	11.5	12.9	10.2	10.2	9.9	10.9	14.7	10.6	11.7	12.9	11.9
WHEAT	9.1	9.9	11.0	8.7	87.8	11.0	11.4	10.4	12.8	10.6	10.2	9.9	11.4	10.6	12.4	13.2	14.4	[illegible]
MAIZE	11.2	18.7	12.4	10.9	10.8	17.5	12.9	18.3	19.6	18.7	11.5	12.0	16.8	20.3	16.5	16.1	12.8	16.3
SORGHUM	8.4	11.3	10.1	9.3	9.4	16.0	14.4	14.3	15.0	13.2	6.6	10.5	12.1	10.2	13.5	13.2	13.7	[illegible]
OTHERS	7.6	10.0	8.7	8.7	8.0	9.9	9.4	8.6	10.7	9.2	8.1	9.3	8.8	9.9	9.1	10.5	13.7	8.9
PULSES	6.5	7.2	9.4	8.3	7.3	11.9	11.4	10.4	12.1	9.3	6.7	6.9	8.8	7.5	8.9	10.1	14.2	[illegible]
OIL CROPS	3.1	3.6	3.2	4.1	3.7	4.5	4.6	3.6	4.7	3.8	3.6	3.5	4.0	4.2	3.6	4.1	13.9	4.2

sources : CSA, STATISTICAL BULLETIN 56, 74 and AGRICULTURAL SAMPLE SURVEY 1986/87.
: 1990 and 1991 estimates are taken from 'Survey of current economic conditions in Ethiopia, Vol. 1, MOPED, 1993
* Main season and excluding Eritrea, Tigray, Assab & Ogaden Autonomous Regions.

Fig. 2 Yield by Major Crop Categories

[1974–1991]

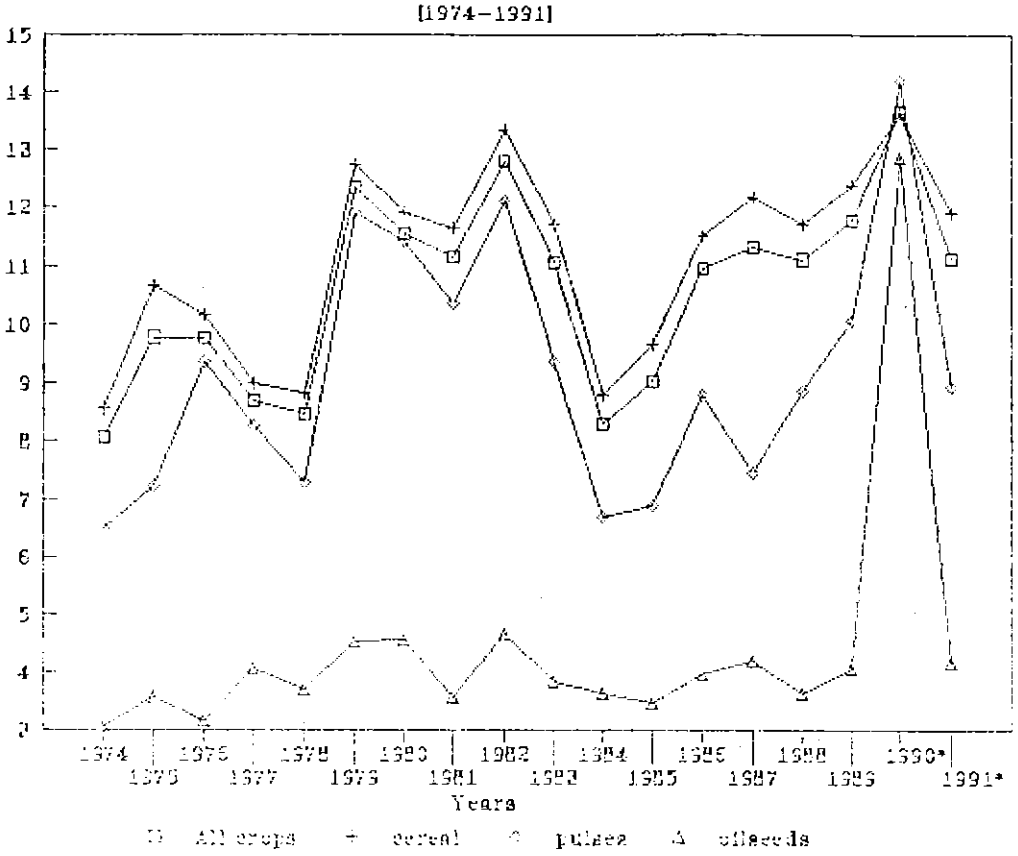
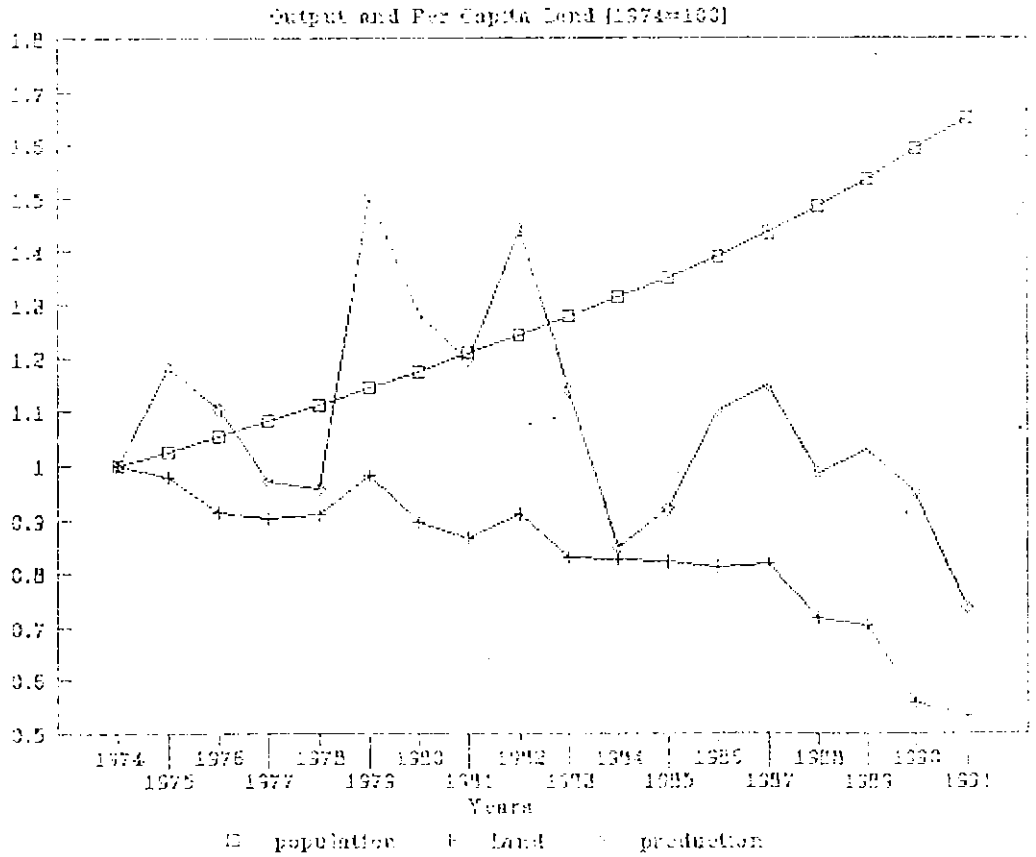


Fig.3 Indices of Population, Per Capita



capita land cultivated, as presented in fig. 3 shows that the problem is indeed serious. This is the dismal story of Ethiopian agriculture for the period under analysis.

But a comparison of the potential yield amount with the actual obtained shows that Ethiopian agriculture is lagging behind, not only the yield levels in other countries but also its potentials. According to the intensive "On-Station" and "On-Farm" trials of the Institute of Agricultural Research (IAR) for all crops the yield levels on the trial plots were larger than the national average figures obtained by farmers. Statistically, as depicted in table 4.2, the yield was higher by 47, 66, 61, 126 and 64 percent for teff, wheat, barley, maize and sorghum respectively. But surprisingly the same research indicated that for teff, barley and wheat the national averages are higher than the "control yields" on the farmers plot. Generally, the implications of the research results are twofold. Firstly, the results indicate that significant potentials do exist to increase the productivity of the crop husbandry sub-sector. Secondly, the gap in yield levels between the trial plots and farmer fields is basically owed to differences in production systems where the problems of technology diffusion and replicability are reflected. Therefore this remains one area of concern as far as raising productivity & food crop production in Ethiopia is considered.

Table 4.2

Comparison of Actual and Trial Plot Yield Levels for Major Crops

Crop	No. of Trials (a)	Control Yield (b)	National Average (c)	Trial Plots (d)	Difference (percentages) (b)/(c)	(d)/(c)
Teff	876	691	875	1286	0.79	1.47
Wheat	539	1292	1330	2214	0.97	1.66
Barley	198	963	1254	2016	0.77	1.61
Maize	262	2516	1694	3831	1.49	2.26
Sorghum	44	1459	1362	2229	1.07	1.64

Source : Food Production, Food Security and Nutrition, Agricultural Production Technology, UNDP 5th Country Programme(Draft), October 1993 (in Asres, W., 1994)

With regard to the livestock sub-sector, its performance is not as significant as what can be expected from its potential per se. The annual offtake for cattle is only 8.2% (2.1 million heads or 259000 MT carcass) and for sheep & goats 22.5% (11.4 million heads or 127000 MT carcass weight). Besides, the annual milk production from the national dairy and goat flock is estimated at

650000-700000 MT and 1300000 MT respectively (Asres, 1994:415). Current annual fish production is also small, only 4000 MT per year. Generally the contribution of this huge endowment to the national economy remained insignificant. This is basically due to the low level of productivity of the livestock which is caused by both genetical and environmental factors.

What does these all production and yield mean to the economy of the country? As presented in Annex 2, agriculture contributed the lions share of the GDP around the beginning of the 1960's & earlier. During this time it had more than a 60 percent share of the GDP though the trend declining through time, has reached its present average level of about 47 percent (see also fig. 4). In absolute terms that is of considerable magnitude. But from the point of view of the employed labour force size and its potentials such a contribution can not be appreciated. For the years, 1961-1991, the average GDP growth rate was 2.3 per cent while the same index for agricultural value added (AGDP) was only 0.8 per cent. In most of the cases the growth of the GDP closely follows the trend of the agricultural sector. Figure 5 shows that GDP and AGDP grow and decline in the same fashion. One observation of the annex and the figure reminds us that for the drought year, 1984/85 the agricultural sector experienced its lowest growth rate. And so did the GDP. This is why we say that Ethiopia's economy is largely an agrarian economy.

Generally, agriculture has performed abysmally. One of the widely documented roles of Ethiopian agriculture has been food crop production. But for the last three decades and almost half of the present no single year was fortunate to produce enough to satisfy the country's food demand. During this time the domestic production was only able to cover on the average about 80 percent of the minimum required food demand. The rest has to come from abroad both through purchases and during drought years as food aid. Unfortunately the quantity of imported food is increasing over time. And the process of reversal in this respect is unlikely in the very short run unless series of measures are taken .

However, it is from this sector that surplus is expected to be generated. Under the prevailing conditions it would be unlikely, if not impossible, that agriculture will contribute at any significant extent to the economic development process of the country. This is not to undermine the present role of agriculture but rather to show the fact that it is possible to produce much more surplus from the sector than is presently done. And, if agriculture as the most important sector of the economy is constrained by such extremely low level of productivity and backward technology, then for any inception of sustainable development a rise in agricultural productivity and production is a prerequisite. There is no single panacea for the latter, but a series of

Fig.4 Sectoral Contributions to GDP

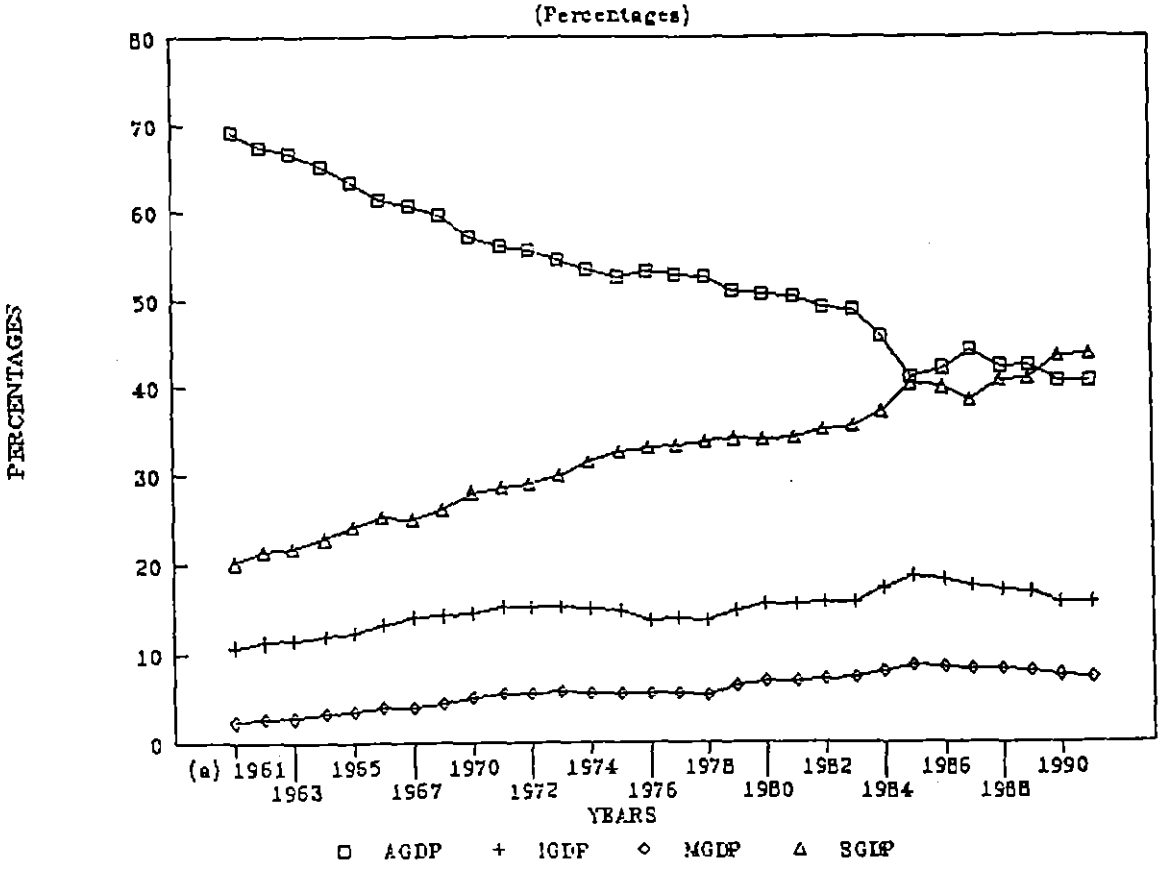
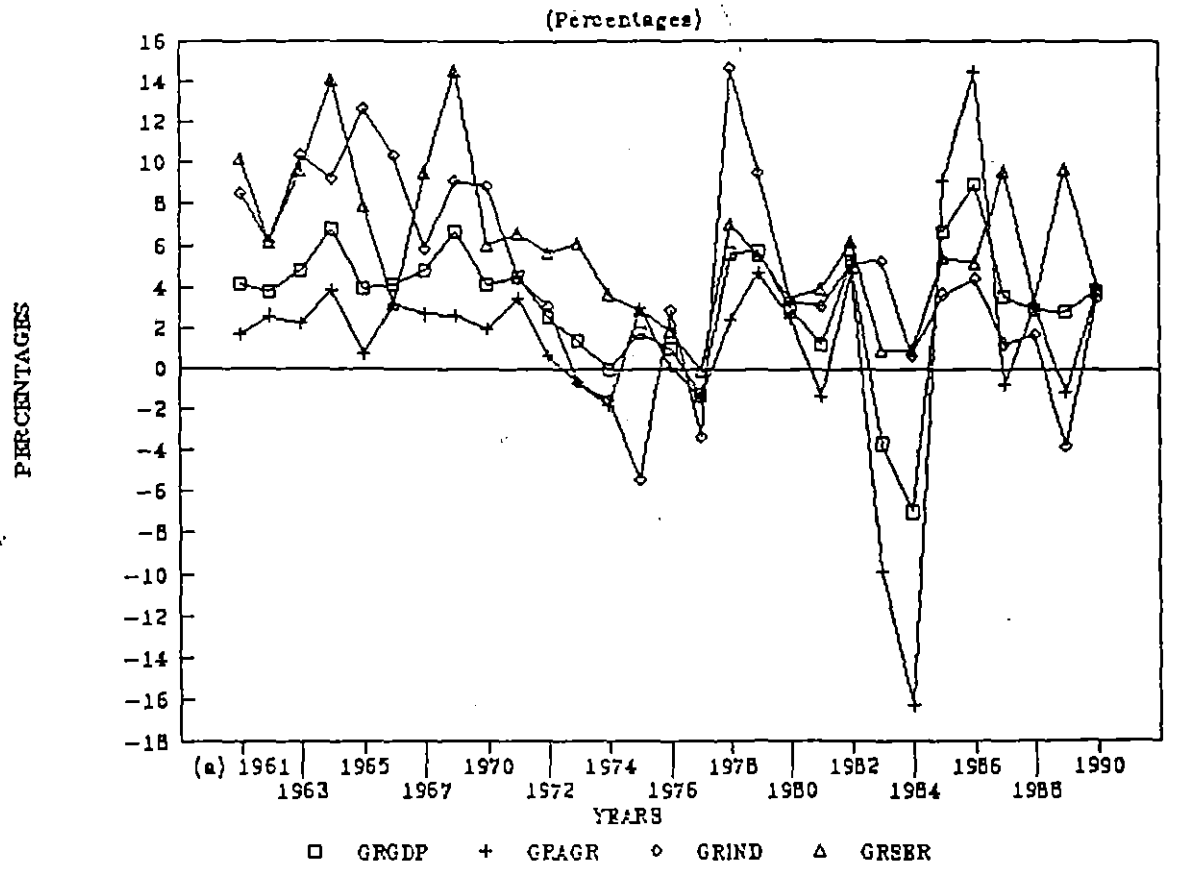


Fig.5 GDP and Sectoral GDP Growth Rates



interrelated actions which enact the problems of the sector, facilitate the utilization of the potentials and so and so forth and consequently bring about the targeted results.

4.3 Non-Agriculture

The two broad sectors contained in the non-agricultural activities are industry and services. The industrial sector comprises manufacturing, small-scale industries & handicrafts, mining & quarrying, construction, electricity and water. The service sector on the other hand includes the distribution oriented trade, transport & communication and others, such as banking & insurance, public administration & defence, housing, education, health and domestic services. But an attempt to treat these all in a paper like this would be, to say the least, over ambitious. Hence, the focus of analysis in this section will be restricted to the industrial sector in general and manufacturing in particular.

Despite the fact that Ethiopia has a long history of artisan activity, industrial development particularly manufacturing is in its infancy. Industries in the modern sense of the term were first established in Ethiopia at the turn of the century but it was not until the 1950's that industries gathered pace (UNIDO, 1992:11, Mulatu, 1982). At that time, generous tax incentives, high levels of tariff protection and the provision of credit by Ethiopian banks on favourable terms encouraged an inflow of foreign capital into the industrial sector (ibid). Mulatu summarizes the situation as:

> The entire process reflects a congruence between a particular investment policy and a related investment climate. The investment policy encouraged the production of consumer goods, guided by the principle of import substitution, and allowed investors to choose their own centers of individual location. The investment climate encouraged both foreign and indigenous investors to take advantage of the situation, in their endeavour to reap maximum profits and to enjoy the benefits of whatever external economies developed (1982:65).

Among other things, because the majority of the investors were foreigners and the consequent problem of capital flight, and the capital-intensive nature of the enterprises, such industrial development has not produced any significant contribution to the economy. This is evidenced by the fact that during the ten years to 1972, over 80 percent of the profits generated by foreign investment in Ethiopia were repatriated (UNIDO, 1991:21).

The manufacturing sub sector can be roughly sub-divided into three categories, namely: medium and large-scale (MLSIs), small-scale industries (SSIs) and handicrafts. According to the Ministry of Industry (MOI), the MLSIs are those using power driven machinery and employing more than ten persons while those with less than ten employed workers are considered as SSIs. Handicrafts are generally those using hand-made tools. The number of enterprises in each category is not yet exactly known. Different surveys with varying degrees of coverage give different figures. For MLSIs the highest figure reported for 1985/86 was 402 (CSA, 1989) while the 1984 Handicrafts and Small-Scale Industries Development Agency (HASIDA), a government agency responsible for SSIs & Handicrafts, survey estimated the number of SSIs to be 7684. Most handicrafts are one-man activities. But during post revolution an attempt was made to organize artisans in cooperatives. Though it is known that those working individually are by far the majority, statistics if better at all, are only available for those in cooperatives. By 1987, there were 852 cooperatives with 37046 members (op.cit).

The manufacturing sub-sector in general is characterized by emphasise on light industry, excessive spatial concentration, weak linkages with the rest of the economy, capital intensiveness and obsolete technological level.

In 1965, light industries of food, beverages and textiles dominated the structure of manufacturing enterprises by accounting for nearly 75 percent of manufacturing value added (MVA). The picture of such a structure is even not better after nearly three decades. Nor is it expected to be so in the near future. For example, in 1988 data for MOI supervised industries reveal that 103 of the surveyed 165 enterprises were engaged in the manufacture of light consumer goods and these account for 67.7 percent of MVA. The intermediate goods rank second with 36 enterprises contributing 23.5 percent of the MVA (table 4.3).

The Pattern of geographical dispersion of manufacturing plants shows a high degree of concentration in few areas. While Shewa, the central region hosts the highest proportion of the enterprises, Harerghie in the eastern part of the country stands second. In 1986, out of 315 private and public manufacturing plants, Shewa alone had 265 (84%) enterprises, where 85% of these are concentrated in Addis Ababa. Harerghie the second industrial center contains 6% while all other regions had the remaining 10% share.

While at the beginning most of the establishments were in private hands, a profound change in the structure of ownership took place in 1975, when the government nationalized virtually all the large-scale industrial enterprises owned by foreigners and Ethiopians alike. Since that time the sector is

dominated by Industrial Public Enterprises (IPEs). But presently, owing to the fashionable 'structural adjustment' process and its associate privatization, the number of IPEs has started to decline. Nevertheless, since the adjustment was introduced in 1992 it is not yet in full swing and thus still the IPEs hold their dominant position in manufacturing activities.

In 1985/86 IPEs accounted for 96 percent of gross value of production, 95 percent of value added, 93 percent of employment and 97 percent of the fixed assets of the medium-and large-scale enterprises (table 4.4). As far as SSIs are concerned, a survey undertaken for the same year showed that they account for about 23.4 percent of total MVA and 45 percent of employment. Given the general environment in which they are operating this is indeed a notable contribution.

Table 4.3
Value added of Public Industrial Enterprises by End Use [1988]
(Percent)

Branch	LCG	CD	IG	EG	SR
Food	100.0	-	-	-	-
Beverages	79.9	-	20.1	-	-
Tobacco	100.0	-	-	-	-
Textiles	88.7	-	11.3	-	-
Leather & Footwear	38.1	-	61.9	-	-
Paper & printing	9.3	-	3.9	-	86.8
Chemical	58.0	-	39.4	2.6	-
Non-Metal (Cement)	0.0	-	100.0	-	-
Metal	5.8	63.3	32.5	1.6	-
Share companies	23.2	-	76.8	-	-
Total MOI	67.7	3.8	23.5	0.1	5.0

Note:- LCG: Light Consumer Goods
CD: Consumer Durables
IG: Intermediate Goods
EG: Engineering Goods
SR: Service Rendering
Source: Ministry of Industry, Statistical Bulletin, June 1989 (in UNIDO, 1991).

As can be inferred from Annex 2, the share of industry and manufacturing (particularly medium-and large-scale) in GDP which were respectively 10.8 and 2.3 percent at the beginning of the 1960's has in 1991 reached 15.7 and 7.2 percent. Similarly, for the last three decades value added in the industrial sector in general has been growing on the average by about 4.7 percent

annually while in MLSIs and SSIs & Handicrafts by nearly 11.5 and 2.9 percents respectively.

The MLSI sector performed very well until 1974 but from 1974 to 1978 the growth rate was close to zero and at times it was negative. The time being the early years of the socialist revolution, poor accomplishment of the enterprises was largely attributed to the disruption of the economy by armed conflicts and low levels of investment. The years 1979 and 1980 registered growth rates as high as 27 and 10 percent respectively and they remained the best years until now. It was during this time that industries achieved greater

Table 4.4
Public Sector Share in Manufacturing Industry [1985/86] a/
(percent shares)

Branch	No. of Establishments	Gross value of Production	Value added	Employ-ment	Fixed assets
Food	46	96	96	91	97
Beverages	68	98	97	97	99
Tobacco	100	100	100	100	100
Textiles	47	94	98	97	98
Leather & Footwear	38	97	96	92	95
Paper & printing	38	92	93	86	74
Chemical	60	95	95	92	93
Petroleum	100	100	100	100	100
Metal	55	72	70	79	83
Non-Metallic	48	95	95	88	99
Total	50	96	95	93	97

Source: CSA, Results of the Survey of Manufacturing and Electricity Industries (1985/1986), January 1989.
a/ All public sector enterprise and a sample of 199 private enterprises.

capacity utilization rates equal to 70 to 100 percent. The explanation given to this is the effect of the National Development Campaign[11] which in the face of scarce investment funds, relied on the use of existing capacity to increase output through repairing idle factories and alleviating raw material and manpower constraints (op.cit). Then once again the growth rate declined to less than 5 percent. Especially for the years 1990 and 1991, the growth

[11] With the objective of stablizing the economy after the radical revolutionary measures, the years 1978-1983 were officially declared as National Production Campaign years.

rate was negative. The adverse macro-economic situation, constraints within the industrial sector and lack of raw materials were cited as the major causes.

