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Agricultural and Development Economics Division (ESA)
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The Roles of Agriculture Project aims to extend current thinking about the social, environmental and economic roles of agriculture in the development process. For more than three years, the project has worked to establish an analytical framework; to identify the social and economic roles for which the market prices of agricultural activities fail to convey sufficient signals to secure an optimal level of those activities; and to carry out eleven country case studies. The case studies include Chile, China, the Dominican Republic, Ethiopia, Ghana, India, Indonesia, Mali, Mexico, Morocco, and South Africa.

The ROA International Conference, October 20-22, provides an opportunity to present and discuss research results from the eleven case studies and to draw on the lessons, strengths and experiences learned over the past three years for the design and implementation of future work. The country studies consist of module reports (policy, environment, poverty, food security, buffer, social viability, and culture) and a national summary report. This paper has been prepared for presentation to and discussion by country case study team members participating in the International Conference. It is a working draft.

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Summary Report on Recent Economic and Agricultural Policy

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Executive Summary

The Policy module of the role of agriculture project was part of the Ethiopia case study of the FAO's ROA project and had two interrelated objectives. First, to examine the policy setting within which Ethiopia's agricultural sector and the externalities it generates has evolved in the 1990s and second to study the impact of new policies on the roles of agriculture selected for the analysis, taking into consideration the interactions between these policies, institutions and the farming systems (agro-ecological and socio-economic conditions). Three separate activities were carried out to achieve these objectives. The first part involves formulation of a Policy-Role Matrix for Ethiopian agriculture which was used as a conceptual guide in the process of linking policies and the specific roles-outcomes. Second, an extensive and detailed review of the performance and role of the Ethiopian agriculture in the 1990s in order to study the responsiveness of Ethiopia's agricultural sector to the policies and institutional reforms undertaken during the 1990s is considered. Third, in collaboration with FAO's economists, attempt was made to calculate the nominal rate of protection (NPR) for three importable food crops (wheat, maize, sorghum) and three exportable crops (coffee, sesame and sugar) with the objective of analyzing the competitiveness of Ethiopia's agriculture based export sector.

To achieve the above objectives, the study employed the before-after methodological approach. Accordingly, first, the performance and role of the agricultural sector after the 1990s reforms was analyzed and compared with the situation before the reforms. This is followed by identifying and analyzing the possible factors responsible for the observed change/no change on the role and externalities of the sector. Descriptive analysis such as calculation of index numbers, growth rates and charts were also used. Furthermore, a Policy-role matrix (PRM) was also used as a conceptual guide in the process of linking policies and the specific roles-outcomes. The study relied on secondary data from various publications of the Ministry of Finance and Economic Development, the National Bank of Ethiopia and the Central Statistical Authority.

The contribution of agriculture to food security both through its direct impact on food production and indirect effect on farm incomes (i.e. through improving entitlement capacity) has failed to recover even after the economic reforms of the 1990s. Despite some short-lived successes in some areas and years, the impact of the country's new development strategy that is commonly known as ADLI and its main instrument, PADETES (the agricultural extension system that was designed based on ADLI strategy) was too little to affect per capita agricultural production or productivity at national level or in a sustainable manner. In addition, the 1990s economic reforms didn't bring a notable impact either in raising agriculture's contribution to the export sector or in generating surplus to the development of the non-agricultural sector. On the other hand, the relative price for agricultural products compared to the prices of non-agricultural commodities was not in favor of agriculture. For instance, price for food crops declined by up to 25% during the 1996 and 2001 bumper harvest years. Similarly, the relative terms of trade between agriculture and non-agricultural sectors showed a clear declining trend in favor of the later during the 1995 to 2001 period. Except for workers in the cloth and foot wear sectors, the trend is that the relatively impoverished agriculture continues to contribute to the welfare of most people engaged in the non-agricultural sectors by providing cheap food.

Despite some positive measures taken by the government such as relaxation of some of the constraints on rural land renting and reducing the frequency of land redistribution, rural land is still a public (government) property and is subject to potential redistribution in most regions of the country. There is increasing evidence that land tenure policy particularly the issue of tenure insecurity and inefficient land markets continue to contribute to environmental degradations such as deforestation, soil erosion and drought and low agricultural productivity. The land policy is also faulted for discouraging farmers to take off-farm employment opportunities and thus aggravating the population pressure that is adversely affecting the performance of the sector in general and worsening the poverty situation in rural Ethiopia in particular.

Part I: Agriculture in the National Economy (1990 - 1999)

Section 1: The Role of Agriculture in the Ethiopian Economy.

Ethiopia is endowed with diverse terrain and agro-ecological climate ranging from temperate in the highlands to tropical in the lowlands. Because of this, a variety of crops can be grown in the country. Much of the land area, however, is mountainous. The mountain range and the rift valley run north-south through the center of the country (FAO/WFP, 2001).

Agriculture, as is the case in much of the developing world, is still the largest sector in the Ethiopian economy [1] contributing to about 50 percent to GDP and estimated to provide employment to most of the 85 percent of the country's population that reside in rural areas. It generates about 90 percent of the export earnings, and supplies about 70 percent of the country's raw material requirement for its agro-based industries (MEDaC, 1999). Thus, the growth of the agricultural sector is vital to the national economic development and the well-being of the population. As per the National Accounts, crop production is estimated to contribute to around 60 percent, livestock around 27 percent and forestry and other sub-sectors around 13 percent of the total agricultural value added. Agriculture is the foundation of the country's food production and hence the major contributing sector to food security (FAO/WFP, 2001). As the economy is underdeveloped and disproportionately depends on agriculture, the agricultural sector has many roles to play in the Ethiopian economy. In general, the sector should fulfill the following roles:

- production of food crops in a manner that can fulfill the objective of food security at least at national level,
- production of exportable agricultural products to pay for imports and reduce the gap in the balance of payment,
- generation of surplus for the development of other sectors,
- utilization of agricultural and natural resources in a sustainable manner that cannot harm the livelihood of future generations.
- enabling farmers to attain a better life by improving their productivity and income.

However, many of the aforementioned roles still remain as unfulfilled as agriculture is known for its extremely poor performance. A cursory look at the performance of agriculture in Ethiopia over the past four decades clearly shows that the per capita value added in the sector has been declining precipitously (see figure1). By comparison, over the past four decades, the sectors that have performed reasonably well are industry and services (the non-agricultural sectors) which were growing rapidly during the same period. The disparity between urban and rural productivity has increased from 4.4 (i.e. urban productivity being 4.4 times that of rural productivity) in 1987 to 4.7 in 1997. The gap between the modern sector and the primary sector increased from 8.4 to 10.7 (Figure 1). This clearly reflects the relative impoverishment of the overcrowded rural economy. This is not only a result of the actual increase in productivity in the urban sector, even more worrying, it is a product of the decline in productivity in the primary sector by about 0.2% per year (Berhanu Nega, 2003). However, the decline in labour productivity in the rural sector may be more explained by the disproportionately large number of people newly added to the rural sector rather than the actual decline in total value-added by the sector. Only about 8.2 million people were added to the urban population during the past 40 years (2002/03 and 1962/63), while the rural population increased by about 38 million during the same period[2].

Food security has become a growing problem in Ethiopia as the number of people looking for food aid has been increasing continuously. For example, during the last days of the imperial regime (around mid 1974), only about 1.5 million people or 5% of the population required food aid. By mid 1980's (during the Derge regime), the number of people that suffered from food shortage escalated to 7 million or 17.4% of the population and now about 14.5 million or 22% of

the total population (most of them are farmers) are unable to feed themselves during periods of drought (Figure 2). Recently poverty and lack of productive resources (land and capital) have emerged to play a growing role in explaining the problem of food insecurity. In general, the contribution of agriculture to food security both through its direct impact on food production and indirect effect on farm incomes (i.e. through improving entitlement capacity) has continued to deteriorate.

The capacity of the agricultural sector to enable farmers to attain a life free of poverty and use natural resources (soil, water and forest) in a sustainable manner will determine whether agriculture can generate positive externalities or not as these conditions define the nature of the relationship agriculture has with the environment. It is the agricultural sector's inability to reduce rural poverty and to provide farmers better life and policy problems like weak property rights and insecure land ownership that contributed to the continued generation of various negative environmental externalities like heavy soil erosion, deforestation and drought[3]. Most Ethiopian farmers lack both the resources and the incentives for high levels of productivity that enables higher levels of income.

Beyond the realization of the short-term objective of attaining the food requirement of the people, agriculture need to exhibit several additional qualities if it is to serve as the leading sector and the main engine of development for the country as expected by the ADLI strategy of the government. It is well known that as an economy grows agriculture accounts for a decreasing share of both GDP and employment. Thus, the case for agriculture as the main focus of economic growth must rely on identifying a set of intersectoral linkages through which agricultural growth contributes to the growth of non-agriculture in the Ethiopian economy. The fact that agriculture comprises over half of the GDP suggests that agriculture's direct impact on economic growth (or the lack of economic growth) is substantial. In the long run, however, agriculture's indirect contributions to economic growth through its catalytic effect on non-agricultural growth may be of even greater importance (Block, 1999). Because of its unique position as a factor of production and in Ethiopia's socio-economic history, land is the most important factor of production to allow agriculture to function as an engine of growth or the lack of it.

Section 2: National Objective of Food Security and the Performance of the Agricultural Sector in the 1990s

The term food security in earlier times was conceptualized as a problem of food supply against the level of consumption needs. This view, however, is less practical as entitlement to available food is more or equally important. Therefore, food security combines the two concepts: the ability to produce or/and purchase sufficient food. The food security strategy of the Ethiopian Government focuses on eliminating long-term food deprivation and averting short-term stresses in the capacity of commanding enough food (MEDaC, 1999).

Food insecurity[4] in Ethiopia currently covers a large area and a significant number of people. As evidenced from different sources, the size of the food insecure people has varied between 40% and 50% over the last decade. In general, food insecurity in Ethiopia is highly correlated with the decline in per capita food production. Though an increase in food production is observed during most of the post-reform years (since 1991), there is still an increasing gap in food deficit. This can be seen from the improvement in the rate of deterioration of per capita food production. For example, the declining in per capita food production worsened from -0.84 in 1970s to -1.98 in 1980s then improved to -0.64 in the 1990s (FAO, 2001).

