

Federal Democratic Republic of Ethiopia
Federal Democratic Republic of Ethiopia
Ministry of Agriculture and Rural Development
Ministry of Agriculture and Rural Development

**Ethiopia's Agriculture Sector Policy and Investment Framework:
Ten Year Road Map (2010-2020)**

*Main Report
Final*

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ACRONYMS AND ABBREVIATIONS

ADLI	Agriculture Development-Led Industrialization
AESE	Agricultural Economics Society of Ethiopia
AGDP	Agriculture Growth Domestic Products
AGP	Agriculture Growth Programme
AI	Artificial Insemination
ARCD	Agriculture and Rural Centered Development
ARD	Agriculture and Rural Development
ATVET	Agriculture Technical and Vocational Education and Training
AU	African Union
AWDM	Agricultural Water Development and Management
BoARD	Bureau of Agriculture and Rural Development
BoFED	Bureau of Finance and Economic Development
BPR	Business Process Reengineering
BSC	Balanced Score card
CAADP	Comprehensive Africa Agriculture Development Program
CBO	Community Based Organization
CSA	Central Statistical Authority
CSO	Civil Service Organization
COMESA	Common Market for Eastern and Southern Africa
CRDA	Christian Relief Development Association
CT	Consultants' Team
DA/SMS	Development Agent/Subject Matter Specialist
EAAP	Ethiopian Association of Agricultural Professionals
ECX	Ethiopian Commodity Exchange
EDRI	Ethiopian Development Research Institute
EEA	Ethiopian Economic Association
EIAR	Ethiopian Institute of Agricultural Research
EPA	Environmental Protection Agency
EPRDF	Ethiopian Peoples' Revolutionary Democratic Front
FDRE	Federal Democratic Republic of Ethiopia
FTC	Farmers Training Center
FYDP	Five Year Development Plan
GDP	Growth Domestic Product
GoE	Government of Ethiopia
HLI	Higher learning Institutes
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
IR	Inception Report
MDG	Millennium Development Goal
MFI	Micro Finance Institutes
MoARD	Ministry of Agriculture and Rural Development
MoE	Ministry of education
MoFA	Ministry of Federal Affairs
MoFED	Ministry of Finance and Economic Development
MoJ	Ministry of Justice
MoST	Ministry of Science and Technology

MoTI	Ministry of Trade and Industry
MoWR	Ministry of Water Resources
MoWUD	Ministry of Works and Urban Development
NARS	National Agricultural Research System
NCs	National Consultants
NEPAD	New Partnership for Africa Development
NFYDP	Next Five Year Development Plan
NGOs	Non-Governmental Organizations
PAP	Pastoral and Agro-Pastoral
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PIF	Policy and Investment Framework
PM&E	Planning Monitoring and Evaluation
PPD	Planning and Programming Directorate of MoARD
PSNP	Productive Safety Net Programme
SDPRP	Sustainable Development for Poverty Reduction Program
SLM	Sustainable Land Management
RARI	Regional Agriculture Research Institute
REDFS	Rural Economic Development and Food Security
RDPS	Rural Development Policy and Strategy
RE&D	Research, Extension & Development
ToR	Terms of Reference

SUMMARY

I. Background

The agriculture sector PIF preparation¹ is the logical follow up of the CAADP compact. Ethiopia completed the preparation and signing of the CAADP Compact in August 2009, which is an initiative of the African Union's New Partnership for Africa's Development (AU/NEPAD) footed on a vision and strategic framework to eradicate hunger and poverty and place the continent, at all levels, on a path for sustainable socio-economic growth. PIF is a 10 years road map prepared to assist the GOE in formulating a Policy and Investment Framework (PIF) for Agricultural Development on the basis of its overall national development vision and strategy, and act as a guide for focused investments falling under the CAADP Ethiopia compact and the agriculture and rural development sector thematic areas. In the 10 year road map PIF is expected to indicate what should be the budget for on-going programmes as well as the priority investment areas in the agriculture sector to help the nation achieve its successive FYDP targets and beyond to become a middle income country by 2025². Ethiopia has started the pathway to these targets by embarking on a strategy known as ADLI, and derived from this, a strategy for the agriculture sector known as ARCD.

II. Methodology and Conceptual Framework

The PIF preparation has used various approaches to collect data and information. These are primary and secondary data and information including review of documents, independent evaluation and research works that yield appropriate statistical analysis of growth and related variables, as well as field visits. The PIF preparation consultants' team traveled to Oromyia, SNNP, Amhara and Tigray Regional states. The experiences of other countries were also examined by using appropriate data and information sources. FDRE CSA data have been the official and accepted data to undertake quantified analysis during the PIF preparation. The team also used data from MoFED, and other relevant Ministries and institutes to undertake budget estimation for on-going and incremental investment areas and some cost and benefit analysis for incremental investments. Clustering techniques are used to put the very long list of incremental investment areas initially in 10 intra-sector and 4 inter-sector thematic areas. After the national workshop³ the intra-sector clusters are reduced to 8⁴.

In order to undertake the PIF preparation⁵ it was essential to start with definitional and conceptual underpinnings of some key terminologies or principles. Specifically scope of the sector and the study, the definition and conceptual underpinnings of vision, growth, pillar, sub-sector, programme, project or the broader, again controversial, issues of policy and institutes need a good grasp.

During the PIF preparation a list of five programme and incremental investment areas classifications that are considered to the equivalent of sub-sector or pillars are used. These are agriculture development which is mainly catering for productivity and production improvements; agricultural marketing; natural

¹ Prepared by Dr Demese Chanyalew (Team Leader), Dr Berhanu Adenew (Public Finance Expert), Dr John Mellor (International consultant) and Getachew Adugna, Technical Asstant.

² In the next five years the economy is expected to attain a minimum 10% economy wide growth per annum. The indicator for the middle income country status is a USD1000 per capita income.

³ A two-day national workshop, August 23 and 24, 2010, was held at the Ghion Hotel, Addis Ababa to discuss the PIF draft report. The comments and suggestions were compiled and forwarded to the consultants by the PIF steering committee. Annex 18 presents this including the reflections of the consultants' team on the comments and suggestions forwarded.

⁴ For details, see section 7 of this summary or chapter 7.

⁵ At this juncture also to understand the assessments and findings of this PIF report.

resources development, conservation and utilization; disaster risk management and food security; administration and management (support services). Each one of these is containing more than a programme.

A programme is a broader cost center of a public body or a broad objective of expenditure. Projects are expected to come under programmes. Accordingly, for example, AGP and PSNP are projects and not programmes by the definition and conceptualization adopted in the PIF preparation. Neither the many programmes contained in the bilateral or multilateral institutes. They are projects which have entry and finish date, i.e., limited life time. The sectors programmes are expected to last long, usher several external projects of varied project life while sustain with the government commitment to allocate annual budget to them whether or not donors support for the specific program is imminent. Programmes are assumed to emanate from the policy and strategy that has surpassed them by formation.

Agricultural policy is taken as a statement of course of action set by the Federal and Regional State governments of FDRE in the management of agricultural development affairs. It could be formulated and implemented in the form of laws, rules, regulations, directives and broad goal oriented guiding declarations that affect different economic and social agents and institutions. Institutional issues are examined from organizational and relational dimensions. Both dimensions are footed on laws, regulations and directives. The organizational framework covers the structure of the government and the place agriculture is given in the government structure. Strategies serve to bridge policies and programmes.

III. Vision and Growth: Assessment and Findings

Assessment

In the context of the PIF preparation the government's vision of making Ethiopia a middle income country by 2025 remains valid and acceptable. Middle income is defined as per capita income of \$1000. However, in chapter 3 this has been analyzed further in the context of government's economy wide strategy and specifically the targets set for the agriculture sector, as well as identification of investment areas. The strategy for fulfilling that vision is Agricultural Development Led Industrialization (ADLI).

In Chapter 4, trend and sources of agricultural growth in Ethiopia is also examined. Whether Ethiopia can make its vision realized under various agriculture sector growth scenarios were analyzed. The CAADP target of 6% and a higher growth rate of 8% were used to indicate the expected performance of Ethiopia's agriculture sector in the coming 10 years. Indicators such as yield and per capita production, poverty reduction and employment generation have been used to explain sector wide as well as commodity specific, specifically cereals, potential to make the vision and goals realized. Recent empirical studies, including IFPRI's contribution to the CAADP Ethiopia Study, and the experiences of other countries are used in the discussions of the two chapters. Of course it is indicated that the starting point for this vision was an economy dominated by low-productivity agriculture on potentially highly productive resources.

Findings

The findings of chapter 3&4 can be summarized as follows:

- ADLI is the right strategy for Ethiopia to follow in order to attain its vision of a middle income country by 2025.
- The government's ADLI strategy is so crucial not only to rapid transformation of the economy but to dealing with Ethiopia's immense problem of poverty and employment.
- In Ethiopia in the coming 10 years agriculture is still the key sector to lead the development of the economy towards industrialization.
- Agriculture can satisfactorily play this role even if it continue sustainably to grow at least at the CAADP target rate i.e., at 6%

- Agriculture may continue to lead but for industry to pick agriculture's growth rate must be higher so that its share to GDP declines at a faster rate, say close to 30% in 10 years time. (It is now, about 43%).
- Agriculture's share to GDP should decline but itself should remain a significant employment creating and poverty reducing sector.
- By international standards the increase in extension effort in Ethiopia was huge. The huge government effort not only brought a high density of extension agents and large expansion of the proportion of the rural population within reach of all weather roads, but also an emphasis on increased labor input into agriculture, means of utilizing that labor moderately productively and changed rural attitudes towards increasing agricultural production. Those changes associated with a massive extension effort are certain to increase agricultural productivity. It should also be noted that these changes are also one time changes. They give an immediate upward shift in production and create conditions for other changes to be more productive but they are not in themselves the basis for sustained growth.
- Both sources of growth of the last decade, increased land area and improvements in traditional husbandry cannot be expected to continue indefinitely. For the future, the sources of growth have to change dramatically. Greatly increased use of improved seed and fertilizer will be the core of future growth – of course in the context of multiple changes in practices. But for the desired impact on growth the supply systems for both seed and fertilizer will need substantial change and the response to fertilizer will have to be substantially raised from present levels and maintained at a high level. The latter requires a steady flow of improved technology from the research system and its application by an increasingly technically sophisticated extension system. Government policy will have to focus on radically scaling up the current modest growth rates for seed, fertilizer, and research output. Irrigation investment will also have to increase substantially to meet the six percent target and even more to achieve the even higher rate that is possible. These returns from increased inputs require substantial investment in natural resources to maintain the productivity of the base set of resources.
- By drawing significant attention to the critical role of research to ensure profitability of high levels of plant food provision and of extension in promulgating those profitable technologies, those systems must adapt to the widely differing agro-ecological zones of the country to ensure nationwide participation. The distribution channels will have to become far more active – that requires rapid expansion of the cooperatives' capacity that now dominates fertilizer distribution and complementing that cooperative role with a vigorous private sector, reaching additional farmers and ensuring competition. The former requires increased public investment and the latter significant change in the practices faced by the private sector. Finally Government will have to keep abreast of unexpected changes in international markets and assist in adjustment to those changes.
- The donor community should be on a trend of rapidly declining assistance to relief and a rapidly increasing support for development projects that are pro-agricultural growth. These shall include support to strengthen the agricultural research and extension systems with a strategic focus on seed, fertilizer, improved animal breeds, AI services, feed as well as irrigation among others. It may take few years to get up to speed on such investment, particularly on irrigation. Thus, as the faster to implement measures come on board by reducing the poverty numbers through diversions from relief to the rapidly rising requirement for irrigation.
- Ethiopia has large areas of land with potential for irrigation. It is essential that donors respond to this opportunity since irrigation serves both the crop and livestock sub-sectors and the GoE's sectoral pillar of agricultural production and productivity enhancement. Investment on irrigation that is well studied and financed by avoiding size, scale and spatial and agro-ecology biases, keeps the growth process moving.
- In its efforts to promote economic development, the GoE is making large investments in roads, electrification, education, health and agricultural productivity. Rapid rural non-farm (including

small market town) growth requires physical infrastructure. Rural road networks linking these areas to surplus agricultural producers and inter-regional roads linking small market towns to major urban centers are crucial to enable efficient marketing of products. Likewise, electrification enhances production efficiency for producers of non-farm goods and services as well as improving quality of life (thereby reducing incentives for migration to large cities). Communications networks, (either mobile phone access or land-lines), also improves market efficiency by facilitating contacts between buyers and sellers and increased communications within vertically integrated marketing chains.

IV. Policy: Assessment and Findings

Assessment

Key documents that give a good grasp of Ethiopia's recent agricultural policies reviewed. These include the very recent exhaustive agriculture sector-wide policy assessment reported in the CAADP Ethiopia study⁶. Policy issues are reviewed in three categories covering natural resources, agriculture development and marketing. Within these the current national agricultural policies are classified in 10 subject/issues: land, agriculture water (Irrigation), forest, crop production, livestock production, farm inputs (seed, seedlings, fertilizer, pesticides, farm tools and machinery, feed, semen, drugs and vaccine etc.), pest management, agricultural research, agricultural extension, and agricultural marketing and trade. Footed on the present strong policies of the sector, the PIF preparation also identified areas of weaknesses and gaps that need to be addressed soon in order for the next 10 years growth targets and the vision of reaching a middle income country by 2025 achieved.

Findings

Cognizant of the fact that GoE is ready to review policy, in order to attain more than what it has achieved in the recent past, the GoE needs to address the following policy gaps and weaknesses.

- **Compensation:** when rural agricultural land is expropriated for public and private development purpose the use of regional coffers for compensation should be, as much as possible, minimized. One way for this is to encourage rental arrangements where the private sector can take its own share. A policy regime that paves the ground for the private sector takes its share be sought while the regional administrations takes a responsibility to facilitate the process with a system that reduces the compensation financial burden on governments, reduce bureaucratic costs of expropriation, valuation and compensation and at the same time reward farmers better and ensure that they have secure landholding rights, which are transferable for a preferred deal after the contract period expires in a market-driven competitive investment environment.
- **Pastoral and agro-pastoral (PAP) areas land administration and use:** In Ethiopia land policy is one area of policy which has been extensively covered through legislations and studies. Despite this there are still gaps in terms of adequate coverage of the land tenure issues of PAP areas. Already huge investment is being made in PAP areas in terms of expanding road networks, water system be it for human and animal drinking and irrigation, electricity and telecommunication. All these social overhead capital investments should be used to attract incremental agricultural investment in PAP areas be it in the livestock or crop sub-sectors. In this connection PAP areas existing land tenure policy is one critical policy areas that calls for checking.

Besides there is a need for policy to direct the transformation process to cope-up with alternative livelihood options in PAP areas. Individuals are changing from pastoral to non-pastoral

⁶ During the conduct of the CAADP Ethiopia study previous other studies and reports on agricultural policy were reviewed and the materials referred are listed in the reference section of the study.

occupations be it in agriculture, commerce, and urban businesses. This complex process must be tuned to orderly socio-economic system supported by well designed visionary socio-economic policy that encompass *at and after* the transformation process period.

- **Land degradation and soil erosion:** Soil and water conservation as part of land management requires due attention by government to have clear policy and strategy which accommodate all the agro-ecological zones of the country.
- **Livestock sub-sector:** livestock sub-sector is not policy deficient nor is the existing policies are hindrance to its development. The problem lies on **gaps** and **lack of focus** which should have been addressed via regulations and directives. There is still a need for detailed separate policies on animal health and animal feed. A policy attention is still needed in terms of managing free grazing practices. Ethiopia is lacking an official policy specifically that could guide development direction in the dairy sub-sector. There is a lack of policy against adulteration in the area of several products and more severe is in honey and beeswax production. In those existing policy documents there is a need for including institutional mandates and responsibilities.
- **Improved seed system:** Several policy issues revolving around the seed system need review. These include mandates and responsibilities of the public and private sectors for production, pricing and distribution, seed import and the issue of harmonization with other countries seed system, as well as the extent of government intervention in the private seed enterprises operations.
- **Investment on staple food crops production:** The production of major staple crops is still left for the many smallholders with traditional practices. The efforts made so far are to increase productivity at the small holder's level using mainly biological and chemical technologies such as seed and fertilizer. Investment on agriculture water development and improved farm tools and machinery is yet lagging. There is no strong rural agricultural finance system that caters for commercial emerging and expanding farms specifically that are tuned to produce staple food crops. The emergence and expansion of such farms would have saved most of the foreign exchange that is being spent for the imports of wheat in recent years. Besides, the agriculture sector would have been performed much higher than what it has had if it had been supported with increment to capital use, for example having access to capital goods by attaining up to 5% of the capital goods import of the country. So far the capital goods import share within agriculture is less than 2% and mostly it goes to commodities such as exportable horticultural crops and flowers. Moreover, these sub-sectors have enjoyed the 30/70 % own capital and investment loan arrangement, respectively while those in the staple food crop production have a problem of getting access to finance to cover the 70% of their investment project even if they manage to generate the 30%. If the country has to embark on irrigation agriculture, as well as agro-processing firms, there is a need for a policy review in terms of allowing investors in staple food production to enjoy fair loan arrangement and access to foreign exchange.

V. Strategy: Assessment and Findings

Assessment

Inseparable from policy is the strategy to implement it. The Agricultural Development Led-Industrialization strategy was the first comprehensive strategy launched by the EPRDF government and it continued to influence the formulation of successive policy, strategy, and plan documents. ADLI also remained the lead strategy which Ethiopia's agriculture sector vision and goals in the context of PIF are footed on. The Agriculture sector lead strategy is agriculture and rural centred development (ARCD). As clearly pointed out in RDPS, the basic directions of agriculture and rural centered development so far

revolves around the extensive utilization of human labor; proper use and management of land, water and other natural resources; agro–ecology based development approach; integrated approach to development; targeted interventions for drought–prone and food insecure areas; encouraging the private sector; enhancing the benefits of the working people; and enhanced use of agricultural technical and vocational training.

Findings

Though the above and several sub-sector and programme based strategies are developed there are still gaps to be filled. These include:

Water-led women- centered green revolution: Ethiopia’s agriculture in the years ahead should be driven by enhanced investment and a paradigm shift in agricultural water development and management (AWDM). The future AWDM investment in Ethiopia should ***avoid size, scale and spatial and agro-ecology biases*** and investment on any appropriate AWDM initiative should be made based on a prior set vision and goal. In line with this there should be also a paradigm shift to ***water-led women- centered green revolution***.

Support and strengthening of the private sector: The private sector should be a key strategic partner to make the input and output markets function efficiently, and effectively to meet the farmers and agro-processing enterprises demands. Fertilizer distribution is a trading activity – something the Ethiopian grain trade private sector is good at. The private sector should be encouraged and supported to be a key actor to introduce and supply improved farm tools and implements. Government has almost without exception found that constraints in government finance limit public sector seed producers from meeting rapid increase in demand. Ethiopia is now in that situation. Besides, there is a shortage of adequately skilled seed producers in the private sector so the requisite expansion requires supplying (and supervising through certification) existing private sector suppliers and providing major technical assistance to bring new producers in.

In addition to the above, private sector investment, including joint ventures with foreign investors, to establish fertilizer producing plant should be encouraged. Given the skyrocketing energy cost these days that affects international fertilizer price and its consequent effects on fertilizer import, distribution and use in Ethiopia, it is highly timely that the government makes efforts and looks for means and strategies to encourage investment in fertilizer producing plant in the country.

Utilizing CSOs: Civil society organizations specifically agricultural professional associations like the Ethiopian Association of Agricultural Professionals (EAAP) or professional initiatives like the recently formed Professional Advisory Group (PAG) to advise and support higher education, academic and research programmes, in agriculture, natural resources management and veterinary sciences should be utilized at different levels of policy and strategy formulation and implementation.

Reducing pre and post-harvest losses: Ethiopia has focused on the increase of productivity and production agricultural products to increase availability of food crops. More would have been gained had the nation was focusing with a well set strategy to reduce pre and post harvest losses. The country loses annually a tremendous amount of agriculture produce due to pre and post harvest losses.