The growth trend of SSIs and handicrafts was similar to what is said above for MLSIs. The share of SSIs & handicrafts from industrial GDP has been declining from 32 percent at the beginning of the 1960's, to around 27 percent in the 1980's and down to 22 percent at the start of the 1990's. Overall, for the last thirty years value added in SSIs & handicrafts had an average growth rate of 2.9 percent and a share of 25.3 percent of industrial value added.

Most of the SSIs are the traditional bakeries, grain mills and edible oil extractors. Textiles and garment manufacturing is the second most important SSI activity. In terms of diversification, the range of products in SSIs had been found to be larger than with the MLSIs counterparts. As observed by UNIDO experts, the range of products manufactured by SSIs is already impressive (insecticides, shoe polish & toilet preparations in Chemicals, cutlery, structural metal products, light machinery and tools in the metal branch, marble, finishing stones & building blocks in the non-metallic products branch) and is gradually widening as entrepreneurs take advantage of the wide range of simple products suitable for import substitution (op.cit). It has been commonly reported that, SSIs in Ethiopia are constrained by factors such as foreign exchange shortages, lack of inputs, scarce financial resources and shortage of skilled managerial and technical staff.

The contribution of the industrial sector to employment generation has remained insignificant. In 1986 for which data is available MLSIs employed a total of 90845 persons, which represents less than 0.5 percent of the total economically active population (op.cit). Over 90 percent of this is accounted for by the public enterprises. Although the employment predominance of the textiles branch has fallen slightly, it remains by far the most important employer, accounting for about 40 percent of the industrial work force. Low industrial employment in Ethiopia is apparently due to the high capital-intensity of the enterprises. The value of fixed assets per employee in the manufacturing enterprises is also the highest when compared to the standards of developing countries. This has been criticised a lot as far back as the 1960's.

The study of UNIDO has vividly proven the contention we made in chapter II, where we emphasized the importance of sectoral interdependence especially that of agriculture and industry.

> Industrial performance has also been affected by that of the economy as a whole and agriculture in particular. Output of many cash crops has stagnated, in some cases even fallen, and so industrial enterprises have had to contend with irregular & often inadequate deliveries of raw materials. Production in the food processing branch was particularly affected by the disastrous droughts of 1984/85. Moreover, the drought inevitably forced the government to reallocate resources away from industry to more urgent relief and rehabilitation activities (1992:22)

4.4 Exportables

Ethiopian exports are are dominated by agricultural commodities. No sector of the economy has played such a role as agriculture in generating the scarce foreign exchange and internationalization of the economy. That is why we say Ethiopian agriculture is basically an international sector.

Time series data for 1970-1990 indicate that on the average 93.8 percent of the value of merchandise exports was accruing to primary products while the remaining 4.7 and 1.5 percents are respectively accounted for by fuel and manufactured exports (table 4.5).

Of the agricultural exports; coffee, pulses, oilseeds, live animals and fruits & vegetables constitute the major ones. The average contribution of these commodities to total export earnings which was on the average 754.59 million Birr during 1974 to 1987, had been 62, 4.3, 3.7, 1.8 and 0.7 percents respectively. Such is the economy of Ethiopia that it depends on a single crop for nearly two-thirds of its export earnings. Even by other developing countries standards, this represents an excessive form of a mono-crop economy.

For the period under reference, among the agricultural exports, coffee registered the highest and a steady average annual growth rate of 15 percent. To the contrary, the export earnings from pulses and oilseeds show a significant drop of nearly 14 percent each. This is justifiable given the decline in the volume exported of these crops. Although the export earnings of pulses and oilseeds started to show a declining tendency beginning from 1974, the drop was sharp during 1984/85 indicating the fact that the drought also had a negative impact on the export sector. The same was true for other agriculture-oriented exports such as raw cotton and oilseed cake.

The other agriculture originating export commodities are chat[12], fruits &

[12] Chat is tree plant whose leaves are chewed as a stimulant.

vegetables, natural gum, and flowers. Chat is increasingly becoming an important export crop in Ethiopia. Documents from the National Bank of Ethiopia indicate that for the years 1981-1987 the share of chat in total export was 2.8 percent. This is quite a considerable magnitude from a crop whose production has been rather discouraged in the past years.

Although the contribution of the manufacturing sector in export earnings is presently low, it is increasing over time. This can be observed in Table 4.5 though it is regrettable that the table does not show the exact figures of sectoral contribution to exports. According to the MOI, the value of manufacturing exports increased steadily from Birr 83.7 million in 1980 to Birr 157.3 million in 1987 and their share in total exports increased from 8.8 percent to 19.8 percent over the same period (op.cit). The statistics of the World Bank[13] show that, for the years 1970-1990 manufacturing exports on the average had a share of 0.13 per cent of the GDP, 0.83 Per cent of the industrial value added and 1.22 per cent of the manufacturing value added. However, a year-by-year examination of these statistics indicate that the share is growing over the years.

Nevertheless, the range of manufactured exports is extremely narrow. In 1988, 72 percent of the exports of the MOI supervised enterprises were generated by the leather & leather products branch mostly processed hides and skins; 19.5 percent, by food processing industries; mostly sugar & molasses; and 7.5 percent by textiles, principally knitwear and ready made garments (op.cit). According to the available information 34 industrial export products are identified but only 18 of them are exported on regular basis and these products account for 90 percent of manufactured export earnings.

One characteristic of the Ethiopian manufacturing export items is that the majority of them are exported as primary goods or intermediates. The above study revealed that, for the period 1985-1989, 88.4 of manufactured exports of MOI supervised industries may be classified as primary products or intermediate goods which would undergo further processing in the importing country (op.cit). Since such products usually command very low prices, the income earned is far below the revenue which would have been generated if the industrial processing has been completed inside the country. Thus processing of these exports to the stage of final goods remains a potential area for manufacturing development.

As far as import dependence (import dependence defined as the ratio of total imports to total domestic supply) is concerned, despite the fact that the

[13] Data obtained in the ISS Computer Network Database Programme.

Table - 4.5
Value of Exports of Major Commodities [1974-1988] (Million Birr)

Item	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Average Total	Av.Grow. Rate	Percentage Total
coffee	151.9	152.7	324.6	520.0	502.3	592.6	631.8	524.3	480.[illegible]	590.4	466.[illegible]	664.8	524.3	439.2	468.96	0.15	0.[illegible]1
Pulses	102.5	64.9	55.9	42.7	17.2	22.4	24.8	23.7	30.9	20.3	16.9	12.6	8.5	16.1	32.81	-0.05	0.04[illegible]
Oilseeds	95.9	82.3	31.2	17.7	12.3	9.5	13.9	28.4	19.5	27.9	15.6	7.9	9.8	22.0	28.14	-0.05	0.03[illegible]
Sugar	4.5	9.5	17.8	3.0	10.5	10.7	16.6	9.8	7.0	10.1	9.3	10.4	12.6	16.4	10.59	0.10	0.014
Hides & Skins	46.9	34.2	61.6	48.1	53.8	141.3	138.7	92.9	98.[illegible]	93.4	95.4	119.5	108.3	133.0	90.47	0.07	0.130
Live Animals	14.6	29.8	19.4	1.8	1.1	4.5	8.3	9.8	8.3	14.8	19.7	18.9	15.6	32.4	14.21	-0.00	0.019
Meat canned & frozen	14.6	7.1	7.0	3.4	0.8	3.6	5.4	6.3	5.3	5.9	3.9	3.9	5.4	5.1	5.55	-0.04	0.007
Fruit & Vegetables	5.3	7.3	2.4	5.4	3.5	3.9	4.8	3.6	5.5	4.2	6.0	6.0	12.8	11.8	5.89	0.01	0.008
Oil seed cake	8.8	8.0	10.8	9.4	3.8	11.9	5.8	8.8	14.4	16.1	1.0	2.0	1.7	1.1	7.40	-0.01	0.010
Raw cotton							5.4	28.2	18.4	11.9	1.8	0.0	1.6	1.1	8.55	0.04	0.011
Petroleum products							54.[illegible]	76.1	53.8	73.9	66.0	44.2	27.3	36.0	53.94	-0.00	0.071
Other exports	102.4	53.0	40.9	36.3	19.7	67.9	41.0	49.4	37.8	58.9	40.2	33.8	66.9	59.4	49.83	-0.04	0.066
Re-exports	8.9	29.6	7.8	0.4	1.3	0.7	0.4	0.4	0.2	1.3	0.0	0.5	0.0	0.0	3.68	0.04	0.005
Total Exports	556.3	478.4	579.4	688.2	615.8	869.0	951.1	851.5	810.5	929.1	743.1	924.5	794.8	773.6	754.59	0.03	1.000

SOURCE : National Bank of Ethiopia, annual reports 1984, 1987/88 [in Mulatu, W. 1990].

overall dependence has increased the industrial import dependence has fallen from 38.7 percent in 1975 to 30.1 percent in 1986 which was accompanied by a fall in the proportion of manufacturing goods in total imports from 67.3 to 56.99 percent for the same period (op.cit). As observed by UNIDO, this may be attributed partly to the success of the governments strategy of import substitution through the development of industries satisfying basic needs and domestic consumer demand. But part of the explanation is related to the rise in the import of agricultural inputs and food items which inflate the total import bill. In line with what was said above, it has been found that industrial dependence on imported raw materials and intermediate goods has declined over this period. In contrast, however, dependence on imported capital goods has been increasing (op. cit). With the current low level of development of the engineering industries, the trend is likely to continue for the future.

Despite this achievement, the share of industrial goods in the total import bill is still high. In general, as Eshetu put it, the industrial base in most underdeveloped countries is fragile and more exogenously determined (1990b:242). Ethiopia is no exception. In evaluating the overall contribution of the industrial sector to the development process of contemporary developing countries, Eshetu further contends:

> The cumulative impact of such industries as exist is so small that they have not been able to bring about the kind of transformation that we associate with the industrial revolution. Because such industries as exist in these countries are dependent on external sources for their technology and because of their limited linkages with the rest of the economy, they can not serve as sources of dynamism and as promoters of flexibility; hence the justification for calling the industrial base of these countries fragile (1990b:242).

Such an end note is very relevant for the present level of industrial development in Ethiopia.

4.5 Inter-Industrial Linkages

The linkages between sectors can be expressed in different forms. Ahluwalia identified three channels of linkages between agriculture and industry namely, production linkages, demand linkages and saving & investment linkages. Production linkages arise from the interdependence of agriculture and industry for productive inputs, i.e, supply of agricultural materials such as grain,

cotton, jute, sugar-cane, tobacco, meat, hides & skins, etc to agro-based industries, and the supply of fertiliser, pesticides, agricultural machinery and electricity by industry to agriculture (Ahluwalia et.al, 1989:226).

Demand linkages are reflected through creating consumer markets for products other than from the sector itself. However, in this regard, the relationship has often been conceived as uni-directional. To be more explicit, while the effect of urban income and industrialization on the demand for agricultural commodities is well recognised, the impact of rural income on industrial consumption goods, on the other hand has not been accorded adequate attention. For simple industrial consumption goods such as clothing, footwear, sugar, edible oil, soap, etc. total rural consumption is by far higher than urban consumption (ibid). Although data scarcity do not allow to substantiate the argument for the Ethiopian case, our consciousness tells us that the situation is indeed the same.

In agrarian countries like Ethiopia, the effect of the agricultural sector on savings in the economy is not only limited to private savings in the sector. Government savings are also affected, not only by agricultural incomes, but also by the food grains terms of trade (ibid). As Ahluwalia and Rangarajan argued, "this is because government revenues tend to be indexed to the price of manufactures while government expenditures are related more to food grains prices because of the dearness allowances payable to government employees" (1989:230).

It is apparent that inter-sectoral interdependence in Ethiopia is generally regarded as flimsy. The same holds true for intra-sectoral relationships. Unfortunately the available scant information do not allow to make a detailed quantitative analysis of the sectoral linkages as would have been desired and required. Hence the discussion will extend a little further only on the production linkages for which limited illustrative data is found. For the reasons stated above, here also the discussion will be confined to the relationships between the two major sectors of interest to the topic of our paper, agriculture and industry, particularly manufacturing.

4.5.1 From Industry to Agriculture

Ethiopian agriculture uses different inputs which are produced in the industrial sector. These are fertilizers, pesticides, hand tools, tractors & combiners and electricity. Except for the latter two for which there is some

domestic production the others are currently fully imported.

Ethiopia is one of the developing countries where both pesticides and fertilizer consumption per unit of cultivated land are at the lowest levels[14]. Various factors account for this situation among which supply failure is regarded as one of the major factors. Supply shortages of pesticides is a frequently raised problem by farmers. The situation is even more severe in remote areas where farmers have to travel long distances to get the necessary chemicals in urban areas from the urban based crop protection experts. In a country where crop pests and insects are one of the major agricultural ailments by causing significant loss of output, it is not difficult to understand the likely effect that might be entailed by lacking a domestic supply capacity. From economic theory we know that sometimes supply generates its own demand. Analogously, the establishment of domestic plants, it is believed, will improve the supply situation which, *ceteris paribus*, encourages farmers to use more in the future than they are used to presently.

An UNIDO study made a similar recommendation by commenting that, "despite the importance of agriculture to the Ethiopian economy, there were practically no pesticide formulation facilities in Ethiopia - Shell Chemicals operates a small lindane dust formulation plant and another MOA operated plant closed in the mid-1980's owing to a shortage of spare parts" (op.cit). The same study advised that a small-scale formulation plant should be built in order to take advantage of import substitution opportunities and propagate the use of pesticides within the peasant sector. The establishment of domestic capacity was further justified by the benefit the plant might create to the national economy. The local material content which is estimated to be about 30 percent for liquids and 85-99 percent for dust and granules, the high value added that would be generated and the considerable foreign exchange savings would further justify the feasibility of such plants (op.cit).

Similarly, there are no fertiliser producing enterprises in Ethiopia and thus all fertilizers have to be imported. The demand for fertilizers outruns its supply. The consumption level of fertilizers is extremely low, less than one kilogram per hectare of land until 1988 and a unit more after that. This is basically due to both the low supply and high price of fertilizers. The rationale for limited imports of fertilizers and insecticide, like all imports, is justified by scarcity of foreign exchange. The final result of

[14] A very elaborated empirical evidence is presented in Chapter IV of this paper.

which is the reduced domestic availability and hence lowering the yield level and output of the sector. Although, the comparative advantage needs detailed benefit-cost analysis the importance of establishing a small-scale fertilizer processing plant in Ethiopia has been hinted. What we know so far is that a pre-feasibility study for a fertilizer plant which is estimated to cost Birr[15] 460.5 million and with a capacity of 660,000 tons per annum (tpa) of DAP and 340,000 tpa of urea is in preparation (Op.cit:81).

In a nut shell, at present it is apparent that the industrial sector has failed to fulfil its task of providing agriculture with the necessary industrially-produced agricultural inputs. This has ultimately lead agriculture to look for alternative sources of supply outside the country. Hence not developing the necessary linkages with the domestic industrial sector that would also have had a positive macro economic impacts.

With regard to agricultural machinery home production is well underway. But the quality of products sometimes does not satisfy the specifications set by local situations. This creates supply constraints for the agricultural sector and marketing problems for the manufacturing branch since its production could not find buyers. The case of tractors produced by the Nazareth Tractor Factory, a factory which was built in 1984 in cooperation with the former Soviet Union, and sickles made by the Kotebe Metal Works Factory, can be taken as one example. Its low level of development has also limited the sector's demand and consumption for energy. Agriculture needs electricity for irrigation, lighting, etc. But due to the limited irrigation development, its use of the service is very negligible and is presently limited to the state farms. However, in some areas whilst the demand for power is high the infrastructure is not available at all.

Without forgetting supply failures for which the domestic industrial base is to be blamed, Ethiopian agriculture; characterized by a lack of or a limited demand for industrial inputs, is also responsible for the present weak linkages between the two sectors. However, the causal relationship for the latter is circular where inadequate use of inputs causes agricultural production to fall and consequently brings low income to farmers. Low income again means limited demand and thus low consumption of inputs. Therefore it can be argued that breaking this vicious circle of agricultural development

[15] Birr is an Ethiopian Currency unit. Before the 1992 devaluation 2.07 Birr= 1US$ and presently 5 Birr= 1US$.

has strong implications for strengthening the linkages between the two sectors.

4.5.2 From Agriculture to Industry [Backward Linkages]

From the industrial sector side, a multitude of agricultural commodities are used as raw materials for factory processing. However, the backward linkages created by the industrial base is not yet exhaustive. This can be linked to the very objective the entrepreneurs had during establishing the enterprises. Especially those establishments which were built before 1974 (the Ethiopian Socialist Revolution) were mostly undertaken by private capital, predominantly foreign with the primary motive of maximum profit generation and with no or with little linkage considerations. After 1974, though there was full awareness to linkage effects on the part of the industrial policy makers, still the actual performance has been below the expected level.

The structure of industrial inputs as depicted in table 4.6, reveals that dependence on imported intermediate goods and raw materials has declined over time. However the studies undertaken by UNIDO indicated that for the same period the import of capital goods has increased (op.cit).

Table 4.6
Ratio of Imported Raw Material Costs to total costs by Industrial Group [1985/86-1989/90]

Industrial Group	1985/86	1986/87	1987/88	1988/89	1989/90
Food	0.147	0.106	0.175	0.201	0.161
Beverages	0.357	0.332	0.227	0.315	0.292
Tobacco	0.718	0.704	0.766	0.621	0.566
Textiles	0.313	0.326	0.304	0.318	0.338
Leather & Footwear	0.170	0.161	0.166	0.166	0.181
Wood & Furniture	0.315	0.343	0.276	0.308	0.268
Paper & printing	0.656	0.680	0.659	0.729	0.628
Chemical	0.851	0.828	0.816	0.826	0.829
Non-Metal	0.550	0.524	0.516	0.597	0.587
Metal	0.947	0.942	0.930	0.916	0.926
All Manufacturing	0.402	0.402	0.395	0.385	0.375

Source: CSA, Results of The Survey of Manufacturing and Electricity Industries 1982 E.C (1989/90), Statistical Bulletin 112, Addis Ababa, April 1993.

Among the industrial groups food, leather, wood & furniture and beverages did obtain the highest proportion; more than 70 percent of their raw materials from the local agricultural sector in 1989/90. These enterprises generated more than half of the MVA. For the remaining branches, the range was between

66.2 percent in textiles to 7.4 percent in the metal works branch. Obviously what can not be supplied domestically is met by imports.

If import dependence is to be defined as the proportion of imported inputs to total input consumption, the degree of import dependence for Ethiopian manufacturing enterprises which was nearly 40 percent in 1985/86 has declined to 37.5 percent within five years in 1989/90 (table 4.6). Although, such a drop is welcome obviously the rate is too slow. Within the context of the country's low and fragile foreign exchange earnings, this is still quite a considerable magnitude. What is more, a high degree of import dependence is still observed in most of the branches which means that short-run efforts to reverse the situation are unlikely and the import dependent industrial structure will continue to persist for some time in the future. This is especially true for high-tech branches such as chemicals and engineering.

As a proportion of total corporation expenditure on imported inputs, direct materials are by far the most important, accounting for 78 percent of imported inputs, whereas indirect inputs account for only 9 percent and spare parts for 13 percent (op.cit).

Even in the less import dependent branches such as food processing, the trend shows a rise in the proportion of imported inputs. This might be due to the fall in domestic supply, since this was the time when Ethiopia has experienced its worst drought in her history. In general the period under analysis was characterised by unstable agricultural production and a consequent inadequate supply. According to UNIDO's study this had a direct repercussion on the food processing branch where during the drought years of 1983/84, output dropped by 16 percent over the level in the previous year (op.cit).

During the time under reference, a rise in the share of imported inputs was also observed in the textiles industry which could possibly be explained by the fact that the industry depended entirely on imported nylon and acrylic yarn.

Leaving aside the structural factors on the side of the manufacturing sector, the performance of the agricultural sector by itself has also contributed to the weakening of the linkages between the two sectors. Supply failures and poor quality of the products when available, are believed to cause production problems in the manufacturing sector. For instance, high impurity in grain supply for food processing enterprises, poor quality tobacco leaf for cigarette factories and defective skins & hides for the leather industry are frequently reported. This and other factors might have forced the manufacturing sector to use imported raw materials.

So far so for the present situation, but for the future enormous agricultural processing potentials exist in the country. As the report of UNIDO made it explicit:

> Clearly import dependence reflects both the limited linkage to a domestic resource base and the weakness of Ethiopia's basic industrial structure. A wide range of raw materials that could be produced in Ethiopia are not at present, or are produced in insufficient quantities: jute, tobacco, malted barley and hops to mention just the few (UNIDO, 1991).

The same observation and remark was also made by Singh when he says:

> Some agricultural raw materials which could be produced in Ethiopia are still unnecessarily imported particularly cotton and coarse fibres (1987:11).

In addition to the above, rubber plantation, bio-mass processing, animal bone processing, etc. are areas for future expansion.

The final conclusion that can be drawn from the above discussion is clear. The present degree of linkages between agriculture and industry is not the type that ADLI strategy presumes. External orientation of the industrial sector's raw material procurement is still predominant. Food, Textiles, Tobacco, Wood & Furniture and paper & printing represent branches where domestic substitution of inputs seems feasible even under the present circumstances. Therefore development of an industrial base which is inward looking for its raw materials remains a central goal of the strategy.

CHAPTER V
THE FINANCING OF ADLI STRATEGY AND RESOURCE ALLOCATION

5.1 Introduction

So far we have been endeavouring to show how sluggish the performance of the economy in general and agriculture in particular were in the past years. In addition it was tried to build the causal relationships between agriculture and the economy on one side and the former and industry on the other. We also said that to bring about fundamental change in the economy it is necessary to find means and ways of increasing the productivity of agriculture. The fact that this process of agricultural growth requires capital formation is not questionable. What might be debatable is the mechanism, magnitude and source of capital formation.

Growth, *inter alia*, requires investment- investment in inputs and in infrastructure. But for developing countries it is this shortage of investible resources that dictates or slows down the pace of their economic development in general. It is this lack of resources that compel LDC's not to be self sufficient in their development endeavour. Hence the support of the developed world is desperately needed if any meaningful development is to take place in the south. Particularly this is serious for poor economies like Ethiopia.

If what we said above is palatable, we can broadly classify the sources of investible resources in Ethiopia into two: domestic and foreign. Following this the capacity of domestic surplus generation and the system used in its allocation will be discussed in section 5.2 while the case of foreign investible resources is treated in section 5.3. The first will be discussed in the following section and the later there after. And the final section attempts to model the future direction of national investment efforts with particular emphasis to public investment. But it should be clear form the outset that actual estimation of capital formation or, to put it differently, the magnitude of the investment required for the implementation of the strategy will not be carried out in this paper. First, because of the multi-dimensionality and continuity of development processes, it is methodologically difficult to estimate precisely the magnitude of the required resources. But it is almost tautological that the investment amount under this new strategy would be much larger than in the past periods. Second, since some of its determining factors are beyond control, it makes it artificial to pursue such an exercise. Third, as we will explain later foreign resources are expected to form a substantial portion of the investment needs and for the reason cited above it is difficult to forecast the quantity of foreign aid or credit flow. In section 2.6, the question of financing the strategy was put as one point

of departure. Here we will defend our position explicitly and empirically.

5.2 Domestic Investible Resource Generation and its Allocation

5.2.1 Surplus Generation (Mobilization)

When we tried to describe the structure of the economy of Ethiopia we ultimately emphasised that the economy is by and large agrarian. The contributions of agriculture in terms of food production, employment and labour supply have been mentioned. Here we will attempt to examine its importance as a source of investible surplus. In addition to agriculture, some branches of industry and services have investible surplus producing potentials. For instance, statistics show that for 165 IPEs, for the years 1978-1982, the ratio of operating surplus to their gross value of production were 13.4, 13.7, 11.9, 11.2 and 10.6 per cents respectively[16]. Nevertheless, as far as Ethiopia's domestic capital formation is concerned agriculture holds the leading position.

Capital formation is carried out by savings generated from surplus. But in some situations there is a phenomenon of 'forced saving' where as its name implies, the act of saving is carried out without having real surplus or without the wish or support of the saver. In this paper we will be concerned with both senses of the term.

Different countries have been employing different kinds of agricultural surplus extraction instruments. The most commonly used mechanisms, however, have been tax, price and marketing policies. According to Eshetu (1990a:90), surplus may also be mobilized through cash contributions be it voluntarily or not. Another form of surplus extraction may be the compulsory delivery of agricultural output to the state marketing or distributing body. Still another mechanism of surplus mobilization could take the form of repayment of agricultural credit in kind as has been the case in Taiwan.

In Ethiopia both in the past and present a combination of the above mentioned mechanisms have been used in channelling resources from agriculture. However one can observe a clear distinction between the instruments used over a given period of time. During the Imperial time the dominant form of such an instrument has been taxation. As Gilkes wrote, taxes were paid "in produce, in services and in cash" (1975:117-118). But due to the highly localized nature of these taxes their contribution to the national capital formation has been low. The first land tax proclamation which demanded a money tax was issued in 1942/43 when the government was in a serious financial need in the

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[16] See CSA, Results of The Survey of Manufacturing and Electricity Industries, 1982 E.C (1989/90), Statistical Bulletin 112, Addis Ababa, April 1993.

aftermath of the historical anti-fascist war (Asfaw, 1984). After this a series of proclamations and amendments were made in 1944/45, 1951/52, 1967/68, 1975/76 and 1978/79 which increased the magnitude of the tax and refined the mode of its payment.