Section 3: Performance of Ethiopian Agriculture in the 1990s and its impact on the export market.

The second major objective of the agricultural sector in Ethiopia is to produce exportable agricultural products to enable the country to pay for its imports and reduce the gap in the balance of payments. This necessitates three things: first the sector should increase and diversify exportable agricultural products, second it should improve the quality of the products to meet the demand of international consumers and withstand fierce competitions at international markets and third productivity should be improved to compensate potential declines in farm income as prices of primary products decline in the long-run.

As one of the least developed economies in the world that heavily depend on agriculture, the structure of the Ethiopian exports is dominated by agricultural products which alone accounted for more than 90% of the exports proceeds of the country (MEDaC, 1999).

The performance of the export sub-sector during the late 1980's and early 1990's showed a clear declining trend in export earnings. In absolute terms, export earnings had declined from 443.6 million USD in 1988/89 to 154.2 million in 1991/92. The introduction of the reform measures, however, seems to have a positive impact on the performance of the export sector. Export earnings have showed a continuous revival in the years following the reform reaching a level of 453.6 million USD in 1994/95 that restored export earnings capacity of financing imports back to the 1988/89 level. This increase in the performance of the export sector was mainly associated with the windfall gains from increase in world coffee prices in 1994/95 (MEDaC, 1999). As this increase in world coffee price was short-lived, Ethiopia's export earning which disproportionately based on its traditional export commodity (coffee) has declined recently following the decline in world coffee price (see Figure 3).

In a nutshell, despite the government's intention and continued effort to improve the performance of the export sector by adopting measures such as devaluation of the Birr, streamlining of trade licensing, establishment of Export Promotion Agency, introduction of export credit guarantee scheme, issuance of a directive for allowing external loans and suppliers credit, etc., total export performance is not encouraging and the structure of export remains rigid. For instance, exports capacity to cover imports is reduced to merely 30 percent in 1998/99 and to 24% in 2001/02 from its 43 percent in 1994/95 (the highest after the reform period) and 1988/89 of the pre-reform period.

All in all, the performance of the Ethiopian export sector, which is highly dependent on the agricultural sector, does not show any stable recovery trend. The responsiveness of the export sector to the policy reforms undertaken since 1992 is either very short-lived or not as high as expectation. It seems that second generation of policy and non-policy reforms are required to improve the performance of the agricultural sector and its contribution to the export sector.

Part II. Major Instruments of Socio-economic Policy (1990-2001)

Section 4. Brief review of Ethiopia's pre 1990 economic polices and major changes in the 1990s (1990 - 2001).

Following the civil war and the subsequent change of government in 1991, Ethiopia has launched a new Economic Reform Program (ERP) in 1992 to reverse the situation and address

structural and non-structural economic problems created during the 17-year (1974-1991) socialist command economic policy of the Derg regime. The set of policies undertaken include: (1) devaluation of the domestic currency, (2) maintaining prudent or tight fiscal and monetary policy, (3) upward adjustments of interest rates, (4) trade liberalization and price deregulation, (5) transport deregulation, (6) issuance of an investment code, (7) labor market liberalization, and (8) issuance of a labor code. In principle, the adjustment that includes those set of policies offer opportunities as well as challenges to agricultural development. However, agriculture is better placed than other sectors to turn the adjustment process into an opportunity (Hamza Abdurezak and Azanaw Tadesse, 1995).

Moreover, the Ethiopian Government in the early 1990s declared collectivisation of agriculture and villigization as undesirable and liberalized both agricultural output and input markets. The reform ended substantial taxation of agriculture, removed the restrictions on private sector participation in grain movements and abolished the quota system of grain delivery, and liberalized the fertilizer market, creating a multi-channel distribution system. Measures were taken to hand over unprofitable state farms to surrounding farmers or to employees or private investors on consessional terms. The overriding objective of the government was stated as attaining fast, broad based economic development (Mulat Demeke, 2000). The government continued with its policy reform since these initial measures. It has reduced, for example, deposit rates recently by half to 3 percent and lending rates to 7.5% to reflect the downward trend in inflation and encourage investments. It has also reduced export tax on coffee to support coffee producers and exporters in the face of continued decline in world coffee prices.

Subsequently, the government declared around mid 1994 that its major development strategy is Agriculture Development Led Industrialization (ADLI). Even though written documents about ADLI were not available during the time, senior officials of the government claimed publicly that ADLI could address the greatest and most intractable problems of food security and poverty in a short period of time by enabling Ethiopian peasants to use their "abundant" resources (labor and land) efficiently and effectively. Recently, a document published by the ruling party (EPRDF) elaborates what ADLI as a conceptual guideline or development philosophy of the ruling party means. According to this document, ADLI focuses on the smallholder farmer through the diffusion of fertilizers and improved seeds and the establishment of credit schemes as well as the expansion of the road system and improvement of primary health care, primary education and water supply. The strategy viewed agriculture as the engine of growth, on account of its potentially superior growth linkages, surplus generation, market creation for products of domestic industries, and provision of raw materials and foreign exchange (Development Strategies and Priority of the Abyotawi Democracy, 2000).

However, to fulfil these functions and its assumed role as the engine of growth, the agricultural sector should still be able to demonstrate that:

- it can grow at sufficiently higher rate, at least at a little higher than the growth rate of population,
- any development in the sector should be able to improve rural labour productivity which is an important precondition to induce sustainable use of natural resources (land, soil, forest and water) and stimulate the non-agricultural sectors,
- the source of growth should principally originate from increased investment and efficient use of resources (from increased productivity) rather than from the use of additional scarce natural resources especially land (i.e. future increases in food production must exploit biological yields on existing land), and
- agriculture should supported to establish good linkages with other sectors.

To make this work, a huge task is expected from all policy makers and development agents found both in the government and non-government institutions. Especially, the government should be able to evaluate the current performance of the agricultural sector, the challenges and constraints faced by the sector and its potential in realistic terms. This will help to modify existing policies or design a new comprehensive and consistent development strategy that could provide adequate incentives and support expected to motivate economic agents to achieve the aforementioned goals of the agricultural sector.

Section 5. Major effects of macro-economic policies on the role and performance of the agricultural sector

As discussed earlier macroeconomic policies affect the role and performance of the agricultural sector either through their effect on relative prices between agricultural and non-agricultural, and/or tradable and non-tradable commodities and/or resource allocations/utilizations. As farming in Ethiopia is subsistence oriented (i.e., most production and consumption activities of farmers are carried out outside the market) and operate in an unpredictable environment where erratic rainfall and adverse weather conditions is frequently prevail, farmers' responsiveness to changes in macroeconomic policies is expected to be very limited. However, as the shift in policies during the reform period are not only changes in policies but also a fundamental change in orientation from a socialist economy to a market economy, it is not unrealistic to expect some concrete changes on the performance of the agricultural sector. On the other hand, the exercise of separating the effect of macroeconomic policies from other factors including the weather factor that has a decisive role in determining the performance of the agricultural sector and externalities it generates is not a simple task.

Despite such constraints, the major impacts of the macroeconomic policies undertaken in the 1990s on the role and performance of the sector and the externalities associated with it can be evaluated by identifying and measuring key performance indicators and comparing them with anticipated outcomes and objectives of those policies. For example, the impact of correcting overvalued exchange rate should be reflected in increased domestic and/or farm gate prices of exportable products and improved supply of those commodities.

5.1 Monetary policy and agricultural Credit

Through its ongoing Economic Reform Program, the government continue with its monetary and financial sector reform to stabilize the macro-economic environment and create an efficient financial sectors that facilitates economic growth (MEDaC, 1999). The government sought to ensure adequate growth of credit to meet the requirements of the non-government productive sectors through maintaining the growth rates of broad money parallel with growth in nominal GDP which can help to contain inflation and external balances at a sustainable level. With the introduction of the ERP, the government opened the financial sector for the private sector and adjusts interest rates. Since 1994/95, the government sets only the minimum deposit and maximum lending rates, remove discriminatory interest (especially lending rates) rates and start auctioning government securities. Since 1998, the ceiling on lending rates has been suspended by the government to be determined by the market (MEDaC, 1999).

In an economy such as Ethiopia where agriculture accounts for a major proportion of economic activity and employs a large proportion of the population, it could be assumed that increased

credit to agriculture would lead to increased growth in the economy. Increased credit to agriculture would also lead to higher production of food, exportable and industrially processed agricultural products. This will enable agriculture to fulfill its expected roles and generate positive externalities. However, this depends on many factors. First, credit should be available and accessible to farmers; second farmers should have access to appropriate technologies and investment alternatives that determine the capacity of farmers to use available credit. Availability of well functioning factor markets (especially land and capital) and farmers'/investors' confidence on property rights in the country also play roles in influencing farmers' decision to invest. Finally, availability of competing investment opportunities in non-agricultural sectors with a high rate of return or less risk may determine where to invest (in agriculture or other sectors). Policy instruments like preferential interest rates and other incentives that could improve the relative profitability and security of agricultural investment could be used by policy makers to make agriculture more attractive to farmers and potential investors.

Despite some success of the policy changes of the 1990s in shifting the direction of the flow of financial resources (mainly credit) from public enterprises to the private sector, the economic reform program (ERP) has failed to direct available credit to the sector that has greater importance to the development of the economy (Figure 4). The agricultural sector had on average about 14.7% share in total credit disbursement in seven years between 1991/92 – 1997/98, while domestic trade had 32.2% and industry 13.2%. As shown in Table 1, the share of agricultural credit has recently stagnated at around 16% and never exceeded 22 percent of total credit. Even though the problem may not be confined to the amount of credit available, the money flows to the agricultural sector in the form of credit does not reflect its current contribution to the economy and the wider impact of potential investment in agriculture.