Reduce the negative influence of HIV/AIDs on agriculture sector performance: The incidence and influence of HIV/AIDs in ARD and its effect on the availability and productivity of labour is being addressed through limited studies. In spite of the positive performance of agricultural growth, this sector is facing a serious challenge by HIV/AIDS. Hence, the existing limitations in expediting the assessment of the impact of HIV/AIDS in the productivity of agriculture labour and as a consequence on production need to be addressed without ado.

Improving animal feeds and nutrition: Animal feed and nutrition are critical issues in the Ethiopian livestock development context. Feed shortage is becoming a very critical issue both in the highlands, where land shortage is prevalent, and in the lowlands, where range degradation and invasion by invasive weeds is spreading. In the midst of this, the expansion of compound animal feed industry by the private sector is non-existent. The households are still following the traditional livestock rearing system, which is open grazing. An alternative livestock rearing, feeding, and management system need to be sought. A system which can augment the productivity and production of the nation's livestock resources with a well designed policy and strategic goals, including the maximization of livestock owners income and improving their living standards.

Synchronized breeding: Synchronized breeding is an artificial manipulation of the reproductive cycle of animals for the purpose of fixed time breeding through AI and as a result to achieve compact calving, lambing or kidding. The system allows aligning the breeding programme with feed availability and marketing. Its use in the public sector is still under discussion. The core issue here is whether it is to be practiced by the public or private sector or both, the country need to have a clear strategic direction.

Bee forage: The current GoE policy on apiculture is to develop and expand honey production with special emphasis in irrigated areas, integrated with fruits and agro-forestry. Recently, the need for bee forage practice is getting importance especially with the promotion of modern beehives in different agro-ecologies. All these are in place without a strategy on bee forage.

Forest resources utilization: The Policy, strategy and the proclamation on forest development, conservation and utilization document compiled by MoARD (2007) does include statements with the term utilization. Most of it is related on how to collect, organize and analyze information or to undertake studies. It is not clear on the strategy of how to utilize forest and forest products with an apt forest conservation practices.

VI. Institutions: Assessment and Findings

Assessment

There is no doubt that institutions are key elements of a policy formulation and implementation process. They can be seen from the aspects of organizational set-up and relationship or linkages among organizations. Both aspects are covered, in their relative importance, in policy documents including proclamations and regulations that notify the establishment and operation of the institute of concern. Broadly the institutions are classified into seven categories. These are government (Federal⁷, regional and woreda level); non-government organizations (NGOs); mass organizations cooperatives, youth and women associations' organizations; private institutions; civil society organizations (CSOs); donors: bilateral/multilateral institutions; and domestic agricultural research and extension as well as CGIAR affiliated institutions⁸. These institutions have been playing their roles but still contain gaps which need to

⁷ In the final draft report, it was suggested that there is a need to urgently institutionalize land administration and use at the Federal level. By the time the PIF preparation was ending, the GoE already acted and officially a "Rural Land Administration and Use Directorate" is established within the MoARD. The consultants also got the chance to meet and discuss with the appointed director who revealed that the directorate has three case teams working in the areas of a) land registration, survey and law preparation, b) GIS and land information system building, and c) land use study and regulatory. According to the BPR study, it will have 29 experts from diverse professional areas. Its major focus in the coming five years will be on land registration and certification (Steps 1&2). Besides, given the available resources, land use planning will also be undertaken concurrently. The consultants' team appreciates government's prompt response to such urgent programme/institutional arrangement needs.

⁸ These classification was also used to assess the state of existing institutions in the CAADP Ethiopia study. The CAADP Ethiopia study has also included a table that shows the organizational setting, responsibility, synergy and partnership.

be addressed diligently. These involve issues ranging from national sectoral program formation up to capacity building of FTCs at woreda level.

Findings

Programme formation and leadership: For PIF to be an effective framework for the next 10 years agriculture sector policy and investment implementation, both the technical and budgetary coordination and allocation systems and mechanisms should fall under the strict compliance of the programme definition and formation of the FDRE government. According to the FDRE government budget manual a programme is a broader cost center of a public body or a broad objective of expenditure. A programme can have sub-programmes and further contains projects.

The present arrangements of programmes, projects and directorates in MoARD call for review. The arrangements in terms of Directorates, Authorities, Institute, or Agencies should be anchored on the programmes. Some of the projects have offices that are directly answerable to the State-minister instead of being lead by the director concerned. This has to be rectified. Programmes should fall under a Directorate, Authority, Institute, or Agency. Any support that is coming from external sources shall take a project format which brings resources that are to be used for a specific life time. In this context the On-going PSNP, SLM or the starting AGP are projects and not programmes. PSNP remains part of the GoE food security programme and its existence is inversely related to the capacity and ability of the government to get rid of the food insecurity problem. The government, other things remaining constant, is planning to achieve a food-secure nation status by the end of the NFYDP period. This implies that if PSNP is to have a next phase as a project, it should target this goal of the government, to contain an exit strategy for the FSP itself. AGP is a project with various components whose implementation should be conceived as activities contained in and lead by different programmes. Given the spatial coverage (regions and woredas) of the present AGP, in the coming ten years several AGPs are expected to be designed and become implements for the PIF proposed investment areas and components. For all these the overall coordination responsibility shall be that of the Planning and Programming Directorate (PPD) of MoARD. These does not deter the placement of project implementation unit, if the need is studied and accepted by PPD.

Sector wide linkages and relationships: Institutional gaps related to linkages or relationships i.e., synergy is identified. This includes issues of information exchange; linkages among GOs, NGOs, and CSOs; RE&D; quarantine, standard and quality control; warehouse receipts and ECX; irrigation construction and use; and pastoral affairs coordination. In the existing RE&D system the pastoral and agro pastoral issues are not adequately covered. Hence it is timely to review *the linkage and relationships among institutions within the sector both at Federal and Regional levels putting the agro-ecology and integrated approach into perspective.*

Inside the national agricultural research system: There are organizational issues that need to be rectified within the national agricultural research system (NARS). The agriculture research system of the country, which is also referred as the NARS includes EIAR, RARIs, HLI, IBCR, and Ethiopia based CGIAR affiliated institutes such as ILRI. There are existing problems of coordination mostly institutional, though some say they are policy problems by feature. The GOE has started to take a measure to rectify the problems between EIAR and RARIs. Some RARIs still seem uncomfortable with the measures being taken. Some members of RARIs also relate some of the issues to the Federal and Regional Constitutions and the rights enacted for them to discharge their duties and responsibilities. In short, there seems to be a serious institutional arrangement and coordination mechanism problem that needs to be resolved by the concerned bodies in the soonest possible time. This is urgent for the agriculture research system to remain one of the key players in the scaling up/out, enhanced interventions in natural resources conservation, as

well as the commercialization of smallholders' agriculture via the possible import substituting agro-processing business ventures development strategies in the NFYDP.

The above being on the technical side of NARS, during the PIF preparation it was also noticed the resource provision, budget, for agricultural research is also an issue to be addressed by Federal and Regional governments soon. There should be an increase in the expenditure on agricultural research to a modest level, for example, increasing it from the current share which is below 1.5% of AGDP to 2%.

Strengthening the PM&E system: The next 10 years agriculture development programmes and incremental investments to be embarked on should be well fitted with sound planning, monitoring and evaluation (PM&E) systems. Good practices of PM&E need to be instituted in the sector and among related sectors at all levels of government and non-government agencies. Field visits and discussion with experts revealed that there is no coordinated development activities planning and implementation among federal, regional governments, as well as NGOs and donor communities. Sometimes different offices or NGOs intervene in the same woreda with identical development projects. A PM&E unit within PPD should, among other activities, be able to register, monitor and evaluate projects and programmes run/supported by donors. It has been pointed out, for example, that donors are good in agreeing quickly to have established joint programmes but drag a lot or remain unwilling to pool resources for the agreed programmes and plan and M&E the same from one coordinating body. This needs to be corrected.

Agriculture sector studies' coordination: Quite a number of agriculture and food sector studies have been conducted be it in sub-sector, commodity, thematic or sector wide manner be it by the commissioning of the government, NGOs, or donors. Most of the time these have been done without coordination for traceability and use throughout the nation be it by federal or regional research and development institutes. Besides, during and after conduct, each study has contributed very little in terms of building a national capacity for agricultural development and policy research. In such a situation there is a need for a programme and a body that should be responsible within the MOARD to coordinate and document various agriculture, food, marketing and price policy or development studies. To start with it could be placed under the (PPD) with an initial capacity building resources provision.

Dichotomization and the rationale behind development resources allocation: Let the annual development budget setting and allocation to woredas follow strictly core Federal and regional programmes and externally financed projects connect only to these programs. The present classification of woredas on the basis of one problem and one project is making the so called high potential, food secure woredas not to have fair share of available resources to work on natural resources conservation practices, engaging them in income and job generating public works such as community roads, as well as attracting fair share of NGOs and donors spending on basic socio-economic infrastructures such as water supply and sanitation, and health services that are targeting malnourished children and mothers. Recent studies indicated that classification of woredas as Food Secure (FS) and insecure (FIS) is creating resource provision disparity for works that are important to mitigate land degradation as well as provide preventive assistance to those whose assets in rural agricultural areas are denuding due to natural catastrophist. This classification was the result of projects like PSNP. Similar derailing seems to emerge with the *Agriculture Growth Programme (AGP) which is appearing with a dichotomization of woredas as high versus low potential*. It is possible to have projects that are location specific and time bound. But it is a mistake to follow what they followed to specify their project area as a guideline for the overall government budgetary allocation procedure. Let the annual development budget setting and allocation follow strictly the financial system and the federal –regional linkage mechanism and externally financed projects connect only to the Federal and regional programs.

Revisit Pastoral affairs coordination: There is a gap in terms of having a legalized body which has the mandate to mobilize internal and external resources (fund) and align indigenous traditional institutions

with formal institutions (research centers, Universities, administration etc) for the purpose of development in the PAP areas. In this regard, on pastoral affairs there is a need to reexamine the role of coordination offices in various ministries and that of the technical committee⁹. Each institute appears to take its own course of action.

Livestock sub-sector institutional issues: Recent extensive studies in the livestock sector argued that livestock sub-sector in Ethiopia warrants a much more organizational arrangement than it has at the moment. It is high time to revise the livestock and fisheries status both in terms of programme formulations and organizational setting. At least it deserves to be housed in one separate Directorate of livestock and fisheries, if not at a higher level, say with a state-minister portfolio within MoARD.

Irrigation: Infrastructure- to –Use: The linkage between MoARD, MoWR, BoARD and BoWR on irrigation infrastructure construction and use still needs a reexamination. More should be done on institutionalized linkage between them and between MoARD and MOWR in terms of transfer of the physical infrastructure, the work to be done jointly till the actual targeted beneficiaries are in use of the facilities, as well as in terms of repairs and periodic maintenance of the physical infrastructure.

The institutional dimension of the seed system: Improved seed as a national strategic agricultural input needs emphasis with its complexity starting from production up to marketing distribution and use. In cognizant of this, quality control and the integration and working relationship among public and private research, development and multiplication agencies have become vital to facilitate the production and supply of improved seeds to the farming communities. However, this relationship falls short of the desired level of integration and coordination and as a result there is lack of adequate quality control measure, and certification of improved seeds¹⁰. Furthermore, the existing system is not giving a fair competitive ground for ESE as well as private seed enterprises. ESE is at a cross road of being a profitable parastatal and a non-profit making development supporting enterprise of the government functioning with controlled prices and protected labour. The private sector is not supported to expand particularly in the area of having support to access credit. Both ESE and RSEs as public enterprises need also to adjust to the production of pre-basic and basic seed living space for the private seed producers, including farmers, to handle the certified seed production. In general, the system should be reassessed in terms of organizational and relational aspects so that all actors can work closely i.e. the public, private sector dealers, CSOs, specifically the newly organized Seed Association, NGOs, development partners as well as those enterprises working in the seed business but located in neighboring countries.

Nutrition: The availability and access to food is the responsibility of MoARD while the utilization and dietary health and care is that of the MOH. On the basis of this nutrition strategy has been drafted and revised about five times in the last two decades. The recent National Nutrition Strategy (NNS) issued by MoH,¹¹ coverage is appreciable but still additional focus and efforts are needed to integrate adequately and appropriately the nutrition issues of PAP¹² communities, the standardization and explicit nutritional values of the diverse crop and livestock products and by-products, and to adequately address the productivity effect of malnutrition on food insecurity¹³.

Gender mainstreaming: The rural workforce is proportional in terms of sex distribution. However, the women labour is still not adequately and properly used in the direct agricultural productivity and production enhancement and farm income augmenting context. It has been noticed that efforts of mainstreaming gender are put in place in the various programmes of the agriculture sector. But they are

⁹ CAADP Ethiopia Study, 2009 has provided a detailed discussion on this issue.

¹⁰ Refer CAADP Ethiopia Study, and also the Report on Assessment of the Formal Seed System in Ethiopia, October 2, 2009.

¹¹ FDRE, National Nutrition Strategy, MOH, January 2008, Addis Ababa (Text in Amharic).

¹² The NCs are aware of recent undertakings in this regard. (See USAID, 2009)

¹³ For details refer Demese's contribution (Chapter 3) of the above study.

not done as fast as expected. In general gender mainstreaming needs to be strengthened and expedited in order to increase the marginal benefit obtained from rural labour (men and women) and in aggregate to enhance value addition in the agriculture sector.

Climate change and DRM: Climate change has recently become the major concern of the GoE. Particularly, the government has given due attention to the impact of climate change on meeting the goals of reducing poverty and setting a sustained food-secure country. Ethiopia at large and its agriculture sector specifically are highly sensitive to climate change and its impacts. Therefore, during the next FYDP implementation period the Disaster Risk Management (DRM) wing of MoARD and BoARDs have to design various interventions to mitigate the problems of climate change in the country at large and the agriculture sector specifically. In this regard two points are worth noting. First, climate change is a long term process and therefore requires well thought out long term solutions. Secondly, research must provide much of the solution to the climate change problem and adaptation strategies.

Institutional Capacity: It is obvious that ultimately MoARD and BoARDs role is not to produce but to ensure those who are producing, more than 95% are private entities, are producing to the level best in terms of input use including knowledge and technology. For this to happen most of the public investment in the sector may have to go for service rendering and tangible public goods production in the areas of natural resources management, research, extension, and marketing and as recently started to the promotion of agricultural investment. In the context of the first three most of the investment has to be done at the woreda level, specifically in the form of capacity building. But capacity gap at all levels of government is a serious one in its entire dimension i.e., human resources, working premises, equipment, machinery, furniture and other facilities. The problem is severe at the grass root, specifically at woreda levels. Specifically, ATVETs and FTC require incremental capacity building interventions in terms of DAs/SMS skills up grading, providing them with the minimum instruments such as housing and means of transport, putting in place the least required FTC infrastructure, furniture and equipment, and ensuring demonstration farms to be exemplary in terms of centers of research results demonstration and revenue generating entities with innovative practices that did not derail their major responsibility of demonstrating new things or new ways of doing things to farmers.

VII. Budget and Investment

On-going programs budget

Due to the policies and following the ADLI and ARCD strategies and associated institutional arrangements Ethiopia's agriculture sector development in the last six years has been remarkable in terms of sector wide GDP growth and relative contribution of the sector to poverty reduction and increase in per capita food production.

Since 2004/05 the average annual growth rate of the agriculture sector in terms of AGDP is about 13%, which exceeds the CAADP target of 6%. This is a strong and sustained performance after a sharp decline which had hit bottom by 2002/03, including this ten year trend shows an average of about 10% growth rate. The percent share of agriculture from GDP declined from 53.1% to 42.6% between 1995/6 and 2008/09¹⁴. The food poverty head count decreased from 44% in 1999/00 to 38% in 2005/06 to nearly 33% and expected to be 28% by the end of the PASDEP period (2009/10)¹⁵. The per capita grain production increased from below 1.5 quintal in 2003/04 to 2.13 in 2007/08¹⁶. The number of manufacturing of food

¹⁴ Data obtained from MoFED.

¹⁵ Source: MoFED, PASDEP Annual Progress Report, 2006/07.

¹⁶ Ethiopia is almost meeting the 2100 Kcalorie per capita per day requirement. The equivalent of this in terms of grain production is 2.16 quintals

products and beverage establishments in 1998/99 was 228 and increased to 381 by 2006/07¹⁷. Similar achievements have been made in the area of basic infrastructure development that are important for agriculture and rural development. In order to achieve the above and others the government has increased its budget for ARD and basic infrastructure sectors. The Federal government budget to the agriculture and natural resources sector has exceeded the CAADP target of 10% since 2005/06. Generally the total Federal budget allocated to agriculture and natural resources has increased from 9.4% in 1993/94 to 15.5% in 2007/08.

Given the above trend, and being cognizant of what the GoE was doing for the sector's budget, during the PIF preparation a budget for on-going programmes have been estimated on the basis of three assumptions.

Assumption 1: No major change within the sector in terms of programme arrangements. Put differently, national sector wide (MoARD and BoARDs) institutional arrangements programme, and projects that are shown in the latest available approved budget are the bases for the budget projection.

Assumption 2: The budget projection has to commensurate with the GoE target growth rate (10%) of the economy in the coming development plan period. This is a key assumption which shapes the base for the calculation of the budget for the coming 10 years. Recall that In Chapters 3&4 analysis of Ethiopia's agriculture sector growth was made using 6% and 8% growth scenarios. The findings indicate that the economy is assured of attaining what it wants to accomplish in the sector if the sector growth rate is at least 6%.

Assumption 3: The policy, strategy and institutional reviews suggested assumed to take place and unless there is a justifiable reason not to accept, the suggested changes will be in place immediately to drive the economy in the desired direction.

On the basis of these assumptions and based on the available data and information¹⁸ the consultants' team has made budget estimation for the agriculture sector on-going programmes. In order to ensure that the budget allocated to the agriculture sector is in alignment to the expected GDP growth rate, first the ratio (put in %) of the agriculture sector budget to that of GDP for recent years was calculated. The trend of various years' ratio was analyzed, and on the basis of the calculated ratio, the value of GDP for the years 2010 to 2020 was projected on the basis of the 10% growth rate. Then, using estimated agriculture budget to GDP ratio the PIF period budget for the agriculture sector on-going programmes is estimated (See Table below).

As shown in Table S1 the agriculture sector budget for on-going programmes is expected to be tripled by 2020 (end of PIF period). The budget which was Birr 7.12 Billion (both recurrent and capital) in 2008/09 is expected to increase to Birr 9.6 Billion by 2010/11 and Birr 15.8 Billion by 2014/15, and reach Birr 27.9 Billion by 2019/20¹⁹. This is closely in line with the governments own projects of sectoral budget for the Second Five Year Development Plan²⁰ (see Annex table 16). It is worth noting that the agriculture

¹⁷ CSA, Annual Statistical Report, various years.

¹⁸ It was not easy to get and compile sectoral budget in all areas and regions. The best have been done in this regard.

¹⁹ The share of capital and recurrent budgets is kept constant at 77% and 23%, respectively.

²⁰ By the time PIF preparation came to an end the GoE did issue the NFYDP (PASDEP II). In this document the agriculture sectors five year budget is shown. The sector budget for the NFYDP for 2010/11 is 12.1 Billion while estimation by the PIF is 9.6. For 2014/15 theirs' is 18.1 Billion while PIF estimation is 15.8. This shows that the estimated PIF budget for on-going programmes is less than the government's own projection in the base year and at the end of NFYDP, respectively. For detailed comparative analysis results which also shows the discrepancy in terms of capital and recurrent projections, please refer Annex 16. The difference is mainly in the capital budget which plausibly means the government is expecting external support in a form of aid, grants and loans more than what it is getting in recent years and perhaps the recent trends of increased foreign support from non-traditional ones, like the recent appearance of mid-east and Asia countries, specifically China, as well as Bill and Melinda Gates Foundation support is to increase.

sector budget share in GDP is to increase at a decreasing rate. This is because agriculture has to give way for the growth and expansion of other sectors with a proportionate shift of government budget share to the other sectors, too. This is also in line with the ADLI strategy. In general, in the years ahead about 60% of the total budget for the sector is expected to come from treasury and the rest from external sources in the form of grants and loans.