Agricultural taxes were levied on the basis of holding size, fertility level and income. The tax in lieu of tithe[17] which was operational since 1944/45-1975/76 was abolished and replaced by the new agricultural income tax of 1967/68. The major distinction between the two systems is, while the first is based on the size and quality (classified as fertile, semi-fertile and poor) of land holding the latter is levied on the basis of income.

After the 1974/75 Socialist Revolution, by abolishing all the former taxes a new rural land use tax and agricultural income tax were institutionalized. The amending proclamation of 1978/79 has further raised the tax rates of both land & income.

In the present time, the direct agricultural taxes include: land use fee, the tax on agricultural incomes and taxes on exports of agricultural commodities. Other revenues such as contributions to public service establishments (road, school, clinic, water, etc.), drought assistance, national defence, etc need also be considered as surplus mobilized from the sector (ibid). Here it is logical to digress a bit on the specifics of the structure of the direct taxes as important as they are for domestic capital formation. The present land use fee is a fixed sum of Birr 10 per farmer irrespective of the location or fertility of the land. Differently, State farms are urged to pay 2 Birr per hectare of their holdings. The agricultural income tax which is progressive in its nature has a minimum floor rate of Birr 10 for income earners below 600 Birr. But the available information has shown that almost all farmers pay this amount which made its progressiveness very fictitious.

Export taxes by far constitute the highest proportions of agricultural taxes. In addition to the 2 percent transaction tax which is levied on all exports of agricultural products, few agricultural exports are subject to other forms of taxation. These include coffee and hides & skins. Export duties, surtax and cess[18] make up the coffee taxes, while only the first is levied on hides & skins.

As presented in table 5.1, for the years 1961-1988, the average share of

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[17] A traditional land tax system where one-tenth of the output of the farmer is commonly paid in kind.

[18] Cess is a form of tax which was originally introduced to provide revenue for the now defunct National Coffee Board (Eshetu, 1990a:89-90). It was a parastatal organization.

income tax, land use fee, export duties on coffee, surcharge on coffee, coffee cess, export duties on hides and skins and transaction taxes on exports from total agricultural tax have been 15.79, 16.15, 8.37, 86.3, 2.99, 0.76,, 5.45 per cents respectively.

What is the contribution of these agricultural taxes to national capital formation? The time series data for the last 28 years shows that agricultural tax incomes have shown a sharp increasing trend, with an annual average growth rate of 31.73 per cent. For the years under reference agricultural taxes accounted for about 5.5 per cent of the total tax revenue and 5.01 per cent of total ordinary revenue. Suspicious of the fact that the diminutive taxes registered in the early years of the time series might have caused these figures to be smaller, estimation was made for the years beginning from 1977 when an amendment proclamation was given to the existing one. The result was that the shares rose to 8.7 and 7.6 per cents respectively, still small figures.

A look at the table indicates that the conviction that the bulk of surplus is derived from the agricultural sector through taxes is unattested. As Eshetu commented, "contrary to a widely held impression, the figures show that the agricultural sector is not an important source of tax revenue, especially when considering its contributions to employment and output" (1990a:92). However, the fact that their share is growing from year to year is evident.

As was voiced by the Transitional Government, because of the recent institutional changes in rural areas and partly because of the prevailing political instability in the country, the collection of taxes and particularly the agricultural ones has been very slow. Among the agricultural taxes the difficulty was related to income taxes and land use fee. In the near future it is extremely unlikely that the collection of such taxes will be improved. Why we say this is because of the reasons cited above and the natural environment situation. The drought situation is becoming increasingly recurrent. During the time of drought and other environmental calamities (which are assumed to cause significant loss in production), what is usually done is farmers will be exempted from taxation of any kind (see table 5.1 for the years 1984 & 1985). Given the coverage and frequency of occurrence of drought on the one hand and the present structure of farming on the other, one could argue that, at least in the short-run it is unlikely that agricultural income tax and land use fee would contribute at any significant magnitude to the capital formation effort. This gives an indication that ADLI strategy should not be implemented with much optimism on the domestic resource base.

Other instruments of agricultural surplus extraction are pricing and marketing

Table - 5.1
Central Government Revenue, [1961-1988]
(million Birr)

Item	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
agricultural income tax	0.2	0.3	0.4	0.2	0.3	0.3	0.2	0.3	0.5	15.4	18.9	20	14	11.3
land use tax	15.1	15.5	13.3	15.7	15.9	16.4	16.9	7.2	7.5	7.8	7.4	7.9	13.2	12.4
export duties on coffee	-	-	-						-	34.7	12.2	12.1	13.6	9.7
surcharge on coffee exports	-	-	-	-	-	-	-			-	15.3	10.4	25.4	25.8
coffee cess	-	-	-	-	-	-			-	-	-			
export duties on hides & skins	-	-	-	-	-	-					1.3	1.4	1.6	1.3
transaction tax on exports	3.4	3.5	21.3	4.4	5.4	4.5	5.3	4.7	4.5	5.4	5.4	5.4	8.3	10.8
Total agricultural tax	18.7	19.3	35	20.3	21.6	21.2	22.4	12.2	12.5	63.3	60.5	57.2	76.1	71.3
Total tax revenue	2108.4	2128	2138.9	2178.8	2221.1	2245.3	2268.7	2275.5	2293.1	2333.8	2370.1	2397.2	2448.8	2503.1
Total ordinary revenue	2144.7	2169.8	2173.8	2219.1	2254.7	2288.2	2328.9	2345.8	2366.4	2391.1	2429	2458.7	2521.1	2554.1
Tot. agricul.tax as percent of total tax	0.89	0.91	1.64	0.93	0.97	0.94	0.99	0.54	0.55	2.71	2.55	2.39	3.11	2.85
Tot. agricul.tax as percent of total ordinary tax	0.87	0.89	1.61	0.91	0.96	0.93	0.96	0.52	0.53	2.65	2.49	2.33	3.02	2.50

Source: Ministry of Finance, Annually published Accounts [in Mulatu, W., 1990].

(contd' Table - 5.1)

Item	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
agricultural income tax	10.4	9.7	18.7	18.2	48.7	51.3	99.6	50.3	52.6	48.6	41.9	46.9	50	57
land use tax	6.2	13	17.4	19.3	47.2	48.3	50.2	49.8	51.3	48.1	41.4	44	45.8	47.4
export duties on coffee	7.1	12.2	6.6	16.8	12.2	13.7	13.3	12.4	14	14.3	10.1	9	12.2	10.6
surcharge on coffee exports	17.9	56.6	193.2	254.6	203.4	364.7	154.7	158.7	174	225.6	148.7	236.7	125.4	119.4
coffee cess	-	-				3.6	6.9	5.3	4.6	5.5	3.8	4.7	5.1	4.2
export duties on hides & skins	1.2	1.4	1.5	1.5	2.1	1.6	1	1.2	0.8	0.9	1	0.8	0.3	0.2
transaction tax on exports	7.7	9.1	9.2	8.3	9	11.8	11.5	11.4	10.3	11.4	9	11.4	12.4	12
Total agricultural tax	50.5	103	246.6	318.7	322.6	395	337.2	289.1	307.6	354.4	255.9	353.5	249.2	250.8
Total tax revenue	2537.1	2581.3	2824.8	2908.9	3117.5	3270.2	3331.6	3410.4	3533	3707.5	3654.5	3854	4071.4	4,297.3
Total ordinary revenue	2658.9	2749	2980.1	3157.3	3352.5	3539.5	3729.4	3850.7	4149.4	4,269.9	4,300.3	4783.9	4905.1	[illegible]
Tot. agricul.tax as percent of total tax	1.99	3.95	8.73	10.96	10.35	12.08	10.11	8.48	8.71	9.56	7.00	9.17	6.12	5.84
Tot. agricul.tax as percent of total ordinary tax	1.90	3.71	8.27	10.09	9.62	11.16	9.04	7.51	7.41	8.30	5.95	7.39	5.08	4.66

policies. Between the early years of the revolution until 1989, when the socialist mode of production gave way to the mixed economy system, pricing and marketing policies played the most significant role in syphoning resources from rural Ethiopia.

Although at that time the government's price policy of fixed-prices was equally applicable to most commodities irrespective of their sector of origin, its impact on agricultural commodities has been especially detrimental. Besides the marketing policy created a system where farmers were obliged to sell part of their production to the state parastatal body called the Agricultural Marketing Corporation (AMC) which was responsible for the procurement and distribution of products. This procurement was meant for redistribution to urban areas at low prices, to feed the army and to strengthen the national food security system. But despite these splendid objectives the fact that it was done against the advantages of the producers is clear.

Unfortunately, to our knowledge, no research has attempted to precisely estimate the magnitude of surplus generated under these mechanisms. A very general direction was, however, given by Eshetu. According to him, the surplus extraction process can be looked along three dimensions: (i) considering if the quota deliveries were or were not too high, (ii) estimating the difference between the official farm gate price paid to the producer and the price paid by the final consumer, (iii) considering differences in the terms of trade of agricultural products vis-a-vis those of non agricultural goods (1990a:94).

As far as the quota system is concerned, it has been widely reported that the farmers were overburdened by the system. Although the actual practice varies from region to region, in some areas the quota set for farmers was so high (higher than what is left after deducting consumption and seed requirements from the total output) that they had to buy from the market at market prices to fulfil their quota (Eshetu, 1990a, and Befekadu & Tesfaye, 1990).

The deliberate policy of creating two prices, official and market price, explain the other form of surplus generation from agriculture. During the time under reference, it was visible that the price received by the farmer was much lower than not only its market rate but also the AMC selling prices. As Eshetu succinctly stated, "as far as the peasant is concerned to the extent that the price he receives from the AMC falls short of the free market price, the difference is surplus extracted from him" (1990a:95).

Survey data on Addis Ababa's grain market as presented in table 5.2 reveals the considerable gap between the AMC selling prices and free market prices

where the lowest for white teff was 31 per cent and the highest for maize 51 per cent. A comparison of free market to farm gate prices indicates a further wider gap, from 54 per cent for red wheat to 78 per cent to chickpeas. Results of similar surveys across the country are also in consonant to this fact. As shown in table 5.3, for red teff the AMC selling price is less by 7 per cent in Nekempte and by 52 per cent in DireDawa. Generally it is an all agreed fact that the pricing and marketing systems of the past represent the highest form of surplus extraction.

Table - 5.2

Whole Sale Prices of Grain in Addis Ababa Grain Market* [13.3.89-18.3.89]
(Birr Per Quintal)

Grain Type	AMC farm gate price (a)	AMC selling price (b)	Free market average price (c)	Percentages (a/b)	(a/c)
Teff	42.00	63.00	110.17	67	38
white	48.00	69.55	124.83	69	38
mixed	41.00	61.90	112.00	66	37
red	37.00	57.55	93.67	64	40
Wheat	33.00	54.27	84.17	61	39
white	36.00	57.55	110.67	63	33
mixed	32.00	53.15	74.00	60	43
red	31.00	52.10	67.83	60	46
Barley	29.00	48.80	89.25	59	32
white	30.00	49.90	115.00	60	26
mixed	28.00	47.70	63.50	59	44
Maize	22.00	44.45	52.00	49	42
Chick peas	30.00	49.90	135.67	60	22
Lentils	45.00	66.30	186.50	68	24

* The market in Amharic is called "Ehel Berenda"
Source: AMC (in Eshetu, 1990a), columns 5 & 6 own calculation.

Through the present domestic and foreign unequivocally biased terms of trade, agriculture is also being squeezed. Domestically it is clear that the rate of increase in the prices of manufacturing commodities is by far higher than those of agricultural products. Although the absence of information on national price indices do not allow us to make statistical comparisons among commodities, from the retail price index of Addis Ababa, the only price index for which periodic estimation is being carried out in the country, we can infer that the price differentials are significant to cause resource diversion

from agriculture. And following this it can be argued that the pricing and marketing systems are working against agricultural products. Despite our inability to quantifying the magnitude of resources extracted in this manner, it is not difficult to understand that variation in the terms of trade takes one form of extracting agricultural surpluses.

In conclusion, we can say that due to the high delivery quotas, low farm gate prices, and unfavourable agricultural terms of trade, the then government's grain marketing and pricing policies were highly instrumental in extracting surplus from the primary sector. Even in agriculture, the agents which lost the most are the peasants since the prices paid by the AMC are higher to the state farms than are to the peasants. Some studies indicate that during this time peasants, on the average, received 66 percent of the price per quintal of products paid to the state farms (Befekadu & Tesfaye, 1990:67).

Table - 5.3
Comparative Prices of Red Teff in Different Markets
(Birr Per Quintal)

Towns	AMC selling price* (1984/85-1985/86)	Free Market Price (1987/88)	Ratio (Percentage)
Addis Ababa	56.05	88	64
Ambo	54.49	71	77
Asmara	87.88	176	50
Assela	50.66	75	68
Bahir Dar	51.71	76	68
Dire Dawa	64.65	136	48
Debre Berhan	54.42	95	57
Debre Markos	50.39	79	64
Gondar	50.46	74	68
Metu	52.48	58	90
Nazareth	54.82	97	57
Nekempte	53.28	57	93
Shashemene	49.56	75	66

* excluding 2 percent turnover tax. Note that the AMC wholesale purchase price for 1984/85-1985/86 was 39 Birr

Source: AMC [in Eshetu, 1990a], column 3 own calculation.

After 1989 the government controlled price system has been abolished and farmers have started to enjoy free market prices. But due to the prevailing institutional (market agents), infrastructural, and other determinants there

is still significant price differentials between the farm gate and market prices today.

As is usually assumed and advocated the market forces are not guaranteeing the farmers with remunerative prices. Besides, the terms of trade both at home and abroad are rather worsening now than it was before. The structural adjustment programme, which is better known in Ethiopia as the 'New Economic Reform', is widening the terms of trade gap for most commodities. This is true given the fact that the import of manufactured commodities still account for the highest share of the total import bill and the benefit of the adjustment process is basically connected to world market oriented products only.

The surplus generated through foreign exchange and other social contributions should not be underestimated either. Particularly the former represents a very considerable amount owing to the fact we discussed above (chapter 4) that the exports of the country are largely agricultural. Moreover, in the past and partly until now, like the home market the export market was monopolized by government agencies which made it possible for the government to have absolute command over whatever foreign exchange was generated by exports.

Generally it can be said that the past regime's price and marketing policies or for that matter other policies too, were of a highly extractive type. Despite our failure to estimating the actual volume of surplus extracted from the sector (with the exception of taxes), it is uncontroversial that agriculture has been squeezed highly and is the major financial source of the national economy.

5.2.2 Patterns of Resource Allocation

If so much is said about the resources generated in the agricultural sector the next question would be, how much flowed into the sector in return? This will be the issue we will grapple with and hopefully attempt to answer in this section. To this endeavour the three main mechanisms of resource transfer namely, the structure of government current expenditure, government capital expenditure and share of the national institutional credit would be in short examined below.

With regard to current expenditure, in 1984/85 the average proportion of agricultural expenditure was only 17 per cent. Similarly as depicted in table 5.4, for the years 1966-1988, the average annual central government domestic capital expenditure was 451.23 million Birr of which agriculture & land settlement received around 28 per cent. This share has been as low as 4.06 per cent in 1967, at the beginning of the time series and increasing all through

Table - 5.4

Central Government Capital Expenditure (Excluding external assistance) [1966-1988]

(millions of Birr)

Item \ Year	1966	1966-68	1969-71	1972-74	1975-77	1978-80	1981-83	1984-86	1987-88
Economic Development	70.1	47.47	65.80	105.93	210.93	283.60	651.13	911.87	1144.30
Agriculture & Land Sett.	3.9	4.93	8.57	20.70	78.63	121.47	234.80	300.20	357.07
Mining & Energy	0.7	0.37	1.17	0.87	1.77	78.27	100.27	226.10	279.00
Industry	24.8	14.20	5.90	11.97	7.90	8.40	106.13	103.30	119.77
Transport	25.1	19.90	35.03	53.77	97.27	111.33	144.87	177.10	208.13
Communication	1.8	1.50	8.67	12.50	15.57	23.47	27.90	75.13	94.33
Construction	23.3	18.40	26.37	41.27	81.70	87.87	116.97	101.63	113.80
Water Resources	4.2	2.97	3.70	4.13	11.67	23.77	42.53	77.07	148.50
Commerce & Tourism	7.6	3.13	2.23	2.20	3.40	0.87	21.77	17.83	12.27
Financial Agencies	3.8	1.97	9.20	13.30	10.30	1.00	0.77	10.60	19.57
Social Development	3.5	6.80	22.73	25.10	38.30	41.30	65.10	84.80	94.47
Education	0.8	3.80	9.67	14.37	16.17	19.60	29.50	33.40	33.30
Culture & Sports		0.13	0.03	0.17	0.00	0.73	1.03	1.23	2.27
Public Health	2.5	2.20	11.67	9.93	13.23	11.07	12.07	17.73	24.37
Others	0.2	0.67	1.39	0.63	9.90	9.50	21.70	32.63	34.53
General Services	2.4	2.13	1.33	2.93	0.30	2.33	4.23	15.00	21.27
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compensation Payments		0.00	0.00	0.00	0.00	0.77	2.17	7.60	12.03
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	76	56.40	89.87	133.97	249.53	328.00	722.63	1019.27	1272.07

Note: Others include community services, social welfare, plan, social research & statistics and information & National guidance.

Source: Ministry of Finance, Annually Published Accounts [in Mulatu, W. 1990]

has reached its peak of 45.68 per cent in 1979 and maintained well above 20 per cent until 1988.

Although both in terms of current and capital expenditures the sector received the highest proportion of any sector, not mentioning the size of its dependents and from the point of view of its contribution to the national economy alone, one could argue that agriculture deserves more.

Data on the sectoral allocation of commercial bank credit (table 5.5) reveals that during 1977-1989, agriculture (excluding exports and coffee) got on the average 6 per cent of the total credit of the bank. If we sum up the credits extended to the three parts it would rise significantly to 36 per cent. This clearly shows the banks biased credit system to exportable agricultural crops neglecting food and industrial raw material production. While the average for the total credit offered by the bank for the period is 178 per cent higher than its base year values, for agriculture the average is lower by 1 per cent from its level in 1977. What can explain the neglect of agriculture other than these figures?

Actually the largest source of institutional credit for the agriculture sector is the Agricultural & Industrial Development Bank (AIDB). It is true that the highest proportion of the banks credit is meant to the primary sector. However these credits suffer what, extending Chambers (1983) line of rural development problems analysis, I would call 'institutional bias'. The bank's credit allocation is biased to large plantations such as state farms and cooperatives against small peasant agriculture. Therefore there is reason to question the worthiness of such credit allocation to producing units whose contribution to national output is not more than 5 per cent. The same is true for the current and capital expenditures. There is enough empirical evidence that the bulk of capital expenditure made in the agricultural sector was actually invested in the state farms. For example between 1979-1985, around 64 per cent of the investment allocated to agriculture was absorbed by state farms (table 5.6).

The above analysis might have been taken as to mean that agriculture is highly taxed and the process should be stopped. But to put our position explicitly, we are not against the extraction of surplus, be it through voluntarily or forced saving means. But what is not acceptable is that first the amount of extraction should take into consideration the taxable potential of the peasants and second, the highest proportion of the surplus generated should be reinvested in the sector. Our stand is analogous to " **Do not kill the Goose that lay the Golden Eggs**". Otherwise, when the stream drys out the economy will find itself in a crisis which it can never cope with and revive.

Table - 5.5
Sectoral Distribution of Commercial Bank Credit, [1977-1989]
(millions of Birr)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Average	Percent
Agriculture	54.4	57.5	33.5	88.1	46.9	44.1	44.9	41	45.4	45.2	68.5	71.5	58.9	53.84	5.79
Industry	78.1	87	108.1	124.9	129	147.2	122.3	113.7	108.6	102.7	126.1	164	211.1	134.85	14.42
Exports	109.5	114.6	141.5	141.3	91.2	122.8	172.1	160.6	170.1	210.5	148.9	156.7	235.4	151.94	16.33
Coffee	82.2	84.9	108.9	88	24.5	61.4	108.1	79.3	75.6	106.6	43	42.5	91.6	76.66	8.24
Imports	1232.1	137.4	148.6	168.3	377	352	218.1	213	219.4	131.3	249.8	329.8	278.4	211.94	22.78
Construction	47.6	28.8	81.2	82.8	95.7	114.1	130.3	151.2	152.3	163.6	157.5	178.8	194.1	121.38	13.05
Domestic Trade & Services	99.9	125.2	218.3	335.8	219.6	240.7	274.3	253.8	178	238.1	286.9	390.8	280.4	241.68	25.97
Personal	8.8	8.9	6.2	13.3	12.1	10.3	9.7	9.1	10.9	10.1	10.6	11.1	10.9	10.15	1.09
Total Reported	521.4	559.4	737.4	954.5	971.5	1031.5	971.7	942.4	884.7	901.5	1048.3	1302.2	1369.2	930.44	100.00
				p e r c e n t a g e s											
Agriculture	10.4	10.3	4.5	9.2	4.8	4.3	4.6	4.4	5.1	5.0	6.5	5.5	4.6	5.9	5.8
Industry	15.0	15.6	14.7	13.1	13.3	14.3	12.6	12.1	12.3	11.4	12.0	12.6	16.6	13.4	14.4
Exports	21.0	20.5	19.2	14.8	9.4	11.9	17.7	17.0	19.2	23.3	14.2	12.0	18.5	16.3	16.3
Coffee	15.8	15.2	14.8	9.2	2.5	6.0	11.1	8.4	8.5	11.8	4.1	3.3	7.2	8.2	8.2
Imports	236.3	24.6	20.2	17.6	38.8	34.1	22.4	22.6	24.8	14.6	23.8	25.3	21.9	23.5	22.5
Construction	9.1	5.1	11.0	8.7	9.9	11.1	13.4	16.0	17.2	18.1	15.0	13.7	15.3	13.0	1.40
Domestic Trade & Services	19.2	22.4	29.6	35.2	22.6	23.3	28.2	26.9	20.1	26.4	27.4	30.0	22.1	26.0	26.0
Personal	1.7	1.6	0.8	1.4	1.2	1.0	1.0	1.0	1.2	1.1	1.0	0.9	0.9	1.1	1.1
Total Reported	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ From 1984 onwards, data excludes the accounts of the Djibouti Branch.

2/ Excluding long-term credit shares in and deposits with the Housing and Saving Bank.

Source: Commercial Bank of Ethiopia, Annual Reports (various issues) [In Mulatu, W. 1990].

Table 5.6
Actual Capital Expenditure in Agriculture and the Share of State Farms [1979-1985] (millions of Birr)

Year	Total Capital Expenditure	State farms	Coffee and Tea	Percentages	
				State farms	Coffee and Tea
1979	293.3	175.3	0.0	60	0
1980	507.6	334.0	27.1	66	8
1981	675.7	432.9	53.6	64	12
1982	713.8	424.6	47.7	59	11
1983	731.1	470.7	81.3	64	17
1984	389.6	261.0	26.2	67	10
1985	502.0	334.1	39.2	67	12
Total	3813.1	2432.6	275.1	64	11

Source: Towards a Strategy for the Development of State Farms in Ethiopia, Vol.1, Addis Ababa, 1986. (in Fassil G.K., 1994:138)

5.3 Foreign Investible Resource Attraction

We can distinguish three types of foreign investible resources, namely, aid or assistance, credit or loan and direct foreign investment.

Despite the low level of development of the economy, Ethiopia is one of the few countries which receives a disproportionately small proportion of the Official Development Assistance (ODA).

Foreign assistance in the field of agriculture dates as far back as the 1950's in the era of Integrated Rural Development Projects (IRDP) such as the well known CADU, WADU and others. Similarly, direct foreign investment in agriculture is marked by the opening of large commercial sugar plantations around the same period by the Dutch company called HVA-Ethiopia. From this time until the advent of the revolution foreign investment though not very much expanded was on the process of flourishing. The situation got worse during post-revolution. After the revolution , especially during its early years, neither public nor private foreign investment was undertaken in agriculture. In the mid 1980's some large farms were established as joint ventures (such as Ethio-Korea, Ethio-China, Ethio-Bulgaria, Ethio-Yemen, Ethio-Libya) with the then allied socialist countries of the former USSR, Korea, Bulgaria, Yemen, Libya, China, etc. While some of these farms were abandoned due to political and economic reasons others like Ethio-Yemen are

still functional. Although the government tried to improve its rigid regulations and invited foreign investors particularly the western centred ones, they remained sceptical of the overall political system and no one showed interest to make use of some of the generous provisions. This situation is still persisting in the present time.

The foreign assistance the country received over the years is fairly well documented. For the years 1966-1988, for which data on sectoral allocation of foreign assistance is available (table 5.7), the average share of agriculture & land settlement of the total foreign capital expenditure was about 45 per cent. With 20 and 15 per cents share of the investment, next comes the water resources and mining & energy sectors respectively. This is quite a large share showing the attention donors gave to the sector. During this period, the lowest assistance, i.e, only 5.6 million was received in 1967 while the highest 217.3 million Birr which is obvious was in the drought year 1984/85.

Table 5.8 gives the comparison of the domestic vis-a-vis foreign sources of the central government spending. A look at the table shows frustrating figures that at times for example in 1966 foreign assistance made up about 22 per cent of the government's total spending. But with a very high trend of fluctuation ,in between, the present foreign assistance represents around 10 per cent only. The only exception to this rule is again the drought year of 1985 for which the share has been about 19 percent.

Similarly, foreign loan & credit also account for a significant proportion of the central government spending. This has been as low as 5 per cent in 1969 and as high as 21 per cent in 1982 again with a wide variation in between. More or less, we can say that since the 1970's the amount of foreign credit has surpassed its counterpart foreign aid or assistance.