Ethiopian agriculture as it stands at present requires high government support in terms of the right incentives and policy that can attract capital which is indispensable to make agriculture a sector that is suitable for farm investments and that serves as the engine of the economy generating positive externalities. Consequently, agricultural credit could be one policy variable of a paramount importance to alleviate the critical financial constraint that is hampering farm investments such as irrigation, drainage, purchase of hand pumps, tractors and modern inputs like fertilizers, improved seeds, pesticides and animal feeds. However, first, effort should be made to analyze agriculture's absorption capacity of available credit. The problem may be more of agriculture's inability to use credit because of various structural and institutional problems rather than the availability of financial resources. Besides dealing with such issues, the government should realistically assess its claim that in the long-term Ethiopian peasants could generate sufficient capital from their own production activities using their abundant labor and land[5] (Development Strategies and Priority of the Abyotawi Democracy, 2000). Such claims may undermine the crucial need of capital and modern farm enterprise management that are desperately lack in rural Ethiopia where farmers struggle to survive on their subsistence farming for decades.

5.2 Agricultural prices and terms of trade

Price for agricultural products and its development relative to non-agricultural prices is, among others, an important factor to determine the level of farm income, productivity and the use of modern farm inputs like land saving farm technologies (e.g. fertilizers). Agricultural prices could also influence the nature of agriculture's relation with the environment. If, for example, agricultural productivity remains stagnant and its terms of trade decline over time, farmers will be forced to expand their farming activities into ecologically fragile areas to compensate lost income and the effect of increased population. This will have serious implications on the

environment. However, price plays its full role if the production system is market oriented. In Ethiopia most farmers produce at subsistence level and the principal objective of their production is to meet household needs. This, however, does not mean that all Ethiopian farmers have no marketable surplus and consequently do not respond to market prices. On the contrary, as consumers of non-agricultural products or services, some farmers have to produce extra output for sale in the market and some other farmers search for employment in non-agricultural activities to earn money to buy food and other products.

The sectoral terms of trade between agriculture (approximated by food prices) and the non-agricultural sector which is approximated by three commodities (DAP fertilizer, clothing and foot wear and household equipments) and one service (transport and communication) is represented by the rural retail price index of the respective commodities (Figure 6). The price index for food items which represents the index for agricultural sector increased only by 12.2% over the five years from 1995 to 2001 while the corresponding percent for DAP fertilizer (traded agricultural inputs) and transport and communication is 76.6% and 65.2% respectively (NBE, 2000/01). The term of trade is in general against agriculture[6]. Except for workers in the cloth and foot wear sectors[7], the trend is that agriculture has a positive contribution for the welfare of people engaged in non-agricultural sectors by providing cheap food (relative to non-food items).

Since 1992, the Ethiopian government has left for the market to determine prices of most agricultural and non-agricultural commodities, except for fertilizer which is subsidized by the government until 1996/97. Market forces, therefore, were largely responsible for the variations observed in terms of trade between agricultural products and non-agricultural products. However, this does not necessarily mean that markets are playing their full role in resource allocation after the reform. There are other non-market factors that affect the structure of production, incentives, and resource allocation in the Ethiopian economy in general and its farming sector in particular. Consequently, one could not consider the development in the relative terms of trade between agriculture and non-agriculture as a desired or natural process that was created among sectors that have a level playing field.

Despite declared commitments from the government to the agricultural sector, the sector is faced with more policy and infrastructure related problems compared to others. The land policy, for example, has been an obstacle for a free rural-urban population migration. Rural population in Ethiopia cannot easily migrate permanently to urban areas for fear of losing their farm plots (see Berhanu et al, 2003). On the other hand, the land policy may limit agriculture's capacity to realize the advantages of economies of scale in production and marketing as the land, the major factor of production, is not freely transferable or marketable. The land policy hampers the development of factor markets that is essential for factor mobility. The Ethiopian agriculture, for example, seriously lacks capital and management that are indispensable to avoid or minimize the damaging relationship between agriculture and environment.

On the other hand, there are non-policy factors that negatively affect agriculture's terms of trade. Markets for agricultural and non-agricultural commodities, for example, are not equally developed. Agricultural output markets in Ethiopia are thin, scattered and suffer from higher degree of monopoly and seasonality in the supply side. Farmers as sellers of agricultural products have a very weak financial position to withstand the adverse effects of these factors, whereas the markets for other commodities are relatively less vulnerable to these factors. Hence, government support is required to avoid excessive and premature flow of resources from rural Ethiopia that will hurt the sector to fulfill its assumed roles and functions.

The absence of industrial protection which will depress the prices of agricultural tradable relative to non-agricultural tradable had a positive role in keeping the terms of clothes and footwear (the major industrial commodities in the Ethiopian case) below the terms of trade of the agricultural sector. However, this does not necessarily mean that it is beneficial for the overall economy as most of these products (clothes and footwear) are imported, probably most of them through contraband or illegal imports.

5.3 Public Expenditure Towards Agriculture and Government Revenue over the past decade

Public expenditure is one of the variables that shows how much the government translate its political commitment towards the development of the sector into practice and its acknowledgment of the sector's contribution to the development of the economy. Overall government capital and current economic development expenditures, which stood at about 2,420.6 million Birr in 1993/94 increased by about 169.7% to 4,107.0[8] million Birr by 2000/01. On the other hand, Capital and current expenditures on agriculture, natural resources and settlement[9] had increased by 182% from 623.5 million Birr to 1,135.5 million during the same period. Accordingly, as percentage of total capital and current economic development expenditure, agriculture's (including natural resources and settlement) share increased marginally from its 25.8% in 1993/94 and to 27.6%% in 2000/01 (Figure 6).

However, relative to the development of total government expenditures, this change takes a different picture. For instance, as compared to total government expenditures, the relative share of agriculture, natural resources and settlement declined from its 8.8% (623.5 million Birr) to 7.4% (1,135.5 million Birr) between 1993/94 and 2000/01. In general, it is difficult to say that public expenditure made available to the agricultural sector is commensurate with its expected contribution to the development of the overall economy.

Government revenue from agriculture in the form of agricultural income tax and land use fee increased slowly but surely in the past decade especially since 1992/93. Though revenue from agricultural export tax fluctuates, the trend is generally rising.

Even though agriculture's share in total government revenue has been small, it has started to increase in recent years. It was only 0.68% (15 million Birr) in 1991/92 and increased to 5.16% in 1994/95 before declining marginally to 4.18% (351.6 million Birr) in 1997/98 (Figure 8). Despite some marginal improvement in agriculture's role as a source of government revenue, its contribution is generally very low especially compared to the number of people engaged in it. The subsistence nature of Ethiopia's agricultural production system can explain this phenomenon.

5.4 Exchange Rate Policies and Agricultural Exports

The profitability of agricultural export in the pre-reform period was undermined from overvalued exchange rate. The primary justification for devaluation of Birr in 1992 and since then was, therefore, to enable an increase in producers' prices that would boost production and supply of exportable agricultural products.

The devaluation of the Birr by 241% in 1992/93 has immediately reflected on the volume of coffee exported. Coffee export increased by 14.8% in 1993/94. As coffee is a perennial crop, the increase in the volume of coffee export was believed to be diverted mainly from contraband market to the official market and some reduction from domestic consumption rather than from increased production.

Export earnings have also showed a continuous revival in the years following the reform reaching a level of 453.6 million USD in 1994/95 restoring export earnings capacity of financing imports back to the 1988/89 levels. As a share of GDP, the relative importance of exports increased from 1.5% in 1991/92 to 8.3% in 1994/95. As the improvement was attributed largely to the windfall gains from an increase in the price of coffee in the world market that lasted for a very short period, the contribution of foreign trade in the GDP declined in subsequent years. For example, it decreased to 7.4% in 1998/99 and 1999/00 and to 6.8% in 2000/01.
In general, the performance and the structure of the Ethiopian export market which is mainly based on the agricultural sector did not show any major and consistent improvement during the post reform period (Figure3).

Part III. Major Instruments of Agricultural Policies

Section 6. Brief review of Ethiopian agriculture and the ADLI development strategy

The Sustainable Development and Poverty Reduction Program (SDPRP) that shows the government's strategy for poverty reduction in Ethiopia has been accepted recently by multilateral financial institutions that started to finance development projects designed in the framework of the SDPRP. The SDPRP proposes a development strategy composed of four interrelated parts: ADLI, Judiciary and Civil Service Reform, Decentralization and Empowerment, and Capacity Building (MOFED, 2002). The major component of the SDPRP program that relates directly to economic development is, however, the ADLI strategy, which recognizes the prime importance of agriculture to the overall development of the economy. As the Ethiopian population disproportionately resides in rural areas and engages in agriculture, poverty is predominantly a rural phenomenon. So any strategy that focuses on rural areas where the majority of the poor resides seems from the outset reasonable. However, the real issue and point under discussion should be how poverty and its root causes are defined and analyzed in the SDPRP and how effective ADLI is to fight rural poverty.

Since its inception, ADLI and PADETES, the agricultural extension system that designed based on ADLI strategy, have been criticized by scholars both at theoretical/conceptual and empirical levels. Despite some short-lived successes in some areas, many years experience with ADLI and PADETES [10] demonstrated that their impact on agricultural productivity and per capita production at national level was very small and insignificant (Figure 9 and 2). This is one of the arguments for many scholars to show the shortcomings of the strategy and its limitations to fulfill its intended objectives. Following are some more examples that demonstrate the gaps or weakness of ADLI as it is currently implemented or designed (for details on ADLI, please look at Development Strategies and Priority of the *Abyotawi* Democracy, 2000):

- ADLI recognizes the importance of investing initially in rural areas where returns per unit of resource is believed to have either wider impact or/and a higher return. However, either ADLI or PADETES did not effectively deal with problems that hinder the free flow of capital and management into rural areas[11] or they failed to show in practical terms the way

wealth and management could be created in rural areas where poverty-stricken farmers struggle to survive for decades[12],

- ADLI recognizes the importance of the non-agricultural sector to the development of the agricultural sector. However, it failed to show how these could be translated into action on the ground. For example, rural-urban terms of trade especially in periods of surplus production is not in a condition to encourage a sustainable use of technologies in the farming sector which consequently determine the nature and sustainability of agriculture's linkage with non-agricultural sectors. The problem of Ethiopian subsistence oriented farmers who lack bargaining power in marketing their products should have got sufficient attention in ADLI.
- ADLI recognizes the importance of the agricultural sector to the development of the national economy as a source of cheap food, labor and capital and raw materials. However, it failed to show how these could be achieved as it puts inadequate consideration or practical commitment to the development of the interface of rural-urban sectors through, for example, expanding agro-industries, cottage industries, the development of secondary cities in rural areas, the release (through encouraging migration) of the over-populated rural population, which together with excess livestock population, put a lot of pressure on limited natural resources.