Table S1: PIF period agriculture sector budget estimates for on-going programmes

Year	Estimated budget (‘000 Birr)	Estimated budget (‘000 USD)
2010/11	9,621,882	718,051
2011/12	10,965,654	818,332
2012/13	12,437,691	928,186
2013/14	14,055,081	1,048,887
2014/15	15,835,788	1,181,775
2015/16	17,778,719	1,326,770
2016/17	19,965,598	1,489,970
2017/18	22,358,133	1,668,517
2018/19	25,001,396	1,865,776
2019/20	27,922,550	2,083,772
Total	175,942,493	13,130,037

Incremental investment areas identification and costing

One of the major tasks of PIF preparation is identification and prioritization of incremental investment areas for the agricultural sector and estimating the magnitude of investment resources required over the next ten years. The consultants’ team has identified about 24 incremental investment areas by the time it submitted the inception report. With a strict scrutiny and clustering of the investment needs by related thematic areas, finally, the list of areas of investment were condensed into 10 intra-sector and four inter-sector areas. These are divided into two²¹, those within the sector and those that are cross-sectoral. The identified investment areas within the agriculture sector include irrigation, agricultural research, the seed system²², livestock, natural resources management, agricultural cooperatives, market system and infrastructure, agricultural extension, private sector support, and agricultural credit²³. In the cross-sectoral category are rural roads, rural energy, nutrition and climate change.

²¹ Details with elaborated focus issues or commodities are given in Annex 12.

²² While the team was in Amhara region, the issue of farm tools and implements has been raised to be considered as one of the incremental areas. The team recognized it but to keep the uniformity of the prioritization exercise with the rest of the regions it was not reflected in the prioritization table. For detail see in Annex 12.

²³ One of the suggestions came out of the national workshop was to consider the food security programme (FSP) and disaster risk management (DRM) as one area of incremental investment. The Consultants’ team has already included them as budget holders in the on-going programme. This includes the FSP’s four components, namely, household asset building, safety net, settlement, and off-farm income generation. The DRM on-going programme budget also includes financing for additional silos and reserve storage capacity building. Cognizant of this, the government’s strategy and goals, including poverty reduction and attaining food security, the consultants’ team still urges for the prevalence of a mind shift from relief to growth, growth that reduces the need for relief. Put differently, the PIF preparation team, after thoroughly analyzing government’s strategies, directions and goals, started with a premise that in 15 years time (by 2025) the bulk of poverty and food security will be eliminated, hence there is no need to make incremental investment, other than the on-going financing, on food insecurity. Every effort during the PIF period should be made to orient relief measures towards growth.

During the national workshop²⁴ there were two views on the clustering and prioritization of incremental investment areas. One view is to put agricultural research, extension, seed, fertilizer, and part of the livestock investment components, such as the promotion of improved breeds, veterinary and AI services in one cluster and leave the rest as listed by the consultants' team. The proponents of this also suggested after this change to consider a means to give priorities based on the rankings given by the three working groups of the workshop²⁵. The other view, which came from one working group during the workshop, is to leave the investment areas clustering as given by the consultants' team. The proponents of this view also said there is no need to prioritize among the 10 incremental investment areas identified by the consultants' team. They argued that growth will be achieved only if all the 10 identified investment areas are financed in a balanced, phased and sufficient manner dependent on location, depth and magnitude of the problem to be solved in the chosen location, and the urgency to solve (the time dimension). This group also argued that soil and water conservation is an essential entry point for sustained agricultural growth. Seemingly succumbing to the need for prioritization and is an indication for top priority position of the natural resources conservation and management area.

After the national workshop and the consultants' analysis of group deliberations, the intra-sector clusters are reduced to 8. This happened by introducing an investment cluster which contains systems and inputs that are closely associated with the government's next five year development plan that aims at scaling-up strategy of technologies and proven practices. These include research and extension systems strengthening with special emphasis on various components of the crop and livestock agriculture including seed, fertilizer, improved breeds, veterinary and AI services which are expected to be major sources of production and productivity growth in the short-to mid term of the 10 year PIF period. This cluster is labeled as agricultural production and productivity augmenting systems and inputs investment area (Table S2). Natural resources conservation and management includes incremental investment needs on soil and water conservation, watershed management, management of acid, saline and vertisol; land rehabilitation, land registration and certification, land use plan, fuel wood production, agro forestry and reforestation. Irrigation development investment area envisions investment which will be appropriately studied to fit the size and scale choice of the various agro-ecologies and geographical areas²⁶. The livestock development incremental areas, other than those contained in the new cluster, includes among others investment to upgrade vaccine production centers, establish regional semen centers, and establish laboratory management information system. Similar details for the other investment areas are also given in Annex 13.

With the new clustering arrangements, the top priority incremental investment area became agricultural production and productivity augmenting systems and inputs. Including this, the top five investment areas which the nation has to put in development projects and seek funding at the early stages of the coming FYDP area natural resources conservation and management, irrigation, livestock development infrastructure, and strengthening agricultural marketing systems and facilities. These top five choices closely go with the government agricultural development direction set for the NFYDP. The other investment areas that did not join the top five are not by any means less important than others. Ethiopia needs support in these areas, too. Hence, both the government and donors are expected to design development projects and solicit funding in these areas.

The benefits to accrue by having development projects that contain the above investment areas at large remain to be inclusive of gains in terms of making Ethiopia expedite the elimination of hunger, reduction of poverty by the end of the MDGs period (2015) and fulfilling the nation's goal of becoming a middle

²⁴ Annex 18 presents the comments and suggestions compiled and forwarded to the consultants by the PIF steering committee and the reflections of the consultants' team on the comments and suggestions forwarded.

²⁵ See Annex 18

²⁶ Annex 13 gives details of the sub-components or focuses of the investment area.

income country by 2025. These investment projects are also expected to ensure the nations endeavor to make agriculture give the path way for the industry sector to lead. They are also expected to guide the shift from relief to growth oriented ODA.

The incremental investments which will be implemented in the sector following a project approach require estimating the cost of funding the procurement of human resources; physical facilities and capital that will enable them contribute to the achievement of the development targets of the Ethiopian agricultural sector. Costing of the investment areas basically refers to the costing of those critical elements (technologies, materials, institution capacity needs, facilities, etc) that are expected to affect and increase agricultural production and growth in relation to the expected targets set for the sector during the next 10 year plans.

Depending on the data availability, cost build up has been made using components and detailed activities of the chosen incremental investment areas. Table S2 gives total incremental investment finance requirements of each of the priority areas. Overall, a total of USD 9955 Million (Birr 133.3 Billion) ²⁷ is expected over the PIF period for investment in the selected incremental investment areas. It is important to note that though irrigation is showing the largest share it is because of the high unit cost of irrigation infrastructure. Besides it should be known that irrigation is among the inputs to augment agricultural production and productivity both in the crop and livestock sub-sectors and it is for center of attention that it is listed as a separate area of incremental investment. The 8 incremental investment cluster areas are expected to come in a project format and be part of the annual budget (mostly capital) when availed. These investment projects require the government, particularly MoARD, to put in place bankable projects together with interested donors to finance them.

Table S2. Incremental investment needs of the selected priority areas

Rank	Investment areas	USD (Million)	Share of Total (%)
1	Agricultural production and productivity augmenting systems and inputs	706	8.00%
2	Natural resources conservation and management	1891.2	21.5%
3	Irrigation development	4648.3	52.8%
4	Other livestock development	11.12	0.13%
5	Agricultural Marketing systems and facilities	20.3	0.20%
6	Cooperatives support and strengthening federal and regional agencies	301.7	3.40%
7	Rural credit	343	1.30%
8	Private sector support	115.6	3.90%
	Climate change	770	8.70%
	Sub-total	8,810	100%
	Contingencies	1,145	13%
	Total	9,955	

Source computed by the Consultants' Team.

²⁷ An exchange rate of USD 1: Birr 13.4 was used in this calculation. In each investment area a capacity building investment cost estimate is included (see Annex A11.11). The national workshop group deliberation suggested and agreed that this shall cover among other things investment to fill in system gaps related to ICT, critical physical facility gaps, and support to strengthen PPD of MoARD specifically in the area of PM&E.

Table S3 provides the estimated incremental investment budget by CAADP pillar (climate adaptation is added here) When analyzed in the context of CAADP framework food production and food security attract the bulk (61%) of the incremental investment followed by natural resources (watershed management and land administration (21%) and climate change adaptation (9%)²⁸. Here irrigation development is considered under food production and food security, which in the content of Ethiopia's agriculture sector means agricultural production and productivity enhancement pillar. Secondly, even if it is the food production cum security that takes a big chunk, it is tuned to growth rather than relief.

Table S3. Distribution of PIF incremental investment finance by CAADP+²⁹ pillar

	Natural resources (watershed and land admin)	Rural infrastructure and market access	Food production and food security	Research and extension	Climate change adaptation	Total
Total '000 birr	28,637,149	3,809,328	81,146,396	8,141,622	11,659,340	133,394,375
Total '000 USD	2,137,101	284,278	6,055,742	607,584	870,100	9,954,804
%	21%	3%	61%	6%	9%	100%

Note: the budget in table S2 includes contingency allowance of a 13% variation due to price and/or physical changes.

VIII. Ethiopia in the Context of Other Countries Experience

It was essential to finally wrap up the PIF preparation by examining Ethiopia's agriculture sector growth in the context of other countries. Each country is a unique development experience. The historical background, the resource base, the level and spread of formal education, institutional structures, and the nature and orientation of leadership are among the many sources of differentiation. Nevertheless there are many constants about the evolution of economies, the process of economic growth and particularly the characteristics of rapid growth in agriculture. The experiences of other countries are of special relevance with respect to these constants. In a brief chapter the lessons must be simplified and only a few of the more relevant features discussed. Seven of the constants are identified to be of special importance to Ethiopia. They are as follows:

- Development is a process of transforming an economy from largely agricultural to largely service and manufacturing. Agriculture can accelerate that transformation.
- Most farmers are constrained by limited land area. Therefore growth in their production and income is largely a function of technological change and shift to high value commodities –both raising the value of production per hectare.
- Farming is most efficiently pursued by a family size labor force, with consequent lack of ability to realize scale economies in many complementary activities, and therefore government plays a critical role in provision of technology and some of its accompaniments.
- The small size of farms, in terms of labor force, requires organization of farmers to provide scale economies for all (many) aspects of the agricultural value chain.

²⁸ In the identification of priority investment areas, climate change adaptation was designated as cross-sectoral issue. But it appeared in the investment cost estimate while the other cross-sectoral are not. The others have their own sector plans and are housed in well known sectors like roads in the ministry of transport, energy in the ministry of mines and energy, and nutrition in the Ministry of health, roads. Climate change is a recently emerging and highly important area of investment which still needs guidance in terms of formal sectoral placement. The consultants, however, believe the agriculture sector has quite a big interest and relevance for actions related to climate change adaptation and disaster risk management.

²⁹ The + is to emphasis the attention given to climate change separately and which is further elaborated in section 7.4.

- e. The nature of agricultural production processes requires specialized agriculture oriented financial institutions.
- f. Market prices and private business play a key role in rapid agricultural growth. Roads and other physical infrastructure are vital to growth

The lessons to Ethiopia are clear. Most important Ethiopia is on the right vision and strategic track – better articulated than most of the countries – in its ADLI vision and strategy. Ethiopia is on the right track with a large scale extension system and building indigenous agricultural research capacity. Ethiopia is right in building the cooperative movement as a strong institution and in being explicit about not using force in that effort and in minimizing the role of government in management of cooperatives. Ethiopia has done less well on building specialized agricultural finance institutions. That will become an increasingly important issue in the future.

A notable feature of these comparisons is the large role of foreign assistance in developing the three key public sector oriented institutions for research, extension and credit. In all the earlier developing countries foreign assistance to higher agricultural education, research, extension, credit and development of cooperatives has been very large both in financial transfers and technical assistance. That was true for Ethiopia in the 1960's as well. However, in recent decades that type of support at the national level has largely disappeared. Thus national expenditure on research is a complement to the international system not a substitute. In summary, the comparisons strengthen the case for Ethiopia's vision and basic strategy. They offer useful lessons for developing agricultural research, extension, credit and cooperative systems as well as in several policy areas. They confirm the value of freeing areas appropriate to the private sector for those activities. In general Ethiopia is following the positive lessons. It needs foreign assistance in the key areas that were historically important in foreign assistance.

VIII. Conclusion and Recommendations

Conclusions

The assessments and findings of Ethiopia's agriculture sector PIF preparation reaffirm that the GoE vision of reaching a middle income country status by 2025 is possible but conditional to its adherence to the ADLI strategy. Agriculture should continue to lead the transformation of the economy to industrial with a slight adjustment to the ARDC strategy. The adjustment required is to pursue a combined land, labour and capital using strategy in the short run following the directions set in the NFYDP base document and in the mid to long run by availing capital for the public and private sector investment in conservation of natural resources, development of appropriate irrigation schemes, in farm inputs, farmers organizations, specifically cooperatives, as well as the promotion and expansion of market oriented value adding private sector that particularly exploits the livestock and the high value exportable crop sub-sectors. All these require a mind shift from donors' side to support Ethiopia's agriculture growth by garnering resources for this purpose. Spatially the low land areas should receive increased capital investment particularly in promoting irrigation agriculture and modern livestock husbandry, processing and marketing.

Agriculture, based on extensive land and labour use, has contributed to the recent years registered economy wide as well as sector specific growth in terms of increased revenue and foreign exchange. Most of the benefits gained from the growth of the agriculture sector have been diverted to the growth of service, industry, energy, and telecommunications sectors, as ADLI imply. Now it is time to promote agriculture by investing more on those critical areas that can enhance the transformation and industrialization of the economy. This requires a change in focus of sources of growth. There is a need to shift gradually from land and labor based growth to scaling up of technologies such as improved seeds, breeds, fertilizer, AI services etc. Appropriate use of cooperatives and private traders in the input and product markets; investment in storage and transport; increased credit; strengthening of agricultural research and extension services; expansion of irrigation schemes that fit well to different agro-ecologies

and geographical areas; as well promoting innovative, income augmenting natural resources conservation practices. These are well captured in the identified PIF incremental investment areas. The investment portfolios should be diversified and specialization should be encouraged with the backing of increased investment in crop and livestock high value and specialty commodities, specifically those which promote commercialization and out growers scheme linked with agro-processing businesses. In the later case government efforts to promote the private sector expansion should be matched with donors support to generate and avail financial resources and capacity building of the sector.

Eight incremental investment areas within the sector and 4 outside the sector are identified. The GOE and its development partners should work in harmonized and coordinated manner following a project approach to invest in these areas. Donors should work closely with MoARD's PPD to make Ethiopia have well known, sustainable and efficiently managed agricultural programmes which transcend project periods and changes of donor's type and interest. Recently non-traditional donors from Middle East and Asia are also coming in to assist GoE in its effort to implement ADLI and reach its vision of making Ethiopia a middle income country by 2025.

Finally, the documents reviewed and the discussions held revealed that the GoE has made tremendous efforts to perfections in terms of setting policy, strategy and the necessary institutions. But as it is everywhere in the world policies are conditional and subject for review. The government in its RDPS (2003) document also clearly stated that policy review is part of its working imperatives. Hence, on the basis of this the gaps and weaknesses identified and listed in should get focus and be subjected for review for the PIF implementation. If this and the afore-mentioned concluding remarks are considered then reaching a middle income country level with an agriculture sector that will grow fast but with more rapidly declining GDP share can be achieved concurrently by making agriculture to absorb significant employment, high contribution to reduction of food insecurity and income poverty.

Recommendations

a. Broad Issues

Programme consolidation and the project approach: In the agriculture sector program consolidation has to be made to take advantage of economies of scale in the future. Programme management overhead costs can be reduced tremendously through this effort and the saved amount can be redirected to productive development augmenting investment areas. The PIF proposed 36 programmes need to be adopted as a framework for coordination and harmonization of agriculture sector interventions nationwide. They should become the cost centers whereby any other projects and interventions financed by treasury or external sources will be registered under them. Donors should provide their support to the sector under these programmes. There should not be any programme within the sector without being known by the sectors coordination body, MoARD, and specifically by its Planning and Programming Directorate (PPD) which has the responsibility to integrate all via a well established, transparent and accountable PM&E system.

Programme budgeting: programme budget should be practiced. Programme (process) owners (directorates, Institutes or Agencies) should set appropriate program specific *monitoring and evaluation* mechanisms that is well integrated with the overall PM&E system of the sector to efficiently and effectively implement existing programmes with available resources. It is only through this way that one may be able to see how much each Birr invested in the public sector (be it by treasury or external sources) is returning positively by benefiting the target group considered at the planning stage.

Preparation of bankable project documents: PIF has identified incremental investment areas which should come in the sector through a project approach. MoARD, specifically PPD, has to take the initiative to prepare bankable projects and present them to development partners who may have special interests in specific investment areas part or in full coverage. It seems there is a CAADP platform initiative that can finance the preparation of bankable projects and this should be used by PPD as an advantage and gullible opportunity.

Partners support, accountability and institutional arrangements.

One of the objectives of the PIF assignment was to identify where and how partners could provide external assistance with a view to maximizing its impact/return for the country. This study start covering this issue early enough, in chapter 3, by suggesting that development partners, particularly bilateral agencies to shift their focus of support from relief to growth promoting development projects, such as supporting the irrigation development, conservation of natural resources, or the promotion of private investment in high value exportable agricultural commodities. The study has shown that although donors contribution to the government budget will be scaled up on the basis of the budget projection and given the conditions set a prior, their annual support to reach to 6.4 Billion Birr (USD 478 Million) by 2014/15 and 11.2 Billion Birr (USD 835 Million) by 2019/20. It also indicates for a higher growth and a faster decline of the sector's contribution to GDP, donors should embark on investment projects designing, fund solicitation and financing of the same in the 10 intra-sector and four inter-sectoral areas. In doing so donors should align and harmonize their support in line with government recognized and MoFED registered sector programmes. It has been found out that there are several programmes/projects run by bilateral and UN agencies which are not known or not well integrated in the PM&E system of MoARD. It is partly due to this suggestion is made for MoARD to establish an agriculture sector studies and donor support coordination unit as well as the need to strengthen its PM&E system. The handling of the donor support programmes and projects should be footed on integration and presence of mutual accountability both for inputs used and results achieved from government bodies and donors side. The already started RED&FS institutional arrangement should be strengthened to accommodate these issues as well as to

bring on track the agriculture programmes/projects of donors who are not yet members of the RED&FS platform, and the non-traditional one from Middle East, Asia or those like Bill & Melinda Gates Foundation (BMGF).

(b) Specific Issues

Agriculture research and extension: Although the government policy and strategy documents, starting from the Revolutionary Democracy, specify the role and importance of agricultural research and extension in development and the required integration and coordination among research and extension institutes, still much is desired to be done. There is still a gap in terms of integrating education, research and extension in the agriculture sector institutions. Specifically the NARS needs a revisit either in search of a policy or institutional solution to the many problems that are being raised by the RARIs, and HLIs and other stakeholders of NARS. Rectifying this problem the GoE has also to take a policy stance that the budget for agricultural research becomes 2% of the AGDP.

The livestock sub-sector: The livestock sub-sector despite its huge potential seems a forgotten sub-sector in the national economic development endeavors and specifically in the agriculture sector development initiatives. The sector has still several problems to be resolved in the area of animal feed, health, breed improvement and associated production, processing and marketing activities. In order to enhance the national contribution of the livestock sub-sector to GDP it should get appropriate position in the agriculture sector ministerial and bureau level arrangements. The least should be that it has to have its own process owner (Directorate) in the MoARD and regional BoARD.

Agricultural Credit: The agricultural credit system in the country does not provide a comprehensive national system of competitive agricultural credit to small and large scale commercial farmers. The current system of MFIs can probably sustain the credit growth required for the many traditional smallholder farmers and rural small-scale entrepreneurs. Over the longer run major changes are needed. Commercial agriculture and agro- processing by smallholder individual farmers, cooperatives, or large-scale commercial agriculture investors has to take place. In this context, the credit requirements of the agriculture and rural sector will be highly specialized and require a comprehensive national system. Such a system is the norm in countries with successful agricultures ranging from the United States, to Japan, South Korea, Taiwan, India, and many other countries. However, in view of the challenges that these countries face, the GoE should first commission a study that makes a thorough assessment and recommend for a sustainable agriculture and rural credit system and institutional arrangement. The chosen system must of course be adapted to the conditions in Ethiopia and the existing institutional structures. Given the very large and varied experiences of other countries the study can benefit by having members with extensive international experiences. Thus a composition that includes both Ethiopian nationals experienced in Ethiopia and international experts experienced in a range of other countries with successful systems should be members of the study team.