From the figures presented in the two tables, we can deduce three major facts of direct relevance to our main topic of discussion. Firstly, the figures

Table - 5.7

Capital Expenditure financed by Foreign Assistance [1966-1988]

(millions Birr)

Item/Year	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	Aver.	Perce.
Economic Deve.	3.5	4.5	9.5	7.1	11.9	10.9	18.5	15.9	21.8	20.7	25.6	26.7	55.8	38.6	52.7	53.7	95.0	81.8	130.3	199.5	152.2	102.	129.0	55.10	84.31
Agric. & Land	2.8	3.3	6.9	3.5	5.5	8.1	14.9	13.0	14.8	13.9	20.3	17.1	49.3	33.0	35.4	16.4	69.7	33.8	23.6	109.3	84.8	57.1	43.3	29.56	45.23
Mining & Energy	0	0	1	0.9	1.2	1.7	2.5	1.7	5.0	2.7	1.3	1.2	0.9	1.7	5.7	11.6	5.1	10.3	39.5	40.9	28.0	24.4	31.6	9.52	14.56
Industry	0.4	0	0	0.2	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0.10
Transport	0.2	0.6	0.5	1.6	1.2	0.3	0.5	0.7	0.4	0.6	0.5	2.7	1.8	0.7		17.2	0	15.9	7.3	1.4	0	0.1	0	2.46	3.77
Communication	0.2	0.6	0.5	0	0	0	0.5	0.3	0.1	0	0	2.5	1.6	0	0	0	0	0	0	0	0	0.1	0	0.28	0.43
Construction	0	0	0	1.6	1.2	0.3	0	0.4	0.3	0.6	0.5	0.2	0.2	0.7		17.2	0	15.9	7.3	1.4	0	0	0	2.17	3.32
Water Resources	0.1	0.6	1.1	0.9	3.1	0.8	0.6	0	1.2	3.2	3.5	5.7	3.8	3.2	11.6	8.3	18.8	20.9	59.0	47.7	38.8	20.4	54.1	13.37	20.45
Commer. & Tour.	0	0	0	0	0	0	0	0.5	0.4	0.3	0	0	0	0	0	0.2	1.4	0.9	0.9	0.2	0.6	0	0	0.23	0.36
Finan.agencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Social Deve.	0.6	1.1	0	4.1	2.3	1.9	5.6	7.3	10.3	7.8	9.9	2.2	4.6	2.9	2.7	15.5	34.6	17.0	23.0	17.8	11.2	19.9	25.7	9.91	15.17
Education	0.3	0.9	0	4.1	1.9	1.5	5.6	6.7	6.5	7.7	7.2	0	0	0	0	0	11.3	9.9	7.1	5.6	5.1	7	9.2	4.24	6.49
Culture & Sports	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.03
Public Health	0	0	0	0	0.1	0	0	0	0	0.1	2.7	1.2	3.4	1	0	11.7	20.7	3.8	6.4	7.2	3.4	8	12.4	3.57	5.46
Others	0.3	0.2	0	0	0.3	0	0	0.6	3.8	0	0	1	1.2	0	2.7	3.8	2.6	3.3	9.5	5	2.7	4.9	4.1	2.00	3.06
General Services	0	0	0	0.1	0	0	0	0	0	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.16	0.25
Compensation Payments	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18	0.27
Total	8.2	5.6	9.5	11.3	14.2	12.8	24.1	23.2	32.1	32.1	35.5	28.9	60.4	41.5	55.4	69.2	129.6	98.8	153.3	217.3	163.4	121.9	154.7	65.35	100.

Note: Others include community services, social welfare, plan, social research & statistics and information & National guidance.

Source: Ministry of Finance, Annually Published Accounts [in Mulatu, W., 1990].

prove that even with the present economic structure, foreign resources have had a considerable share of both total central government spending and capital expenditure. If the productivity of agriculture under relatively significant foreign support is low, then the logic of attempting to bring about growth in the sector without outside assistance and in a situation where domestic resources are weak (or weaker than before) is not really clear. What is more, the investment required is huge, at least as the new strategy stipulates larger than the past. Therefore, before running out of time, it is advisable that the policy makers think of approaching donor agencies, governments and international multi- and bilateral credit institutions such as the World Bank, IMF, OECD, etc. Like in the past, joint venturing arrangements are also a possibility.

Table 5.8
Share of External Finance of the Central Government Spending [1966-1987]
(Millions of Birr)

Year	Loan & Credit (a)	Foreign Assistance (b)	Tot. External Finance (c)	Tot. Govt. Expend. (d)	percentages (a/d)	(b/d)
1966	38.4	104.7	143.1	463.3	8.29	22.60
1967	27.5	91.9	119.4	487.7	5.64	18.84
1968	26.1	87.5	113.6	433.0	6.03	20.21
1969	23.6	85.2	108.8	445.2	5.30	19.14
1970	48.3	14.1	62.4	497.1	9.72	2.84
1971	51.0	12.8	63.8	538.0	9.48	2.38
1972	62.5	24.1	86.6	602.9	10.37	4.00
1973	48.9	32.0	80.9	624.6	7.83	5.12
1974	46.9	48.1	95.0	679.8	6.90	7.08
1975	114.3	96.1	210.4	952.8	12.00	10.09
1976	121.9	77.2	199.1	1123.4	10.85	6.87
1977	105.2	82.6	187.8	1294.5	8.13	6.38
1978	89.6	71.8	161.4	1631.3	5.49	4.40
1979	185.8	194.6	380.4	1651.5	11.25	11.78
1980	184.1	174.1	358.2	1963.9	9.37	8.87
1981	145.4	190.4	335.8	2113.4	6.88	9.01
1982	494.8	261.6	756.4	2388.1	20.72	10.95
1983	444.2	259.3	703.5	3550.0	12.51	7.30
1984	237.6	253.7	491.3	2944.3	8.07	8.62
1985	376.9	631.3	1008.2	3300.3	11.42	19.13
1986	544.7	443.1	987.8	3696.4	14.74	11.99
1987	493.7	322.0	815.7	3839.2	12.86	8.39

Source: Ministry of Finance, Annually Published Accounts, [in Mulatu, W., 1990]

Secondly, unlike domestic resource allocation, foreign assistance tends to favour the economic sectors in general and agriculture & land settlement in particular. One possible explanation could be that most foreign donors are interested in poverty alleviation activities and in a country like Ethiopia

where poverty and agriculture are taken as synonymous, it is not surprising that the bulk of the assistance was allocated to agriculture. This makes it rather attractive for the case at hand. Indeed it is in line with what we have been trying to argue and what the ADLI strategy is advocating. So the cost of failing to consider this relationship is high.

Thirdly, the comparison of both tables vividly magnifies the existing wide gap between the total amount of foreign assistance and the amount made as capital expenditure. For the time series data it was calculated that the capital expenditure represented only 18 per cent of the total expenditure. This reflects the widely criticised behaviour of foreign capital that much of what is brought from abroad is spent for consumption items than for long-term investment. Academicians have been debating on the issue of the correlation of aid and growth. Some are sceptical while others are not. Since this topic is beyond the scope of this paper we would not like to go inside the jargon. But to defend our position that aid could be highly supportive of the development effort of developing countries and by default of Ethiopia, we prefer to indicate in passing that research results made for Sri Lanka have found that aid in fact has a very strong impact on investment and output through increasing private and public capital formation (White, 1992:16). Even under worst assumption that aid is directed at consumption goods it is still helpful because the domestic resource which would have been spent for consumption would be released to capital investment.

> Aid to agriculture, is of course more beneficial to the developing world than a shift in the allocation of domestic investment between industry and agriculture. Aid raises total investment; reallocating investment funds merely changes its distribution. Aid also strengthens the balance of payments by making it possible to run a deficit (Adelman, et.al, 1989:332)

The amount of foreign assistance that Ethiopia is getting is also so small when compared with other low income countries. Even during the serious drought years of 1984-1985, Ethiopia's per capita aid inflow which was US$ 8.6 was lower than the average figure for Sub-Saharan African (SSA) countries US$20.0 (MOF, 1992:7). For the same year, the per capita aid for the two neighbouring countries was $69.4 for Somalia and $28.3 for Sudan. Similar observations could be obtained from the foreign credit structure of different countries. In 1988, the per capita loan for Ethiopia was $62.8 while every Somalian had had a credit of $344.9. Other countries such as Mauritania, Cote d' Ivoire, Congo and Gabon had more than $1000 per capita credit (ibid). This is basically attributed to the late government's political and economic policies which were not in line with the interests of foreign creditors for which it

should partly be blamed. Presently, the World Bank and IMF are trying to reverse the situation, of course with their painful adjustment slogans.

From what we saw during the 1984/85 famine of the international communities's active participation in saving the lives of many Ethiopians, we are optimistic that they will continue helping Ethiopia if they are approached to finance certain agricultural investments like irrigation, rural roads, fertilizers, insecticides, research, so and so forth. At least we believe that donors would be pleased if they are asked to provide agricultural inputs than to ship food aid. Particularly the 1984 famine has given a good lesson in this respect. But this requires genuine effort, determination and above all practicality from the home side especially the government. Ethiopia's foreign relations record which was really highly appreciated during the Imperial time has been severely damaged by the military government. Both formal and informal indications witness that foreign governments are still suspicious of the situation in Ethiopia. Therefore it is the duty of the people and the government to re-build the confidence of foreigners, be it government or investors.

The problem associated with aid financing is its uncertain nature and sometimes it being tied. Thus it is not advisable to solely depend on aid. The government should be bold enough at critical points to sign credits. Most of the present debt of the country was spent to finance the past regime's purchase of military weapons. Under the light of this, what is wrong, if at worst, of being indebted for importing agricultural technology and investment capital. It is also fortunate that compared to many LDC's Ethiopia is the least indebted country.

In summary, we want to underline the fact that foreign financing could play a significant role in Ethiopia's development endeavour. Its role would be one of support. But at the same time we should not be driven by much optimism. After all, the major portion of investment resources should be generated domestically.

5.4 Public Investment Under ADLI Strategy

By now it has become clear that domestic and foreign resources alike are equally important sources of investment. As we have formulated above the foreign finance constituents are donors, credit institutions, and public & private investment. Except for the private investment, the rest including the domestic public capital would form the total public investment pool. However, this does not mean that the role of donors should be restricted to the supply of investment capital. Rather, what is wanted to say here is that to avoid the usual problems of duplication and coordination, the government could play the

role of providing support and guidance to the donors through identifying priority areas, co-financing arrangements, facilitating procedural activities, etc.

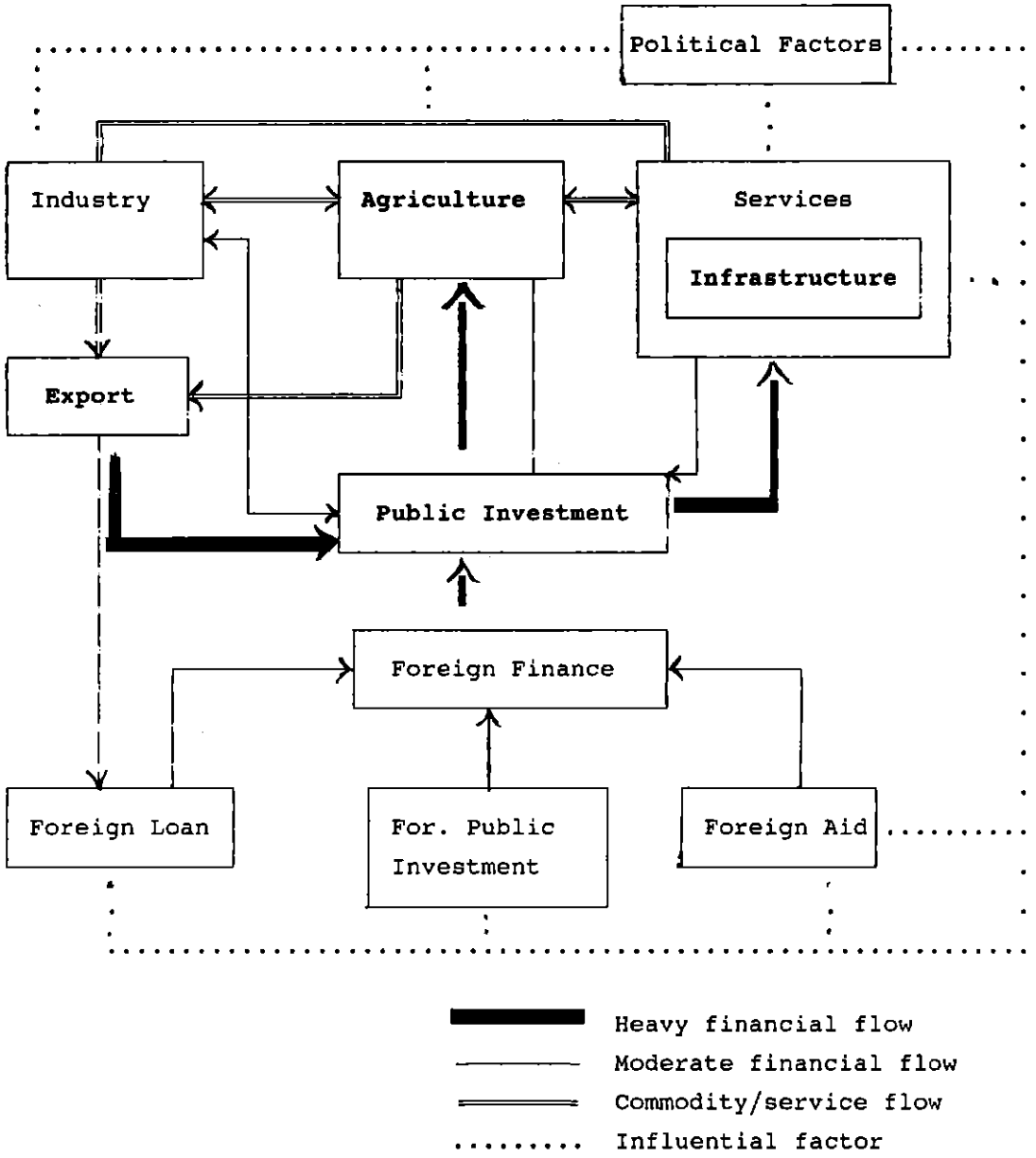
Two priority sectors are identified as investment targets under the new strategy namely, agriculture and infrastructure. As is shown in bold in fig. 6, these sectors deserve heavy investments. In agriculture, emphasis should be given to export products, food crops, industrial raw materials and conservation of natural resources. As envisaged in the new strategy the export sector is to become the engine of growth thereby creating favourable conditions (investible resources and enlarging the market) for the ADLI strategy. The past regimes also followed the same strategy. And to the extent that other sectors are not forgotten there is nothing wrong in it. But caution should be taken that an economy, however well developed its export base might be, so long as it is surrounded by backward sectors it could not escape the trap of underdevelopment. Fantu (1990) in his comparative analysis of rural development options in Ethiopia and Africa at large with the international context has clearly shown the problem of an agricultural export enclave economy under the present world trade environment. According to him:

> Internationally, commodity prices dropped across the board to their lowest levels in 30 years. This cut Africa's export earnings from $65 billion in 1985 to $46 billion in 1986. During the same period, costs of imports of manufactured goods rose by 20 percent. The IMF alone took out 1 billion more in 1986 than it put in Africa (UN, 1987:28-30 & 1988:11-12 in Fantu, 1990:77).

He also states that,"under present conditions, it is impossible for Ethiopia and other African countries to export their way out of debt" (1990:73). This is to say that always keeping a balance of things is a good strategy of risk aversion. Hence it would be useful if the new strategy gives equal attention in its investment programmes to all branches of the sector.

With regard to physical infrastructure, the emphasis should be on transport infrastructure and communication. The role of information on production and exchange or trade has increasingly become important all over the world. In the developed world, the breakthrough in computer and satellite technology has made information exchange very fast and reliable. In our case we lack even the simple telecommunication services like rural radio to maintain contact between the rural and urban areas. Information should flow between rural and urban areas so that it is easier to know what inputs are needed, where, in what quantity and what products are produced, how much is brought to the market as surplus, etc. and how it can be transported.

Fig. 6 Schematic Presentation of the Workings of Public Investment under the framework of ADLI Strategy (Short Run Scenario)



The condition of Ethiopia's road network is rather worse. Under the poor road system it is even more difficult to transport the already produced surplus than to encourage further surplus production. Recently increasing numbers of studies have shown that there is strong correlation between infrastructural development and agricultural sector performance (Mellor & Delgado, 1987, Platteau, 1993). After making his study on the subject for Sub-Saharan African (SSA) countries, Platteau suggests that:

> Given solid econometric evidence and compelling theoretical arguments to the effect that rural infrastructure has a

> significant impact on agricultural performance, particularly in poorly equipped countries such as those of SSA, African governments and international donors ought to make special efforts to rehabilitate existing communication links and to build up new roads, electric grides, health & social facilities, ... throughout the countryside (1993:36).

Mellor and Delgado also said that, "improved roads are probably the single most important factor in transforming rural Africa" (1987:4).

In Ethiopia during the first (1957-1961) and second (1963-1967) five year plans due attention was given to infrastructural development, where about two third and 19 percents respectively of the total investment was directed to the sector. Though from that time onwards it has been surpassed by industry and agriculture, it is still receiving quite a large amount of the country's investment. Nevertheless, similar to the other sectors of the economy, the transportation infrastructure of Ethiopia is also in a rudimentary stage. The length of all weather roads has increased from 8788kms in 1975 to 14282kms (out of which 10225 were asphalted) in 1986, but the road density was still under 15 km per 1000 sq.km (UNIDO, 1991:146). According to the Ten Year Perspective Plan (TYPP)(1983/84-1993/94) which was outdated before its life time, by the end of the plan period the length of all-weather road would reach 27438kms. This would raise the road density from 12.8 to 22.4km (PMAC, 1984:336-337). However, due to the very small size of the country's investment resources, the highly rugged natural topography, the political instability and other natural disasters which necessitated the diversion of resources, the accomplishment did not proceed a footstep until the present time.

According to an UNIDO study, three quarters of the rural population in Ethiopia live more than half a days walk from the nearest all weather road (ibid). Forming star-like shape, the main single all-weather roads radiate from the capital city to the regional capitals. In turn the regional capitals are connected to the district centers with a single road. Very few of the regional capitals and districts have direct road link between them. Detailed examination of the road system gives a rather gloomy picture. A survey[19] undertaken in West Gojam Administrative Region has revealed that about 50 per cent of the farmers have to travel for more than an hour to reach the nearest rural markets, whilst these markets themselves are at a far distance to an all-weather road system. This makes it really difficult to transport agricultural products from one area to another, be it from surplus to deficit or from rural to urban areas. Even during famine periods there were surplus

[19] See Chapter VI of this paper for the details of the Survey.

producing areas. But lack of transport system make the surplus inaccessible and hence creating shortages in needy areas. Platteau explains the situation in Ethiopia as:

> As is well known, the rigidities caused by poor communication links prevent food prices from equalizing across a vast territory-a well-documented fact for a country like Ethiopia-, with the effect that famine conditions may strike deficit areas due to severe losses of exchange entitlements (1993:31).

This paper does not attempt to exhaust all the positive externalities of infrastructural development. But it can be summarised that infrastructure influences production, prices, credit, social & cultural change, food security, exposure to international markets, etc.

In a nut shell, appreciating past & present efforts made to improve the country's rudimentary infrastructure, it should be reminded that owing to the high correlation between agricultural and infrastructural development on the one hand and its present low stage of development on the other it would be compelling to strengthen investment priorities for the sector.

For the industrial sector in general as diagrammatically shown in fig. 6, short-run public investments need to be limited. The rationale for this recommendation could be, (i) under the present reform process where the existing IPEs are in the process of privatization, there is hardly any rationale to suggest new investment, (ii) as described in the foregoing pages so long as the agricultural sector remains backward industry would not grow since the former will pull it down, (iii) as can be seen in table 5.9, private investment has shown great interest in industrial undertakings. For the year 1992/93 of the 714 new projects approved by the Investment Office of Ethiopia, 325 (46%) were in the industrial sector. Therefore it would be wise to encourage, support and guide these and similar private interests than to compete for limited resources as has happened in the past. But still in some branches where for any one reason private investment could not be attracted or allowed, then it may call for public sector direct involvement.

Among industrial investment areas those with higher domestic linkages need to be initiated and supported. As we said in chapter IV, for the agricultural sector fertilizers and insecticides producing plants are typical industrial concerns that deserve real support like duty free importation of machinery, tax exemption, tax holiday, etc. Agro-processing industries represent other areas of interest. Investment in agro-processing industries has dual importance in that first, they increase the value added through industrial

Table 5.9
Approved Sectoral Investments [F.Y 1992/93 and 1st Quarter of 1993/94]

Sectors	Number of Projects	Total Investment ('000 birr)	Employment Creation	Capital Labour Ratio ('000 Birr)
Industry	325	2269386.30	20362	111.45
Agriculture	84	220282.79	4560	48.31
Real State	172	1098373.45	6178	177.79
Hotel & Tourism	75	392373.28	3940	99.59
Social Services	18	37284.90	600	62.14
Construction	4	72541.30	2819	25.73
Trade	17	74304.20	1580	47.03
Transport	16	205784.65	1551	132.68
Mining	3	171462.40	407	421.28
Total	714	4541793.27	41997	108.15

Source: Investment Office of Ethiopia [in MOPED/UNDP, 1994].

processing and second, they create backward linkages to the domestic agricultural sector. Among others these include, sugar, spices, fruits and vegetables, fish, animal feed processing, etc.

Fibre producing enterprises could also make use of the country's reliable potential for growing cotton, sisal, kenaf, flux and other fibre products. We are not attempting to exhaustively list the industrial potentials of Ethiopia nor are we expected to do so. What we are doing rather is to indicate those branches which come straight forward when we think of industries with potential linkage effects or, put it differently, domestic agriculture resource based industries.

As far as agricultural implements are concerned, taking into consideration the existing factories, the effective demand for the products and alternative sources of supply like SSI; we believe that, in the short-run the available enterprises would suffice to satisfy the requirements of farmers. But the problem of quality and design of implements need consideration. The implements should satisfy specifications set out by farmers.

It would be over simplistic and artificial if we close our discussion without mentioning the fate of other sectors under the frame work of ADLI strategy. Among the goods producing sectors; mining & quarrying, electricity & water and among the social services housing, education and health should in our view be

the next priority investment areas. While the first groups directly influence the production process (agriculture & industry) the social service's impact is indirect through human development. But both are crucial and hence should properly be taken care of in resource allocation. Nevertheless, we still strongly insist on a primordial agricultural & infrastructural investment rationing. Especially the goods producing sectors, can be made to finance their own development. Many studies were commissioned to study the country's mineral resource base. But no concrete result has come out until now. All claim that, Ethiopia has a massive mineral resource potential. Including the presently extracted minerals about 19 types of hard minerals are identified as potentially feasible for processing (UNIDO, 1991). But before any significant investment is made, it is recommendable to further scrutinize the resource base.

As is shown diagrammatically, the closure mechanism of our model is represented largely by savings from exports where the highest proportion enters to the pool of public resources for reinvestment while part of it will be used for foreign loan repayment or repatriation as profits (if there be any direct foreign investment). The relationship between agriculture, industry and services would be one of mutual support through commodity and services flow.

The main reasons why we are concerned with public investment are: (i) due to the low level of economic development the basic infrastructures are presently poorly developed, and improving these services has been traditionally the responsibility of the public sector. Nowhere in the world has there been private investment in infrastructure such as roads; (ii) in terms of resource allocation, as widely conceived, the private sector is efficient and even if it is not, little can be done to change its decisions whether we model it or not; (iii) the role of the public sector is still indispensable, not only as a facilitator but also as an active development agent.

As a conclusion to the chapter three points need to be underlined: (i) in general the domestic capacity of capital formation is limited as explained by the low saving rate of the economy. Statistically speaking, the gross domestic saving for 1985-1990 was on the average less than 3 per cent of GDP[20]. For macro-economic equilibrium savings and investment should be in balance. In the case of Ethiopia this has been negative during the last three decades except for 1965 & 1966 when 2 & 3 per cents respectively of positive saving rates were registered. What is worthmentioning here is that the gap between savings and investment is high about 11 per cent; (ii) Therefore, the use of foreign

[20] It was computed on the basis of World Bank data obtained through ISS Computer Network Database Programme.

resources becomes mandatory with out which no meaningful investment and hence productivity growth would be forthcoming; (iii) Given the limitedness of investible resources sectoral prioritization is crucial. Otherwise the consequence of shallow rationing across all branches of the economy would be to perpetuate the healing rather than finding a lasting cure to the economy. Following the name of the strategy, agriculture is a number one priority. Taking into account its influence on the former and its positive externalities in other sectors we propose that physical infrastructure to be equally important subject of investment.

Chapter VI
OBSTACLES AND POLICIES TOWARDS A SUSTAINABLE AGRICULTURAL DEVELOPMENT

6.1 Introduction

Any agricultural production system is influenced by a multitude of factors. For the Ethiopian case we have indicated in section 2.6 that the variables which constrained the agricultural sector are in general natural, economic and/or technical, political and social in nature. The prolonged drought, natural degradation (of soil, forest & vegetation, etc), rainfall, and so and so forth are included in the first group. While, factors such as low technological level, poor infrastructure, limited extension services, lack of credit facilities, undeveloped marketing systems are the major technical and/or economic bottlenecks, the absence of appropriate development policies both at macro and sectoral levels and the persisting political instability in the country make up the core political problems. The social constraints on the other hand are explained by high human and livestock population pressure, cultural taboos, religious beliefs, low educational and health levels.

Nevertheless, such a classification is simplistic and only serves analytical purposes. In reality, the malaises of the sector are more than these and are interdependent and mutually reinforcing. Only reasons of convenience justify and partly excuse us for using the approach in this paper.