Section 7. Agricultural market

7.1 Agricultural Market Reform

Agricultural markets have been reformed since the adoption of the new economic policy in 1992. Prices for agricultural products have been deregulated and left to be determined by market forces. Consequently, the Government marketing agency "The Agricultural Marketing Corporation – AMC" has been renamed as the Ethiopian Grain Trade Enterprise and mandated to operate on profit bases, as an independent state owned trading company. Moreover, near state monopoly on the export of agricultural commodities (e.g. coffee) was abolished through reforming the Ethiopian Coffee Export Organization and opening the market for private traders. The structure and operation of agricultural input market is also reformed in such a way that allows economic agents to participate freely in the market. However, compared to the output market the transition was gradual in the case of the input market. For example, the government subsidized fertilizer prices from 1993 to 1996/97 to minimize the negative effect of the steep devaluation of the Birr and kept fertilizer prices affordable to farmers. Even though due to pressures from international financial institutions subsidies for fertilizer prices were abolished in 1997, the government continued to encourage more fertilizer consumption by making credit available to farmers that participated in its new extension system. As a strategic farm input which is viewed as a major instrument to ensure or improve national food security, fertilizer will continue to attract government attention in the future too.

However, government support is neither complete nor effective. It is not complete because it ignores or put insufficient attention to the output market. Whenever farmers' harvest is good, they are forced to transfer large part of their surplus to traders and consumers located outside the farming sector. Price fell, for example by up to 25 percent, during the 1996 and 2001 bumper harvests (EEA/EEPRI, 2002). Such market failures have emerged as major reasons for some government advisors and intellectuals to recommend government to intervene in the pricing and marketing of agricultural outputs and inputs. For example, a recent document prepared for the UN Conference on Environment and Development by the Federal Democratic Government of

Ethiopia reported that in its present stage of development, Ethiopia is unable to rely solely on the market mechanisms as it is characterized by widespread imperfections. The document recommends the government to consider policy options such as price support programs for farmers and targeted food subsidy programs (FDRE, 2001).

On the other hand, current government intervention in the input market is not as effective as it has been desired. The market operated under different type of problems that hinder the delivery of dependable market functions to farmers. Mulat et al (1998) identified three major problems associated with the existing structure of the fertilizer market which seem to have affected demand directly or indirectly:

(i) retail markets are poorly developed (most sales to farmers going through a limited number of retail outlets run directly by the major distributors/wholesalers). The limited participation by small-scale wholesalers and retailers has made the fertilizer market uncompetitive and inaccessible.
(ii) the system of credit disbursement to farmers discourages competition and leads to market concentration and uncertainty for potential new entrants in fertilizer distribution. The allocation of loans[13] are not only bureaucratic but also contrary to market principles. For the most part, only firms favored by the authorities are nominated as suppliers. Administrative measures applied to enforce repayment can also be harsh and inconsiderate of the farmers' circumstance. For instance, collection begins immediately after harvest in all areas. All farmers are forced to bring their produce to market at the same time (to pay their fertilizer debt, taxes etc.). As a result, supply exceeds demand and prices fall sharply whenever farmers are pressed for repayment. The system does not accommodate the interest of farmers who are willing to incur additional interest costs by delaying crop sales in hopes that prices will raise later in the year.
(iii) Because of limited suppliers (importers), wholesalers and retailers are forced not to operate as independent traders who are in a position to call on several suppliers and obtain the best possible deal. They operate as commission agents of these suppliers. This limits the possibility to attract new entrants into the market and widen the distribution network.

Section 8. Agricultural extension, credit and research

8.1 Agricultural extension and credit

Ethiopian agriculture has got once again a new government commitment in the 1990s. Even though the previous government also gave greater attention to the sector, the commitment of the new Ethiopian government that assumed power in 1991 to the sector seems special as it put agriculture at the centerpiece of its overall development strategy. The Agriculture Development Led Industrialization Strategy (ADLI) was formulated and adopted by the government in 1994/95. Consequently a new agricultural extension system 'the Participatory Demonstration and Training Extension System (PADETES)' was designed mainly to put ADLI into reality especially in rural Ethiopia where 85% of the population resides. The major component of PADETES was to disseminate modern farm inputs especially fertilizers and improved seeds and the accompanied modern farming practices to small holders. The government with financial assistance from bilateral and multilateral sources has allocated substantial resources to implement the new system. Even though encouraging results were obtained especially during the early years of the program and in areas with adequate and reliable rainfall, the overall accomplishment of the program is much below the expectation both in terms of its coverage, the

sustainability of the system and above all in terms of raising labor and land productivity especially at the national level.

One of the major problems in the government extension system is the technical efficiency or quality of its personnel especially at the grass root level who have direct contact with farmers. The other problems are service and advice delivery capacity of the extension system. The process of new technology introduction is currently mediated above all by the Development Agents (DAs). The decision in recent years to increase their number testifies to the government's commitment to the development of smallholder agriculture. But there are potential problems. One is the dilemma that whilst the DAs, as residents within qebeles (villages), are the MoA's agents most directly in contact with farmers. They are also amongst the least technically qualified. But it falls mainly to them not only to administer the new agricultural input package but to run agricultural and horticultural demonstrations, undertake livestock development work, take part in the annual agricultural performance survey, and where relevant supervise food-for-work schemes (Holt and Rahamato, 1997).

- <u>Agricultural credit</u>

Due to the subsistence-oriented mode of production, limited use of purchased farm inputs, unreliable weather conditions, low output prices and uncertainties associated with policies, Ethiopian peasants have little interest for agricultural credit. The only exception is fertilizer credit. This is partly due to high government interest to expand the use of fertilizer that is considered by Ethiopian policy makers as a strategic input to increase cereals production, and partly due to farmers' interest to counterbalance decline in soil productivity that resulted from continuous mono-cropping practices of Ethiopian peasants. Even the fertilizer credit market has faced many problems that have serious implications on the sustainability of the market and farmers' interest for fertilizers.

Although credit repayment has improved under the new arrangement and the volume of credit supply has been increasing in recent years, it appears that the approach suffers from some serious limitations with important implications for fertilizer demand. Credit allocation and collection procedures have deviated from the principles of normal banking operations, leading to distortions, delays in sales and unnecessary strains on the farmers as well as the administration and extension staff. The allocation of loans is not only bureaucratic but also contrary to market principles. For the most part, only firms favoured by the authorities are nominated as suppliers: mainly Ambassel in the Amhara region, Dinsho in Oromia and AISE (together with its wholesale agents) in the South region. Administrative measures applied to enforce repayment can also be harsh and inconsiderate to the farmers' circumstances. All farmers are forced to bring their produce to the market at the same time (to pay their fertilizer debts, taxes etc.). As a result, supply exceeds demand and prices fall sharply whenever farmers are pressed for repayment. The system does not accommodate the interests of farmers who are willing to incur additional interest costs by delaying crop sales in hopes that prices will rise later in the year (Mulat et al., 1998).

8.2 Agricultural research

The history of agricultural research in Ethiopia dates back no further than the 1950s, when higher education institutions in agriculture were first established. However, a formal step to institutionalise agricultural research at the national level was made in 1966 with the establishment of the Institute of Agricultural Research (IAR), which was restructured and renamed as the Ethiopian Agricultural Research Organization (EARO) recently (Seme, 1988).

Even though it is not possible to say that agricultural research has made no contribution in terms of improving agricultural productivity, its contribution to date is marginal and was not able to

increase farmers' productivity even around research centres to any significant level and in a sustainable manner. Despite serious capacity limitations mainly in terms of skilled and experienced manpower, lack of coordination within the national research system and effective relationship with extension institutions are also major factors that hinder the translation of new findings/technologies obtained and tested at research centres into realities on the average farmers' fields. Apart from these, ill-advised government policies, farmers' subsistence nature of production, market failures etc. were also contributing to limited impact of agricultural research on Ethiopian agriculture. However, among the major failures of the Ethiopian agricultural system is believed to be its limited activity or interest to engage in policy-related and other social researches that hold back the sector's capacity to identify and research on the most pressing problems of Ethiopian peasants and affect negatively the wider dissemination and effectiveness (i.e. through feedback information) of technologies generated by the research institutions.

Figure 9 depicts that average yield in Ethiopian agriculture remains unchanged at least in the last 2 and half decades (1974-1999). As discussed earlier, rural labour productivity also continues with its downward trend. These are clear indication for a negligible impact of extension and research on the performance of Ethiopian agricultural sector in general and the crop sub sector in particular[14]. However, there may be other more important factors that determine average yield and labour productivity in Ethiopian agriculture, though technology is only one factor. If the case is that non-technology factors like policy and institutional issues play negative roles and offset the positive impact of technologies developed by researches, Ethiopian research institutions should do more research on these factors and show to the public whether that is the case.

One of the reasons for the weak impact of agricultural research on the performance of the sector is its weak coordination with the extension system and the farming community in general. Seme (1988) for example stated that almost until that time (1988) every research centre in the country selected its research programs at will. There was no clearly stated statement regarding national research needs and priorities. Despite some attempts like the establishment of the Research-Extension Liaison Committee (RELC) and its failures, still there isn't a well established scheme for setting research priorities on a formal and systematic way that can increase the probability of implementing research outputs, warrant an efficient utilization of limited available research resources, and ensure to put in place a system that can be able to conduct systematic evaluations and draw valuable lessons for future actions. Despite a fair recognition of the importance of establishing a well-organized and workable coordination between agricultural research and extension, the issue is still not resolved and deserve sufficient attention from concerned government agencies.