Integrated approach in farm inputs policy and strategy design

It has been mentioned that the promotion and introduction of improved farm tools and implements should be considered along the major investment areas during the PIF period. During regional visits it has been also mentioned that the disintegrated approach to address the policy , strategy and institutional aspects of some farm inputs, particularly seed and fertilizer, makes the sub-sector capacity building erratic in seeking solution for the old traditional and backward technology using Ethiopia's smallholder farming. Besides, unlike the past and recent efforts to introduce seed-and-fertilizer based green revolution what Ethiopia needs is water centered, specifically small-scale irrigation and water harvesting technologies, centered green revolution. Such revolutions should be also focused on the strategic use of the available abundant labour, particularly women labour to lead the small scale irrigation interventions. These indicates that in the agriculture sector it is important to give appropriate and adequate attention to all

types of farm inputs, hence any revolution to take place in rural-agriculture Ethiopia should be water and women centered.

Guiding the dynamic economic development of PAP areas: GoE has made huge investment on infrastructure development in PAP areas. The investment in roads, electricity, and telecommunication and water resources, both for agriculture and drinking purposes, is attracting investors from outside as well as ignited changing livelihoods within the PAP community itself. Pastoralists' livelihood changes and diversification in alternative income generating enterprises including agriculture and non-agriculture alike is taking place. All these are searching for appropriate policy measures to guide them. Besides, the emergence and expansion of small towns as part of the urbanization process is further adding to this complexity of the dynamic economic development undertakings, calling for ex-ante policy and institutional formation or reviews

Ethiopia's Agriculture Sector Policy and Investment Framework: Ten Year Road Map (2010-2020)³⁰

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND

In the recent history of Ethiopia's agriculture sector development the last six years has been remarkable in terms of sector wide GDP growth and relative contribution of the sector to poverty reduction and to an increase in per capita food production. Since 2005/04 the average annual growth rate of the agriculture sector in terms of AGDP is about 13%³¹, which by pass by far the CAADP target of 6% (CAADP, 2009)³². This is a strong and sustained performance after a sharp decline which had hit bottom by 2002/03. The food poverty head count decreased from 44% in 1999/00 to 38% in 2005/06 to nearly 33% and expected to be 28% by the end of the PASDEP period (2009/10). The per capita grain production increased from below 1.5 quintal in 2003/04 to 2.13 in 2007/08³³. Despite these achievements still the government of Ethiopia (GoE) has made poverty and hunger reduction its top priorities. It recognizes much has to be done in the agriculture sector to tackle these problems as well as realize its vision for the country to achieve a middle income status by 2025³⁴. It is because of the government's leadership, commitment, and determination to reduce poverty and eliminate hunger, and reach a middle income country status by 2025 this 10 year PIF preparation is approved and commissioned.

The achievements made in the agriculture sector are also the results of a coordinated effort by the GoE and the donor community particularly to design and implement the first poverty reduction strategy and five year plan known as SDPRP and its successor PASDEP. The efforts' put together has supported the country to implement its ADLI strategy and achieve a slight structural shift, as ADLI necessitates, to the non-agriculture sector (CAADP, 2009). The percent share of agriculture from GDP declined from 53.1% to 42.6%³⁵ between 1995/6 and 2008/09³⁶. PASDEP has also benefited from the global initiative to undertake Ethiopia's needs assessment to meet the Millennium Development Goals (MDGs), specifically Goal One the two targets related to poverty and hunger.

The MDGs needs Assessment (NA)³⁷ for the sector has informed the first five year of the MDG period which is also the period of the current PASDEP. This Policy and Investment Framework (PIF) has also

³⁰ Prepared by Dr Demese Chanyalew (Team Leader), Dr Berhanu Adnew (Public Finance Expert), Dr John Mellor (International consultant) and Getachew Adugna, Technical Asstt.

³¹ The liner trend since 1996/97 indicates an average growth rate of about 10% (See Figure 5. 1 in Chapter 5).

³² Ethiopia completed the preparation and signing of the CAADP Compact in August 2009, which is an initiative of the African Union's New Partnership for Africa's Development (AU/NEPAD) footed on a vision and strategic framework to eradicate hunger and poverty and place the continent, at all levels, on a path for sustainable socio-economic growth.

³³ Ethiopia is almost meeting the 2100 Kilo -Calorie per capita per day requirement. The equivalent of this in terms of production is 2.16 quintals.

³⁴ Measured by achieving a USD 1000 per capita income

³⁵ This is expected to reach to mid-twenty at least if the assumptions and growth rates estimated in Chapter three and 4 are realized.

³⁶ Data obtained from MoFED

³⁷ The MDGs NA was done for nine sectors of which one was the rural development and Food security Sector Study, MoFED, 2004.

been considered in the preparation of the next five year development plan (NFYDP). Ethiopia has completed the first draft of the NFYDP³⁸ and this preparation has also benefited from the vision and strategic framework of CAADP³⁹. Put differently PIF is expected to assist in revising the MDGs 2nd five year components in order to inform the preparation of the NFYDP as well as give future ten years road map (2010-2020) in the agriculture sector. In the 10 year road map PIF is expected to indicate what should be the incremental spending on on-going programmes as well as the priority incremental investment areas in Ethiopia's agriculture sector to help the nation become a middle income country by 2025.

1.2 OBJECTIVE

With the above milieu the PIF preparation started with the following overriding objectives:⁴⁰

- *To assist the Government in formulating a Policy and Investment Framework (PIF) for Agricultural Development on the basis of the overall national development strategy of the GOE,*
- *To elaborate a ten year roadmap to achieve the development vision of the GOE and act as a guide for focused investments falling under the CAADP Ethiopia compact and the agriculture and rural development sector thematic areas, and*
- *To identify short, medium and long term agricultural investment needs of the country with clear outcomes in terms of agricultural development indicators.*

Based on this overriding objective, and on the successive meetings and discussions held since the preparation and submission of the inception report, this PIF study report includes the connectivity among the FDRE government vision, growth strategy, and sector pillars with on-going, modified and new agriculture sector programmes in conjunction with their resource requirements in terms of annual budget or incremental investment needs which could be contained in a project format that external sources deem essential. Put differently, it sets the ground for development partners' harmonization, coordination and resource allocations to on-going programmes through existing projects or design, finance and implements new investment areas enclosed in this PIF report by ensuring their alignment to the CAADP Ethiopia compact. Ultimately, the report is expected to make a recommendation on how holistic and integrated strategic planning framework can prevail in Ethiopia to address the challenges that are hindering sustainable agricultural development in multi-sector and coordinated manner.

1.3 ORGANIZATION

The next chapter presents the methodology, conceptual and definitional frameworks. Chapter 3 discusses the interaction of the government's development vision and its strategic approach. It revolves around the assessment of ADLI's relevance to Ethiopia's expected structural shift from agriculture to industry. Chapter 4 analyzes past agricultural growth rates and their implications for future growth. Chapter 5 gives a summary of existing Ethiopia's agriculture sector and sub-sector policies, strategies, and institutional arrangements, followed by gap analysis on the same. Chapter 7 presents the PIF period budget for on-going programmes, investment areas identification and prioritization and financial implication of the investment areas. Chapter 8 gives a brief note on lessons to be learnt from other countries while Chapter 9 is a conclusion and recommendation chapter followed by list of reference. The annexes produced separately as volume II of PIF report.

³⁸ This in some cases referred as the next PASDEP. This was a base for the 2003 E.C (2010/11) fiscal year budget which is approved by the parliament on July 1, 2010.

³⁹ Adopted by the then OAU Heads of State and Government Summit in July 2001.

⁴⁰ As indicated in the terms of reference (ToR).

CHAPTER 2

METHODOLOGY AND CONCEPTUAL FRAMEWORK

2.1 METHODOLOGY

The PIF preparation has used various approaches to collect data and information. These are primary and secondary data and information including review of documents, independent evaluation and research works that yield appropriate statistical analysis of growth and related variables, as well as field visits. The experiences of other countries were also examined by using appropriate data and information published by international statistical agencies.

2.1.1 DOCUMENTATION REVIEW AND USE OF SECONDARY DATA

Clearly stating the *vision* for the agriculture sector in the context of PIF, explaining the trends and expectations of the Ethiopian agriculture sector growth and review of existing and identifying of the gaps and remedial measures related to agricultural policy and institutions in Ethiopia were among the tasks to be accomplished during the PIF preparation. Such tasks require an extensive desk reviews and secondary data and information analysis. The consultant team has used various studies that have been made in recent years to make an informed analysis and conclusion in these areas⁴¹.

The assessment of recent growth trends in the agriculture sector required independent evaluation and research works that has to employ appropriate statistical analysis of growth and related variables. This has been done primarily using Central Statistics Authority (CSA) data and in the absence of the required data external sources were also used⁴².

2.1.2 THE APPROACH TO IDENTIFY INCREMENTAL INVESTMENT AREAS

Being cognizant of the arrangement for the international consultant⁴³ and setting a prior a work schedule that expedite the preparation of PIF in the allocated short period, among the initial tasks accomplished was to identify key stakeholders from Government, NGOs, CSOs, CBOs, and the Donors⁴⁴ and pay a

⁴¹ PIF is a follow up of CAADP Ethiopia Study (2009), hence readers should make sure that they have had access to the two volumes of this study. Other key documents used are the REDFS pillar areas documents and investment frameworks such as the Ethiopian Strategic Investment Framework for SLM, the Food –Security cum PSNP programme documents, the Agriculture Growth Project documents, various reports and studies by EDRI, bilateral and multilateral institutions, the FDRE Government base document for the 2010-2014 FYDP, MoFED Guideline for the FYDP as well as MoARD's latest Business Score Card (BSC) resulted from the Business Process Reengineering (BPR) exercise. For more see the reference list.

⁴² It is agreed a prior that the FDRE CSA data remains the official and accepted data to undertake quantified analysis during the PIF preparation. The team also used data from MoFED, and other relevant Ministries and institutes to undertake the expenditure, cost and benefit analysis of on-going and incremental investment areas.

⁴³ As indicated earlier, the consultants' team for the PIF preparation is composed of two national and one international consultant. The international consultant has started to work in his duty station abroad but was scheduled to come and work with the national consultants for three weeks starting the 7th of February. Strategically it was important to work intensively and reach on preliminary state of investment areas identification before the international consultant returns back to his duty station. This was also critical since the work of on on-going programmes budget projection as well as the costing for incremental investment areas have to be completed before the international consultant returns in his second leg of the task schedule which is first week of May.

⁴⁴ More than 35 Federal and Regional level institutions were identified and visited the list is indicated in the Annex A15 that lists persons met. This final report also benefited from the comments and suggestions made by the more than 100 participants of the national workshop including stakeholders from Federal, Regional governments as well as NGOs, CSOs, and donors.

visit for interviews and brainstorming sessions. On the basis of this strategic move in the presence of the international consultant the team managed to identify preliminary investment areas⁴⁵, policy and institutional gaps. The consultants' team used clustering techniques to put the very long list of incremental investment areas in 10 intra-sector⁴⁶ and 4 inter-sectoral thematic areas. The team also used the pair wise technique⁴⁷ to prioritize them. The pair wise technique is based on a pair wise ranking technique which enables selected specialist from various profession make choices to provide individual priorities and be able to statistically compare one taking precedence over the other. In order to apply the technique, it was essential to set criteria that can be used for investment areas prioritization and ranking. In the PIF preparation these include the following:

1. Alignment with government's vision and goals of becoming a middle income country by 2020 with significant employment growth and poverty reduction.
2. Alignment with the Government's agricultural sector pillars and strategies
3. The ease to attract external development support
4. Capacity sequencing to absorb internal and external resources

The second criteria, i.e., alignment with the Government's agricultural sector pillars and strategies is linked to the next five years development plan (NFYDP), 2010-2015 base document.

In this document the agriculture development of the country is to be planned around smallholders and private investors. The *smallholder crop and livestock production development is to be driven by*:

- The scaling up of best practices and technologies
- Promotion of natural resources conservation and improved irrigation
- Transformation from low value to high value crop production and marketing

The smallholder agriculture is expected to benefit from capacity building works as well as strengthened technology multiplication and distribution system that also considers the production of inputs by the farmers themselves or in their localities and be distributed through cooperatives.

In the NFYDP of the agriculture and rural development sector the second major direction involves the private investor in agriculture development. According to the document, the private sector investment can be seen in two ways.

- Using labour extensive on limited land size and producing high value products, particularly giving attention to horticulture, and
- producing by using large scale with labor intensive interventions. This is expected to be practiced in low land areas, where there is ample arable land and where farmers can integrate this with other agricultural activities. In this connection the identification and use of land bank is expected to serve as a key instrument.

2.1.3 REGIONAL VISITS

The PIF preparation consultants' team travelled to Oromyia, SNNP, Amhara and Tigray Regional states. Bureaus and institutes were identified⁴⁸ and targeted officials and experts were interviewed using appropriate checklists. Specifically, the verification of incremental investment areas and prioritization of the same using the pair wise technique was conducted at each regional state by forming an expert group at one venue with participants from different bureaus and institutes. The prioritization and ranking of the investment areas are computed and announced to the participants at the same venue. Besides, relevant

⁴⁵ More than 24 thematic investment areas were identified by the time the inception report was prepared and submitted. More was added during the initial documentation review, the first two weeks interviews and brainstorming sessions with stakeholders.

⁴⁶ After the national workshop and the consultants' analysis of group deliberations, the intra-sector clustering is reduced to 8.

⁴⁷ which ones was promoted by Technical Centre for Agricultural and Rural Cooperation (CTA), ACP/EU Lome Convention, Wageningen, Netherlands, January 2000.

⁴⁸ At least BoARD, BoFED, BoWR, and RARI were the target.

data and information, as well as technical coefficients were identified during the visits of the different regions and they are used in the budget and investment analysis.

2.2 CONCEPTUAL FRAMEWORK

This PIF report can be easily understood with adherence to the scope, definitional and conceptual underpinnings of some key terminologies or task guiding principles. It is not abnormal to encounter definitional and/or conceptual variation in the area of policy and investment framework elements such as vision, growth, pillar, sub-sector, programme, project or the broader, again controversial, issues of policy and institutes. In this sub-section these key terminologies and issues are discussed to pave the ground for the understanding of the chapters to follow.

Box 1: Key definitional and conceptual terminologies and issues

- Scope
- Pillar and sub-sector
- The programme/ project notion
- Investment: public versus private
- Policy
- Institution

2.2.1 SCOPE OF PIF ETHIOPIA

Like any agricultural economy, Ethiopia's agriculture economy is examined under two major components: farm and non-farm agriculture. The farm sector covers the two sub-sectors: crop and livestock. The non-farm agriculture of the country has to cover issues/problems revolving around agribusiness, agricultural marketing and trade inclusive of value addition; support services such as research, extension, and transport, as well as the multiplication and/or distribution of critical inputs such as seeds, fertilizer, semen, vaccine and others.

It is difficult to isolate the agricultural development policy elements from the water, land, and forest policies of the country. Hence any agriculture policy and investment framework in Ethiopia has to start from the natural resources base. PIF preparation also builds on this and integrates the pastoral and non-pastoral livestock and crop development activities.

Besides as part of the agriculture sector, issues such as disaster risk management, food security, and resettlement remain overriding. Structural issues related to small, medium and large farms or firms, commercialization, price, income and employment issues require paramount importance in agricultural sector PIF preparation. In general, setting PIF for a sector of such a wide scope is a daunting task. As much as possible the necessary data and information is used to accomplish the task but in circumstances where gap arises it could be attributed to the sectors complexity and wider scope as well as the many actors, institutes and stakeholders that are prominent being within and without the sector periphery.

2.2.2 PILLAR AND SUB-SECTOR

The specific ToRs for the PIF preparation Consultants Team (CT) points out that the investment areas identified should be aligned with the existing agriculture sector programmes and in turn the programmes to the agriculture sector pillars. For the purpose of PIF preparation and specifically its investment needs identification currently used or recently proposed pillars or a combination of the two have been used to configure the pillars⁴⁹.

⁴⁹ For details refer Annex 2

Documents obtained from MoARD indicate that after the BPR exercise and issuance of the first balanced score card (BSC)⁵⁰ four focal areas which can be also considered as lead pillars or subsector indicators has been set. These are

- increasing productivity and production;
- establishing modern agricultural marketing system;
- strengthening sustainable natural resource development, conservation and utilization, and
- strengthening disaster risk management.

The REDFS⁵¹ has three agriculture sector pillars and has become functional to harmonize and coordinate donors support to the agriculture sector through three technical committees formed following the pillars. The recently signed Ethiopia's CAADP compact has four indigenized pillars. However, from the setting of a 10 year road map that shall indicate clustering of adopted programs and incremental investment areas, the technical pillars should pave a way for a cluster that encompass the administration and management of the same. Because of this during the PIF preparation a list of five programme and incremental investment areas classifications that are considered to the equivalent of sub-sector or pillars in the budget analysis are listed below.

1. Agriculture development (picking on the issue of productivity and production of the BSC)
2. Agricultural marketing
3. Natural resources development, conservation and utilization
4. Disaster risk management and food security
5. Administration and management (support services)

In general, the above five program clusters (the equivalent of pillars or sub-sectors for the PIF preparation) are expected to be of exemplary not because the different pillars contained in MoARD BSC, REDFS and CAADP are included but also they accommodate programs which are going to contain the ways and means of resources (human, financial and physical) solicitation and allocation that also guide successive FYDPs recurrent or capital budgeting inclusive of treasury, bilateral and multilateral sources.

2.2.3 THE PROGRAMME/PROJECT NOTION

Bridging the pillars/subsectors and investment areas is the programme. Programme setting also follows the formulation of sector policies and strategies. It is the core budget appropriation instrument⁵². The PIF preparation recognizes the need for programme budgeting⁵³ where by each programme is subject to a conventional PM&E system in order to evaluate its performance in predetermined continuous or periodic timeframe. Projects should come under programmes. On the basis of this connectivity and for the purpose of PIF a sub-sector or broad area of investment is expected to contain more than one programme and in turn a program to contain one or more projects with several activities that are financed partly or fully by treasury or from external sources.

The above definitional requirements, however, does not exclude assessments to strengthen and consolidate current programmes. One thing that seems to emerge is the number of programmes within the agriculture sector may not remain as many as they are today. That means the government may have to

⁵⁰ MoARD, Balanced Score Card, Addis Ababa, 1999 E.C. (Text is in Amharic) and it is currently being reviewed.

⁵¹ Established officially in April, 2008.

⁵² In the context of current MoFED practices, a programme by definition is a framework that contains similar activities designed to bring developmental changes (result-based); and enhance growth with a continuous resource allocation from internal and external sources via annual recurrent budget or capital budget i.e., set in a project format. Specifically, according to the FDRE government budget manual a programme is a broader cost center of a public body or a broad objective of expenditure. Expenditure has to be related to output. This definition is adopted to make the result of PIF preparation easily buyable by MoARD, MoFED and broadly government and legislative bodies of the country.

⁵³ This was also one of the CAADP Ethiopia Study, July 2009.

take a bold stand for programme consolidation to maximize gains from economies of scale and size in terms of managing and executing them. Besides, this may entail a need for re-configuring the current institutional arrangements, aid modalities, and accountability.

2.2.4 PUBLIC VERSUS PRIVATE INVESTMENT

The agriculture sector's contribution to GDP and the growth rate expectations were not explainable adequately by what is to be invested for the services/support delivered by the public sector solely. It is evident that the dominant producer and direct investor to harness economic returns is the private sector, specifically smallholders (agriculturalists and pastoralists and agro-pastoralists alike) and the emerging commercial and large scale farm and non-farm agribusiness producers. In this connection it is evident to comprehend that public investment is not necessarily directed to seek a direct benefit or return to tax payers' money. An output of a given public investment can be an input for private use or broader public works. For example, a public investment in soil and water conservation or watershed management could be an output in terms of rehabilitated and fertility augmented land to be used further for production purposes by the public or private entities.