Complete diagnosis of the ailments of Ethiopian agriculture, among other things, requires detailed information and more space, the two crucial problems this paper is confronted with. As we hinted in chapter II, therefore, we prefer to dwell on selected issues which we believe are most crucial, complex, suited to our short run model of analysis and above all were selected as our points of departure. These are the economic and/or technical factors and political issues. Even within this category emphasis will be given to few specific problems. But this by no way means that the other factors are less important.Following this conviction, we will first discuss the economic and/or technical constraints while the political factors follow there after.

6.2 Economic and/or Technological Considerations

Analogous to what we said above, there is no clear cut demarkation between technological and economic factors. Though not hundred percent, technological improvement could guarantee economic betterment and economic prosperity will stimulate technological advancement. Owing to this high correlation between the two the following discussion may at times present the two as a single entity and independently at other times.

6.2.1 Does Conservation pay in the short run?

Chapter IV has vividly shown that the productivity of agriculture is not only low but is also unstable. Land degradation has been identified as one of the major problems for causing decline in productivity. We have said that the history of farming in Ethiopia particularly in the highlands dates as far back as the unrecorded past. As a consequence the soils are highly exhausted. Although, the low sensitivity[21] nature of Ethiopian soils camouflages the degree of this damage, experts in the field (like Constable, 1984, Hurni, 1988) have confirmed that the damage is severe. Soil erosion is the most critical environmental problem. Almost 75 per cent of the Ethiopian highlands is estimated to need soil conservation measures (FAO, 1986, in Wood, 1990). This warns us that unless immediate conservation measures are undertaken the consequence will be serious and may be irreversible. The resiliency[22] property of the soils makes the task more burdensome. Two reasons could explain this.

Firstly, given on the one hand the area to be conserved and on the other the capability of the economy to mobilize material and human resources sufficient enough to meet the needs, one could easily imagine that the coverage and depth of the conservation programme would proceed gradually. Experts estimated that with the current annual rate of progress, it will take about 70 years to provide some treatment to the highlands (Hurni, 1988).

Secondly, even on very optimistic assumptions that the conservation measures will succeed in all areas and within a short period of time, due to the slow natural rehabilitation and rejuvenation process, reaping immediate benefit is not possible.

All said, one qualification is to be made that increasing productivity and production through conservation and rehabilitation measures is more a long-term target than a short-run solution. Conservation pays very little in the short-run. What alternatives can one look for to cope with the present food and other agricultural production crisis in the country?

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[21] For Blaikie and Brookfield (1987:10), sensitivity refers to the degree to which a given land system undergoes changes due to natural forces, following human interference. (For further analysis see section 4.2.1 of this paper)

[22] According to Blaikie and Brookfield, resilience is in simple expressions 'the ability of land to reproduce its capability after interference, and the measure of need for human artifice toward that end' (1987:10).

6.2.2 High Yielding Improved Technology (HYITs) a Way Out

Measuring development in general and agricultural development in particular has remained a controversial and difficult task until the present time. Earlier, the criterion for judging agricultural performance has been largely associated with productivity. After this another dimension namely, equatability was increasingly advocated by academicians and politicians alike. The third and presently fashionable criterion of agricultural development is stability[23]. A sustainable agriculture presently encompass all these three dimensions.

Conway and Barbier define agricultural sustainability as, "the ability to maintain productivity, whether of a field or farm or nation, in the face of stress or shock. A stress may be increasing salinity, or erosion, or debt; each is a frequent, sometimes continuous, relatively small, predictable force having a large cumulative effect" (1990:37). Although the definition has some ideal elements when it talks about stress or shock absorption, we could still agree on the main concept.

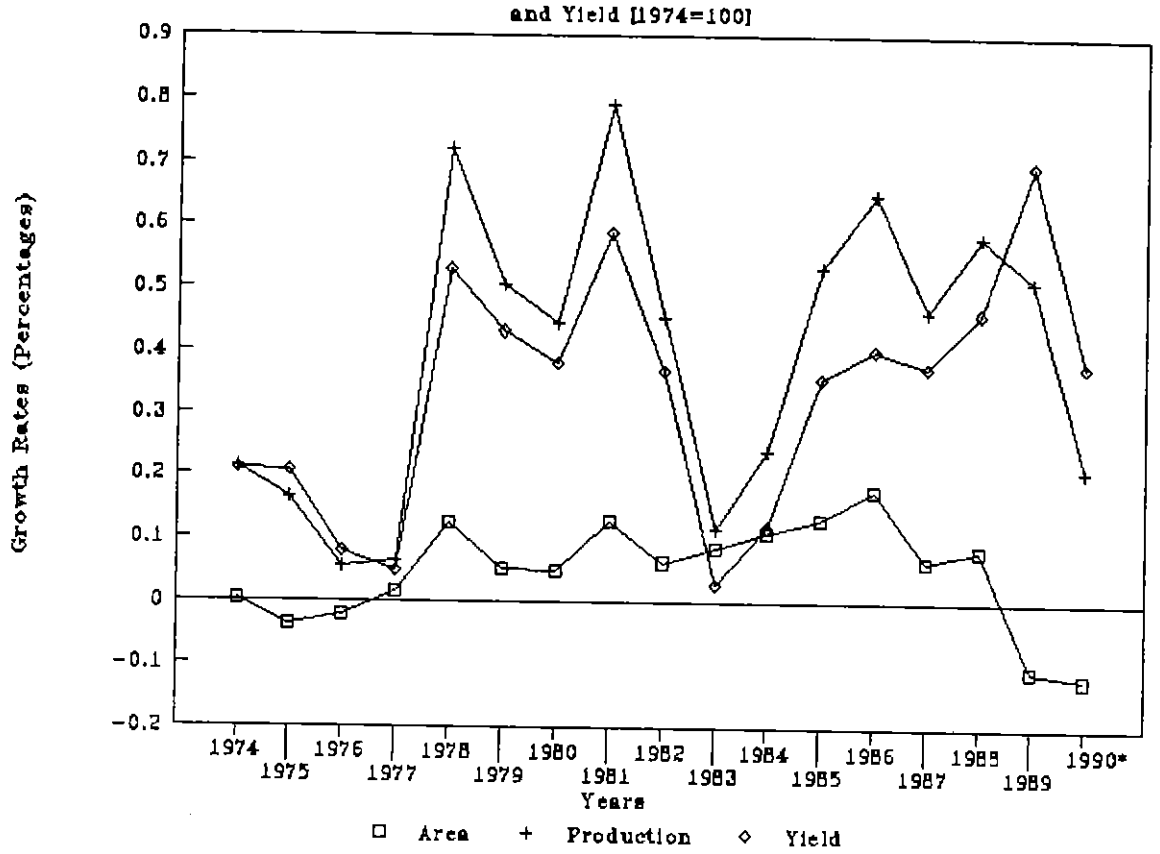
Different researches have found that Ethiopian agriculture has a potential for increasing its productivity and production. This increase in productivity could come from increasing factor productivity (such as labour, land, etc) through (i) the use of modern agricultural inputs like HYVs, fertilizers, pesticides, etc., (ii) ensuring two or more harvests on a plot by using irrigation, (iii) employing modern and effective farm implements, (iv) expansion of the area. Irrigation is a viable alternative but requires a huge investment and the construction takes time. With the present situation improved farm implements are not really the critical problems and seem to have less demand and lower real effect. As can be seen in fig. 7 the trend in area expansion is also likely not to expand fast. Hence in the face of urgency and of limited resources, increasing factor productivity through increasing the use of agricultural inputs (HYITs) comes out as an immediate candidate.

Among the modern agricultural inputs those commonly referred to are HYVs, fertilizers and pesticides. The importance of HYVs has been properly recognized in the Ethiopian ADLI strategy. Only fertilizers and pesticides do not get consideration as viable inputs in the short-run. This forms one of our points of departure from the planned programme of action towards implementing the strategy and will be the subject of our discussion in the remaining part of this section. Because of the usual data lacunae, however, the following

[23]Agricultural stability is defined as the constancy of productivity in the face of small disturbing forces arising from the normal fluctuations and cycles in the surrounding environment (Conway, 1990:42).

discussion will only focus on the use and impact of fertilizers.

Fig.7 Growth Rates of Area, Production and Yield [1974=100]



Let us now substantiate why we advocate the use of HYIT in the light of the surrounding strong criticisms against the Green Revolution (GR) which is almost synonymous to HYIT. But before doing so it is logical to explain in short what the GR and its characteristics are.

Conway and Barbier describe the rise, merits and disadvantages of the so-called GR as:

> Agricultural development thinking in the 1960's and 1970's was preoccupied with the problem of feeding a rapidly increasing world population. Then, the obvious solution was to increase per capita food production. The resulting Green Revolution has had **a dramatic impact on the Third World, particularly in terms of increasing the yields of the staple cereals,-wheat, rice and maize.** However, despite impressive results, it also suffers from the problems of equity and failures in achieving stability and sustainability of production (1990:11)(my emphasis).

The basic elements of the GR as summarized by the authors are: (i) breeding programmes for staple cereals that produced early maturing, day-length intensive and high yielding varieties (HYVs), (ii) the organization and distribution of packages of high pay-off inputs, such as fertilizers, pesticides and water regulation, (iii) implementation of these technical innovations in the most favourable agro-climatic regions and or those classes of farmers with the best expectations of realizing the potential yields (ibid).

Due to the GR, the per capita food production in the developing countries rose by 7 per cent since the mid 1960's and in Asia alone by 27.7 per cent (ibid). But, not surprisingly, there was a decline in Africa. This could be explained by the limited expansion of the technology in Africa and due to other environmental or climatological factors. But before we stretch our discussion further we would like to comment that the third element of the GR which is widely criticised on the basis of empirical evidence is likely to be irrelevant for the present time. Thus what we called the HYITs departs from the traditional GR on the considerable attention it gives not only to better endowed areas but also to other less favourable areas. Similarly unlike the latter, its target groups are all farmers. Although prioritization in terms of products, natural characteristics, etc. is inevitable, as explicitly stated in the strategy all spatial & human dimensions will be considered.

Now let us explain the reasons for advocating HYITs as a way out to ensure an immediate increase in per capita food production and productivity in Ethiopia.

Ethiopia stands at the tail of the world as far as the level of modern agricultural inputs consumption per unit of cultivated land is concerned. According to the World Bank statistics[24], for example, from 1965-1991, the national fertilizer application rate is only 1-2 kg. per hectare of cultivated land. Inter-country comparison in different parts of the world shows that this is indeed a very insignificant amount. As depicted in table 6.1, for the years 1979-1991 for which there is complete data, the average annual application rate (kg/ha) was 65 in Bangladesh, 42 in China, 48 in India, 2 in Kenya, 369 in Korea (Republic), 322 in Holland, 44 in the Philippines, 0 in Somalia, 1 in Sudan, 1 in Tanzania, 44 in USA and 20 in Zimbabwe.

The associated figures of per capita food production for the different countries reveal that there is strong positive correlation between fertilizer use and per capita food production. This has been explicit in Korea, Holland,

[24](World Social Indicators of Development, World Bank Data obtained through the ISS Computer Network, DataBase Programme.)

Table - 6.1

Fertilizer Consumption and Per Capita Food Production - Cross-Country Comparison

	Bangladesh		China		Ethiopia		India		Kenya		Korea		Holland		Philipines		Somalia		Sudan		Tanzania		Uganda		USA		Zimbabwe	
Year	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
1965	119	6	83	7	110	0	90	4	113	1	87	148	71	249	90	15	116	0	90	0	94	0	109	1	82	26	85	11
1966	111	8	87	10	111	0	87	6	115	1	93	181	71	257	82	14	130	0	88	0	101	0	103	1	83	29	99	11
1967	123	10	86	7	108	0	91	9	117	1	82	208	78	258	79	15	125	0	101	0	96	0	110	1	87	31	113	12
1968	122	11	82	7	110	0	95	10	123	1	79	204	80	255	79	19	125	0	87	0	92	0	113	1	86	32	88	12
1969	123	13	80	9	109	0	96	11	124	1	91	229	78	279	82	26	126	0	95	0	93	0	116	1	86	34	113	13
1970	113	15	87	11	113	0	100	13	111	1	79	243	80	296	84	26	111	0	91	0	94	0	131	1	81	36	101	15
1971	102	12	89	11	106	0	99	15	109	1	79	260	82	283	86	26	108	0	91	0	91	0	132	1	87	36	141	18
1972	98	19	87	13	105	0	92	16	111	1	78	285	79	286	84	24	113	0	93	0	89	0	132	1	85	38	147	17
1973	106	19	91	16	104	0	97	16	111	1	78	334	82	301	85	32	104	0	91	0	92	1	125	1	87	41	109	21
1974	100	13	90	13	97	0	91	14	107	1	83	274	68	305	84	35	97	0	100	1	88	1	130	1	87	37	131	21
1975	108	22	90	16	98	1	100	19	107	1	91	301	89	305	94	28	103	0	101	1	100	1	140	0	93	44	116	20
1976	101	25	89	15	96	0	98	19	113	1	98	393	86	307	100	32	101		94	1	101	1	141	0	95	47	126	17
1977	106	35	88	21	92	0	104	24	118	1	103	425	89	313	99	31	103	0	103	0	105	1	128	0	98	44	123	14
1978	106	37	95	25	98	0	104	28	113	1	108	385	94	308	93	36	107	0	97	0	103	1	125	0	96	48	117	15
1979	102	42	100	30	105	1	97	29	109	1	111	478	96	341	100	37	100	0	93	0	106	1	100		100	49	94	15
1980	101	43	99	34	99	1	99	31	98	2	93	557	97	330	100	38	100	0	100	1	96	1	97	0	95	50	92	23
1981	97	41	101	33	96	1	104	34	94	2	96	643	107	330	100	36	100	0	108	1	98	1	102	0	104	45	113	23
1982	98	48	107	35	103	1	100	35	101	2	100	774	107	317	99	38	100	0	94	1	99	1	108		102	48	99	20
1983	98	57	114	39	95	1	111	43	105	2	97	821	105	340	90	40	93	0	86	0	101	1	111		85	46	94	21
1984	96	61	119	42	85	1	111	45	88	2	102	949	108	357	88	39	90	0	72	0	101	1	101	0	98	46	79	19
1985	97	56	119	35	87	1	111	47	99	3	105	863	104	347	96	41	94	0	85	1	102	1	99	0	103	41	109	22
1986	96	65	123	36	94	1	109	48	108	3	102	974	113	346	93	43	91	0	76	0	101	1	96	0	97	40	103	21
1987	93	72	126	46	87	1	106	49	103	3	99	978	109	316	88	51	90	0	72	0	95	1	97	0	93	42	77	18
1988	93	77	126	51	87	1	117	61	108	3	103	996	104	321	87	55	97	0	85	0	93	1	100	0	86	42	99	22
1989	99	90	128	50	87	2	121	64	107	3	100	417	111	293	88	58	93	0	68	0	99	1	104	0	95	44	88	19
1990	98	93	137	53	87	2	120	69	103	3	103	418	104	278	88	64	79	0	83	1	90	1	105	0	96	44	86	23
1991	96	103	137	59	86	2	130	70	99	3	104	435	107	266	86	47	91		76	1	86	1	104	0	94	44	79	19

Notes: (a) Food Production Per Capita (Kgs.) (1979-1981 100)

(b) Fertilizer Consumption (Kg./Ha)

Source: World Bank Tables, IBS Computer Network, Database Programmes.

Table - 6.2
Input Response of Ethiopian Agriculture

Regions	Farmers using Fertilizers (%)	Average Fertil. Consup. (kg/ha)	Farmers using HYV	Average HH Credit(Birr)	Per Capita Food Production(kg)	Average HH Income(Birr)
Arsi	47	31.8	21	97.1	135	939
Bale	1	0.8	2	17	140	550
Gamo Gota	1	0.3		9.3	56	259
Gojam	16	9.1		10.4	34.3	456
Gondar	3	1.4	1	16.2	150	280
Hararghe	4	1.4	2	23.5	102	484
Illubabor	2	1.1	2	10.2	142	676
Kefa	13	5.3		21.1	170	403
Shewa	24	19	1	29.6	194	421
Sidamo	9	3.9	4	13.1	71	302
Tigray						
Wellega	15	7.2		13.4	160	455
Wollo				1.2	114	80
Ethiopia	14	8.8	2	19.2	141	495

Source: IFAD, Special Programming Mission to Ethiopia, Vol. II & III, August 1987.

China, and India. For other countries like Bangladesh, despite a rise in fertilizer consumption, per capita food production did slightly fall from its levels in 1979-1981. One possible explanation could be that the population grew by a rate[25] slightly higher than the food production growth rate. Differently, in most of the SSA countries including Ethiopia, the level of fertilizer application was low and consequently their per capita production was stagnating or falling. According to the TYPP, it was planned that at the end of the plan period (1994), fertilizer utilization will reach a level of 48 kg/ha (PMAC, 1984). Although the 'good intentions' of the policy makers are appreciated, the actual achievement did not move a point forward.

Another study made by the International Fund for Agricultural Development (IFAD) has estimated that 14 per cent of Ethiopian farmers use fertilizers and the average national fertilizer application rate is 8.8 kgs/ha (table 6.2). Although this figure seems highly inflated it still represents a proportion of only 13% of Bangladesh, 20% of China, 18% of India, 2% of Korea, and 2.7% of Holland.

What is more, the relationship of agricultural production and fertilizer use is quite significant in Ethiopia. For the cross section data comprising eleven regions as presented on table 6.2, a regression analysis was made to examine the link between fertilizer use and per capita food production and income. The result with a coefficient of 0.33 and R^2 = 0.88 shows that about 88 per cent of the variation in output is explainable by fertilizers (Annex 3). The relationship between the two variables can be explained by the following equation:

Following the commonly used linear equation system,

$Y = a + bc$ our equation can be,

$$F = a + bC$$

where: F = Amount of Food Production (Kg/per capita)
C = Quantity of Chemicals used (Kg/per ha.)
a = is a constant, then the estimated equation is:

$$F = 4.745 + (0.333)C$$

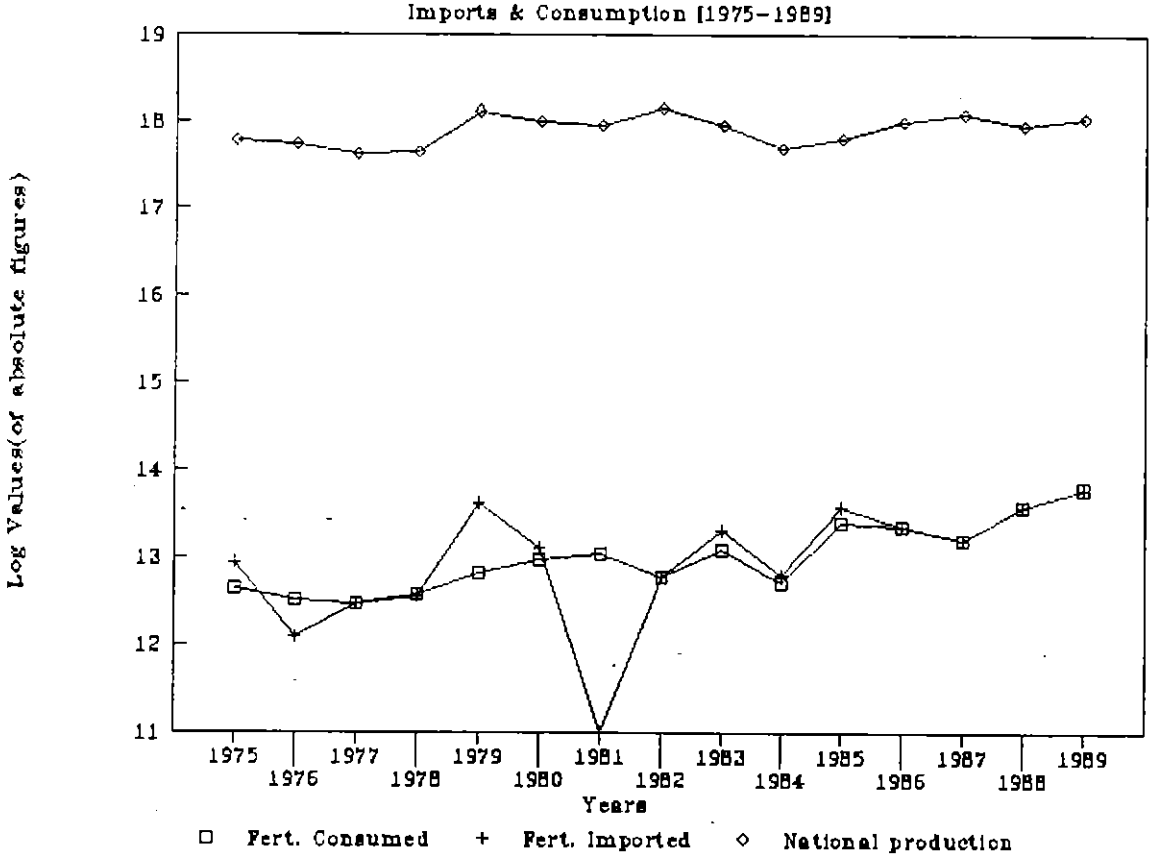
For income the effect is a little less where the regression coefficient is 0.18 and R^2=0.44.

[25]The average population growth rate in Bangladesh is 2.2 per cent for the last two decades (World Bank Tables in the ISS Computer Network Database programme).

Considering the fact that production is influenced by various factors in addition to fertilizers, an attempt was made to incorporate credit in the model, the only variable for which complete data is available. The multiple regression implied that to bring about an additional unit of food production it requires 0.30 units of fertilizers and 0.26 units of credit. But a comparison of this to the single regression results which was 0.33 for fertilizers shows the downward bias of the former thereby undermining the contribution of fertilizer to production.

Most important is also the high correlation between food production and income to the use of fertilizer, credit and HYV[26] (see also fig.8). The correlation matrix presented in table 6.3 and Annex 4 shows this fact. The fact that agricultural credit is normally used to purchase inputs and the former has shown good correlation with both production and income could also justify the impact of these inputs.

Fig. 8 Food Crop Production, Fertilizer



[26] Since data for HYV use is not complete in table 6.2, the correlation only shows for the regions where data is available.

Generally based on the above empirical evidences one can strongly defend that agriculture output has a strong positive correlation with the agricultural inputs mentioned above.

Table 6.3
Correlation Coefficient Matrix of Agricultural Inputs, Per Capita Food Production and Income

	FOOD	FERT	CREDIT	HYV	INCOME
FOOD	1.00000	0.93923	0.65067	0.61106	0.79352
FERT.		1.00000	0.57412	0.69830	0.66189
CREDIT			1.00000	0.85239	0.89620
HYV				1.00000	0.63034
INCOME					1.00000

Where: Food (per capita production), Fert (fertilizer per ha.), Credit (average HH), HYV (percent using HYV), and Income (average annual HH income)
Source: Computed from data in table 16 and excerpted from annex 4.

6.2.2.1 Regional Input use and Surplus Production

The structure of fertilizer consumption in Ethiopia shows highly skewed distribution where more than two-third of the supply is taken by the three surplus producing regions, namely; Arsi, Gojam and Shewa. Arsi, a region in central Ethiopia (Annex 1 Map 1), which is close to experience the GR because of the well known CADU project, has the highest fertilizer consumption level, 31.8kg/ha (Table 6.2). Against the national average of 14 per cent, almost half of the farmers in the region use fertilizers. With an average consumption of 19 and 9.1 kg/ha, Shewa and Gojam rank second and third respectively. The highest proportion of farmers in Arsi use HYVs and credit. It is, therefore, hardly surprising that per capita food production is the highest in the country.

The effect of fertilizers is very explicit in Gojam. Although HYV figures are not available, with a credit level below the national average (10.4% against 19.5%) it stands as the second largest surplus producing region.

In a nut shell, the qualification has been made that for the country under study high per capita food production is closely associated with increased agricultural input consumption particularly fertilizers. That is why we say short-run efforts to increase agricultural production and productivity in agriculture should give due attention to the intensified use of agricultural

inputs. Put differently, HYIT will give the way out of the present crisis. But no one dares to conclude that HYIT are the only determinants of agricultural production. Fortunately the natural environment is also favourable in these regions. But again there are regions like Gondar, Kefa, Sidamo and Wellega with similar environmental conditions.

6.2.2.2 The Farmers Perspective - a case from a region

A survey[27] undertaken in West Gojam Administrative Region has proven the strong linkages between fertilizer use and surplus production. Of the interviewed farmers, all farmers who used fertilizers (61 per cent) also responded affirmatively for producing surplus for the market. However, as presented in table 6.4, the amount of reported surplus production seems low and we attribute this to the peasants suspicious nature which emanated from their bad experience with the policies of the past government, particularly the agricultural pricing and marketing policies (the most important being the forced quota delivery).

Besides, all agricultural extension workers covered in the survey reported that fertilizers followed by pesticides and improved seeds are the most highly demanded agricultural inputs in the region. The words of the farmers is similar. While 55 percent of the farmers are currently fertilizer users, only 7 per cent use HYV, 19 per cent apply pesticides and about 38 per cent do not use any inputs. Nevertheless, among those who claim to use fertilizers only about 40% apply 90-100kg/ha., whereas the level which is usually recommended in Ethiopia is 125 kg. of DAP and 73 kg. of urea[28].