Section 9: Agricultural Investment

Agricultural investment is a major instrument to enhance the performance of the sector and its role in the national economy. Investment is instrumental to enhance the use of scarce natural resource in an efficient and sustainable manner. It is through investment that agricultural productivity and the value of agricultural products can be improved. This will consequently contribute to the generation of positive environmental externalities as it could lead to efficient and sustainable utilization of natural resources. The reverse process of small (or marginal) investment in a situation where population increase at a very rapid rate increases the probability of agriculture to generate various negative environmental externalities. This is the process that has been taking place in Ethiopia for decades.

9.1 Agricultural investment: Changes and development

With the change of government in 1991, the new government established an institution, the Ethiopian Investment Authority, to encourage and promote private investment in Ethiopia. Another government institution, the Ethiopian Privatisation Agency, was established to oversee the privatisation of viable state farms and other enterprise that were nationalized by the previous government. Since then private investment in the Ethiopian agricultural sector has re-emerged from its situation in the early 1970's when the country's communist leaders brought the development of commercial farms to a standstill through nationalization of modern commercial farms that brought these farms under the domain of the public sector in the form of state farms.

According to data obtained from the Ethiopian Investment Authority, a total of 1311 projects with an investment capital of 4.4 billion Birr (526.12 million USD at the 2000/01 exchange rate) were licensed for domestic investors since 1992. Another 31 projects with initial investment capital of 2.7 billion Birr (321.6 million USD) were licensed for foreign investors. Agriculture's share in total domestic and foreign investments amounted to 24.1% and 11.31% in terms of licensed projects and 11.4% and 19.5% in terms of initial investment capital, respectively (EIA, 2002). Even though the number of licensed investment projects seems quite high, the number of projects that either started operation or proceed according to their project plan is very low. For example, of all projects licensed by the Ethiopian investment authority since 1992, 52% failed to carry out their projects according to their project plan or abandon their projects altogether (Table 2). Moreover, reports indicate that the number of licensed and operational projects has been declining after reaching its peak in 1995/96. For example, the number of licensed projects declined to 177 and 130 in 1996/97 and 1997/98 from 199 in 1995/96, while the number of operational projects declined from 92 to 32 during the same period (MEDaC, 1999).

The flow of foreign direct investment to Ethiopia is well below the average for African countries. According to the World Investment Report, 2001 (cited by EIA, 2002) out of the total 1,270 billion dollars of FDI in the year 2000, Africa attracted only 8.2 billion dollars or 0.65% of the total FDI. Ethiopia has attracted on average about 100 million-dollar FDI in any of the year between 1992 and 2001. This indicates that Ethiopia has 1.2% share in the FDI that flows into Africa. This is very low in spite of the country's strategic location to the Middle East and Europe, its abundant cheap labour, population (consumer) size and other factors. All these indicate that after a decade of economic and political reforms, the country is still far from satisfying the requirements essential to attract foreign direct investment.

Section 10. Land policy, Agriculture and Environment (externalities) in Ethiopia

10.1 Rural land policy and the role of agriculture

Land is the most extensively used resource in the subsistence oriented peasant production system of Ethiopian agriculture. As the system lacks adequate means to replace nutrients mined from agricultural lands through crop production, or fail to counterbalance the negative impact of population growth and pressure on limited natural resources, the only unsustainable alternative at peasants' disposal is to expand agricultural land even to forest areas and ecologically fragile areas at the expense of future uses and generations. Moreover, one of the government responses to the current drought is a resettlement program that involves relocating part of the farming population from highly densely populated or/and degraded areas to sparsely populated areas mainly in the western and south western part of the country. This is believed to accelerate the process of environmental degradation in the areas.

Even though the new government has taken some measures like lifting some of the constraints on rural land renting and reducing the frequency of land redistribution, rural land is still a public (government) property and subject to any potential redistribution in most regions of the country. Accordingly, land could not be marketed officially. Moreover, due to fears emanating from the emerging increased number of landless of farmers and the consequent treat of land redistribution, farmers failed to lease their land for a longer period of time or migrate temporarily or permanently to seek off-farm employments or change their occupation or living area (see EEA/EEPRI, 2002, Berhanu et al 2002). These have some negative effects on farmers' willingness and incentives to use their land sustainably and efficiently. The effects may range from affecting farmers' production planning horizon to efficient use of purchased inputs and engaging in environmental friendly practices (like terracing and tree planting) (Berhanu et al, 2002, Dejene Aredo, 2003).

10.2 Rural land policy, the environment and externalities

Ethiopia is currently faced with a number of environmental concerns resulting, directly or indirectly, from human activities and, in particular, prompted by rapid growth of population and increased livestock population pressure. These concerns range from land degradation, due to deforestation and soil erosion, to environmental pollution (FDRE, 2001). According to a FAO study, for example, out of 54 million ha (including Eritrea) in the highlands: 14 million ha had experienced serious degradation, 13 million ha had experienced moderate degradation and 2 million ha had too shallow a soil cover to cultivate crops. The degradation has continued, and between 1.5 and 2 billion tones of topsoil is lost every year (FAO, 2001).

In addition, Ethiopia has now lost part of its biodiversity and the severity of drought that has occurred more frequently has led to resource use conflicts among communities and different generations which was accompanied by disintegration of traditional support systems, values and attitudes or weakened such social assets. Such deteriorating trends contribute for the emergence of policy debate on the issue of bio-technology and genetically modified seeds as a potential solution for the country’s growing food insecurity problems. This fundamental issue which could have a far-reaching consequence on the country’s long-term interest (even on its independence) should be extensively discussed by all stakeholders including Ethiopia’s agricultural scientists, policy makers and the public at large before any political decision made at government level.

Ethiopia's land policy characterized by periodic land redistribution and high tenure insecurity is also associated with the effect of undermining incentives for migration and non-agricultural investments by households. A recent study carried out jointly by the World Bank and the EEA/EEPRI, for example, indicates that off-farm employment increases the subjective probability of future land loss by between 10% and 15% (Berhanu et al, 2003). To the extent that households base future actions on such beliefs, the fear of losing land is likely to lead to a considerable reduction in their willingness to take on off-farm employment, which could have far-reaching implications for the emergence of the non-farm economy, a factor which, all observers agree, will be of critical importance for future development in Ethiopia. Moreover, the study has indicated that, contrary to findings from China, more productive farmers were found to be threatened by future administrative land redistributions. Even available per capita land endowment has found to have an insignificant effect on households' subjective assessment of losing land in any future land redistribution (Berhanu et al, 2003). This indicates the presence of an egalitarian land distribution, high tenure insecurity and perceived pressure or interest for land

redistribution that have all a negative impact on agricultural productivity and environmental degradation.

Berhanu et al (2003) (by quoting Yang, 1977), also mentioned that the need to demonstrate a "need" for land or its "productive" use in any potential land distribution may in the longer term induce higher population growth that have a serious consequence on the environment and endanger the well-being of the future generation by accelerating the process of negative environmental externalities creation in the Ethiopian agricultural system.

11. Conclusion

The contribution of agriculture to food security both through its direct impact on food production and indirect effect on farm incomes (i.e. through improving entitlement capacity) has failed to recover even after the economic reforms of the 1990s. Despite some short-lived successes in some areas and years, the impact of the country's new development strategy that is commonly known as ADLI and its main instrument, PADETES (the agricultural extension system that was designed based on ADLI strategy) was too little to affect per capita agricultural production or productivity at national level or in a sustainable manner. In addition, the 1990s economic reforms didn't bring a notable impact either in raising agriculture's contribution to the export sector or in generating surplus to the development of the non-agricultural sector. On the other hand, the relative price for agricultural products compared to the prices of non-agricultural commodities was not in favor of agriculture. For instance, price for food crops declined by up to 25% during the 1996 and 2001 bumper harvest years. Similarly, the relative terms of trade between agriculture and non-agricultural sectors showed a clear declining trend in favor of the later during the 1995 to 2001 period. Except for workers in the cloth and foot wear sectors, the trend is that the relatively impoverished agriculture continues to contribute to the welfare of most people engaged in the non-agricultural sectors by providing cheap food.

On the other hand, the performance and the structure of the Ethiopian export sector which is largely based on the agricultural sector did not show significant and consistent improvement after the post reform period. The responsiveness of the export sector to the policy reforms undertaken since 1992 is either short-lived or below expectations. This may suggest a second generation policy and non-policy reforms in order to improve the performance of the agricultural sector and its contribution to the export sector. In this respect, the following three areas deserve further attention from policy makers. First, effort should be made to raise the income of producers of agricultural exports by increasing their share in the export prices. In this regard, the efficiency of Ethiopia's transport system should be improved to reduce the high cost of transportation and increase the competitiveness of the export sector. Second, to win in the fierce competition at international market, farmers and industries that produce for the export marker should be encouraged to use modern technologies in their production process. The adoption of modern technologies, in addition to reducing production cost will enhance the production of processed agricultural exports that are highly demanded in the international market. in this regard, the government should provide incentives and undertake promotional activities in order to encourage the expansion of production facilities and the adoption of technologies. The government, for example, should improve the country's information and communication technology (particularly its internet and E-mail services) capacity and provide adequate security including investment guarantee for potential loss related to political or related risks especially for key export oriented long-term investments. The banking system should also be efficient and transparent. Factor market which are either lacking or operate poorly in most rural areas should also be reformed and strengthened to provide efficient, sustainable and dependable services to

farmers. Similarly, agricultural output markets should be supported so that they would enable producers of agricultural exports to receive a fair share of what consumers pay. Third, effort should be made to develop the interface between the rural and urban sectors through the development of agro-processing industries and urban centers in rural areas where export crops are produced.

Despite some positive measures taken by the government such as relaxation of some of the constraints on rural land renting and reducing the frequency of land redistribution, rural land is still a public (government) property and is subject to potential redistribution in most regions of the country. There is increasing evidence that land tenure policy particularly the issue of tenure insecurity and inefficient land markets continue to contribute to environmental degradations such as deforestation, soil erosion and drought and low agricultural productivity. The land policy is also faulted for discouraging farmers to take off-farm employment opportunities and thus aggravating the population pressure that is adversely affecting the performance of the sector in general and worsening the poverty situation in rural Ethiopia in particular.