The PIF preparation has made due emphasis to ensure that the role of both public and private investment in the agriculture sector is well captured and incorporated in the process of investment areas identification as well as in the subsequent benefit-cost analysis. Similar the attempt to set targets related to agricultural growth is in a good grasp of the contribution of the private and public sectors both in the input and product spheres. It is important also to comprehend PIF is not identifying investment projects to be considered and implemented by the private sector. PIF has identified investment areas for public investment undertakings including public support for the private sector expansion and development. With such a support the private sector is expected to prepare its own investment projects and business plan based on principles of competition and rates of returns determined by the market.

2.2.5 POLICY

Though this report is dealing with policy and investment framework preparation there should not be confusion that it is a beginning of agricultural policy formulation in Ethiopia. Of course, the PIF preparation is expected to start with articulation of exiting agricultural policies of the country⁵⁴. However, at the very start there seems to be a need for a clear definitional and comprehension of the term *policy* in terms of both its academic and philosophical underpinnings.

In this agriculture sector PIF preparation, agricultural policy is taken as a statement of course of action set by the Federal and Regional State governments of FDRE in the management of agricultural development affairs. It could be formulated and implemented in the form of laws, rules, regulations, directives and broad goal oriented guiding declarations that affect different economic and social agents and institutions. Policy is determined in the political arena and policy decisions are fundamentally political decisions.

Policy decisions hence stances may also reflect the different levels governments' (federal, regional, woreda and kebele) positions and programme biases. Policy positions are derived from the interaction of facts, beliefs, values and goals that are held by individuals. It indicates as to where the government ought to stand with respect to a particular problem or a set of circumstances. This does not mean that various agents of the society may, individually or collectively, have no varying policy positions in different times and locations on a given issue. But as said above policy decisions are fundamentally political decisions and reflect the policy positions of those leading the political system of the day. In this regard,

⁵⁴ Indicated in the lead consultant's ToR and a review of the same are presented in Chapter 5.

conceptually, one may not easily siphon the politics from policy issues. Of course, in order to assess the efficacy of existing policies one should also put in perspective issues of institutions and institutional arrangements.

In general, following the above definitional and conceptual underpinning, existing agricultural policies should be the core starting points for the PIF preparation in general, and for the investment area identification, prioritization and cost-benefit analysis, specifically. It is here also where care should be made to introduce the term “other countries experience” because experience is to share and not necessarily to copy and follow. Policies and strategies designed in other countries not necessarily are adapted in Ethiopia. Besides, if leadership is going to be a key factor to derive changes and growth (development) in a given country, then it implies policies and strategies are often unique to a given country economic, social, and political situations and conditions.

As highlighted in Chapter 5 that presents a review of Ethiopia’s agricultural policies, strategies and institutions, there are clearly stated policies in Ethiopia addressing various issues in each of the pillars/sub-sectors identified earlier. It is prudent to suggest that all stakeholders of PIF have to accept and work in conformity with the agricultural policies and strategies of the FDRE Government. However, working in conformity with GoE agricultural policies does not mean the consultants’ team cannot identify where policy changes are required or new policy regimes introduced. Of course, it is possible to measure economic effects of policy changes and the resultant knowledge may influence and even change political positions, with at times, other compensating decisions to allow political objectives to be met. Policy research must always be sensitive to these realities.

In other words the PIF consultants’ team can contribute to the beginning of a policy review process on those issues where it is deemed necessary and timely. In this regard it is advisable to stick to the use of options and the notion of selling a revised policy to the decision making and implementing body in the political system of the country. Put differently, all engaged in the PIF preparation shall remain cognizant of the possibilities of having several policy options and the recognition of the principles of incrementalism. *Public policy making is based on the principle of incrementalism i.e., policy is built step by step, and wise decisions as well as mistakes of the past are the foundations for current and future policy.* Secondly, to invoke and continue with any policy review process, the approach and explanations should be understandable by policy makers and particularly politicians. Chapter 9, which presents and discusses policy, strategy and institutional gaps should be read as a continuation of these notes.

2.2.6 INSTITUTION

It is possible to examine institutional issues from organizational and relational dimensions. Both dimensions are footed on laws, regulations and directives. The organizational framework covers the structure of the government and the place agriculture is given in the government structure, such as attaining ministry, bureau, and agency/authority status in general and specific sub-sector components. In this report a review of existing institutional arrangements is made from organizational perspective and is reported in Chapter 5. Institutional issues are also issues of relationships or linkages among existing or newly emerging organizations either in the private or public sector. This further should be seen in terms of programmes or activities within a programme or project to be shared with more than one institute or directorates or departments in an institute and how to monitor and evaluate them for a continuous and periodic performance management and evaluation.

2.2.7 VISION AND GROWTH

From the beginning of the PIF preparation the need and coverage of the vision and growth chapters⁵⁵ of this report has been a source of debate. This is partly because of the trickiness of the assignment and secondly the difficulty to comprehend the analytical basis, indicators, the assumptions/scenarios built on and the conclusions emerging about Ethiopia's ADLI strategy and the role of agriculture in terms of poverty reduction and employment creation. In the first case two questions have been raised.

1. Why writing on "vision" when the GoE already has made clear its vision for economic development by 2025?
2. Why spending resources to discuss scenarios of growth?

Below a brief definitional and conceptual underpinning is made to establish the relevance of dealing with the two issues: *vision and growth*.

Vision

The ToR for the international consultant has stated the need for a vision statement. This has been a tricky specification since the vision for the growth and development of Ethiopia has been set by the GoE and no one has a mandate to change it. After a thorough review of available documents and discussions with concerned authorities, the consultants' team also found out that indeed there is no need to change the vision set by the government. In the context of the PIF preparation the government's vision of making Ethiopia a middle income country by 2025 is still valid and acceptable. However, this has to be understood in the context of PIF and the investment areas to be identified and prioritized.

Chapter 3 of this report presents the understanding of GoE vision in the context of PIF. It builds on the assumption of achieving a real per capita income of USD1000 by 2025. It also explains the implications to expected goals using ADLI as a governing economy wide strategy. With ADLI Ethiopia's economy is expected to continue the already started structural shift from agriculture to industry. Agriculture's contribution to GDP is declining by more than 10% in ten years period and most of this decline is captured by the service sector. The service sector share to GDP has increased from 34% to 42% between 1996 and 2007 (CAADP, 2009). The vision of reaching a middle income country by 2025, however, requires a faster decline in the share of agriculture in the coming ten years. Already the NFYDP basis indicate the government is planning to lead the economy to achieve an average growth rate of 18% in the industrial sector, which includes energy and telecommunication, and make agriculture to grow around 10% while service sector growth to become in between. In the context of PIF the vision should also be explained in terms of making agriculture the major employing sector and contributor to poverty reduction as indicated in MDGs and beyond that. It requires a change from the adopted pillar of increasing agriculture productivity and production to improving farmers' income by increased profitable agricultural activities whether in farm or non-farm enterprises.

Growth

In works that target growth issues it is common to encounter theoretical and practical problems of disentanglement from the issues of development and the role of leadership and attitudinal change in line with conventionally known factors of growth. Agricultural development and growth has remained key definitional and conceptual issues in the PIF preparation too.

Conventional development economics text books equate development as the sum of *growth* and *change*. Economic growth in general and the agriculture economy growth specifically have been measured by monetary value of final goods and services produced in a given period of time. This is reported as the agriculture gross domestic product (AGDP). Change refers to the reduction of poverty, hunger, food

⁵⁵ Chapter 3 and 4

insecurity, unemployment as well as injustice to resources and wealth access and distribution. It is important to note in recent works of a renowned scholar development is considered nothing but freedom⁵⁶. In view of these academic definitions and explanations of development and growth it is important to have a pragmatic approach to the use of the terms and concepts in the PIF Ethiopia preparation.

Agricultural growth in the coming years in Ethiopia is expected to emanate from the sum total of production activities related to consumption, investment and trade activities the country plans to undertake both by the public and private sectors. That is agricultural growth and the need for investment to enhance growth is expected to come from crop, livestock and natural resources development and use both in the highland, predominantly non-pastoral areas, as well as pastoral areas of the country. Chapter 4 of this report has dealt much on crops, and even focused on cereals, to explain the future intervention that may determine the agriculture sector growth. This is for two reasons; first in the recent history of the agriculture sector it is the crop sub-sector which has generated much of the AGDP. Besides the most available data for statistical analysis purpose is in crops specifically cereals. Secondly, there has been paucity of data and information that pave the way for statistical analysis in the livestock and natural resources sub-sectors. The little available, however, is used. Besides, it is important to recognize the net effects of investments on the agriculture economy growth. For example, an investment to promote inorganic fertilizer use, in a direct way, may contribute positively to the agriculture sector through the crop domestic product growth but it may indirectly contribute to soil toxicity and water and environment pollution due to chemical discharges to nearby streams and rivers. Such effects need to be carefully examined during cost-benefit analysis. Knowing these shortcomings, in chapter 4 plausible explanations on the past sources of growth and the future is made. Care has been made in the choice of techniques to relate past performances to the incremental investment areas identified and prioritized in the chapters that follow.

It is important to note here when one assesses Ethiopia's agriculture sector growth, for that matter the overall economic growth, in the recent ten years it may not be easy to quantify and show the contribution of factors such as leadership and attitudinal change as sources of growth. In production economics theory, particularly in scholarly exercises of the 1950 and 60s to explain the role of entrepreneurship to development, there were attempts to equate this and leadership to management and hence management to be a variable to explain sources of growth explained by changes in production of targeted goods and services. Again all these may seem theoretical but in Ethiopia the role of leadership and attitudinal change to the recorded growth is substantial but still remained unquantifiable and not modeled. In the PIF preparation, particularly in chapters 3&4, it is assumed that the strong leadership that Ethiopia has had recently will continue with determination and commitments to make Ethiopia stick to the ADLI strategy, and reach the MDG goals as well as the goals set for the NFYDP.

⁵⁶ Amartya Sen, *Development as Freedom*, New York, 1999.

CHAPTER 3

GOVERNMENT'S DEVELOPMENT VISION AND ADLI

3.1 THE VISION, ADLI, CAADP, AND PIF LINKAGE

This chapter of the report starts with the Government's vision and strategy and provides analysis and quantification of the components of that vision and strategy. International comparisons are also made. Data are presented that quantify the impact of the strategy on the structural transformation of the economy, employment, and poverty reduction. In so doing it clarifies that the ADLI strategy is the internationally proven successful approach to the transformation and poverty reduction elements of the government's vision. The final section relates ADLI and improvements in the social sector.

- ADLI is internationally proven successful approach to the transformation and poverty reduction elements of the government's vision.
- The results for Ethiopia follow not just from the growth rate but from the structure of that growth. For Ethiopia, agriculture led growth is critical to achieving the vision.

The PIF generally and this and the next chapter specifically grow out of and build on the CAADP analysis. Thus, the PIF draws upon the full, massive and broad consultative process that went into CAADP. In this exposition the impact of the CAADP targets for agricultural growth are examined. The CAADP target of a six percent agricultural growth rate is significantly lower than that already achieved in Ethiopia. Therefore, a higher agricultural growth rate of eight percent is examined for potential to more assuredly surpass the Government's vision⁵⁷. It will be shown that the CAADP target is sufficient to meet the Government's vision. The eight percent agricultural growth rate meets the new Government targets for a ten percent overall growth rate in the short to mid-term and achieves the long term vision more rapidly⁵⁸. The next chapter discusses in detail the agricultural growth rate, the input and output composition of rapid agricultural growth, and the policy and required shifts to be made by the donor community from the current relief laden to growth stimulating investment areas.

3.2 GOVERNMENT'S VISION AND THE ADLI STRATEGY

PIF is directed towards implementation of the agricultural development aspect of the government's development vision and strategic approach. The Government of Ethiopia has a clearly articulated long term vision not only of where it wants to get to but also how it will get there. The two are intimately related. The core of the vision is to become a middle income country by 2025 (twenty years from when the vision was announced.) In that context the millennium development goals are to be met. Middle income is defined as per capita income of \$1000.

The strategy for fulfilling that vision is Agricultural Development Led Industrialization (ADLI.) The strategy is not just an agricultural development strategy. It is an economy and society wide strategy within which agriculture has a central role. The Government envisions an economically transformed society within which agriculture will grow rapidly but see its relative importance decline in favor of an even more rapidly growing industrial and manufacturing sector. This vision is consistent with a substantial scholarly

⁵⁷ Readers can have a quick browse of this from the next chapter.

⁵⁸ The government in the NFYDP (in the range of short-to mid-term plan) also expects agriculture to continue growing more than 10%

literature (see for example, Mellor and Lele 1973, Mellor 1976, Mellor 1992 entitled “Agriculture on the Road to Industrialization,” Mellor and Ranade 2006.)

The careful quantitative analysis of the Government’s vision, strategy, and interaction of the two is necessary because there has been vociferous disagreement with the agricultural emphasis of the strategy from a portion of actors including the donor community. It is necessary to show that the Government’s strategy is essential to achieving not only the high growth envisaged in the vision but particularly to the poverty reduction elements of the strategy. It will be shown with Ethiopian data and large scale analysis of international experience that the Government’s ADLI strategy is the only possibility of meeting the strenuous poverty reduction and food security targets not only of the government, but by implication of the donor community as well.

Consistent with the vision, economic development transforms an economy from one that is largely agricultural to one that is largely manufacturing and services (Johnston and Mellor 1961.) Ideally, that transformation brings increased per capita income, more equitable income distribution, urbanization of the population and from the latter, immense cultural advantages (see Jane Jacobs on the value of urbanization.)

The starting point for this vision for Ethiopia was an economy dominated by low-productivity agriculture on potentially highly productive resources. Average rural incomes were low and close to 50 percent of the rural population fell under the standard \$1 a day poverty line. The bulk of the people were in rural areas, many physically isolated by lack of roads and electrification and the small holder farmer sub-sector was disorganized, with no institutional support to carry out the farming operations and access to markets. They were isolated from not only the requisites for a high level of agricultural productivity but from the resources for education and health.

An expansive 20 year vision includes a radical transformation of the economic structure of the economy and equally radical improvements in income, food security, health, and education. The poverty reduction and social welfare gains in the vision follow from the economic transformation and the incident growth rates. The results for Ethiopia follow not just from the growth rate but from the structure of that growth. For Ethiopia, agriculture led growth is critical to achieving the vision.

There is ample reason for optimism that such an expansive vision can be achieved. Agriculture has a dominant role to play especially in the early stages of achieving the vision. Ethiopia does have high potential for rapid agricultural growth (particularly in the rainfall sufficient agro-ecological zone, as evidenced by the gap between current yields and those obtained in research stations and between commercial farms and small farms, as well as in similar ecologies in other countries (Diao and Pratt 2006, Spielman et. al. 2007, Alemu et. al. 2007. See also the next chapter which analyzes the agricultural growth rate). While the agricultural growth rate has been rapid in recent years, it is clear that a small number of removable policy and investment constraints discussed in later sections are constraining that growth. Thus, a few changes are at hand that can provide a continued high agricultural growth rate.

3.3 ADLI AND THE ECONOMIC TRANSFORMATION

Table 3.1 illustrates the structural transformation with sectoral growth rates consistent with the Governments 10 percent target for the NFYDP. In fast growth strategies agriculture inevitably grows more slowly than non-agriculture. Agriculture is constrained by the fixed land area. That constraint is relaxed by yield increasing technological change that flows from the agricultural research system. But even at the best from that institutional structure it cannot grow as rapidly as the best achievable in the non-agricultural sector.

Even given that slower growth rate, agriculture is so large initially and so important to employment growth that it is critical that its full potentials for growth be realized. Agriculture in Ethiopia initially provides nearly half of GDP and encompasses way more than half of the labor force. Thus, over time as those shares decline the GDP growth rate automatically picks up.

Table 3.1 Changing Proportions of GDP by Sector in the Context of Rapid Agricultural Growth

Sector	Share GDP 2004/05 a	Growth Rate	Share GDP 2014/15	Share GDP 2020/21
Agr.	43	8.0	38	32
RNF	33	10.7	34	36
Urban	24	12.0	28	32
Total/Average	100	10.0	100	100

Note the significant change in economic structure shown in Table 3.1. Even though agriculture grows rapidly, by 2020 (end of PIF period) its share of GDP has declined by one-quarter. Meanwhile the share of the urban sector has grown by one-third. At the beginning agriculture is larger than the rural non-farm sector. By the end of the PIF period the latter is 13 percent larger than agriculture. At present the total non-agricultural sector is 57 percent of the economy. By 2020, with the overall ten percent growth rate it is over two-thirds of the economy. That is what is expected as middle income status is reached.

Starting with a round number \$300 per capita income in 2004/05 at the 10 percent growth rate (eight percent for agriculture) reaches \$1378 per capita in 2020, well above the target. Even with an eight percent growth rate (recall that CAADP target assumes a six percent growth rate for agriculture) the per capita income exceeds the target in 2020.

The next largest sector, after agriculture is the rural non-farm sector (RNF) providing one-third of total GDP. That sector produces largely non-tradables. That is goods and services for the local rural market. Examples are construction activity, expanding housing, making local furniture, to some extent local clothing, repairs on buses and other vehicles and small machinery, sales persons in stores, teachers and tutors, and a wide range of services. The demand for these goods and services comes almost entirely from rising farm incomes. It is elastic demand – that means that it grows faster than the underlying income. A ten percent increase in farm income causes as much as a 15 percent growth in the rural non-farm sector (see for example data from Bouis 1999.) The RNF sector is labor intensive and uses very small proportions of capital. Thus, the only significant constraint on growth is effective demand. That point is made in logic and powerful data sets by Meade and Liedhom 1998, and also by Gavian et.al. Though it is beyond the scope of PIF to estimate either policy or investment requirements for the RNF sector; it is true that these activities benefit from improved rural infrastructure that is essential to the agricultural growth that drives the RNF sector too⁵⁹. Because the demand by farmers for output from this sector is elastic (grows faster than income growth) the RNF sector expands more rapidly than the agriculture that drives it. Indeed by middle income status it is larger than the agricultural sector⁶⁰. These sectors also provide the experience and skills that are the stepping stone from farming and rural occupations to the more capital intensive jobs of the urban sector. Agriculture on the road to industrialization passes through the rural non-farm sector.

As the rural non farm sector grows it develops scale synergies within itself and with other activities that shift it gradually from purely rural areas into small towns and growing market centers (Mead and

⁵⁹ Prospering farmers typically spend half of increments to their income on the rural non-farm sector (Bell et. al. 1982, Hazell 1989, Hazell and Ramaswamy 1991, Delgado et. al. 1998, Hazell and Roell 1990.) These sectors are labor intensive and so make huge amounts of employment. That is how the bulk of poverty is eliminated in an ADLI strategy.

⁶⁰ see the comparison with Egypt later in chapter 8 and in Annex 14.

Liedholm 1998). In all countries with rapid agricultural growth the enlarging market towns are vibrant places with rapidly growing employment and a wide range of activities. Thus rapid agricultural growth contributes to a diffused pattern of urbanization. And as many of these activities grow they begin to produce goods that can be sold in major urban centers and eventually to export markets. Thus a diffused pattern of industrialization also occurs. Taiwan is the most impressive example of such a growth pattern (Lee 1972.) In Taiwan industrial production is diffused geographically and a high proportion even of exports come from relatively small, but modern firms that are fully competitive in international markets. With that structure of growth the gini coefficient, a measure of income equality, actually shows a more equal distribution of income with rapid growth (Lee 1972.)

- Agriculture on the road to industrialization passes through the rural non-farm sector.
- The only significant constraint on growth is effective demand.
- The demand for RNF goods and services comes almost entirely from rising farm incomes.

3.4 THE VISION, URBANIZATION, INFRASTRUCTURE AND RNF

The vision that derives from the government strategy has the capital city growing more rapidly than small towns and rural areas. The vision in the government's strategy will have growth in the capital city on the order of five percent per year – doubling in nearly 15 years⁶¹. That is manageable from the point of view of providing urban services. Because that urban growth is driven by employment growth and rising prosperity in rural areas it is consistent with an urban vision without poverty⁶² as shown in the growth chapter. However, the driving force of agricultural growth provides massive increase in the demand for the small scale, labor intensive sector providing goods and services to meet the rising farm incomes. Economies in the small towns and cities will encourage gradual shift of many of those activities into those centers. However, they will maintain a comparative advantage in providing the goods and services demanded by farmers as their incomes rise. The result is a diffused pattern of urbanization – more akin to that of Taiwan than South Korea (Lee 1976.) That in turn will have environmental and social life style advantages.