So far we have tried to show the significance of agricultural inputs for boosting food production. Presently, Ethiopia is dependent upon imported food both from commercial and aid sources. With such agricultural potential it is morally, economically and politically unacceptable for Ethiopia to seek the help of the rest of the world for food items. Obviously for Ethiopia importing food items is comparatively a disadvantage. She has to produce its own food and possibly strengthen its food export. That this is possible, we have tried

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[27] Financed by the Ethiopian Government and the International Union For the Conservation of Nature (IUCN), the objective of the survey was to collect farmer's ideas based on which the National Conservation Strategy (NCS) is to be formulated. To this endeavour, in ten of the fifteen districts in the region, a total of 186 farmers and 24 extension agents were interviewed based on a questionnaire. The author of this paper has been involved both in designing of questionnaires (particularly those whose results are discussed here) and in the actual field survey.

[28] An assumption is made here that the recommendation made for Welmera, an area found in the central highlands of Ethiopia would roughly be applicable to the country at large. See, Towlde Berhan G. E. et al., Participation of a Rural Community in the Identification of Technological Problems in Ethiopia, (A case study from Welmera Wereda), Ethiopian Science and Technology Commission, United Nations University and IDRC, Addis Ababa, December 1980, pp. 50.

to show above and current research has got dramatic results in other SSA countries. This is the subject of the next section.

Table 6.4
Farmers with Marketable Surplus Production
(percent)

crops	< 1 quintal	1-2 quintals	> 2 quintals
Teff	19	48	33
Millet	20	27	53
Maize	11	39	50
Barley	37	63	-
Pulses	37	13	50
Oil crops	8	58	34

Source: Survey results in West Gojam Administrative Zone, June 1993

6.2.2.3 Debating the criticisms of the Green Revolution

According to Norman Borlaug, the Noble Peace Prize winner who is credited with starting the so-called GR by breeding the short strawed wheat and high yielding maize varieties in the 1960's and now president of the Sasakawa Africa Association[29]:

> If Africa is to produce the food that it needs for its large and rapidly growing population, which will double in the next 22 years, it's got to have chemical fertilizers. And the sooner it sets up its systems to import and distribute this with reasonable efficiency and in the same way to market extra produce into the large cities, the sooner there will be progress, I think, on social and economic and political stability. Political stabilities are not built on empty stomachs (BBC, tape No.94R/42G737G)[30].

In eight African countries where the project is working, with improved seed (10 kilos for maize), a couple of bags of fertilizers and technical advise on timing of the use of fertilizer, plant densities, spacing of plants, timely weed control, etc, yields rose by around 2 and a half to 3 times above the national average (ibid).

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[29] Sasakawa Africa Association is a Japanese funded charity which aims to help Africa become self-sufficient in food once again (BBC, tape No. 94R/42G737G).

[30] It is excerpted from the script of the BBC Radio 'farming World Programme' transmitted on 15 September 1994 at 01:45 GMT. The author would like to thank the BBC 'Farming World Programme' for sending the copy of the script as requested.

What are the criticisms of the GR and how relevant are they to the situation in Ethiopia or SSA at large? Among the post GR problems, the widely acknowledged are its environmental impacts, its bias for better naturally endowed areas and rich farmers, its strengthening of dependency, its consequence of mono cropping and high incidence of pests.

The criticisms surrounding the GR are related mainly to sustainability and equity. Most critics (for example, Conway and Barbier, 1990) argue that the technological packages can not be sustained by farmers. Although true as observed in the project area and other places, it is highly exaggerated. Dowswell's[31] empirical argument in this regard is worth quotation:

> When farmers go on their own they certainly scale back their fertilizer use because they cannot get it. Either it is physically not available, or in all of the countries where we have been working when we started, there was substantial subsidies on fertilizers and today there is none. In Tanzania...averaged 5 tons per ha. Graduate farmers are perhaps scaling back to 3 and 3 and a half tons per ha., where as before they have not produced more than 1.5 to 2 tons per ha. So, they do scale back the technology to their level of resources. But they are continuing with those parts that they are most able to handle, either to afford or have physical access to (BBC, tape No.94R/42G737G).

In Ethiopia, the sustenance of the strategy is clearly seen around the area where CADU was operating. As we explained above, despite the withdrawal of the project a decade ago, the region still stands first in the level of inputs consumption and consequently surplus production. As Dowswell argued in the case of Tanzania, "if prices stabilise at current levels (1994), one bag of grain will pay for one bag of fertilizer and one bag of fertilizer in turn will potentially produce 5-10 bags of grain" (ibid). It is not fair to only criticise the technology on the basis of efficiency, taking as given the most detrimental factor to agricultural development, i.e, the international terms of trade. The terms of trade gap between the prices of fertilizers and grains is evident and needs no further elaboration.

The other sustainability issue is connected to the environmental impact of the GR. Especially after the Bruntdland report, research, conferences, seminars, mass media, etc are all voicing towards " environmentally sustainable economic

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[31] Dr. Chris Dowswell works with the Sasakawa Global 2000, which is a partnership between the Sasakawa Africa and former American President, Jimmy Carter's charity, Global 2000 (ibid).

growth." No one disagrees on this idea. But sometimes environmental protection is taken as an end by itself rather than a means for ensuring the well-being of people. For example, some ecologists condemn the use of fertilizers on the ground that they have caused pollution and health problems in certain areas (for example in Punjab, in India). But this across the board accusation is, in our view, shallow. What is the logic that an Ethiopian poor farmer, who is struggling between life and death and who is not sure that he will survive tomorrow, should refrain from using fertilizers (even though we assume that they cause environmental problems) if the use of the latter can at least help him produce better for his family? Conservation and environmental protection are investments and a long-term one. Daniel gave us a beautiful analogous argument:

> To save trees for the next generation may be important; but if this generation does not survive, there won't be a next one at all (1990:170).

Although this seems a pessimistic proposition, it is factual. It has now become widely recognized that poverty alleviation and environmental protection are important dimensions of development. Adams (1992) succinctly stated that, "for the poor countries raising agricultural productivity without endangering its sustainability poses a serious challenge". It is difficult to avoid the trade-offs between the two but with careful planning system it is possible to reduce its magnitude.

But for the country under study the problem is untimely. Normally it can be defended that under the present low level of fertilizer and pesticide consumption, the physical topography, ground water level, etc. Ethiopia is far from environmental hazards caused by HYITs. Its environmental problem is poverty and hunger. It is surprising to note that the whole of Africa uses one-eighth of the amount used in India alone and yet, in the face of food shortages, Africa is advised not to expand its fertilizer use. The experiences gained in other countries will help to understand the limitations of the technology and guide to adopt a proper methodology of application but do not prevent their use and increase the death toll from hunger. Therefore the question of environmental sustenance from increasing fertilizer use under the Ethiopian condition seems less controversial. Moreover, environmental protection is a universal obligation and not the responsibility of one nation alone.

Many people (like Conway and Barbier, 1990) recommend the substitution of organic fertilizers such as green manuring, compost & mulching for chemicals. But what would they say if we tell them that in Ethiopia, dung and crop

residues provide upto 55 per cent of domestic energy and are the dominant fuel sources for one third of the population. It is not because there is lack of awareness of the importance of green manuring for fertilizing purposes but it is rather due to other competing & pressing needs. It has been estimated that the burning of dungs brings about a 10-20 per cent decline in the national crop production potentials (World Bank, 1984 in Wood, 1990).

The second criticisms on the GR has been on its bias to better endowed areas and rich farmers. This has been practically observed in Ethiopia. But the problem has a lot to do with government policies than with the technology perse. For example, during the era of community development, HYITs were introduced to Ethiopia through the famous CADU. And the major benefits of the project were hijacked by the big and middle-sized farmers who came to realize that agriculture could be lucrative. What the new technology brought to the peasants were only eviction from the plots they used to cultivate as tenants.

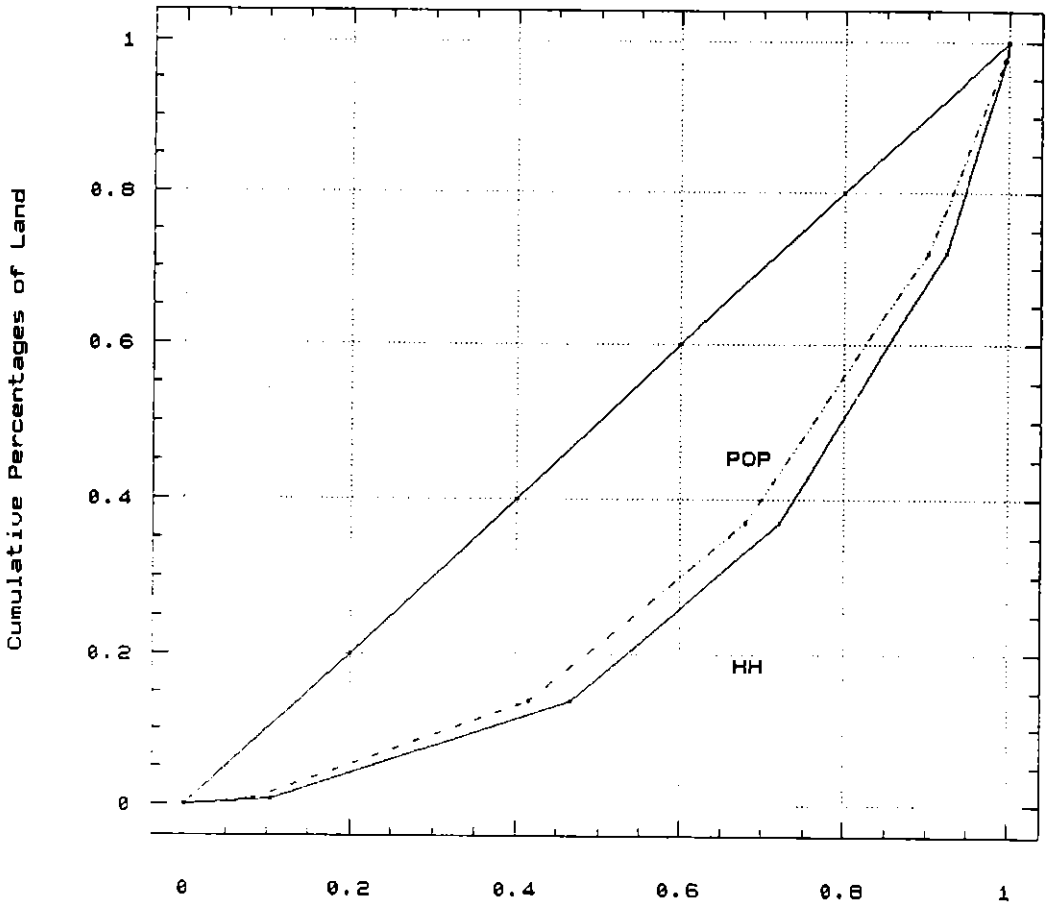
Thanks to the 1975 land reform that crushed the arachic land tenure system and enabled the majority of Ethiopians (particularly those in the south) to have legal access to land. Brune wrote, "without any doubt the land reform eliminated many of the basic problems inherent in the pre-revolutionary agriculture system" (1990:21).

Without exaggeration one can say that the reform, which is often characterised as very radical with the standards in other countries, has almost levelled out the per capita land holding. Dessalegn observed that, "being a redistributive & levelling reform, its strength lay not so much in having increased the resources & wealth of the rural community as in having created equal, if modest, opportunities for every one" (1984:62-63). The analytical tools designed to analyze distributional dimensions such as Lorenz curve and its derivative the Gini Coefficient showed similar results. The Lorenz curves are presented in fig. 9 and the two Gini coefficients calculated on the basis of per capita land holding and land holding per household are 0.408 and 0.467[32] respectively. However, it is our contention that the fairness of land distribution is more than what is explained by these figures and the problem might be from the statistics. Even the very fact that the Gini Coefficient calculated on the basis of the individual holding shows better distribution than the one computed on the household basis proves the existence of considerable fairness towards egalitarian land distribution. The prevalence of fair land distribution in Ethiopia is very obvious but small inter-and intra-regional variations exist even today. Variations in holding size do not

[32] Calculated on the basis of data obtained from, CSA, Agricultural Sample Surveys, Addis Ababa, 1993.

Fig. 9 Lorenz Curve of Land Distribution

Per Capita and Per Household (1989/90)



also always explain unfairness. What is sometimes important is the quality of the land.

Although it is difficult to be conclusive, under similar farming systems, the size of land holding explains economic well being. Therefore, by default then the economic position of farmers is not very variable. This fact could give solution to the equity problem on which the GR used to be condemned both in Ethiopia and other countries.

The remaining criticisms associated to the GR, though true, are largely of management problems which can be systematically overcome by careful planning of the process of implementing the strategy and we prefer not to raise them here.

As a concluding remark we can say that while HYITs have proven to give dramatic results in Ethiopia there level of use remained at the bottom. This is due to its high prices and physical unavailability. In the past socialist

regime, though peasant agriculture was discriminated against cooperative and state farms and the coverage of the credit system was limited, farmers were able to obtain HYITs in credit (fertilizers and HYVs) at reasonable prices.

Presently, along with the effect of the structural adjustment programme, the problem was further exacerbated because: (i) all input subsidies were cut and this brought about sharp price rise which is beyond the capabilities of the peasants, (ii) the institutional restructuring following the adjustment has also created some problems on the credit line used by the main agricultural credit supplier, the AIDB. The bank used producers and service cooperatives as its client to channel credit to their respective member farmers. The breakdown and weakening of these institutions in some areas has brought to a complete halt to the credit system there by worsening the situation. Private suppliers have started to operate in some areas. But on the one hand, given their profit motive and on the other lack of alternative sources from the farmers side may cast doubt on their overall effect on production and productivity growth.

According to one report, the average price of DAP and Urea (the two commonly used chemicals) which was 44 Birr/quintal in 1976/77 has more than doubled to Birr 100 per quintal in 1981/82 (in Fasil, 1993). Nowadays, with the free market system the price has sky rocketed to more than 200 Birr/quintal.

Thus if the present food crisis is to be reversed, farmers should be encouraged and supported to use as much more of these inputs as possible. Government policies need to be geared towards ensuring farmer's access to inputs particularly fertilizers, HYVs and pesticides. The free market system advocated by the engineers of the structural adjustment paradigm has not worked any where in the world & particularly in Africa[33]. Ethiopia is no exception.

More explicitly, if government support may include subsidy of the HYITs, be it so. Even some western governments are subsidizing their non-competitive agricultural sector. What is wrong then if Ethiopia does the same for the sector which formed the back bone of its economy? Particularly at this critical time, the best experience that will fit to Ethiopia's situation is that of China & India where government support to the primary sector is great and is really paying-off.

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[33] See Nyang,' Oro J. E. & Shaw, T. M. (eds) (1992) Beyond Structural Adjustment, The Political Economy of Sustainable and Democratic Development, New York, USA.

It is our conviction then that the stages[34] identified for implementing ADLI strategy which relegated the use of the most important HYIT packages such as fertilizers and pesticides need to be reconsidered and reformulated. Under the present situation, to bring about significant improvement in production or productivity through improving the traditional practice is, to say the least, to undermine the wisdom and talents of Ethiopian farmers who have been praised by foreign and domestic scholars alike. The observation of one scholar could suffice to explain this:

> Rural producers knew how to conserve soil moisture where it is scarce, and how to drain land when it gets waterlogged, long before "development agents" tried to teach them that water flows down slope and carries some dirt. They knew what kinds of crops to grow on which type of soils before the pedologists came up with "soil order" classes. They rotated cereals and legumes on their fields, long before scientists started advertising the significance of nitrogen "nodules". Where appropriate they intercropped their fields, long before agriculturalists woke up to the importance of crop "rooting depth" in land use (Daniel, 1990:160).

Nevertheless, this does not mean that Ethiopian farmers are intelligent and their farming system perfect. The level of literacy in rural areas is low. Therefore expanding the education system in these areas is vital. This can be done both for the formal education and in the form of extension education. In countries such as Burma and Taiwan, this has brought about a rapid rise in productivity. As explained above, peasants are acquiring a lot of new positive technologies and this is very promising in terms of raising production and productivity. What is not palatable is that the policy makers seem a bit optimist when they emphasis on this dimension as if it was the most limiting factor. What we are saying is let us face the reality, the challenge of producing sufficient food for the people. As Brune explicitly warns us, "Ethiopia must try to avoid the fate of those other developing countries which pronounce self-sufficiency as an important objective but adopt policies which increase dependence upon imported food" (1990:27).

6.3 The Political Issues - Rocky Mountains

Tantamount to other factors or more so, the political problems of Ethiopia have remained hard rocky mountains difficult to approach, manoeuvre and direct their orientation to development issues. Though the degree might differ and

[34] See section 2.6 of this paper.

one might be better than the other, all the political systems prevailed in the last three decades took political interests over and above national economic well-being. This, when coupled with other economic, natural and social problems, resulted a stagnation or a deceleration of the economy. It is believed that the political difficulties in Ethiopia are both causes and effects of the present backward state of the economy. This analysis of political economy is a very wide area which needs research in its own. Therefore, in this section few but critical & very determining issues will be raised in a very general and short manner.

6.3.1 Policy Issues

6.3.1.1 Land Tenure Arrangements

Of the policy variables, the land tenure issue occupies a central position at present. During the Imperial time, land was a private property where the owner has absolute rights on his holding to use, rent or sell it. The military government who succeeded the Imperial administration nationalized all land & put it under public ownership. Under the new proclamation, farmers can use the land allotted to them but are not allowed neither to hire it out nor to sell it. The present land tenure system is not clear. Nor is it similar across the country. The system in Tigray region is a case in point where there has been a redistribution recently.

After the reform land distribution & re-distribution has been undertaken a couple of times and the peasants were scared of these frequent re-distribution activities. In most of the cases each time a re-distribution is made farmers were changing their plots. This has created insecurity on the part of the farmers.

Research in Ethiopia and abroad (Brune, 1990, Conway & Barbier, 1990) has proved that land insecurity has considerable impact on land management, conservation, investment, etc. all of which will directly affect total production and productivity. To avoid stressing the obvious, we do not enter to the specifics of proving this with case studies. Rather, let us answer the question: 'Does land insecurity exist in Ethiopia now?'.

In the afore mentioned survey it has been reported that above 41 per cent of the respondents got their present holdings in 1989 (at the time when the socialist system gave way to mixed economy), while only 23 per cent before the land reform, 14 per cent during the first re-distribution and the remaining 22 per cent in between 1981 & 1989. Similarly, when asked how they got the land, 35 per cent replied for getting it from their family, 49 per cent from peasant associations & about 11 per cent from both sources. The remaining said

they had no land. For the question, "How long do you think you will use your present holding?" the response was very similar and surprising. About 46 per cent of the respondents confirmed that they can not even guess, while 45 per cent said the land will be theirs for ever. Of the remaining, 7 per cent of respondents think of owning the land for only 1 year and the others for less than 5 years.

A similar observation can also be seen from the recent new investment projects approved by the IOE where the share of agricultural projects is only 11.7 per cent[35]. A recent study (Asres, 1994) hinted that the development of the private sector in agriculture seems to be very much affected by the land issue.

The question of land ownership has been properly sensed by all parties, policy makers, academicians, organizations, etc and is currently a hot agenda in the country. Broadly speaking the debate evolves around two opposite lines. Led by the Transitional Government, the first group argues for public ownership of land while the second, comprising of people from various backgrounds support its privatization. According to the first group, the best system is to adopt a land use arrangement where by farmers can have all rights on the land under their disposal except the right to transfer it to a second party through exchange or sale. The second group, on the contrary, contends that such arrangements have been very detrimental for agricultural growth in the past and if the rest of the economy is privatized why not land. The debate is a longer one but the above forms the core ideas.

This paper does not take sides. It advocates the one which provides the maximum security to farmers. If this means privatization be it so. But it is only the farmers who know what is beneficial to them. Therefore, the real solution should come from the farmers themselves than from the 'good intentions' of the urban-centered groups. In the world where the importance of 'bottom-up' development approach, participation & empowerment are highly acknowledged, why are Ethiopian farmers deprived of these rights which will enable them to decide on their own fate? On the land issue the farmers are only expected to say 'yes' or 'no' in a referendum. In general, let us not agitate them, let us not influence & confuse them. Let the farmers decide on their freehold using their unpolluted mind.

6.3.1.2 The Regionalization Programme in the context of ADLI Strategy

It is now more than three decades that regional science has come into being

[35] See, section 5.4 and table 5.9 of this paper.

to give solutions to the so-called 'regional problems'. These problems are grossly explained by lack of power and resources. Power in societal context reflects the relationships between individuals or groups of people where one party is able to influence the other without the interest of the latter. Hilhorst prefers to call this as 'domination' and identifies economic and socio-political domination(1990:171-177).

Such a relationship has been the subject of research and discussion under the notions of 'Center-Periphery' or 'Functional-Vs-Territorial' integration. Following this line of analysis, the regional problem, *ceteris paribus*, is the domination of the center or functional interests over and above the interests of the periphery or the territorial unit.

Acknowledging the importance & impacts of these problems, many regional economists (Tinbergen, 1976, Friedmann & Weaver, 1979, Boisier, 1978, Stohr & Todtling, 1981 and Hilhorst, 1981, 1990) have attempted to suggest ways of reducing or avoiding them. Friedmann's 'Agropolitian development', 'Selective Spatial Closure' proposed by Stohr & Todtling and the 'Stake holder analysis' proposed by the proponents of strategic planning are but few. Hilhorst (1990) makes evaluation of the first two and comments that, "Both stress the importance of territorial organizations at relatively low levels of government and both insist on the need for the devolution of power to these levels." All agree that with the present structure, functional interests have prominence over territorial ones and recommend that power should be decentralized to regional or local units to the level that they can bargain in equal terms & live in harmony with the center. But this is easier said than done and the successful stories are rare. It is basically due to: (i) unwillingness on the part of central governments to undertake a genuine devolution of power, and (ii) lack of resources be it financial, human, institutional, etc. at regional level so as to fully overtake the responsibilities. What does this all mean to the recent decentralization effort in Ethiopia?

One of the major tasks the Transitional Government of Ethiopia (TGE) is engaged in since it came into power in June 1991 is the re-organization of regional administration. Following the proclamation (proclamation No. 7/1992) for the establishment of National/Regional Self-Governments, new regional delineations were made based on ethnic lines, for the first time in the history of the country.

During the Imperial era, there were only 12 *Teklay Gizats* (regions), about 104 *Awrajas* (districts) and more than 500 *Woredas* (sub-districts). Except for the change of name, i.e, from *Teklay Gizat* to *kifle Hager*, the military government continued with the same organizational structure until 1989. In mid 1989, the

government started another system of regionalization, basically politically motivated, where the number of regions grew to 32 (27 Administrative and 5 Autonomous). The present TGE completely re-drawn the regional map of Ethiopia and until now it created 9 *Kilels* (Nationals), about 68 *zones* (regions) and many *Weredas*.

All of the above re-structurings were done in the name of strengthening regional development and empowering the local people. The reform during the Dergs did not show the anticipated results as it was solely politically motivated. While it is too early to judge the present decentralization exercise, the fact of its skewness to political issues is clear. From all the indications four impacts can be singled-out:

Firstly, the direct implication of reorganizing regions without taking into consideration economic criterion which is the bases for the whole realization of the strategy might mean that the former and the latter are not coherent government policies. While regional specialization and mutual support are the corner stones of the strategy, the radical regionalization on the otherhand creates very strict procedures which, we believe, reduce regional interaction. If people, resources and know-how can not move freely without being feeling a sense of strangeness from one region to the other then regional interdependence is but a mere articulation. Regions are different in their potentials and production structure. The objective of reducing regional disparity is also weakened by the programme. Within the present sense of regionalism, and given the terms of trade difference, no region wants to be an agricultural region of the other. This is particularly serious when the issue of non-agricultural investment obviously in non-agricultural regions is raised. Few regions are relatively self-sufficient. This in turn influences the level of regional income. Therefore the consequence of overstressing the regionalization programme would be to worsen or to widen the income disparity among the regions. Empowerment with empty regional financial base can not be justified.

Secondly, after three years of delineation & re-structuring still the boundaries of many regions have not yet clearly been demarcated & made final. Regional boundaries still keep on changing (for example, in Regions 3 and 4). The impact of this to development is clear and needs no further analysis.

Thirdly, one of the rationale for the New Economic Reform was to dismantle the unproductive & highly expanded organizational set-up so as to release the associated finance & manpower for other needs. But with the present structure new posts and regional centers are created which would put additional claims on the meagre national resources. It is doubtful that the proportion of newly

created posts to those deleted is low.

Fourthly, the interpretation of decentralization also gone extremely far to the extent that sometimes regional institutions deny their accountability to the center. The case in point is the relationship of the ministries with their branches at regional levels (for example in man-power allocation). Moreover, such a situation opens a loop for unnecessary competition for national resources among regions which in turn might give way to political rift & in extreme cases might jeopardize national unity.

Decentralization and regionalization have become synonymous in Ethiopia. Gasper (1989) distinguishes decentralization as a means from decentralization as an end and concludes that, "territorial decentralization should be treated as a possible means, not as a preset end whose efficiency or virtue are taken as given". Effective development policy requires many more things than a mere decentralization which in most cases is done for political purposes, the relation between political and economic development understood. Territorial decentralization can be considered as only one set of policy instruments, and hence can not be a pre condition for rural development.

Generally most people agree that the regional problem in Ethiopia is the unbalanced development of the center and the regions. Inter-regional disparities are not that much pronounced. Where existed it is caused by historical, locational and economic factors than a conscious government policy of favouring certain regions and neglecting others.

We believe that the decentralization in Ethiopia has gone far to the territorial side. Moreover, the locals are weak in financial, human and institutional resources. In the light of this the cost of adopting such a radical decentralization will outweigh its benefits. For a country which is swimming in an ocean of poverty and for people who have not have enough to eat, the priority should have been to alleviate poverty through strengthening the economic base, through mobilizing what ever meagre resources are available rather than creating new parastatals which put additional burdens on the already exhausted resources. There is enough time to learn from the past mistakes and from other countries experiences.