Population growth and declining availability of per capita natural resources are normal processes in most developing countries. But they lead to disasters in Ethiopia because of the stagnant economic development and the consequent overexploitation of natural resources that has been undertaken for decades in a desperate attempt to regain lost income or welfare. Consequently, the economy has entered into and failed to get out of the vicious cycle of land degradation, declining productivity and poverty. Various attempts made by the successive Ethiopian governments and international institutions (through financial and technical assistances) couldn't chance the prevailing situation.

Land degradation has also greatly affected the country's biodiversity. Besides, the recurrent draught has led to resource use conflicts among communities and different generations which was accompanied by disintegration or weaknesses of traditional support systems, values and attitudes. The general deteriorating situation has contributed to the emergence of the policy debate on the issue of bio-technology and genetically modified seeds as a potential solution for the country’s growing food insecurity problems. This fundamental issue which can have a far-reaching consequence on the country’s long-term interest (even on its independence) should be extensively discussed by all stakeholders including Ethiopia’s agricultural scientists, policy makers and the public at large before any political decision is made by the government.

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1: Policy-Role Matrix

Relevant policies	Government measures to change the policies in 1990s	Intended objectives	Agriculture's Roles, Externalities and their expected interaction with the polices					Institutional factors expected to affect the outcome of policy-role interactions
			Food security at national and household levels	Poverty (Externality)	Generation of surplus for the development of other sectors	Foreign exchange earning	Environnemental effect	
Exchange rate (M)	The Ethiopian Birr was devaluated by 230% in 1992/93 and since then its value decreased relative to US dollar	Increase price of agricultural tradables relative to non tradables	- OR + (But marginal)	+	+	+ . e.g. Coffee export was increased by 14.8% in 1993/94.	- OR +	Factors like inter-sectoral transfer of re sources (newly gained foreign exchange from the export sector) through investment in the non-coffee sector, increased consumption of industrial goods and modern farm inputs may determine whether the devaluation has positive spillover on food security, poverty or environment. Hence institutional and policy factors like an encouraging investment policy, non-inflationary economy and market have crucial role to determine the policy-role interactions.
Interest rate (M)	Recently the government reduced the minimum deposit and lending rates.	To encourage investment	Negligible	Negligible	Negligible	Negligible	- OR + This mixed effect of lower interest rate is due to the fact that availability of cheap credit in an environment where land tenure is highly insecure, may encourage farmers to adopt technologies that may maximize short term benefit at the expense of long term investments that are essential for environmental sustainability. However, this should be empirically tested.	Institutional factors like access to credit and secured property rights seem to affect negatively the intended positive impacts. On the other hand, any investment on environmentally friendly technologies require secured property rights. In this regard, Ethiopia's current insecure land tenure may affect investors' choice of technologies.

"- or + "implies observed negative or positive impact of the policy on the respective roles of agriculture.
'M' indicates macro policy, while 'S' indicates sectoral (agricultural) policy.

Relevant policies	Government measures to change the policies in 1990s	Intended objectives	Agriculture's Roles, Externalities and their expected interaction with the polices						Institutional factors expected to affect the outcome of policy-role interactions
			Food security at national level	Food security at household level	Poverty (Externality)	Generation of surplus for the development of other sectors	Foreign exchange earning	Environmental effect	
Trade liberalization and terms of trade (M)	Agricultural output and input markets were liberalized in 1990s to operate freely	To eliminate government budget burden in subsidizing fertilizer. In case of the output market, to abolish administratively determined low farm gate price. In general to let the economy operate freely.	- Due to serious imperfections in the market and poor infrastructures, the reform failed to enable farmers to receive reasonable price for their output and discourage farmers' sustainable and intensive use of modern farm inputs. Farmers are also forced to pay relatively high price for modern farm inputs. All these lead to bias the terms of trade against agriculture. For example, b/n 1995 to 2001, price index for agricultural products increased by 12% while fertilizer and transport increased by 77% and 65% respectively.	-	-	- OR +	- OR +	-	Underdeveloped market infrastructure and monopoly practices in marketing, and farmers' weak bargaining capacity make them vulnerable to be passive price takers and consequently may discourage them to adopt sustainable farm practices and increase production. Even though it is difficult to predict the terms of trade between agriculture and non-agriculture, data indicate that trade liberalization failed to bring the expected positive impact to farmers due to some other problems mentioned earlier. Consequently, the question should be how agriculture or Ethiopian subsistence farmers should be supported in a way that could help them to realize the potential advantages expected from trade liberalization. This could be through eliminating market imperfections including infrastructure problems that would be instrumental for the emergence of a level playing field for farmers and traders.

Relevant policies	Government measures to change the policies in 1990s	Intended objectives	Agriculture's Roles, Externalities and their expected interaction with the polices						Institutional factors expected to affect the outcome of policy-role interactions
			Food security at national level	Food security at household level	Poverty (Externality)	Generation of surplus for the development of other sectors	Foreign exchange earning	Environnemental effect	
Rural land policy (M) (state ownership of land)	Rural land belongs to the state and farmers have use right with evidence of a permanent physical residence in the area. This use right is inheritable and in some areas transferable with some limitations on the amount of land to be rented and renting time. Even though it is not officially prohibited (except in some regions) redistribution of rural land is becoming less viable to solve the problem of land shortage.	To provide a livelihood for every rural resident and abolish inequality in rural Ethiopia.	- 1. Through high population pressure, stagnant farm productivity, minimal rural-urban migration and frequent land redistribution, currently farmers have too small holdings (about 1 ha on 2.3 different plots) to cultivate, apply technologies and realize the advantages of economies of scale both in production and marketing activities. 2. Common property nature of grazing lands motivated households to keep more livestock beyond the carrying capacity of grazing lands. This damaged pasturelands and contributed to the declining livestock productivity in the country. 3. Discourages migration (i.e., aggravates overexploitation of natural resources), the development of off farm employment and migration, as permanent physical residence is the prerequisite to continue using the land.	-	- declining holding and surplus production	- declining holding and surplus production	- declining holding and surplus production	- The policy contributes for increased population pressure on limited natural resources through discouraging migration and overexploitation of natural resources including deforestation that continued at alarming rate all over the country.	Now even redistribution of rural land becomes a less viable alternative to provide a piece of land and a livelihood for the young generation. Farming mini-plots together with increased landless population with their negative consequence of declined productivity and over exploitation of natural resources are now cited by many as caused by the country's land policy.

Relevant policies	Government measures to change the policies in 1990s	Intended objectives	Agriculture's Roles, Externalities and their expected interaction with the polices						Institutional factors expected to affect the outcome of policy-role interactions
			Food security at national level	Food security at household level	Poverty (Externality)	Generation of surplus for the development of other sectors	Foreign exchange earning	Environnemental effect	
Agricultural investment and credit	Investment code is revisited many times in the 1990s to encourage investment in agriculture. - Expansion of micro finance	Provide incentives for investment and utilization of environmentally sustainable technologies and practices.	Negligible (Some positive impact on increased credit supply for fertilizer and high fertilizer consumption is offset by declining productivity in other places).	Negligible	Negligible	Negligible	Negligible	Negligible	Despite some success of the policy changes of the 1990s in shifting the direction of the flow of financial resources (mainly credit) from public enterprises to the private sector, the economic reform is not successful in directing available credit to the sector with a high potential return and wider impact. The agricultural sector has on average about 14.7% share in credit disbursement while domestic trade 32.2% and industry 13.2% in seven years from 1991/92 – 1997/98. High risk of investment in agriculture relative to others (especially trade) and, low return from investment in production relative to trade are the major factors behind the low share of agriculture in the credit market.

Relevant policies	Government measures to change the policies in 1990s	Intended objectives	Agriculture's Roles, Externalities and their expected interaction with the polices						Institutional factors expected to affect the outcome of policy-role interactions
			Food security at national level	Food security at household level	Poverty (Externality)	Generation of surplus for the development of other sectors	Foreign exchange earning	Environmental effect	
Public expenditure towards agriculture	Agriculture has got a high priority in government policy formulation and development programs in the 1990s.	Recognizing its overwhelming dominance in GDP, employment and export sectors, the government wants to see the sector as the engine of the overall economy.	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Public expenditure is one of the variable that shows how much the government translate its political commitment towards the development of the sector into practice and its acknowledgment of the sector's contribution to the development of the economy. However, data on public expenditure does not fully reflect this fact. Capital expenditure on agriculture, for example, grew by only 95.2% over the last decade while total government expenditure by 258.8%.
Taxation of agriculture	Agricultural taxation is low compared to others during 1990s.	To encourage increased production.	+ But negligible	+ But negligible	+ But negligible	+ But negligible	+ But negligible	+ But negligible	Since Ethiopian farmers are already too poor, the impact of low agricultural tax on the identified roles of agriculture is very small and insignificant.
Food security programmes and ADLI	The government has implemented a food security strategy and a development strategy that focused on agriculture	To achieve the objective of food security at household level and put the agriculture sector in its proper place in the economy	Negligible	Negligible	Negligible	Negligible	Negligible	-	As farmers' productivity (land productivity) remains stagnant, any increase in food production observed in the last decade is mainly attributed to area expansion. This is not good for the environment. Moreover, any increase in food production failed to surpass the rate of population growth. However, compared to earlier times, the gap between population growth and food production is narrowed.