Rapid RNF (including small market town) growth requires physical infrastructure. Rural road networks linking these areas to surplus agricultural producers and inter-regional roads linking small market towns to major urban centers are crucial to enable efficient marketing of products. Likewise, electrification enhances production efficiency for producers of non-farm goods and services (as in the case of hand-looms in Ethiopia, Zhang et al. 2009), as well as improving quality of life (thereby reducing incentives for migration to large cities). Communications networks, (either mobile phone access or land-lines), also improves market efficiency by facilitating contacts between buyers and sellers and increased communications within vertically integrated marketing chains.

The 2025 vision includes coverage of all weather roads so that 90 percent of the population resides within 5 kilometers of an all-weather road. That is essential to both the agricultural growth vision and the social welfare vision (Dercon 2006.) Agriculture becomes commercialized, purchasing inputs previously produced on the farm – fertilizer, seed, increasingly machinery. The proportion of output sold (that beyond subsistence) will increase to 80 percent of output. Thus, road access becomes increasingly important. That flow of consumption goods, production inputs and output becomes dependent on not just roads but all weather roads. Provision of agricultural services such as extension and accounting for

⁶¹ The figures here and below on growth of population in various sectors are derived from Table 3.5 and are therefore based on the assumptions of that and Table 3.4.

⁶² Details are made in the next chapter

business serving agriculture and also education and health services requires educated people who will not live in areas with inadequate roads. Hence the vision is one of rapidly increasing farm incomes and social services in the context of all weather road coverage.

The agricultural growth, as shown in the next chapter will turn increasingly to perishables that require refrigeration and hence electricity. In 20 years farmers' incomes will be sufficiently high so that most will acquire electric appliances. Thus the vision is again of 80 percent of the population having access to electricity in the home. Of course to obtain the envisaged coverage of roads and electrification requires that it start now with a clear plan for moving to the targeted coverage.

Why does not the vision provide 100 percent coverage of roads and electricity? On the order of 10 percent of the population now lives in areas with a resource base, because of soil and rainfall limitations, that does not allow farm incomes of the level envisaged for all within 20 years. Those areas will gradually be abandoned from agriculture and investment in physical infrastructure will be lost⁶³. Welfare is better improved by migration to more favored areas and their non-farm job opportunities. Thus the priority on roads is to the areas that can generate increased farm income. That will cover most of the country but not all.

3.5 THE VISION AND MEASUREMENTS OF POVERTY DECLINE

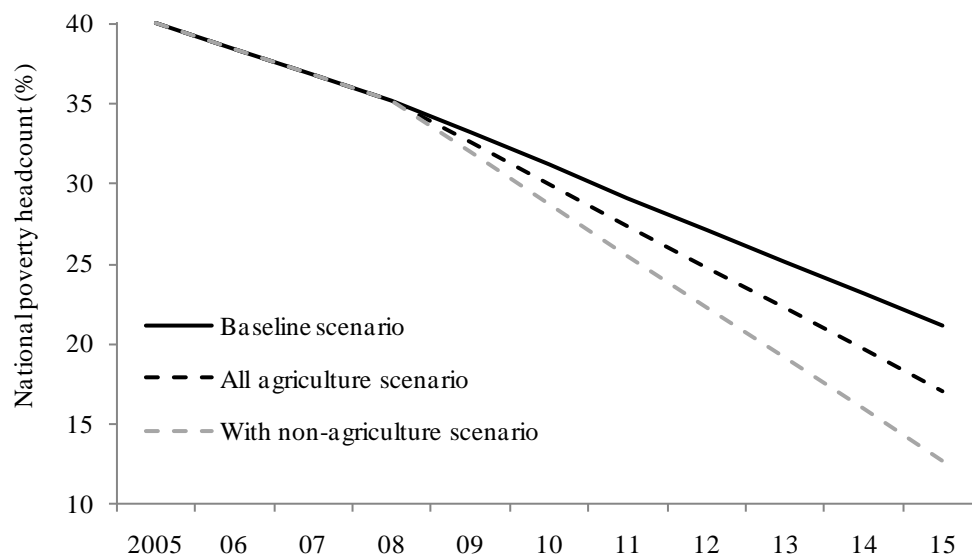
Poverty reduction and employment creation are key elements of GoE vision and the ADLI strategy. The preceding sections show how the ADLI strategy reduces poverty through the impact of rising farm incomes on expenditure in the RNF sector⁶⁴.

Figure 3.1 uses the IFPRI DREME modeling to show the direct impact of rapid agricultural growth on poverty numbers. The modeling is very similar to that presented in the first part of the next chapter. In the DREME model agriculture grows at the CAADP six percent rate and the urban sector grows somewhat slower than in the preceding exposition. With those conservative assumptions, in a ten year period ending in 2015 the proportion of the population under the poverty line in the fastest decline scenario drops to 12 percent, less than one-third the level at the beginning of the ten years. For the purpose of PIF simple extrapolation of that poverty line reduces it to zero in another five years. Implying, structural poverty will remain and require treatment, but the back of the poverty problem is broken with the growth processes of the government's ADLI strategy.

⁶³ However, these areas can and must be rehabilitated by protecting them and planting indigenous and exotic trees and shrubs many of which do have commercial value. It usually requires a long rotational period for at least 20-30 years before re-utilization.

⁶⁴ In this context note, as documented in a later section of this report, that the continuing success of the Governments ADLI strategy has given a growth rate in agriculture that has already resulted in a 20 percent decline in the absolute numbers in poverty. Already resource can be diverted from relief to the growth effort. It is important that donor allocations follow that lead.

Figure 3.1: National poverty results from model scenarios.



Source: Results from the IFPRI Dynamic Regional Economy wide Model of Ethiopia (DREME).

Note: The 'poverty headcount' is the percentage share of the population living below the poverty line. We assign the poverty line so that 40 percent of the population is classified as 'poor' (i.e., the bottom two expenditure quintiles).

Table 3.2, using similar models for each, compares Egypt and Ethiopia and shows that the huge employment impact of the multipliers from agricultural growth holds up in an upper middle income country. This is important to Ethiopia since it means that building a solid base for agricultural growth is important even when Ethiopia reaches middle income status.

Of course agriculture is a much smaller share of GDP in an upper income country such as Egypt (only 16 percent) compared to a low income country such as current the case for Ethiopia (43 percent.) A somewhat slower agricultural growth rate is assumed in the Egyptian example than for Ethiopia. The urban growth rate is about the same. With those growth rates the impact of agriculture and its multipliers on GDP growth is modest at 16 percent. But the impact on employment is huge – over half (56 percent) of employment growth is due to agriculture and its multipliers to the RNF sector. Nothing could make the point more clearly that GDP growth alone is not an adequate measure of economic progress. One does not have to go to the complexities of the Stiglitz exercise. One need only recognize that in a view of justice in any way approximating that of John Rawls that the employment growth rate is critical and that is driven by agricultural growth.

Table 3.2: Contribution to GDP and Employment Growth: Egypt and Ethiopia

Item	Egypt	Ethiopia
Base Share Employment	100	100
Agriculture	26	43
Rural Non-farm	34	37
Urban	40	20
Base Share GDP	100	100
Agriculture	16	43
Rural Non-Farm	16	33
Urban	68	24
Growth Rate		
Agriculture	4.9	6.0
Rural Non-Farm	6.4	6.7
Urban	9.0	10.0
Share of Incremental Growth, Employment	100	100
Agriculture	18	24
Rural Non-Farm	38	46
Urban	44	31
Share of Incremental Growth, GDP	100	100
Agriculture	7	36
Rural Non-Farm	9	31
Urban	84	33

Source: Egypt: Mellor and Gavian (1999); Ethiopia: Tables 3.1 and 3.2.

At the start of the next chapter a detailed analysis of Ethiopia's potential to meet its vision of a middle income country with different growth scenarios is discussed. Above it is shown that employment growth and poverty reduction are two sides of the same coin (Mellor and Desai 1985.). People below the poverty line have few assets other than their labor. If demand for labor increases faster than labor force growth there are two favorable impacts on the poor. First they obtain more employment (underemployment decreases) thereby increasing their total income, and second, as the labor market tightens the real wage rises further increasing incomes (Lele and Mellor 1981.) In Chapter 4, the impact of the difference between a very high (eight percent), CAADP's 6% and a low agricultural growth rate (three percent) is immense. In general, it is indicated that rapid agricultural growth causes rapid growth in employment. That raises income of the rural population below the poverty line.

3.5 IMPLICATIONS

3.5.1 IMPLICATIONS ON FOREIGN AID

At present a high proportion of foreign aid goes to direct income (and food) provision to those below the food poverty line. The Government's vision and the impact of the strategy reduce the need for that by 2025 to a small amount for residual poverty. The ADLI strategy will have taken care of the preponderance of poverty. The donor community should be on a trend of rapidly declining assistance to relief and a rapidly increasing quantity for development projects that are pro agricultural growth. As will be seen in later chapters, for example, irrigation expansion is a major element in the PIF priorities, but it will take a few years to get up to speed on that investment. Thus, as the faster to implement measures come on board reducing the poverty numbers money can be diverted from relief to the rapidly rising requirement for irrigation. It is essential that donors respond to this opportunity and thereby keep the growth process moving.

- The country has progressed only part way to the vision from the initial conditions described above. There is much yet to be done.
- The donor community should be on a trend of rapidly declining assistance to relief and a rapidly increasing quantity for development projects that are pro agricultural growth.

Since agriculture initially dominates the economy and employment, there is an issue as to what its role should be in getting from here to there. In the normal process of economic growth and in this 20 year vision, non-agricultural sectors grow more rapidly than agriculture, particularly in rapid growth contexts. Thus, it is inevitable that with rapid growth the relative importance of agriculture declines. It should do as rapidly as is illustrated in this section.

The slower growth of agriculture compared to other sectors, its decline in relative size, concern about the difficulty of modernizing agriculture, pessimism about the potentials for technological change in agriculture, and even urban ignorance about the intelligence of illiterate farmers, have in many cases led to speculation that agriculture would most usefully be ignored or at least not given priority for scarce resources in the interests of rapid overall growth. This section shows a vision of a rapidly growing agriculture playing a major role in the overall transformation of the economy, exactly as envisaged in the national strategy (ADLI) for economic development.

3.5.2 IMPLICATIONS ON SOCIAL WELFARE (FOOD SECURITY, EDUCATION AND HEALTH)

The 20 year vision is one of food security for all families. The increase in incomes to labor of 50 percent and the four fold increase in agricultural production will lift almost all of the population above the poverty line and hence to food security, even in poor crop years. The small remainder will be dealt with by modest food distribution programs. The elimination of poverty and food security goes hand in hand. Nutritional status will improve through these growth processes and by the increased proportion of output from horticulture and livestock with consequent large increases in home consumption of these products. That will be supplemented by educational programs that encourage improved diets and home gardens.

The increased incomes will eliminate the requirement of children's labor, freeing them for school and the improved roads and electrification will make living in rural areas and small towns attractive to teachers and to the peasantry at large. Thus the vision is for all children to receive secondary school education.

Education will remove pressure on the agricultural land since most educated children from farm households would not like to go back to farming but seeking other employment opportunities. This is of course important in its own right but is also essential to rapid growth of the RNF sector with its increasing proportion of jobs, for example bus conductors, drivers, retail clerks, requiring secondary school education. Similarly, the roads and electrification will bring trained staff to clinics. Education will improve health practices, longevity will increase rapidly, and infant and child mortality will decline.

In its efforts to promote economic development, the government is making large investments in roads, electrification, education, health and agricultural productivity. The efforts to achieve the vision have been underway for several years, significant progress has been made and a solid basis for further progress has been built. Nevertheless the country has progressed only part way to the vision from the initial conditions described above. There is much yet to be done.

CHAPTER 4

TRENDS IN GROWTH AND IMPLICATIONS FOR FUTURE GROWTH RATES, POLICY, AND INVESTMENT PRIORITIES

4.1 CAADP TARGET, SOURCE OF DATA AND INFORMATION

At the beginning of chapter 3 it was pointed out that the PIF grow out of and build on the CAADP analysis. Thus, the PIF draws upon the full, massive and broad consultative process that went into CAADP. In this chapter it will be shown that the CAADP target is sufficient to meet the Government's vision.

The CADDP target of a 6% agricultural growth rate is significantly lower than that already achieved in Ethiopia. The 8% agricultural growth rate meets the new Government targets for a ten percent overall growth rate in the short to mid-term and achieves the long term vision more rapidly.

The CAADP target of a six percent agricultural growth rate is significantly lower than that already achieved in Ethiopia, which is on average more than 10% growth rate per annum since 2005. Therefore, a higher agricultural growth rate of eight percent is examined for potential to more assuredly surpass the Governments vision. The eight percent agricultural growth rate meets the new Government targets for a ten percent overall growth rate in the short to mid-term and achieves the long term vision more rapidly⁶⁵. That is the CAADP agricultural growth rate target plays an important role in determining the growth rate of GDP, and even more so the growth rate of employment and of poverty reduction. Hence it plays a critical role in fulfilling the Governments vision. Equally important, analysis of output growth rates is the first step in diagnosing sources of growth and from that the impact of policies and investment allocations on growth and needed corrections in those policies and investment allocations.

This chapter discusses the agricultural growth rate, the input and output composition of rapid agricultural growth, and the policy and investment priorities required in two parts: in the context of general growth rate trends and target (which is discussed below) and specifically based on the trends and projections of the crop sub-sector, specially cereals productivity and production trends (which is presented in Annex 4). In both cases the data from CSA is used.⁶⁶

⁶⁵ The government in the NFYDP (in the range of short-to midterm plan) also expects agriculture to continue growing more than 10% and this target has been used in the projection of the sector's budget during the PIF period. For further discussion see Chapter 7.

⁶⁶ Ethiopia has a highly professional Central Statistical Agency (CSA) that provides output and other data on the basis of crop cutting samples grounded in consistent, disciplined application of sophisticated statistical methodology. Consistency results in accurate measurement of trends. That is a continuing good fortune for two reasons. First it provides a sound basis for judging past performance. Second, it provides a statistical basis for diagnosing corrections in policy and investment. Those benefits of an intellectually independent and sound data source are important now and will become even more so in the future. One of the investment priorities must be increased funding for CSA to allow it to play an increasingly large and important role in understanding growth and changes in policies and investment priorities for facilitating that growth.

4.2 GROWTH RATE SCENARIOS

4.2.1 THE IMPACT OF AN EIGHT PERCENT AGRICULTURAL GROWTH RATE

The impact of the difference between a very high (eight percent) and a low agricultural growth rate (three percent) is immense⁶⁷. As will be explained later it is rise in real incomes per capita of farm families that drive the poverty reduction. Thus, it is per capita growth that is important. A three percent growth rate for agriculture in the context of 2.5 percent population growth only provides 0.5 percent growth per capita. A six percent growth rate at only two times the three percent provides 3.5 percent per capita – seven times as large as for the three percent growth rate. An eight percent growth rate provides over ten times as fast a growth rate per capita. Thus, the Government is right in setting a high target for agricultural growth. It is essential that NGOs and donors recognize that only with a high agricultural growth rate, with the incident policy and investment priorities can poverty be reduced rapidly.

Tables 4.1 and 4.2 examine the impact of, by international standards, a very high (8 percent) growth rate in agriculture, on both GDP and employment in the context of an overall growth rate of ten percent in GDP. It then compares the impact of that high agricultural growth rate with a “traditional” agricultural growth rate of three percent. The latter is the growth rate to be expected when the government does little to accelerate agricultural growth.

In the base situation agriculture represents somewhat less than half of both GDP and employment, the rural non-farm sector, whose growth depends on demand from rising farm incomes, is one third of GDP and significantly more (37 percent) of employment. The urban sector represents one-fifth of employment and one-quarter of GDP. These are typical numbers for a low income country.

The most striking result in Table 4.1 is with an eight percent growth rate in agricultural GDP and a commensurately fast growth rate in the urban sector, the growth rate of employment is over five percent – twice the rate of growth of population and the labor force. That would easily eliminate underemployment of rural labor in 10 years.

Equally striking, when the urban GDP growth rate is kept at a still high 10 percent, but the agricultural growth rate reduced to the three percent norm of countries not making special efforts in agriculture, the employment growth rate drops to less than the labor force growth rate. Thus instead of poverty being rapidly reduced it would slowly increase. That is the drama of the ADLI strategy – huge reduction in poverty compared with none. As discussed in a later section that has even greater implications for the future.

⁶⁷ Unfortunately, as is always the case for agriculture, the year to year weather driven ups and downs in agricultural production are large compared to the changes in trends due to policy and investment that we would like to detect. Thus considerable care in interpretation of the data is necessary. Further the growth rates cannot be understood without careful analysis of sources of growth which in turn includes many uncertainties. This section draws on a wealth of historical and comparative international information on these matters and presents laboriously derived calculations.

Table 4.1 Base Shares of GDP and Employment and Growth Rates, Eight Percent Agricultural Growth Rate, by Sector

Sector	Base, Employ %	Base, GDP %	High Agric GDP Growth Rate %	Low Agric GDP Growth Rate %	Empl Elasticity	Rate of Growth Employ, High GDP %	Rate of Growth Employ low GDP %
Agric	43	43	8	3.0	0.3	2.4	0.9
RN F	37	33	9	3.1	0.8	7.3	2.5
Sub-total	80	76					
Urban	20	24	12	10	0.5	6.0	6.0
Total	100	100	10	5.9	0.5	5.1	2.7

Source: These are additional calculations made by Paul Dorosh and his colleagues at IFPRI using modeling techniques similar to those presented in the CADDP analysis.

Table 4.2 Shares of Employment and GDP by Sector, Fast (8%) and Slow (3%) Growth Rates, Urban Sector at 10% and 12% Respectively

Sector	Share Employ Growth, 8% Agric Growth	Share Employ Growth, 3% Agric Growth	Share GDP Growth 8% Agric Growth	Share GDP Growth 3% Agric Growth
Farm	21	15	37	27
RNF	55	37	32	22
Sub-total	76	52	69	49
Urban	24	48	31	51
Total	100	100	100	100

Source, same as Table 3

With the eight percent agricultural growth rate the RNF sector grows at 9 percent. Because of the high elasticity of employment with respect to output in the RNF sector, employment grows at 7.3 percent, over three times as rapidly as for the agricultural sector, for which labor productivity is rising rapidly. The rate of growth of employment for the RNF sector is 20 percent faster than for the urban sector. Employment grows less rapidly in agriculture because of the labor productivity increasing impact of the technological change in agriculture (Rao 1975.)

With the fast growth scenarios $\frac{3}{4}$'s of the employment growth is in the rural sector (including small towns) compared to $\frac{1}{4}$ in the urban sector. The shares are roughly equal with the three percent agricultural growth rate.

4.2.2 THE IMPACT OF A SIX PERCENT AGRICULTURAL GROWTH RATE

A six percent growth rate is the CAADP target. It is a rapid growth rate for agriculture. Three percent is what is expected when the government does little to assist agriculture. The latter growth rate is caused by rural population growth, adding to the labor supply, the pressure of poverty, and slow innovation by farmers with little help from modern science. Middle income countries with excellent records on

agricultural growth achieve growth rates of four to six percent (Mellor 1992.) That is sufficient to rapidly reduce poverty rates (see the international comparisons in a later section.)

Ethiopia has achieved on the order of seven percent growth rate in its agricultural sector over the past decade and can with highly favorable investment and policy decisions do better than that. Nevertheless six percent will meet the Governments vision. Table 4.3 and 4.4 illustrate that. This is not to suggest a lower rate but to show even with very conservative results the Governments vision is met with the CAADP targeted six percent rate.

IN tables 4.3 and 4.4, the base weights of the sectors are the same as in tables 3.1 and 3.2 (in chapter 3) and the growth rate for the urban sector is slowed to a still very rapid 10 percent. The growth of the RNF sector is slower than in Table 2 since it is a function of the agricultural growth rate. It is of course faster than the agricultural growth rate which drives it due to the elastic demand of farmers for the output from the RNF. The shares of employment growth are quite different. Agriculture accounts for one-fifth of employment growth, while the agriculture driven rural non-farm sector accounts for over one half (table 4.4.)