It is not wrong to strengthen regional organizations. But it has to be done systematically and gradually. At present the most important conditions are not yet developed to embark on such a fundamental institutional change. Money is scarce. Manpower is limited. Regional information/data is almost non-existent. Why then is the rush for radical decentralization? However, it is too early to generalise and time will tell us whether the programme is genuine and will

bring about the desired results as targeted in the ADLI strategy.

6.3.2 Political Stability

No where in the world has development taken place where political instability persisted. Consequently, most of the poor countries of the world are in one way or another presently under political difficulties. In evaluating the politico-economic development of post-colonial Africa, Eshetu wrote that:

> The harvest of a generation of 'flag independence' has been worsening poverty, famines, civil wars, coups & counter-coups, massive displacement of persons & greater dependence on the international economic system (1990b:1).

As far as the consequence of political problems to economic and social development is concerned, Ethiopia's experience might be number one. Temu gives account of the effect of wars in Africa and Ethiopia as:

> Even if the extent to which the agricultural development of any given African country may have been retarded by the incidence of war & civil strife may not exactly be known, it must be especially noted that countries like **Ethiopia**, Sudan, Mozambique, and Angola have suffered greatly in this respect (1992:96) (my emphasis).

Ethiopia is not the only country having political difficulties but it is among the few exceptions for not solving political questions peacefully. Both in the past and present peaceful settlement of political differences is a nightmare. This brought about political rift and hostility of one group for another is mounting.

If there is good will, determination, responsibleness, respect for the people and love for the country, the solution is simple. Let all concerned parties both at home & abroad come together in a round table and discuss their differences, debate their ideas, be open for reconciliation and come up with mutually acceptable arrangements. If on the contrary egoism, nepotism, and chauvinism happen to dominate the political system of the country the prospect for peace, stability and consequently development are very dim. There are many people who strongly argue that the current political problems are not the problems of the population and are creations of the 'elites'(Paulos, 1994). If true, we believe that, the so-called 'elites' should surrender their interests for the well-being of the majority of the people and the country. Although we believe that Ethiopia's problems should be primarily solved by

Ethiopians, with the present sense of 'Globalization', if it is sincere, a lot is expected from the international community. But not in the way that happened in the past where one government supports (militarily & financially) one party and another government the other and thus aggravate the problem.

What ever beautiful policies are adopted, how large investments are made and how intelligent experts are put in the right place, it is naive to think that development will materialize without concomitantly creating a politically stable environment. What Ethiopia needs at this particular moment is a 'good government'. If successful in this direction, Ethiopia will once again become the symbol of unity, a multi-cultural and multi-ethnic country and remain the bride of Ethiopians and Africans alike.

CHAPTER VII
SUMMARY AND CONCLUSIONS

While the Ethiopian economy started to suffer from crisis from the beginning of the 1960's, the situation became worse in the mid of the 1970's and thereafter. This is accounted for by many factors but most writers tend to put the policy bottlenecks at the forefront. The policies of the past governments were grossly criticised of not basing their strategies on the objective realities of the country like resources, needs, distributional dimensions, etc.

The Imperial regime followed the strategy of export-led growth which has been successful in some respects. But the emphasis it put on exportables brought about the neglect of others, such as food and industrial crops. Ultimately the country's development level has not moved a step forward. The succeeding military government, though it initially articulated that agricultural growth will be the main government policy, it did not take time to hasten the implementation of Import Substitution Industrialization (ISI) strategy. The surplus generated from agriculture added to resources obtained elsewhere in the economy and abroad covered the costs of this industrialization process. Had it not been for the fact that the growth of other sectors particularly agriculture was stagnating or falling the gains in the industrialization process would have been appreciated and sustainable .

Besides, as was seen from the success and failure stories of different countries, the industrial-trickle down proposition remained a mere theoretical exercise. Let alone to support other sectors, the industrial sector is currently unable to finance its operation costs and investment requirements.

It is crystal clear that agriculture forms the nucleus of the Ethiopian economy. Agriculture produces food, generates foreign exchange, supplies domestic industries with raw materials and releases labour for other sectors. For the country under study its role has been especially paramount in food production and export earnings. In chapter IV we indicated that about 90 per cent of the exports of Ethiopia originate from the primary sector. Despite the huge labour force (80%) employed in the sector the contribution of agriculture to the GDP is low, on the average about 47 per cent in the last three decades. Moreover, when compared to its production level before the 1960's, for example, the per capita production of the sector has not only stagnated but in most of the cases seriously fallen. A multitude of factors of natural, political, economic, social, and international nature have been condemned as responsible for this. However, it has now been widely contested that leaving aside the natural factors on which little can be done to influence their

impacts, it would have been possible to act on the other shackles which remained bottlenecks for productivity & production growth in agriculture thereby improving the situation.

Many research results indicate that Ethiopia has an enormous potential for agricultural development. Its agro-ecological climate which is conducive to growing a multitude of crops, its utilizable land, its water resources and above all its knowledgable and hard working peasantry are considered to be its dependable assets. But the reality today shows that the productivity of the sector is very low by all standards and its potential is under-utilized. The riddle has to be solved that why Ethiopia is starving while having.

Unfortunately the different policies adopted by the past governments have been retarding the growth of agriculture rather than improving it. The land tenure system during the Imperial government and in addition to this, the marketing, pricing and investment policies of the late socialist government have been very detrimental to agricultural growth.

The situation of the industrial sector is not different. Particularly manufacturing is in its infancy in Ethiopia. The manufacturing sector is characterised by light industries, high capital intensity, spatial concentration and poor linkages with the rest of the economy especially with agriculture. For IPEs it was estimated that the import dependence of enterprises for inputs was 37.5 per cent. Generally the ISI strategy has not proven itself to be a viable strategy. The degree of linkages between agriculture and industry is found to be weak. Agriculture is unable to supply adequate and high quality products to industry and because of its low income it did not create significant markets for manufacturing commodities. On the other hand, the industrial capacity is limited to the extent that even the basic agricultural inputs like fertilizers and pesticides have to be imported fully from abroad. Moreover, Ethiopia's manufacturing exports are considered as primary goods or intermediates with a high potential of further processing and thus increasing domestic value added. Generally the present degree of linkages is so weak that it does not fit to a balanced and mutually reinforcing approach as envisaged in ADLI strategy. Food, textiles, tobacco, wood and furniture and paper and printing are branches where domestic input substitution is likely to be feasible even under present circumstances. This has been extensively covered in chapter IV.

In a nut shell it would not be wrong if, following the customary style, we call the last three decades and half of the present one as the "lost decades" for Ethiopia. Although the statistics of the World Bank are not dependable (as was criticised by the Economic Commission for Africa (ECA), Ethiopia is at the

tail of the world in most of the development indicators (like per capita GDP). But two or three decades ago the same indicators placed Ethiopia at a better position than some of the developing countries. What went wrong? Can we account all this for only by natural factors?

It is against this state of the economy that the present Transitional Government of Ethiopia came up with a development strategy which is commonly referred to as an Agricultural Development-Led Industrialization (ADLI) strategy. As explained at depth in Chapter II, the debate on sectoral prioritization in the process of development is a fairly old one. Earlier 'Agri-First' and 'Primordial Industrialization' strategies were advocated. But now there seems an agreement among development practitioners, academicians, etc. for a need to a more 'Balanced Development' approach. This is what we refer here as an ADLI strategy. Theoretically ADLI strategy will bring about development in a country through initially increasing productivity and thus production in agriculture and then extracting the surplus produced to finance the industrialization process. After agriculture reaches a level of surplus production, i.e, both marketable and investible surplus, then the process of industrialization will proceed at full swing. But this is the end and not the beginning of the process. For backward agrarian economies like Ethiopia it first aims at raising the productivity of agriculture under the framework of a sustainable development.

Although the final goal of the strategy is to achieve a balanced and highly interdependent agricultural and industrial development, the present low level of development of the former do necessitate a bias for supporting the sector in all its endeavours to break the vicious circle surrounding it. With this consensus the remaining task will be to find strategies capable of initiating growth in the agricultural sector.

In our view, the ADLI strategy is appropriate and timely for Ethiopia. Its distributional dimension, its sectoral proportionality, and its product mix (export-food, agriculture-manufacturing, etc) are all desirable. The overall plan and programme of implementing the strategy in Ethiopia is also quite convincing. But there are some crucial factors both inside and outside the realm of the strategy that have considerable leverage on its success but which have not been dealt with or overlooked and may be under estimated. The entire purpose of this paper then is to identify these constraints which are currently directly and indirectly affecting agricultural development and trace their connection with the strategy. But the paper as limited by time and space as it is, its scope of discussion has been brief and general. Three of the major weaknesses which form our points of departure (in section 2.6) are not mutually exclusive but rather interrelated. The first is concerned with the

financing of the strategy while the second and the third deal with economic and/or technical and political issues.

The increase in agricultural productivity and production is composed of increases in factor productivity of land, labour and capital. But given the urgency to produce more agricultural products, particularly food, most of the promise is with capital and only partly with land. It has been explicitly stated in Chapter VI that, despite the attention the strategy gives to conservation activities, the heavy land degradation and loss of soil fertility which characterised the agricultural regions would not allow significant increase in productivity in the coming few years. Conservation gives a long-term solution and not a short-run way out. In the light of this, capital through investment in agricultural technology (HYITs) provides the best alternative to boost agricultural production and feed the many Ethiopian mouths. Particularly the agricultural inputs such as fertilizers, HYVs and pesticides (when needed) are the quickly responding ones.

But Ethiopian agriculture by the virtue of its low consumption of these inputs falls under the category of Low External Input Agriculture (LEIA). The present level of use of these HYITs is indeed extremely low, even lower than in other developing countries. A cross-country comparison has shown that per capita food production was the highest in countries such as Korea, Holland, China and India where fertilizer use per unit of cultivated land is high. Historical analysis of the so-called Green Revolution which saved millions of lives in the 1960's particularly in Asia and Latin America shows the same fact. In Ethiopia too, it is not by chance that the three known surplus producing regions namely Arsi, Gojam and Shewa, are also the regions which consume the highest proportions of the national supply. Dissenters might question the sustenance of such a strategy and its environmental impacts. But without going far the situation in Arsi is the case in point. Although HYITs were first introduced to the area by the CADU, after almost a decade of phasing-out of the project, the region stands still first in the use of these inputs and consequently in producing surplus. Similar technological sustenance was observed in Tanzania and other countries. Therefore for Ethiopia, as advised by UNIDO, it is beneficial to further investigate the possibility of building a domestic production capacity. This on the one hand strengthens the backward linkage effects and on the other will reduce the country's scarce foreign exchange expenditure on these inputs.

The other criticisms surrounding the technology are its environmental impact and biasedness to better endowed areas and rich people. But we strongly defend that these are largely management problems which can be solved by careful planning of the process and thus do not create a fallacy of the strategy in

Ethiopia.

If agricultural technological conditions are benign in Ethiopia it is tautological that production will be the same. As discussed in Chapter VI, different studies have also indicated that what peasants and development agents are demanding are precisely these HYITs. The case of West Gojam could be cited as an example. Therefore, in contrary to the envisaged programme of relegating or delaying the use of HYITs to later stages of the strategy, with all these empirical evidence we insist that the stages be reformulated so that the importance of agricultural technology be accorded adequate attention right at the beginning of the process of sustainable development. Otherwise it is difficult if not impossible to curtail the present crisis and in turn if these falling trends are not reversed the future of Ethiopia will be in jeopardy. After all, it is pertinent to emphasise that the efficacy of the strategy depends on its success in achieving agricultural productivity and production growth. However, our argument for HYITs is particularly relevant for the present situation. For the future, 'appropriate technology' for which a lot of optimism has been promised all over the world has to prove itself a way out for Ethiopia too.

One of the problems to expand the HYITs might be the scarcity of financial resources. We agree that development to be sustainable has to be based on domestic resources and this is what is meant by a 'self reliant' development. At the same time, it is obvious that agriculture desperately needs huge capital investment. Where can this capital come from? As extensively presented in Chapter V, even while subsistence, Ethiopian agriculture has qualified for producing both investible and marketable surpluses. The point to be underlined here is that with the present structure the resources flowing out of agriculture are by far higher than the amount it is receiving. Given the backwardness of the sector itself, this has shown in the past to be less fruitful. Hence it can be argued that agriculture can very well support itself and is capable of financing its development. But since there is an established system where resources generated in the sector are also being used in other sectors without which their performance might be affected, a strict rule of sectoralism does not work. Except for only in 1965 and 1966, the economy is characterised by negative savings. Therefore other alternatives need to be found. Obviously, since other sectors are not better-off the only option left is foreign capital. This has been the subject of Chapter V.

Foreign finance could come in the form of aid, loan or credit and direct foreign investment. In the past years it has been found that the share of foreign capital investment in agriculture from total foreign finance was higher than the share of government capital investment in agriculture from the

total government expenditure. This leads to the conclusion that agriculture received more attention from foreign capital than from domestic. Therefore rather than undermining the role of foreign capital by misunderstanding the notion of 'self-reliant' development, it is beneficial for Ethiopia to prepare an 'enabling environment' to attract foreign capital and use it effectively. Foreign finance is delicate and apart from economic issues it is sensitive to political and social phenomenon. These all demand, among other things, strong determination, good-will and practicability from the home side. If properly and carefully approached, all the three types of foreign finance could be highly supportive of the development process. Indeed domestic capital remains the most dependable resource.

The other area of concern will be with prioritization and allocation of resources particularly, the public ones. Private investment can be left free to determine its own fate. It has been explicitly stated in official documents of the government that investment priority will be given to exports, agriculture, industry and services in this order. Without objecting to this we feel that food production should also get equal treatment as the exportables. If the rationale to encourage exports is to generate foreign exchange, it is also beneficial to reduce the foreign exchange expenditure on importing food items. For the years 1985-1989, the amount of money spent on agricultural raw materials represented around 5 per cent of the total food import bill. Importing food items puts Ethiopia at a comparatively disadvantage position. If this be convincing, we advocate for a balanced export-food production system.

The impact of infrastructure particularly rural roads and communication on agriculture in developing countries is a well understood subject. Research in Ethiopia and elsewhere in the world has shown its importance to agricultural development through allowing the flow of information, material inputs, labour, technology, etc. Unfortunately like other sectors, Ethiopian infrastructure is in a rudimentary stage. This calls for a fast action towards improving the situation. The two processes of long-term agricultural development, **Commoditisation** and **Deagrarianization** can only materialize if there be a well developed infrastructural system. Although the sub-sector is identified as one of priority areas in terms of future investment, we feel that the priority accorded to it is less. Given the resource constraint one can not expect a dramatic change in the situation. But what we are saying is let it be started now and may be the power of compound interest might work in its own way. Let the people and investors be encouraged, motivated and supported.

Finally the diagnosis of Ethiopian agricultural ailments will not be complete

if its political dimensions are not scrutinized. As very concisely and generally presented in Chapter VI, the question of land tenure, the regionalization programme and the political instability situation are directly and indirectly affecting agricultural production in Ethiopia both in the past and present. Theoretical, practical and empirical evidences indicate that security in land tenure system encourages land management and conservation which consequently increases agricultural production. Despite this there is no clear land tenure system in the country. Therefore adopting a land tenure system which guarantees security and which suits the main stake holders, the farmers, is a very pressing problem and needs immediate solution.

The new regionalization programme currently underway in the country has also implications to the success of the ADLI strategy. While the strategy tends to concentrate on economic regionalization where every region will specialize in its own potentials with a sense of mutual support, exchange and fair share of the 'national cake', the radical regionalization programme on the other hand creates very strict procedures which, we believe, reduce inter-regional interaction. Given the terms of trade difference, no one region likes to be an agricultural region of the other. There is enough experience in other countries. Moreover, it also poses a question of mobilization of investment resources from one region to another. With the present scenario, only few regions are self-sufficient. Therefore, it is not clear how two paradoxical processes of (i) reducing regional disparity through a fair distribution of national resources and, (ii) a delineation and re-delineation of regions based on criteria which do not take into account economic interrelations and consequently which hamper the movement of resources, people, know-how, etc, from one region to the another, can go together. However, it is too early to generalise and time will tell us whether the programme is authentic and will bring about the desired results as targeted in the ADLI strategy.

For a longer time Ethiopia's political system has been characterised by instability. No one knows the adverse impacts of political instability on economic development, be it agricultural or non-agricultural, better than Ethiopia and the Ethiopians. The country has been burning under the ravages of war for the last two decades. The end result was the perpetuation of poverty and other social evils. Even today all implications lead to the conclusion that the political problems of the country are far from getting solved.

If there is good-will, determination, commitment, respect for the people and love for the country, the solution is simple. Let all concerned parties both at home and abroad come together to a round table and discuss their differences, debate their ideas, be open for reconciliation and come up with

mutually acceptable arrangements. After all, this is what democracy is all about in its real sense. If on the contrary egoism, nepotism and chauvinism happen to dominate the political scene of the country the prospects for peace, stability and consequently development are very dim.

In summary these are few of the challenges ahead of Ethiopia's development endeavour. Solution to Ethiopia's agricultural development problems is always possible. What is lacking is the political will and understanding of the dynamics of rural and agricultural development. It is the ideological hang-ups and short-sightedness of the policy makers that have long created the illusions of its insolubility. Development is a complex process and thus unitary factors, such as investment, technological change, political solutions, etc. individually would not bring about any meaningful development. In addition to the above, the credit system (accessibility, procedure, etc.), organizational issues, extension education, population pressures, etc. need also to be improved. Only the interaction and co-existence of these and other variables will give solutions to the problems at hand.

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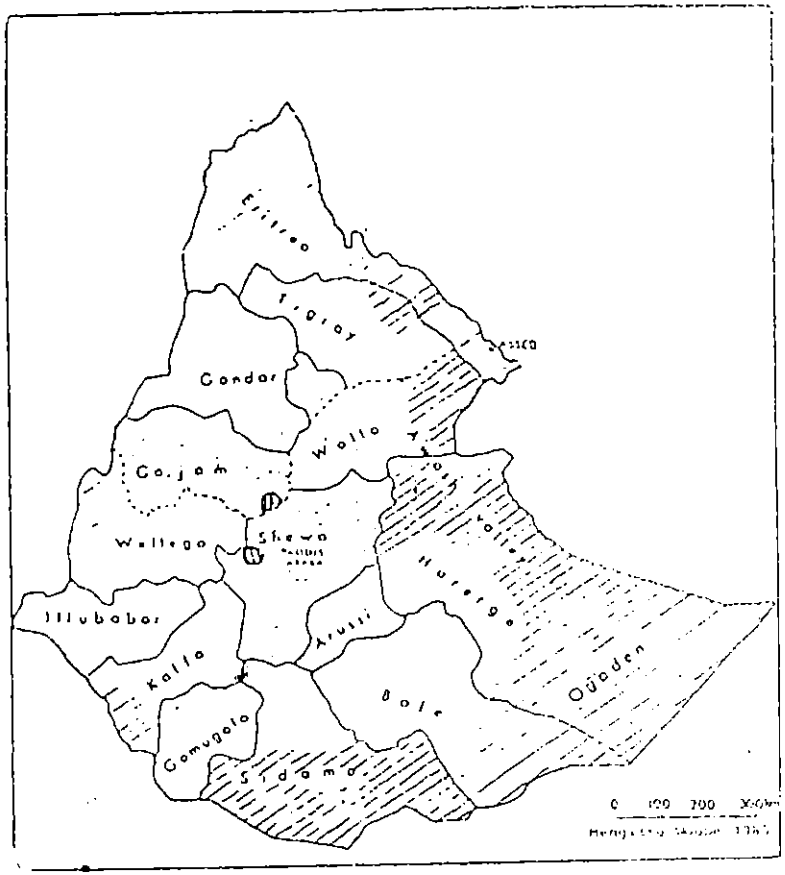
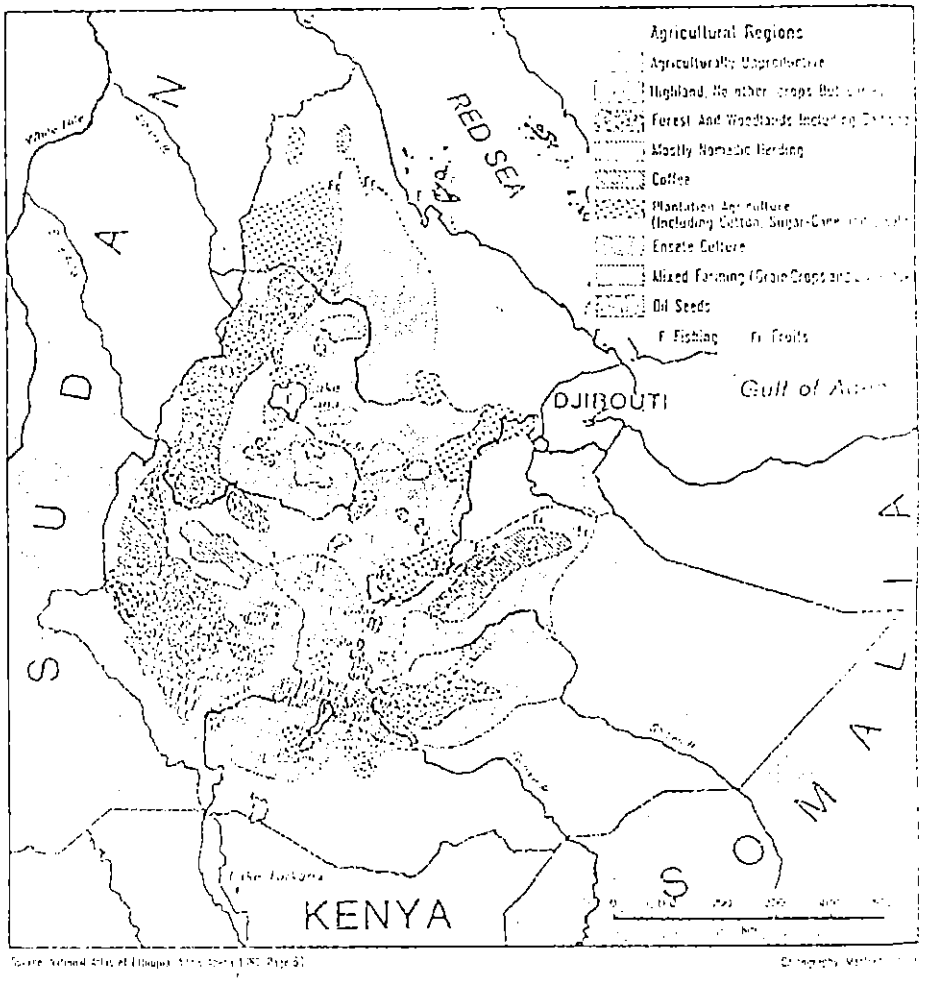
ANNEX 1



Map 1 Regional Map of Ethiopia (Before 1989)

Source: As quoted in Singh (1987)