Figures

Fig 1. Trends in the Per Capita Value -added in the agricultural and non-agricultural sectors

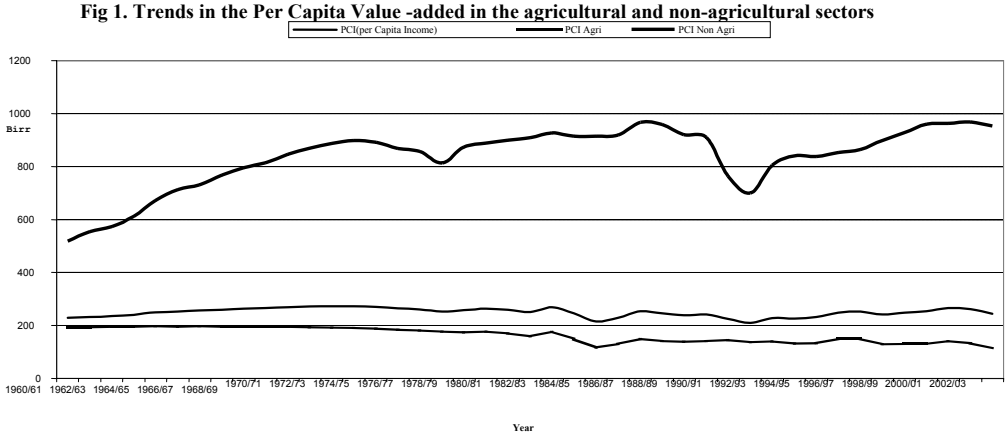
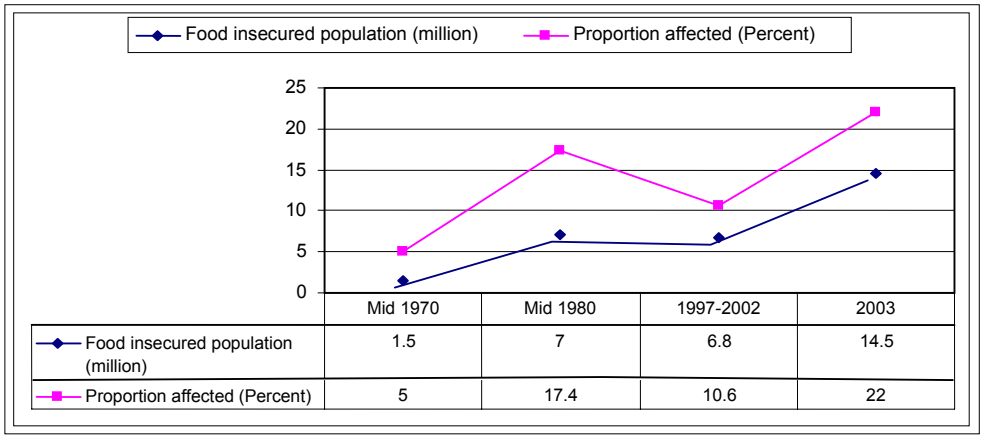


Figure 2: Trends in population affected by food insecurity (in million and percent)



	Mid 1970	Mid 1980	1997-2002	2003
Food insecured population (million)	1.5	7	6.8	14.5
Proportion affected (Percent)	5	17.4	10.6	22

Figure 4: Growth in Agricultural Credit Versus Non-agricultural Credit (1991/92 -1997/98)

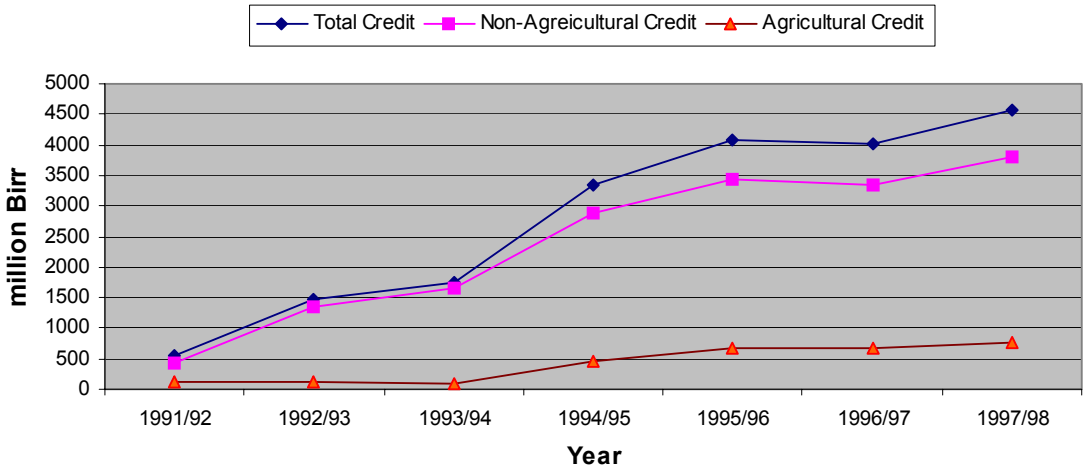
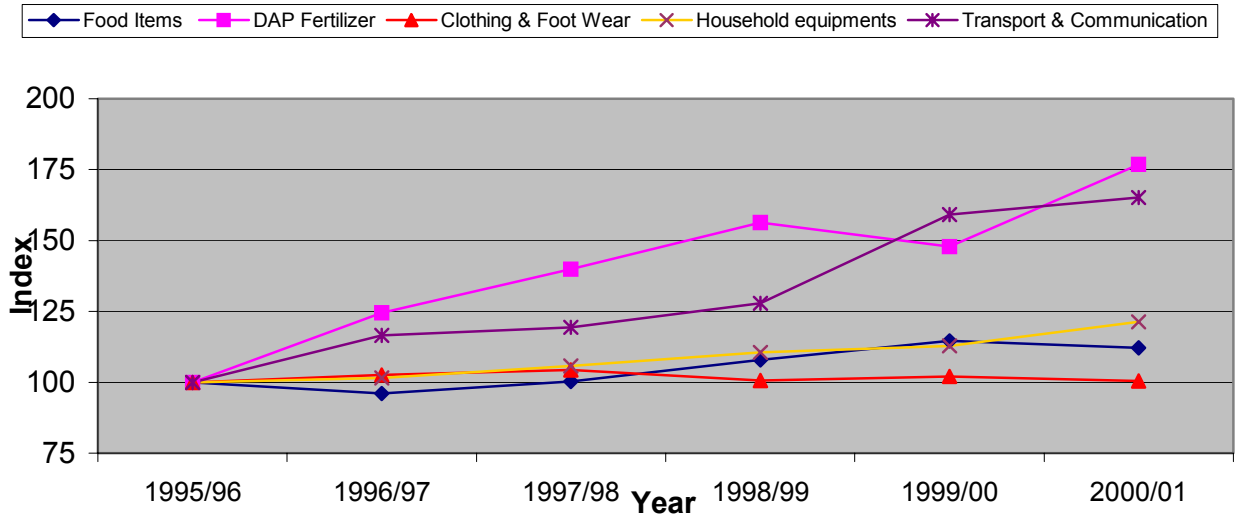
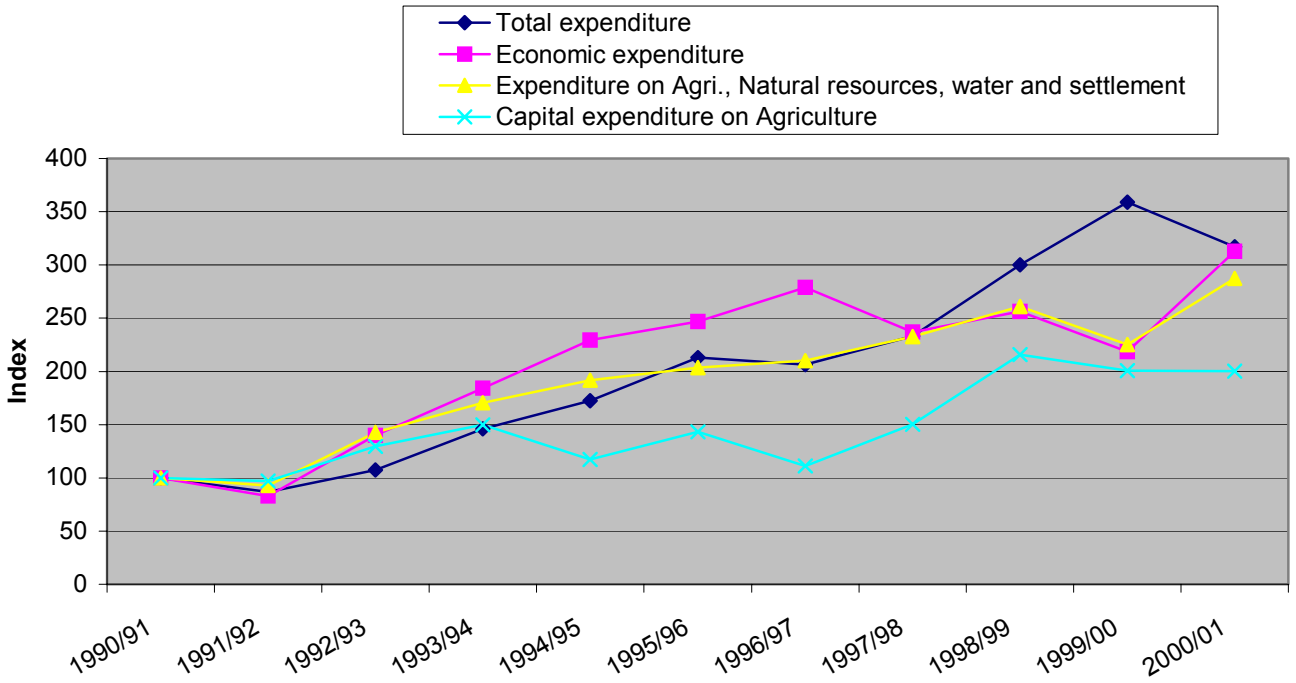


Figure 5:Terms of Trade between Agriculture (represented by Food Items) and Non-Agriculture (1995/96 = 100)



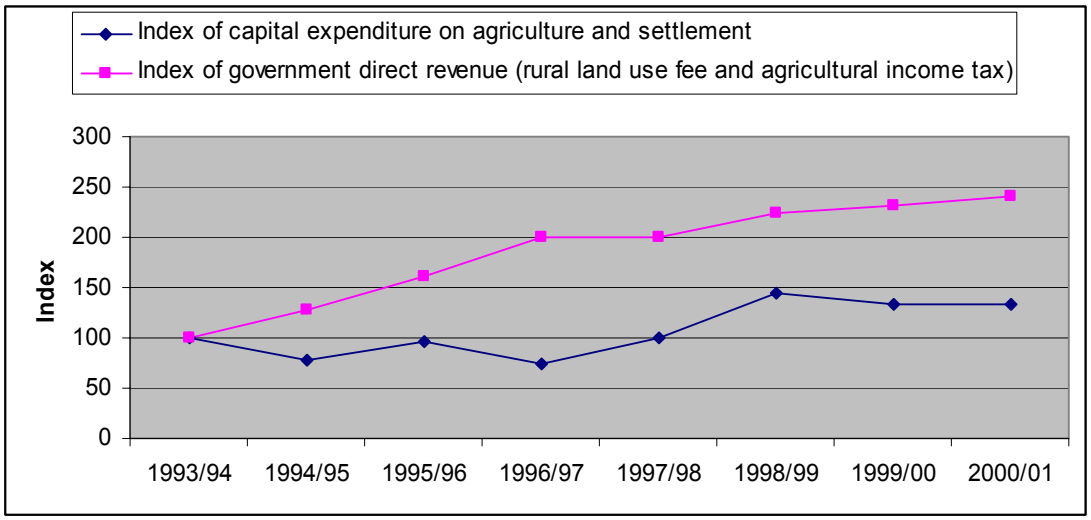
Source: NBE (1998/99 and 2000/2001), EEA/EEPRI (2002).