Table 4.3. Base Employment and GDP and Growth Rates, Six and Three Percent Agricultural GDP Growth Rates, by Sector

Sector	Empl %	GDP %	High Agric GDP Growth	Low Agric GDP Growth	Empl Elasticity	Rate of Growth Employ, High GDP %	Rate of Growth Employ High GDP %
Agric	43	43	6.0	3.0	0.3	1.8	0.9
RNF	37	33	6.7	3.1	0.8	5.4	2.5
Sub-total	80	76					
Urban	20	24	10.0	10.0	0.5	5.0	5.0
Total	100	100	7.3	5.1	0.51	3.9	2.4

Source: same as Table 2

Table 4.4 Shares of GDP and Employment Growth with Six and Three Percent Agricultural GDP Growth rates, by Sector

Sector	Percent of Employ Growth, Agric 6%	Percent of Employ Growth, Agric 3%	Percent of GDP Growth, Agric 6%	Percent of GDP Growth, Agric 3%
Agric	21	17	36	27
RNF	53	40	31	22
Sub-Total	74	57	67	49
Urban	26	43	33	51
Total	100	100	100	100

Source: same as Table 2

The urban sector accounts for somewhat over one-quarter of employment growth. Agriculture's relatively small contribution directly to employment growth follows because fast agricultural growth derives substantially from yield increasing innovation which not only increases output per unit area of land, but also increases labor productivity substantially as well. However the rural non-farm sector grows rapidly because of the elastic demand of farmers for the goods and services from that sector and labor efficiency tends to increase very little. It is increased demand that drives the sector not productivity increases. The urban sector employment grows quite rapidly despite rapid increase in labor productivity because the GDP growth rate is so rapid.

Of course the eight percent agricultural growth rate results in demand for labor growing one third faster than for the six percent agricultural growth rate. Nevertheless that rate is still more than 50 percent faster than the labor force growth rate. Unemployment declines and hence poverty is still reduced quite rapidly. If one assumes that half the population under the poverty line is underemployed (20 percent of the population) then less than 15 years of growth will absorb the underemployed, at which point growth in demand for labor will increase wage rates. The poor benefit first from increased employment and second from rising real wages. Over the 20 year period income of labor and hence of the poor will increase by 50 percent.

The striking contrast is between the six percent and three percent agricultural growth rates, holding the urban growth the same. In the slow agricultural growth strategy the rural non-farm sector accounts for 40 percent of employment growth, compared to 53 percent in the fast growth strategy. Of course the share of GDP growth in the urban sector increases to over half when agricultural growth is slow, as compared with one-third with the fast agricultural growth rate. But the striking figure is that in the low agricultural growth situation employment grows less than population (labor force growth) (Table 4.4.)

In contrast in the high agricultural growth situation employment grows 50 percent faster than population growth. In the slow agricultural growth case poverty increases rapidly, in the fast growth case it declines rapidly. That is why the government's ADLI strategy is so crucial not only to rapid transformation of the economy but to dealing with Ethiopia's immense problem of poverty. Rapid growth of urban industry does little to reduce poverty. That is because employment increases much less rapidly than output growth. That is substantially because very high rates of growth of the urban sector depend substantially on export growth into highly competitive markets. Costs must constantly be reduced and in labor intensive industries that requires increasing labor productivity. That in turn reduces the employment content of growth.

Employment composition will also change radically. The share of employment (and population) in urban centers will increase from less than $1/5^{\text{th}}$ to nearly $1/3^{\text{rd}}$. The proportion farming will decrease from half to 41 percent and the proportion in the rural non-farm sector will decrease moderately – reflecting a shift of many activities servicing farm incomes from rural to small towns. These figures infer that underemployment will be eliminated within ten years with further growth in labor incomes coming from increased wages.

4.3 INPUT SOURCES OF GROWTH

4.3.1 LABOR, FERTILIZER AND SEED

Understanding the sources of agricultural growth helps diagnose what policies have been effective in achieving growth and what policy changes may be needed for the future. The analysis is particularly revealing for the 1990's and first decade of the new millennium.

In traditional agricultures, growth occurs at a slow pace that is derived largely from increased labor input as population growth adds to the labor force and increasing poverty pushes labor to work for lower and lower marginal returns. Farmers are always innovating, albeit at a slow pace, so some yield increase is expected from traditional farmer's practices. The increased labor supply brings additional land into cultivation at declining labor and land productivity and increased labor input increases crop yields.

For the future, the sources of growth have to change dramatically. The base for that to occur has been built. It now needs to be scaled up – which is the explicit intention of the government.

Greatly increased use of improved seed and fertilizer will be the core of future growth – of course in the context of multiple changes in practices. But for the desired impact on growth the supply systems for both seed and fertilizer will need substantial change and the response to fertilizer will have to be substantially raised from present levels and maintained at a high level.

Thus in traditional agricultures production increases are in the context of declining per capita incomes. That is what happened in Ethiopia in the 1960's. Even those processes were disrupted in the 1970's and 1980's. Production actually declined with consequently declining per capita incomes. That set the stage for the spurt of growth in the 1990's. In the 1990's yields actually declined while area grew rapidly⁶⁸. That was undoubtedly a period of bringing back into production land which previous periods of disruption had seen taken out of agriculture. That represented a return to normalcy in security and other features that affect farmer's decisions. Positive effects from the Government's efforts to influence farmer's attitudes were probably also beginning to show.

In the current decade (2000/01 – 2008/09) area increased at less than half the rate of the previous decade. That suggests that the processes that were bringing additional land into cultivation, including recovery of area taken out in earlier decades were running down. That further suggests that rates of area increase would continue to decline. The potential offsetting impact of increased irrigated area is discussed in a later section.

The striking change is that yields per hectare increased at a rapid rate. That is an important finding that demands explanation. A logical explanation would be increased use of modern inputs – seed and fertilizer. However, that seems not to be the case (see Annex 3.) Fertilizer use grew at somewhat less than four percent per year from 1995 to the pre drought year 2000/01 (Table 4.5). Measured from that year to the present the growth rate has been slightly higher at a little over five percent annual rate.

Applying a five percent increment to the then current level of consumption of about 400 thousand tons, or around 200,000 tons of nutrients, provides an annual increment of 10,000 tons of nutrients. Applying a normal response coefficient of 10 tons of cereal output for one ton of

⁶⁸ For details refer to Annex 4.

Table 4. 5 Fertilizer consumption in metric ton in Metric Tons (1995 - 2007)

	DAP	UREA	Total(DAP+UREA)
1995	202312	44411	246723
1996	209883	43269	259152
1997	168623	51808	220341
1998	193395	87976	281371
1999	195345	94919	290264
2000	197345	100562	297907
2001	181545	98057	279602
2002	155941	76329	232270
2003	157955	106394	264349
2004	210837	112105	322942
2005	224819	121735	346554
2006	251156	124561	375717
2007	259020	129121	388141
2008	265768	138988	404756
2009	278239	148437	426676

nutrients provides a contribution to growth of only 100 thousand tons per year. That adds about one percent to output and explains only 14 percent of the seven percent growth rate. And, that assumes that all the fertilizer was used on cereals⁶⁹.

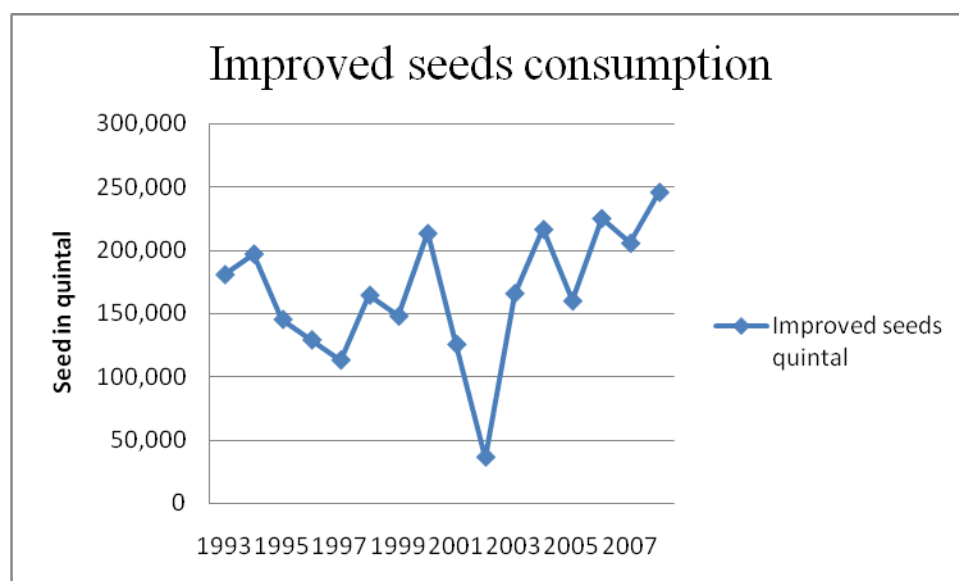
However the response to fertilizer was probably considerably lower than that 10 to 1 ratio due to lack of improved seed and possibly to poor fertilizer practices such as proper timing and placement of fertilizer.⁷⁰ Using a response coefficient of seven to one – still profitable but barely so, a rate of yield increase of 0.5 percentage points per year is explained, leaving 3.0 percentage points unexplained. In looking to the future it will be shown that fertilizer has reached a level that could provide a substantial portion of growth. But that has not yet been the case. If modern inputs do not provide much of the explanation for output growth, what does explain it? There are two sources.

⁶⁹ The assumptions and use of technical coefficients has raised a debate between the consultant and a MoARD advisor to the Minister. The debate seems academic which footed in the inherited methodological differences between an economist and agronomist. Though the debate has no impact in the budget estimation and investment costing in the chapters ahead, for the benefit of the reader the comment came from the advisor is presented in Annex 4.

⁷⁰ CSA data show a small impact of fertilizer use on cereal yields (only a 2 to 1 ratio – which is not profitable to farmers). However, the impact is probably understated because of the tendency for farmers to put organic manures on fields near the village and inorganic on the more distant fields. Thus, the fields not fertilized with inorganic fertilizers are probably receiving substantial organic manure.

Table 4.6, Improved Seed Production

	Seeds quintal
1993	180,849
1994	197,117
1995	145,380
1996	129,163
1997	113,186
1998	164,540
1999	147,983
2000	213,482
2001	125,544
2002	36,244
2003	165,837
2004	216,641
2005	159,959
2006	225,310
2007	205,680
2008	246,050
2009	



First, half the growth is explained by area increase. At first glance this seems implausible since Ethiopia has extreme pressure of population on the limited land area. However, as explained above, as population grows labor is available to bring more land into cultivation. India, also considered a high population

density land scarce country, in the 1950's and 1960's achieved moderate growth with half the contribution from expanded land area (Mellor et. al. 1968). Further, Ethiopia experienced a substantial decline in cultivated area in the 1970's. The area growth beyond recovery of previous losses is plausibly explained by the preceding analysis and by the same factors that increased yields, as discussed below.

The yield increase only shows up in the most recent decade – and mostly in the last half of the decade (see Annex 4). The increased yield was coterminous with greatly expanded extension services. According to IFPRI surveys these services were well regarded by farmers. Given the very low level of yields it is not surprising if improvements in husbandry

Second the other half of growth comes from yield increase. The yield increase only shows up in the most recent decade – and mostly in the last half of the decade. The increased yield was coterminous with greatly expanded extension services. According to IFPRI surveys these services were well regarded by farmers. Given the very low level of yields it is not surprising if improvements in husbandry encouraged by the extension agents provided increased yields. That this followed a period of disruption from which recovery would be expected to be delayed and slow adds to the plausibility of this argument. Further this experience on yields is similar to that of India in the period of stability that followed independence and the large increase in expenditure on community development, including extension agents.

In this context it is important to note that by international standards the increase in extension effort was huge. In the 1950's and 1960's a large part of the rural development literature was devoted to the tradition bound nature of farmers – conservative, risk averse behavior, that underexploited even traditional means of increasing output. The huge government effort not only brought a high density of extension agents and large expansion of the proportion of the rural population within reach of all weather roads, but also an emphasis on increased labor input into agriculture, means of utilizing that labor moderately productively and changed rural attitudes towards increasing agricultural production. Those changes associated with a massive extension effort are certain to increase agricultural productivity.

It should also be noted that these changes are also one time changes. They give an immediate upward shift in production and create conditions for other changes to be more productive but they are not in themselves the basis for sustained growth.

In summary one must accept the yield increase shown by consistent application of valid statistical techniques. It is shown that it cannot be due to modern inputs – fertilizer and improved seed. It is then argued, with the case of India at a comparable stage of development, and consistent with the data to be explained, that improvements in husbandry stimulated by the extension service are a plausible explanation.

However, the important point from this analysis is that both sources of growth, increased land area and improvements in traditional husbandry cannot be expected to continue indefinitely. If judged by the Indian experience both may be running out in the near future. What then?

For the future, the sources of growth have to change dramatically. The base for that to occur has been built. It now needs to be scaled up – which is the explicit intention of the government.

Greatly increased use of improved seed and fertilizer will be the core of future growth – of course in the context of multiple changes in practices. But for the desired impact on growth the supply systems for both seed and fertilizer will need substantial change and the response to fertilizer will have to be substantially raised from present levels and maintained at a high level. The latter requires a steady flow of improved technology from the research system and its application by an increasingly technically sophisticated

extension system. Government policy will have to focus on radically scaling up the current modest growth rates for seed, fertilizer, and research output.

Of course farmers do not use more inputs or new technology unless it is profitable. It is universally the case, when the land resource is as favorable as in Ethiopia, for high input technologies to be potentially profitable. For that to actually be the case falls to the research system to provide, test and recommend, and for the extension system to adapt to farm conditions and teach. Thus expansion of those systems is essential – not only to immediate increase in yields but to the year after year further increases that are essentially to steady and high percentage rates of growth.

4.3.2 IMPLICATIONS OF THE FUTURE ROLE OF INORGANIC FERTILIZER TO GROWTH

Increased fertilizer use is central to and the indicator of modernization of agriculture. Put simply, large increases in output require large increases in plant food. Inorganic fertilizer is the source of that increased supply of plant food. Organic matter is highly complementary to inorganic fertilizers. Inorganic fertilizer raises the rate of return to organic matter even as it increases the supply of organic matter. Conversely increased use of organic matter raises the rate of return to inorganic fertilizer.

If fertilizer use were to accelerate from its current growth rate of about five percent to 15 percent (what India achieved at a similar stage of development, Mellor et. al. 1968) on a base of 500,000 tons (projecting ahead a few years) of material or 250,000 tons of nutrients that would add 37,500 tons of nutrients which would increase rapidly with compounding of the growth rate. With a normal response coefficient of 10 to 1, that would add 375,000 tons of cereals equivalent output annually. That would add 3.5 percentage points to cereals output growth rate.

However, the improvement in seed and in the technical capacity of the extension services should increase the productivity of the base level of fertilizer use. That also increases profitability that in turn accelerates the growth rate. The current base is probably a 7 to 1 response – consistent with moderate profitability which in turn is consistent with the current relatively slow rate of growth of fertilizer use. Increasing the response to the current base of 200,000 tons of nutrients from 7 to 1 to 10 to 1 adds 600,000 tons of output. That is a five percent increase in production. Spread over five years that comes to one percent a year.

If land area expanded at 2/3rds the pace of the last ten years (expanding by 2 percent per year), that would provide a 6.5 percent growth rate from just these two forces. Of course the land area from traditional sources cannot continue much longer to grow at that rate. However, the government plans to double the irrigated area in the next five years. The irrigated area is currently equal to six percent of area. With double the yield of non-irrigated land that would roughly balance the current growth in area⁷¹. Thus expansion of the irrigated area would gradually take over from the current expansion of the traditional land area.⁷²

⁷¹ In one of the comments received from the draft report readers, It has been indicated that this is a very modest estimate. Farmers with access to irrigation can double crop the land. One harvest can be made as rainfed crop. With access to irrigation, even during the rainfed season, if the rains fail, the farmers can practice supplementary irrigation (giving one or two irrigations during the entire rainfed crop season). This will make yields to become not only high, but also more stable. Then farmers can have a second crop during the dry season using irrigation. Thus, irrigation can not only enhance yields, but also double the cropping area on same year.

⁷² These calculations do not take into account adding large tracts of land in the lowlands. The most important reason for this is that that land will come into large scale farming which has little impact on poverty reduction or employment levels as explained in the preceding chapter. Thus, it is not at the core of fulfilling the government's vision. Further that effort is intended to be driven heavily by foreign direct investment and so it does not enter into the PIF concerns with priorities on allocation of domestic investment. Finally, given the reliance on foreign investment the extent of these efforts is particularly difficult to estimate. None of that is to deny the potentials for increased production and additions to national GDP.

Thus the rate of increase in production would be 3.5 percentage points from increased fertilizer, 2.0 percentage points from increased land area/irrigation and 1.0 percentage point from increased response to the base level of fertilizer use for a total of 6.5 percent growth rate. If 1.5 percentage points of land were transferred from cereals to higher value crops, including high quality livestock fodder that would leave a 5.0 percent growth rate for cereals. As discussed in the next section that is consistent with the rate of demand growth.

In short from the discussion thus far and that presented in Annex 4, about future growth the following can be concluded.

First, the sources of growth must change. Second, fertilizer use must grow on the order of three times as fast as in the past. That will require major policy changes in the fertilizer area. Attention has been drawn to the critical role of research to ensure profitability of high levels of plant food provision and of extension in promulgating those profitable technologies. Those systems must adapt to the widely differing agro-ecological zones of the country to ensure nationwide participation. The distribution channels will have to become far more active – that requires rapid expansion of the cooperative capacity that now dominates fertilizer distribution and complementing that cooperative role with a vigorous private sector, reaching additional farmers and ensuring competition. Finally Government will have to keep abreast of unexpected changes in international markets and assist in adjustment to those changes.

Third, the seed system must change radically from its current modest growth rate to a very rapid growth rate. That also calls for significant institutional changes. Fourth the agricultural research system will have to continually turn out improved varieties and practices and fine tune recommendations that will allow the fertilizer response coefficient to rise to a normal level and then be maintained at that level, as is the case for developed countries, even as usage per hectare grows rapidly. And, those changes must occur in varying agro-ecological zones.

In view the 8% growth rate scenario, raising the growth rate of fertilizer use to 20 percent would add another 1.2 percentage points to the growth rate. Raising the response coefficient to 10 would add another 0.5 percentage point. Increasing the irrigated areas growth to 1.5 times rather than 1.0 times the base for each five year period would add another 0.8 percentage points. That gives an increment of another 2.5 percentage points or a growth rate of 8.5 percent. These increases would put tremendous pressure on both the policy and investment regimes. But, they are conceivable. The pressure on the research system and hence much larger financing would be especially great because the current backlog of innovation would be used up much faster.

Two questions remain. First, will continued expansion of the road system continue to add to the growth rate as it has in the recent decade? The answer to that is the very high growth rates for fertilizer and improved seed use, as well as irrigation assume that the road system will expand to bring most of the rural population within five kilometers of an all weather road. Second, will the extension impact on changing farmers attitudes continue to add to the growth rate. The answer to that is perhaps, but not for long. Soon essentially all farmers will have been brought under that influence and the growth effect will cease to occur. Thus, it does not seem reasonable to add these forces to the growth rate calculated above. That also shows that the extension system will have to raise its technical competence rapidly if these high growth rates are to be maintained. The nature of the extension impact must change radically in the future.

4.3.3 A COMMODITY BREAKDOWN OF THE GROWTH RATE

It is useful to examine what commodity specific growth rates are needed to achieve a six percent overall growth rate in agricultural production. Six percent is examined first as it is the CAADP target and is at the top end of the range that the most successful middle income countries have achieved. Eight percent is also examined, which is consistent with an overall 10 percent growth rate for GDP which is the Governments target for the next five year plan (see discussion in the preceding chapter.).

In the low population density areas massive investment in roads, electrification, irrigation and land improvement are needed. If those investments are made largely with foreign capital that is not available for development of the highlands it makes sense to have that development – of course with due attention to the needs of the people who are already there.