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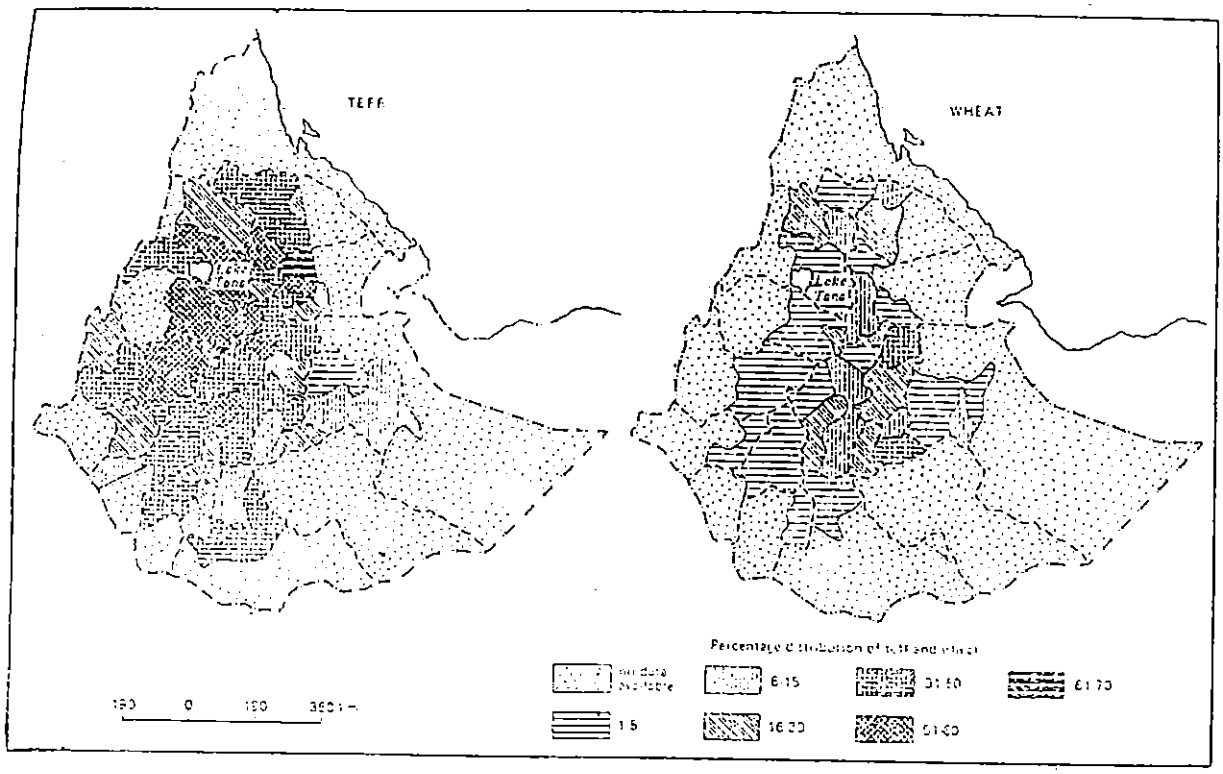
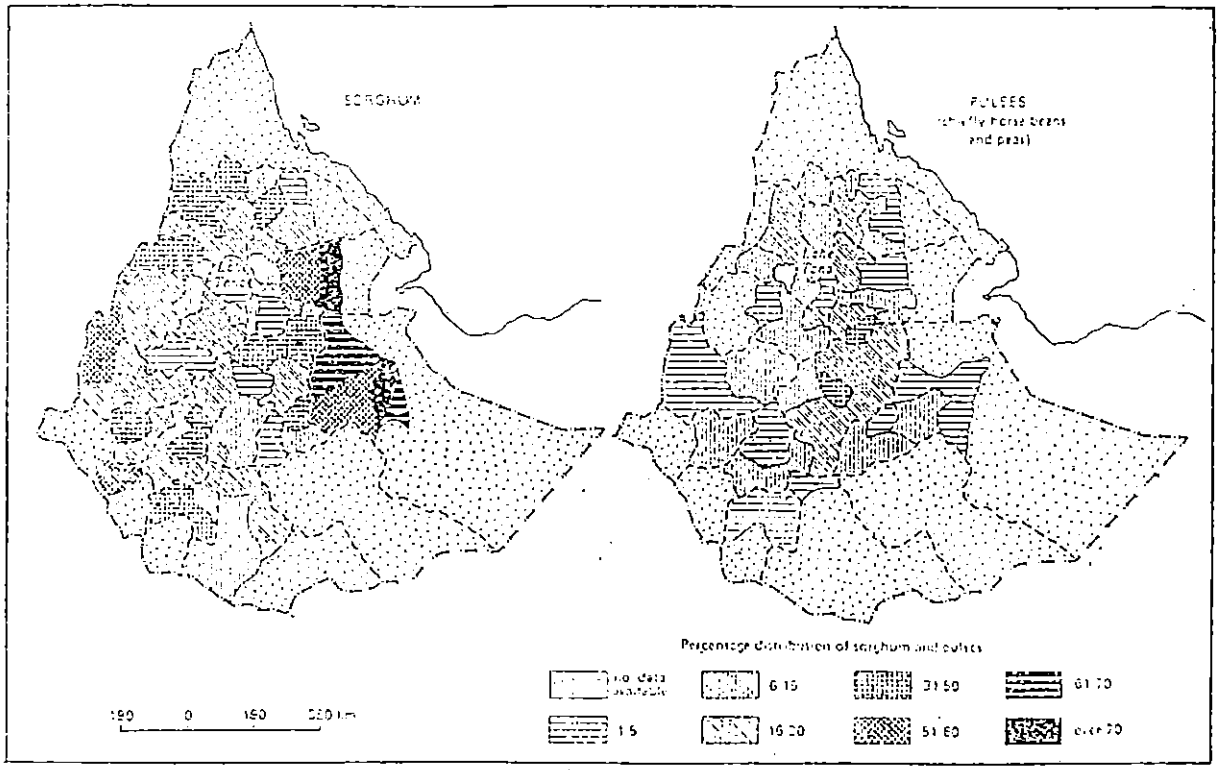
Map 2 Agricultural Regions & their Farming Systems

Source: As quoted in Paueswang et.al (eds) (1990)

ANNEX 1

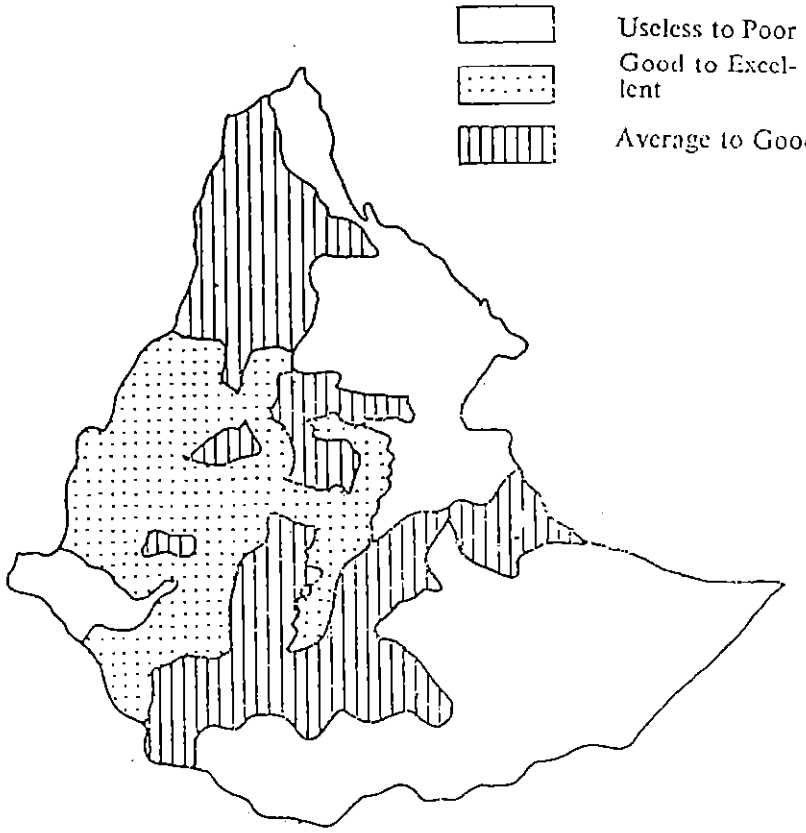




Map 3 Spatial Distribution of the Major Crops Grown in Ethiopia

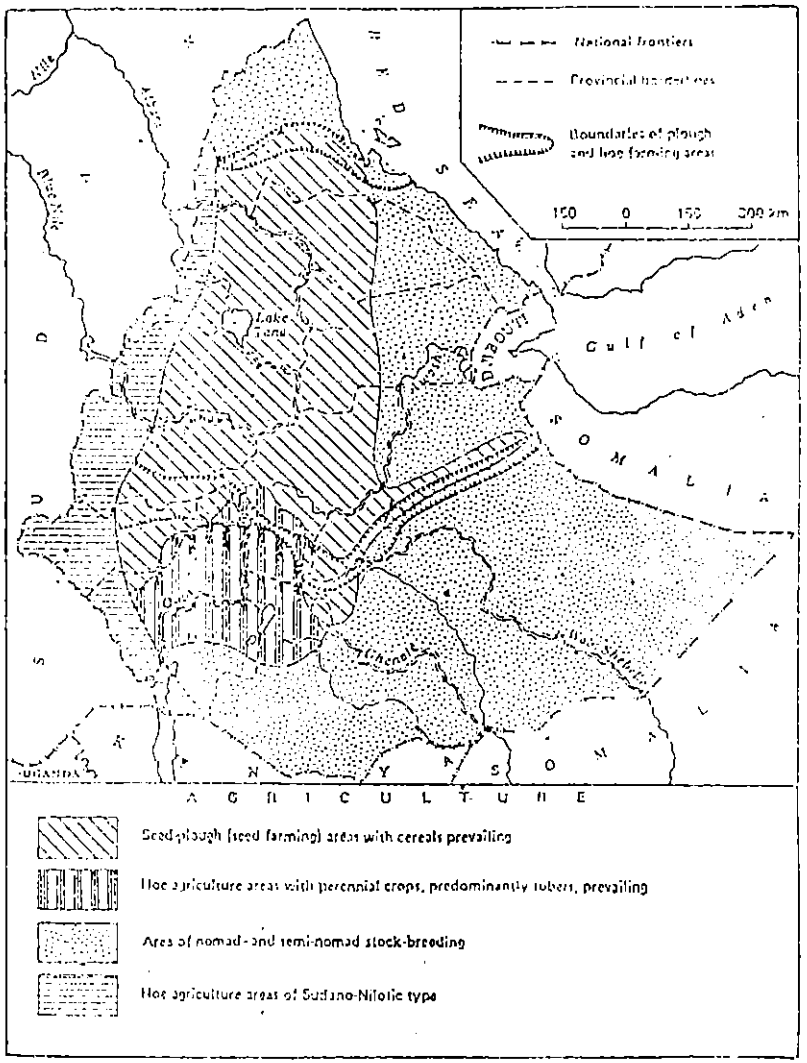
Source: As quoted in Singh (1987)

ANNEX 1



Map 4 Classification of Ethiopian Soils

Source: As quoted in Singh (1987)



Map 5 Prinicipal Farming Areas

Source: As quoted in Singh (1987)

Annex 2 - Gross Domestic Product by Industrial Origin at 1975 E.C (1980/81) Constant Factor Cost, [1960/61=1999/79] [1953=1985 E.C] (millions Birr)

	(a) 1961	1962	1963	1964	1965	1966	1967	1968	1970	1971	1972	1973	1974	1975	1976	1977
	(b) 1953	1954	1955	1956	1957	1958	1959	1960	1962	1963	1964	1965	1966	1967	1968	1969
Goods Producing Sectors	3336.7	3425.1	3531.3	3654.8	3827.1	3931.2	4106.6	4241.7	4406.1	4555.9	4735.1	4782.4	4741.5	4669.3	4724.1	4755.1
Agriculture	2887.5	2937.6	3013.9	3083.7	3202.9	3228.0	3330.4	3430.0	3569.1	3579.2	3704.9	3730.1	3706.7	3640.1	3750.3	3751.2
Agriculture	2795.1	2843.6	2908.5	2976.3	3094.4	3115.4	3209.9	3296.6	3375.6	3441.0	3558.0	3578.8	3550.0	3479.0	3584.7	3582.9
Forestry	88.2	90.1	100.2	102.8	103.9	106.5	114.8	119.1	139.2	133.3	142.0	146.4	151.7	156.2	160.7	165.4
Fishing & Hunting	4.2	3.9	5.2	4.6	4.6	6.1	5.7	4.3	4.5	4.9	4.9	4.9	5.0	4.9	4.9	4.9
Industry	449.2	487.5	517.4	571.1	624.2	703.2	776.2	821.7	896.6	976.7	1030.2	1052.3	1044.8	1029.2	973.8	1001.9
Mining & Quarying	4.1	4.5	5.0	5.9	9.5	11.3	11.1	10.3	11.5	12.0	11.6	12.7	12.1	10.8	9.0	8.1
Manufacturing	98.7	113.1	126.8	153.6	179.5	208.3	234.4	253.5	314.6	356.0	368.8	394.0	389.8	383.7	386.8	395.1
Handicrafts & Small-Scale	146.3	147.1	154.6	166.1	173.6	187.6	196.6	209.7	251.1	265.5	277.9	287.3	284.6	282.4	283.1	286.4
Construction	189.8	209.7	215.6	227.1	240.6	271.6	315.7	317.0	284.4	304.5	320.4	314.4	311.8	306.0	250.0	266.0
Electricity & Water	10.3	13.1	15.4	18.4	22.0	24.4	28.4	31.2	35.2	39.7	41.5	43.9	46.5	46.3	44.9	45.6
Services	838.5	924.4	981.4	1075.9	1227.8	1325.6	1368.1	1498.5	1747.5	1830.9	1941.0	2051.5	2177.2	2250.4	2324.2	2368.1
Distribution	405.3	444.8	477.4	543.7	627.0	680.3	685.0	766.7	894.7	951.3	1004.1	1045.1	1101.6	1097.7	1100.8	1094.9
Trade	316.7	348.0	373.0	421.3	482.0	513.8	516.9	581.6	673.5	706.7	736.0	761.6	813.0	807.6	801.0	784.0
Transport & Communication	88.6	96.8	104.4	122.4	145.0	166.5	168.1	185.1	221.2	244.6	268.1	283.5	288.6	290.1	299.8	311.
Other Services	433.2	479.6	504.0	532.2	600.8	645.3	683.2	731.8	852.8	879.6	936.9	1006.4	1075.6	1160.7	1223.4	1273.2
Banking & Insurance	48.7	53.1	57.4	58.1	66.1	74.1	71.2	77.7	95.1	107.6	113.0	123.8	143.8	171.1	199.1	200.0
Public Administ. & Defence	131.6	161.4	164.4	171.9	208.6	219.5	230.0	245.8	269.8	275.4	301.1	344.5	362.8	406.4	428.	466.1
Housing	108.1	111.9	116.3	120.8	125.6	130.7	136.0	141.6	153.3	160.2	166.4	175.0	182.8	187.9	198.2	199.0
Education	33.2	36.5	41.7	46.2	51.6	58.4	72.3	79.6	98.9	106.5	131.9	139.6	132.1	134.7	144.0	148.5
Health & Medical	19.0	20.3	23.4	25.8	28.7	29.5	33.4	34.4	39.	40.1	44.0	49.7	40.5	40.9	43.5	44.1
Domestic Services	51.2	51.7	52.3	53.0	54.2	55.2	56.6	57.6	59.6	60.7	261.8	62.9	63.5	64.1	64.7	65.
Others	41.4	44.7	48.5	56.4	65.6	77.9	84.3	95.1	115.1	123.0	133.7	141.9	150.1	155.4	155.4	155.4
Total GDP	4175.2	4349.5	4514.7	4730.7	5054.9	5256.1	5474.9	5740.1	6153.4	6386.8	6666.1	6833.9	6928.2	6927.7	7048.	7123.

Source : CSCP, National Accounts Division

(a) European Calendar (b) Ethiopian Calendar

(cont'd)

	1978 1970	1979 1971	1980 1972	1981 1973	1982 1974	1983 1975	1984 1976	1985 1977	1986 1978	1987 1979	1988 1980	1989 1981	1990 1982	1991 1983	Average (1953-83)	Growth Rate	Percent Ave.Tota	Percent Sectora
Goods Producing Sector	4667.3	4899.7	5187.0	5329.8	5316.5	5573.7	5229.2	4622.6	4968.9	5546.7	5525.9	5674.6	5567.6	5779.2	4558.1	0.011	0.[illegible]4	
Agriculture	3698.5	3789.1	3969.8	4071.5	4019.7	4208.9	4792.5	4176.0	4468.1	4964.9	4948.4	4060.1	4014.1	4170.8	3510.4	0.007	0.511	1.000
Agriculture	3523.3	3609.4	3786.1	3878.9	3820.2	4000.8	4576.4	3950.6	4241.3	4735.3	4698.9	3814.8	3762.8	3913.3	3345.2	0.007	0.487	0.953
Forestry	170.3	174.8	178.8	189.2	195.6	203.7	210.8	219.9	220.6	220.6	232.4	238.1	244.0	250.1	160.3	0.027	0.02[illegible]	0.046
Fishing & Hunting	4.9	4.9	4.9	3.4	4.5	4.4	5.3	5.5	6.2	7.1	7.1	7.2	7.3	7.4	5.1	0.007	0.001	0.001
Industry	968.8	1110.6	1217.2	1258.3	1297.2	1364.8	1436.7	1446.6	1500.7	1567.8	1587.6	1614.5	1553.5	1608.4	1047.7	0.044	0.15[illegible]	1.000
Mining & Quarying	7.8	7.8	8.1	8.1	9.4	9.1	11.6	14.1	14.2	11.8	12.5	13.2	19.0	15.0	10.7	0.05[illegible]	0.00[illegible]	0.010
Manufacturing	380.3	484.0	534.8	564.5	590.7	633.7	657.5	667.7	703.3	744.7	760.9	773.7	757.7	742.4	430.4	0.111	0.08[illegible]	0.411
Handicrafts & Small-	280.9	292.2	299.5	306.9	314.6	322.5	330.6	338.6	338.9	348.3	357.0	365.9	357.0	353.4	264.4	0.03[illegible]	0.05[illegible]	0.252
Construction	253.9	273.5	319.2	320.8	317.3	330.1	362.5	353.0	358.7	371.5	359.1	359.7	312.8	360.3	290.2	0.01[illegible]	0.04[illegible]	0.277
Electricity & Water	45.9	53.1	55.6	58.0	65.2	69.4	74.5	81.2	85.6	91.9	98.1	102.0	107.0	117.3	52.0	0.139	0.009[illegible]	0.050
Services	2364.7	2531.5	2673.6	2766.8	2876.3	3056.1	3085.9	3114.4	3285.6	3456.7	3791.8	3916.5	4298.8	4471.6	2309.1	0.058	0.[illegible]	1.000
Distribution	988.6	1118.8	1179.4	1218.3	1264.0	1346.2	1367.6	1396.6	1464.2	1540.1	1566.1	1619.1	1618.0	1687.7	1040.5	0.05[illegible]	0.1[illegible]	0.451
Trade	685.4	789.9	828.5	853.4	878.9	934.3	938.4	887.4	938.6	1013.2	1014.6	1041.8	1022.3	1031.7	725.6	0.043	0.10[illegible]	0.314
Transport & Commun	303.2	328.9	350.9	364.8	385.1	411.9	429.2	469.2	525.6	526.9	551.5	577.8	595.7	656.0	314.9	0.08[illegible]	0.04[illegible]	0.137
Other Services	1376.1	1412.7	1494.2	1548.6	1612.3	1709.9	1718.3	1717.8	1821.4	1916.6	2225.7	2297.4	2680.8	2783.9	1268.6	0.064	0.12[illegible]	0.549
Banking & Insuranc	223.9	239.8	264.0	291.7	310.6	336.4	304.8	312.1	340.6	360.3	411.6	367.4	356.3	345.4	197.4	0.10[illegible]	0.02[illegible]	0.085
Public Administ. &	542.7	542.9	564.7	584.5	602.7	648.9	659.3	665.8	672.5	710.6	930.7	1029.5	1400.7	1489.8	497.5	0.094	0.07[illegible]	0.215
Housing	195.3	198.3	202.2	206.3	209.9	213.7	217.3	221.0	224.9	230.1	236.1	238.5	244.5	249.4	177.0	0.021	0.026	0.077
Education	148.5	159.1	177.4	178.2	195.1	208.9	229.6	247.2	261.9	279.2	301.2	312.6	322.3	335.2	154.7	0.122	0.02[illegible]	0.067
Health & Medical	44.4	46.6	49.3	52.5	54.7	56.7	56.9	58.0	68.1	72.3	74.6	77.6	81.5	82.9	45.4	0.046	0.007	0.020
Domestic Services	65.9	66.6	67.3	68.0	68.7	69.4	70.1	70.8	71.6	72.4	73.1	73.9	74.6	75.4	62.0	0.007	0.00[illegible]	0.01[illegible]
Others	155.4	159.4	169.3	167.4	171.6	175.9	180.4	182.1	136.6	191.6	196.4	197.9	200.9	205.9	131.9	0.025	0.0[illegible]	0.0[illegible]
Total GDP	7042.0	7431.2	7860.6	8096.6	8193.8	8629.8	8315.1	7737.0	8254.4	8964.4	9317.7	9591.1	9866.4	10250.8	6867.5	0.041	1.000	

Annex 3 Regression Analysis of the dependent variables Food production (Food) and Income (INC) on the independent variables, Fertilizer (FER) and Credit (CRE).

4.1 LS FOOD C FER

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	4.7451630	0.1350499	35.136374	0.0001
FER	0.3330883	0.0702909	4.7387089	0.0178

R-squared	0.882147	Mean of dependent var	5.050078
Adjusted R-squared	0.842862	S.D. of dependent var	0.669769
S.E. of regression	0.265500	Sum of squared resid	0.211472
Log likelihood	0.813064	F-statistic	22.45536
Durbin-Watson stat	2.948034	Prob(F-statistic)	0.017820

4.2 LS FOOD C CRE

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	2.3045862	1.8684431	1.2334260	0.3052
CRE	1.0176346	0.6856746	1.4841364	0.2344

R-squared	0.423372	Mean of dependent var	5.050078
Adjusted R-squared	0.231163	S.D. of dependent var	0.669769
S.E. of regression	0.587276	Sum of squared resid	1.034679
Log likelihood	-3.156326	F-statistic	2.202661
Durbin-Watson stat	2.814692	Prob(F-statistic)	0.234426

4.3 LS FOOD C CRE FER

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	4.0747184	1.1081838	3.6769336	0.0667
CRE	0.2599890	0.4256848	0.6107548	0.6035
FER	0.2992417	0.0965265	3.1001000	0.0902

R-squared	0.900672	Mean of dependent var	5.050078
Adjusted R-squared	0.801345	S.D. of dependent var	0.669769
S.E. of regression	0.298521	Sum of squared resid	0.178230
Log likelihood	1.240606	F-statistic	9.067687
Durbin-Watson stat	2.998151	Prob(F-statistic)	0.099328

4.4 INC C FER

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	6.1374709	0.2212178	27.744021	0.0001
FER	0.1760928	0.1151397	1.5293837	0.2236

R-squared	0.438099	Mean of dependent var	6.298670
Adjusted R-squared	0.250798	S.D. of dependent var	0.502449
S.E. of regression	0.434902	Sum of squared resid	0.567419
Log likelihood	-1.654453	F-statistic	2.339015
Durbin-Watson stat	1.941502	Prob(F-statistic)	0.223648

4.5 LS INC C CRE

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	3.4618557	0.8189163	4.2273620	0.0242
CRE	1.0514836	0.3005230	3.4988458	0.0395

R-squared	0.803174	Mean of dependent var	6.298670
Adjusted R-squared	0.737566	S.D. of dependent var	0.502449
S.E. of regression	0.257396	Sum of squared resid	0.198758
Log likelihood	0.968068	F-statistic	12.24192
Durbin-Watson stat	1.116571	Prob(F-statistic)	0.039514

4.6 LS INC C FER CRE

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	3.8078001	1.0696373	3.5598986	0.0706
FER	0.0584821	0.0931689	0.6276992	0.5943
CRE	0.9034137	0.4108780	2.1987395	0.1589

R-squared	0.835568	Mean of dependent var	6.298670
Adjusted R-squared	0.671136	S.D. of dependent var	0.502449
S.E. of regression	0.288138	Sum of squared resid	0.166046
Log likelihood	1.417621	F-statistic	5.081543
Durbin-Watson stat	0.986649	Prob(F-statistic)	0.164432

4.7 LS INC C FOOD

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	3.2924325	1.3403859	2.4563318	0.0912
FOOD	0.5952852	0.2635709	2.2585396	0.1091

R-squared	0.629675	Mean of dependent var	6.298670
Adjusted R-squared	0.506234	S.D. of dependent var	0.502449
S.E. of regression	0.353063	Sum of squared resid	0.373961
Log likelihood	-0.612087	F-statistic	5.101001
Durbin-Watson stat	2.172767	Prob(F-statistic)	0.109073

4.8 LS INC C CRE FOOD FER

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	1.1597636	3.1156409	0.3722392	0.7731
CRE	0.7344547	0.4679839	1.5694014	0.3612
FOOD	0.6498698	0.7136610	0.9106142	0.5298
FER	-0.1359861	0.2347286	-0.5793332	0.6657

R-squared	0.910108	Mean of dependent var	6.298670
Adjusted R-squared	0.640432	S.D. of dependent var	0.502449
S.E. of regression	0.301288	Sum of squared resid	0.090775
Log likelihood	2.927343	F-statistic	3.374823
Durbin-Watson stat	1.277943	Prob(F-statistic)	0.375943

Annex 4 Correlation Coefficients for the variables Credit (CRE), Fertilizer (FER), Food (FOOD), Income (INC) and High Yielding Varieties (HYV)

5.1 COVA CRE FER FOOD INC

Variable	Mean	S.D.	Maximum	Minimum
CRE	2.6979157	0.4282469	3.2995340	2.2300140
FER	0.9154193	1.8885826	3.4594660	-1.2039730
FOOD	5.0500785	0.6697689	5.7838250	4.0253520
INC	6.2986697	0.5024487	6.8448150	5.5568280

	Covariance	Correlation
CRE,CRE	0.1467163	1.0000000
CRE,FER	0.3714688	0.5741194
CRE,FOOD	0.1493036	0.6506704
CRE,INC	0.1542698	0.8962000
FER,FER	2.8533954	1.0000000
FER,FOOD	0.9504327	0.9392266
FER,INC	0.5024625	0.6618901
FOOD,FOOD	0.3588723	1.0000000
FOOD,INC	0.2136314	0.7935209
INC,INC	0.2019638	1.0000000

5.2 COVA CRE FER FOOD HYV INC

Variable	Mean	S.D.	Maximum	Minimum
CRE	2.6979157	0.4282469	3.2995340	2.2300140
FER	0.9154193	1.8885826	3.4594660	-1.2039730
FOOD	5.0500785	0.6697689	5.7838250	4.0253520
HYV	0.7475339	1.3186675	3.0445230	0.0000000
INC	6.2986697	0.5024487	6.8448150	5.5568280

	Covariance	Correlation
CRE,CRE	0.1467163	1.0000000
CRE,FER	0.3714688	0.5741194
CRE,FOOD	0.1493036	0.6506704
CRE,HYV	0.3850842	0.8523859
CRE,INC	0.1542698	0.8962000
FER,FER	2.8533954	1.0000000
FER,FOOD	0.9504327	0.9392266
FER,HYV	1.3912433	0.6982997
FER,INC	0.5024625	0.6618901
FOOD,FOOD	0.3588723	1.0000000
FOOD,HYV	0.4317493	0.6110566
FOOD,INC	0.2136314	0.7935209
HYV,HYV	1.3911071	1.0000000
HYV,INC	0.3341099	0.6303363
INC,INC	0.2019638	1.0000000

5.3 COVA FOOD FER CRE

Variable	Mean	S.D.	Maximum	Minimum
FOOD	5.0500785	0.6697689	5.7838250	4.0253520
FER	0.9154193	1.8885826	3.4594660	-1.2039730
CRE	2.6979157	0.4282469	3.2995340	2.2300140

	Covariance	Correlation
FOOD,FOOD	0.3588723	1.0000000
FOOD,FER	0.9504327	0.9392266
FOOD,CRE	0.1493036	0.6506704
FER,FER	2.8533954	1.0000000
FER,CRE	0.3714688	0.5741194
CRE,CRE	0.1467163	1.0000000