Figure 6: Index of Government total, economic and agricultural expenditures (1990/91=100)



Source: NBE (2000/2001)
** Data from 1996/97 – 1999/2000 are pre-actual.

Figure 7: Index of government direct revenue from agriculture and its capital expenditure towards the sector (1993/94=100)



Note: Source: NBE (2000/2001)
** Data for 1999/00 and 2000/01 are pre-actual. Income from export of agricultural products is not incorporated in government direct income.

Figure 8: Index of government revenue, agriculture's contribution to revenue and its share in total revenue (1990/91)

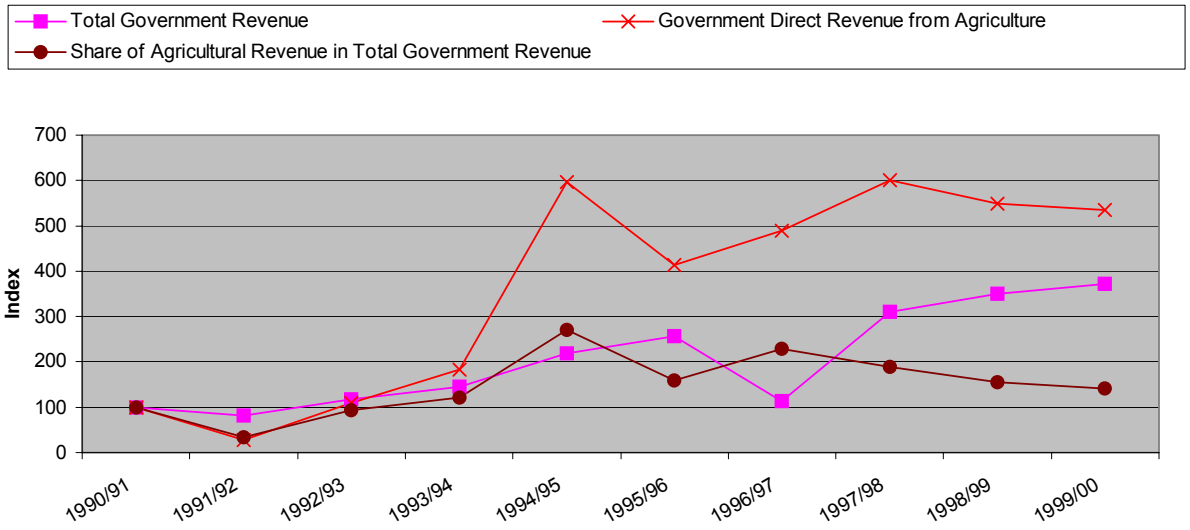
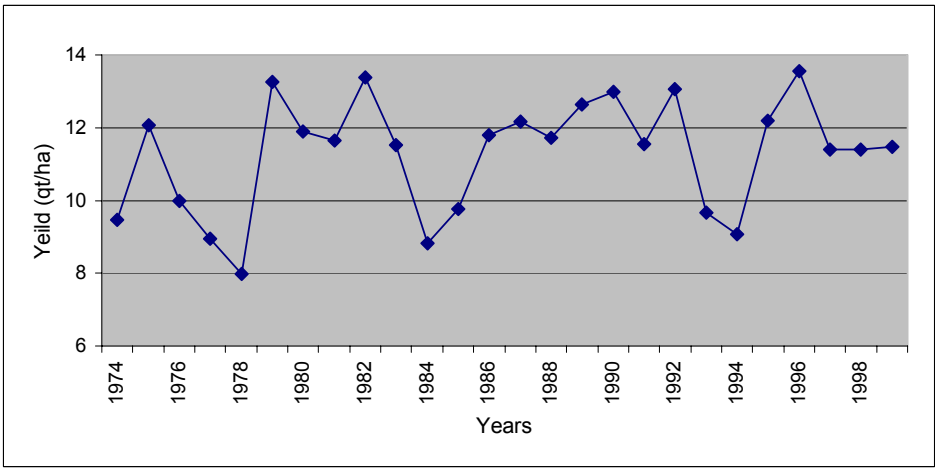


Figure 9: Trend in yield of cereals between 1974/75 and 1999/2000



Source: CSA's various publications

Table

Table 1: Credit disbursement by sector (million Birr)

Year	Total credit	Agriculture	Housing and Construction	Industry	Domestic trade	International trade
1991/92	550.9	119.4	62.1	112.5	148.9	38.4
1992/93	1476.4	125.1	57.9	426.7	381.8	273.4
1993/94	1750.1	92.5	123.7	325.4	741.2	111.5
1994/95	3338.1	461.3	124.8	271.3	1249.7	255.6
1995/96	4093.6	664.4	130.3	484.5	1490.1	614.6
1996/97	4018.9	679.8	194.7	387.6	1274.4	673.9
1997/98	4581.3	764.4	125.6	600.8	1087.4	918.4
Average Growth rate (1997/98-1991/92) (%)	731.6	540.2	102.3	434.0	630.3	2291.7

Source: MEDaC (1999). Survey of the Ethiopian Economy: Review of post reform developments. Final draft, April, 1999, Addis Abeba.

Table 2: Number and investment capital of agricultural investment projects in the period between 1992 - 2001. (Investment capital in million Birr)

	Domestic investment projects approved by the EIA						Foreign investments	
	New		Expansion		Total		No. of Projects	Investment capital
	No. of projects	Inv't capital	No. of projects	Inv't capital	No. of projects	Inv't capital		
Agriculture	1311	4435.18	70	210.98	1381	4646.16	31	2710.92
Food crops	265	799.04	9	11	274	810.04	5	1193.76
Cash crops	135	1054.74	3	10.52	138	1065.26	10	422.49
Food and cash crops	300	1274.37	14	22.62	314	1296.99	4	843.15
Livestock	339	436.41	23	39.27	362	475.68	7	185.28
Crop and Livestock	79	291.57	2	2.24	81	293.81	4	53.68
Agri. services	178	551.87	19	125.34	197	677.21	-	-
Forestry	9	17.80	-	-	9	17.80	-	-
Fishing	6	9.37	-	-	6	9.37	-	12.57
Agriculture's share in all investments (%)	24.1	11.4	11.8	3.8	22.9	10.5	11.31	19.5

Endnotes

[1] Even though contribution of agriculture to GDP remains significant, it is decreasing. In 1991/92 it was responsible for 57% of GDP to fall to 43% in 1999/2000 fiscal year. The share of services in GDP exceeded that of agriculture for the first time in 1999/2000 as it grows at a steady pace of 8%per annum exceeding the 1.8% of agriculture over the last decade (EEA/EEPRI, 2002).

[2] However, population growth rate is very high in urban areas compared to rural areas.

[3] For the environmental role of agriculture in the Ethiopian context, see module of this study report that published separately.

[4] Food insecurity can be of two types depending on its intensity: 'chronic' and 'transitory' food insecurities. The former is a sign of poverty and often caused by a permanent (constant) failure to acquire enough food. On the other hand, the transitory food insecurity is cause by a short-term fluctuation in production or the ability to purchase enough food.

[5] Note that the government also claims farm land is also abundant. However, per capita availability of farm lands is too small to allow modern farm operations (see Berhanu et al, 2003)

[6] Some other studies also confirm this result. A study by Abdurahman, for example, indicates that the terms of trade is moving against the agricultural sector in general and food production in particular since the reform program (Abdurahman, 1995).

[7] Illegally imported clothes and footwears may account for their low terms of trade relative to agriculture. If that is the case, it indicates an illegal resource flow not within a country but between countries and alters the scope of the present problem/analysis.

[8] The figure for the year 2000/01 is not actual data but a pre-actual figure. Actual data on government expenditures since 1998/99 are not available.

[9] The National bank of Ethiopia's annual report fails to report government expenditure that spent exclusively on agriculture.

[10] ADLI first appears in the government development agenda during the 1994 election campaign. Consequently, PADETES formulated and implemented for a number of years.

[11] Since Ethiopia's adoption of a free market economic policy in 1992 and the subsequent legislation of investment proclamations, it is only the service sector and particularly the hotel industry, and in some areas manufacturing industries that attract some investments. It can be concluded that, despite Ethiopia's huge agricultural potential, investment in Ethiopian agriculture is insignificant or negligible.

[12] It is important to note that the government argument that capital could be created in Ethiopia through intensive use of Ethiopia's abundant unskilled labor and land has its own natural limit. It was decades ago that the limit was reached, consequently any sustainable development could not be achieved without reforming the agricultural sector in a way that can enable it to get out of the present vicious cycle of low productivity, low income and poverty into a sector that is capable enough to create wealth (through saving and/or investment) or/and through implementing further policy measures that can facilitate the flow of external investment into the sector. Ethiopia is now virtually in the vicious cycle of land degradation, declining productivity, and poverty.

[13] Fertilizer sales are largely financed through credit in Ethiopia. It is estimated that close to 80% of annual fertilizer purchases are covered by credit from the banks. Historically, fertilizer demand has gone up and down following increases and decreases in the supply of credit (Mulat et al, 1998).

[14] This does not mean that the country's research and extension systems had not any contribution in terms of raising agricultural production and productivity in some areas or some years. Rather it is to mention that their contribution is too little to affect per capita agricultural production or productivity at national level and in a sustainable manner.