Farmers in general have farming systems that incorporate commodities in their interacting context. However much research and marketing is commodity specific and the commodity sets discussed below have important demand and supply characteristics in common. This is an exercise about plausible growth rates not an exercise in constructing farming systems.

Ethiopia's agriculture is dominated by the cereals (32 percent of agricultural GDP) and livestock (33 percent). Export crops (17 percent of agricultural GDP) and other agriculture (18 percent) account for the remainder (Table 4.7). It is generally believed that the livestock sector is undercounted in GDP figures (29 percent). Therefore that sector is pushed up a bit from standard figures and the other sectors pushed down modestly.

Table 4.7 states a hypothetical commodity composition of growth. From that is calculated the shares of growth from each commodity set. Growth rates must be consistent with both effective demand and production potential. To determine the plausibility of these numbers, the following paragraphs discuss each of these in the context of Ethiopia. First the six percent CAADP rate of growth is posited and discussed. The CAADP rate is also the minimum rate required to meet the Governments broad vision. That is followed by discussion of an eight percent growth rate. That would be consistent with the next five year plan targeted 10 percent growth rate for the economy as a whole.

Table 4.7: Ethiopia: Hypothetical Commodity Composition of Growth

Commodity group	Base, percent	Growth rate		Share of growth	
Cereals	32	5	6	27	24
Livestock	33	7	9	39	37
Exportable	17	8	12	22	26
Other	18	4	6	12	13
Total	100	6	8	100	100

Cereals have a comparative advantage in Ethiopia at import parity prices, but it is doubtful if Ethiopia has a comparative advantage at export parity prices except for very small margins of production. Hence computing the rate of growth of domestic demand is an important exercise. The five percent growth rate for cereals in Table 4 assumes a 1.5 percent transfer of area from cereals to other crops. The five percent growth rate is consistent with the rate of growth of demand, calculated as follows. If per capita income growth is 5 percent, and the income elasticity of demand is 0.6, then demand would grow at 5.6 percent per year (2.6 percent population growth rate plus 0.6 times 5 percent per capita income growth rate) and

real prices would actually rise slightly. Somewhat lower income elasticity would still equate with no change in real prices or a small price decline, since own-price elasticity for staples are also elastic.

High own-price elasticity's of demand are typical of low income countries with low caloric intakes. Thus, the food staples growth rate is feasible from the demand side.⁷³ Because of the low base that rate could be exceeded from the production side. Previous discussion showed the feasibility of that growth rate from a supply point of view.

With a per capita income increase of five percent a year, domestic demand growth will support a very rapid growth rate of livestock production. For example assume population growth at 2.6 percent, and an income elasticity of demand of 1.5 (normal for countries at Ethiopia's per capita income level); then demand grows at 10 percent a year. Even at a very low income elasticity assumption of 1.0 demand grows at 7.6 percent per year. Hence no increase in exports is required. Since Ethiopia has clear export potentials to Middle Eastern markets demand for livestock products can match the high growth rates stated here even if per capita income grow more slowly than posited. The constraint is on the production side. For the past decade livestock production, according to national income statistics has been at a four percent rate.

A seven percent growth rate requires improvement in feed quality throughout the system. That in turn requires high yields and substantial shift of area in high potential areas from cereals for human consumption to high quality livestock feed. That in turn depends on raising cereal yields substantially. Later sections discuss other specifics of rapid growth in livestock production. The government, fully cognizant of the potentials, has placed a high priority on the livestock sector. Later discussion deals with the requirements for this growth rate in the livestock sector. Here we simply make the point of the high priority to the livestock sector if the high overall growth targets are to be met.

The government and the PIF place a high priority on accelerating the livestock production growth rate. Table 4.7 drives home how important this is. Livestock account for 37 and 39 percent of growth, respectively on the six and the eight percent growth rate scenarios. Thus the overall growth rate is highly dependent on achieving very high growth rates in the livestock sector. As stated above this calls for massive increases on high quality feed and fodder – much of which will have to occur in the high potential agricultural areas of the highlands. That emphasizes the complementarity between the pastoral areas and the high productivity agricultural areas.

Growth of eight percent of export crops, dominated by coffee, could be achieved significantly from area expansion given the modest current area in that set of commodities and the rapid growth in demand for the high quality coffee produced by Ethiopia. The work of the Commodity Exchange on high quality coffee is a central part of the required strategy. Policies are needed to provide the incentives for the area increase, plus the technology research to bring down costs. Although marketing is important on all areas, it is especially portent in the area of high quality coffee exports. That of course is a private sector activity for which technical assistance is valuable.

⁷³ See also the CGE model simulations of the impacts of agricultural growth (Dorosh and Thurlow, 2009).

Other commodities have been arbitrarily set at a modest rate. For a discussion of various aspects of agricultural productivity growth, see Chamberlin et al., 2007, Diao 2007, Spielman et al., 2007; Alemu et al., 2008; and Seyoum Taffesse et al., 2007.

Two points are noteworthy in this exposition. First, achieving a six percent growth, even more so for eight percent, requires that all major sub-sectors participate. Second, the growth rates are sufficiently high that a focus on priorities within these sub-sectors will be required and explicit attention given to achieving those targets.

Accelerating the growth rate of cereals production will bring cereals prices down somewhat and therefore speed the transfer of area from cereals to other commodities with stronger demand growth. The seven percent rate for livestock will be very difficult to achieve and the nine percent even more so, hence it seems imprudent to plan for more than nine percent for livestock. The move to 12 percent on exports (largely coffee) will require a major increase in resources to promote exports. Note the input sourcing of growth called for huge increase in the fertilizer, seed, irrigation and research growth rates. That will be reflected in the commodity growth rates.

Before concluding it is important to make a specific note on irrigation investment. Ethiopia has large areas of land with low population densities and potential for irrigation. Compared to the rate of return from increased intensity in the high population density highlands, the rate of return in those low population density areas is much lower. That is because in the already farmed areas large investments in land improvements, and support of the labor force have already been made. In the low population density areas massive investment in roads, electrification, irrigation and land improvement are needed. If those investments are made largely with foreign capital that is not available for development of the highlands it makes sense to have that development – of course with due attention to the needs of the people who are already there. More important, from a poverty reduction point of view development of large scale farms, necessarily highly mechanized does little to reduce poverty in the areas of concentrated poverty. That is because much of the return to capital will be removed from the country and the expenditure patterns are in any case not oriented towards the employment intensive rural non-farm sector as is the case for the small commercial farms of the highlands. Therefore the analysis in this report concentrates on the priority policies and investments for development of the areas that are already being farmed.

CHAPTER 5

REVIEW OF POLICY, STRATEGY AND INSTITUTIONS

5.1 AGRICULTURAL POLICY: A REVIEW

Key documents that give a good grasp of Ethiopia's recent agricultural policies are the Revolutionary Democracy⁷⁴, Rural Development Policy and Strategies (RDPS, 2003), Industrial Development Strategy (2002), Implementation Capacity Building Strategies and Programmes (2003), Sustainable Development and Poverty Reduction (SDPRP, 2002), a Plan for Accelerated and Sustained Development to End Poverty (PASDEP, MoFED 2006), as well as the recent EPRDF⁷⁵ 7th Annual Meeting Report⁷⁶ policy and plan documents. In addition to these several relevant studies contain policy statements that are captured in various proclamations, regulations and directives. This include Millennium Development Goals Needs Assessment (MDGs-NA) for the Agriculture and Rural Sector and related MDGs reports ((MOFED, 2002; MoFED, & UN 2004); the Implication of WTO's Agreement on Agriculture, Sanitary and Phyto-sanitary agreements on Ethiopia's relevant sector economic policies, strategies and laws (1999). It is important to note that MDGs –NA has been used in the preparation of PASDEP and it seems that it will continue to be useful in the next phase of FYDP after the end of PASDEP period. In this connection the very recent, government document which is prepared as a basis for the 2010/11-2014/15 FYDP, issued towards the end of 2009⁷⁷ is also a key document to grasp the very recent agriculture sector policy direction of the GoE.

The very recent exhaustive agriculture sector-wide policy assessment was done as part of the CAADP Ethiopia study⁷⁸. In this sub-section key policy issues are reviewed in three categories covering natural resources, agriculture development and marketing (Table 5.1). Within these three categories for the purpose of PIF preparation, for that matter as areas of emphasis, Ethiopia's current national agricultural policy regimes are classified in 10 subject/issues. It is important to note that the sources of these policies, in addition to the above mentioned documents are proclamations, regulations, and directives. For example the land policy of Ethiopia can be traced starting from the constitution and then in the subsequent Federal and Regional level land use and administration laws, as well as other related laws (proclamations), regulations and directives, such as the proclamation on land expropriation, valuation and compensation. The matrix set below therefore is designed to serve as the existing agriculture policy indicator matrix that captures policy subjects or issues with traceable written policy statements either in RDPS, PASDEP or subject matter policy and strategy documents such as the water development policy and strategy or the forest development and utilization policy and strategy documents issued in recent years.

⁷⁴ Text in Amharic

⁷⁵ Ethiopian Peoples' Revolutionary Democratic Front

⁷⁶ Text in Amharic

⁷⁷ Text in Amharic

⁷⁸ During the conduct of the CAADP Ethiopia study previous other studies and reports on agricultural policy were reviewed and the materials referred are listed in the reference section of the study.

Table 5.1: Core Policy Subjects/issues by Agriculture Sub-sectors Directly Responsible for Development

Sub-sector		
Natural Resources Management and Utilization ⁷⁹	Agriculture Development and Production	Agricultural marketing and trade
1. Land 2. Agriculture water (Irrigation) 3. Forest	4. Crop production 5. Livestock production 6. Farm inputs (seed, seedlings, fertilizer, pesticides, farm tools and machinery, feed, semen, drugs and vaccine etc.) 7. Pest management 8. Agricultural research 9. Agricultural extension	10. Agricultural marketing and trade

5.1.1 NATURAL RESOURCES MANAGEMENT AND UTILIZATION

The three critical policy subjects or issues in natural resources management and utilization sub-sector are related to land, agriculture water development, specifically irrigation, and forest and forest by-products.

Land

Available official documents on the national land⁸⁰ policy state that it is the policy of the FDRE government to:

- *Provide land free of charge for every Ethiopian citizen who wants his livelihood to be in agriculture,*
- *Prepare a sustainable and proper land use plan,*
- *Ensure the right of access to land to private investors who wants to invest on land on long or short term lease.*

It is important to note that in some studies and fora there is a mention about the lack of land use policy. As can be seen from the above selected policy stances, it is not indeed the lack of policy in this area but rather lack of strategy and/or institutions to implement this policy that is still a problem. These issues further discussed in the next sub-sections and also in Chapter 9.

Agriculture water (Irrigation)

In recent years agriculture water development has become one of the top priority policy area to review and formulate. For Ethiopia's agriculture to be emancipated from the vagaries of nature particularly from its dependency on rainfall it is believed that the nation has to invest on agricultural water development

⁷⁹ One important natural resource sub-sector but yet difficult to put in one of the three pillars of the agriculture sector is fishery. Of course, the literature reviewed indicates GoE has a policy stance on fishery which includes that "Expand fishery development and production in water bodies where the potential is not fully exploited".

⁸⁰ Refer to FDRE. Constitution of the Federal Democratic Republic of Ethiopia. Federal Negarit Gazeta. 1st Year No. 1. Addis Ababa, 21st August 1995. FDRE. A Proclamation to provide for the expropriation of land holdings for public purposes and payment of compensation. Proc. No. 455/2005. Addis Ababa. FDRE. Rural Land Administration and Use Proclamation. Proclamation No. 456/2005. Federal Negarit Gazeta. 11th Year No. 44. Addis Ababa, 15th July, 2005. FDRE. Rural Land Administration and use Proclamation. Proc. No. 456/2005. Addis Ababa. Besides, for broader policy reading and analysis please refer to the following policies and strategies: The National population policy, 1993; The National Science and Technology Policy, 1998; The National Policy on Disaster and Prevention and Management, 1997; The National Policy on Bio-Diversity Conservation and Research, 1998; The Ethiopian Water Resources Management Policy, 1999; The National Health Policy, 1993; The National Energy Policy, 1993; The National Agricultural Research Strategy, 1993; The National Drug Policy, 1994; The National Health Science and Technology Policy, 1994; The National Land Use and Administration Policy, 2005

specifically irrigation. Of course the literature reviewed in this area again indicates that there are adequate policy stances made by the government specifically in relation to the development and expansion of different size irrigation schemes. The existing agriculture water⁸¹ policy documents explicitly incorporate, at least, the following policy positions:

- *Ensure the development of multipurpose different size irrigation schemes⁸² where appropriate,*
- *Promote the availability of water nearer to pastoralists as much as possible by providing livestock water supply to all the regions particularly to PAP areas,*
- *Promote participatory watershed development to enhance watershed based agricultural production.*

The visits to the various regions during this PIF preparation has indicated that both the Federal and Regional governments have started a determined expansion of irrigation infrastructure and use which by the end of the next FYDP almost the total cultivated land with irrigation seems to reach double of the present size⁸³.

Forest

There is a recent document issued on the national policy and strategy on forest protection and utilization⁸⁴. Some of the critical policy positions included are:

- *Fostering private forest development and conservation⁸⁵,*
- *Expansion of forest development technology,*
- *Expanding market development for forests,*
- *Administration and management of state forests,*
- *Protecting forest resources from threats⁸⁶*
- *Establishing modern information systems on forest development, conservation and utilization.*

5.1.2 AGRICULTURE DEVELOPMENT AND PRODUCTION

This sub-sector is the one which contains most of the existing written policy stances in the agriculture sector. Several broad or specific based policy matters have been addressed through various proclamations, regulations, and directives. It covers crop and livestock agriculture reflective of the backward and forward linkages in farm, non-farm agriculture, agro-processing, and support-services critical to the production to consumption system⁸⁷. The agriculture development pillar area policy issues, in some instances, have called for distinction between pastoral and non-pastoral areas of the country. Knowing this complexity, few of the relevant⁸⁸ extracts connected to the agriculture development and production policy are listed below.

Crop agriculture

Whether it is for annual or perennial crops or whether it is for staple food crops or cash crops for domestic or export markets, the core policy subject or issues revolve around biological technology (varieties), seed and seedlings, fertilizer, and pest management. The following are found to be relevant to be included in

⁸¹ The recent policies and strategies on irrigation are contained in the water resources management policy and strategy issued by FDRE MoWR in 1999 and 2001,

⁸² One important recent policy statement related to irrigation area development is the need to integrate the modern honey and wax production to these areas. There is a stance which is stated explicitly that it is the policy of the government to develop and expand honey production with special emphasis in irrigated areas, integrating with fruit and agro forestry.

⁸³ For details refer to Chapter 6 of this report.

⁸⁴ MoARD, Ethiopian Forest Protection and Utilization Policy and Strategy, 2007, Addis Ababa.

⁸⁵ One of the most important umbrella policies is the Environmental Policy of Ethiopia (EPE) that was approved by the Council of Ministers in 1997.

⁸⁶ It is important to note that wildlife is the core resource that goes together with forest. At present it is handled by a sector outside agriculture. However, one of the core policies in this regard is that the wild life of the country is protected and developed.

⁸⁷ The agriculture marketing aspect, which in actual practice comes as a natural link to production in a value chain conception is dealt alone below.

⁸⁸ again reminding the reader to refer to the recent CAADP Ethiopia Study to both the main report and the review volumes

this report since they are key policy areas to focus on for the next five to ten years public sector interventions to enhance the crop sub-sector productivity and production, as well as to ensure the fulfillment of the food security and farm income maximization goals.

- **Technology:** *Provide support and technology packages that enhance specialization and diversification appropriate to the different agro-ecological zones,*
- **Seed and seedling:** *Develop an effective seed production and supply system through the participation of public and private sectors*⁸⁹
- **Fertilizer:** *Ensure adequate supply of fertilizer through domestic production and competitive and efficient fertilizer importation and marketing system*⁹⁰,
- **Pest management:** *Establish an environmentally sound system of plant protection using integrated pest management system*⁹¹.

Livestock agriculture

Similar to the crop agriculture the livestock-subsector also has its own core policy subject or issues revolving around biological technology (breeds), animal feed, and health. There are also specific issues related to species or products. It is this sub-sector which also calls for specific policy position that are clearly distinct to pastoral and non-pastoral areas. Below are the few national policy reflections of this sub-sector chosen for paving the ground for the later chapter which discusses the weaknesses and gaps⁹².

The core policy subjects or issues related to livestock agriculture in non-PAP Areas⁹³ are,

- ***Enhance livestock centered specialization development that includes the importation of exotic breeds,***
- ***Enhance livestock productivity and production through breed improvement,***
- ***Develop livestock technological extension package for pastoral areas,***
- ***Expand and increase small ruminants in highly populated, fragmented landholding , degraded and arid climate,***
- ***Expand and increase poultry production in all mixed farming agriculture including agro pastoral areas.***

Some of the above relevant policy stances also serve for pastoral areas. Besides, the following also exist to address some of the policy subjects or issues specific to PAP areas.

- ***Ensure pastoral livelihoods and their asset bases through the participation of the pastoral community and the use of pastoralist traditional and formal institutions,***
- ***Expand and ensure access to basic social services,***

⁸⁹ The national seed industry policy (NSIP) and strategy was issued in 1992. Several proclamations were issued to legally enforce and implement various activities underlined in the National Seed Industry Policy. They include the Plant Protection Decree (No. 56/1971), the Plant Quarantine Regulation (No. 4/1992), the Plant Breeders' Rights Proclamation (No. 481/2006), and the Access to Genetic Resources and Community Knowledge and Community Rights Proclamation (No. 482/2006). The most important of them all was the National Seed Proclamation No. 206/2000. In 2004, Proclamation No. 380/2004 gave MoARD the authority to supervise all government organs dealing with seed regulation, seed production and seed distribution.

⁹⁰ In October 1993, the government of Ethiopia articulated a national fertilizer policy document. Important are also the National Fertilizer Policy, 1999 and the Fertilizer Procurement, Import, and Distribution 2006 (Text in Amharic);

⁹¹ IPM has been adopted as a national policy for pest control. The Plant Quarantine Regulations No. 4/1992 gives emphasis to and focuses on control of imports and exports and disposal of pesticides.

⁹² The reader is advised to read the recent work by Tesfaye et.al, 2008 in order to have a good grasp of not only the policy positions but also to get highlights on areas of gaps and weaknesses.

⁹³ Ministry of Agriculture and Rural Development (MoARD), Livestock Breeding Policy and Strategy (Amharic Version), 2008.

- ***Ensure settlement of PAP community members on a voluntary basis and with adequate and appropriate attention to natural resources and environment conservation.***

Some of the other policy statements relevant to livestock in the context of this PIF preparation are,

- ***Animal feed:*** *Promote animal feed production and development both in natural and compound form with due consideration for the protection of natural resources,*
- ***Animal health:*** *Improve and expand animal health services.*

Agricultural research and extension

For the agriculture sector to attain its goals in the NFYDP using the “scaling out/up” strategy, agricultural research and extension are the two systems to focus on in terms of policy and institutional arrangements. As will be seen in the policy and institution gap analysis, Chapter 9, they are among those areas where reviews and dialogues are expected to take place. As of now, the following are the core agricultural research⁹⁴ and extension policy stances of GoE.

- ***Enhance agricultural research programs for sustainable land management, wise use and maximum utilization of water and forest resources,***
- ***Improve and strengthen agricultural technologies supply, multiplication and distribution on a sustainable basis,***
- ***Undertake research on breed improvement, animal health care, feed resources, and adopt domestic and imported technologies by ensuring the collection and documentation of information on the same,***
- ***Enhance better extension services through improved crop agricultural research–extension–farmer and stakeholders linkage,***
- ***Enhance better extension services through improved livestock agricultural research–extension–farmer and stakeholders linkage,***
- ***Enhance better extension services in PAP areas with the participation of traditional institutions.***

5.1.3 AGRICULTURAL MARKETING AND TRADE

In recent years agricultural marketing and trade policy issues are increasingly occupying the forums organized for the agriculture sector development. An expanded review of the agriculture marketing and trade policy subjects and issues are covered in the CAADP Ethiopia study review volume II. This review used materials including the proceedings of a policy forum jointly sponsored by EDRI and IFPRI with the theme “The state of Food Security and Agriculture Marketing in Ethiopia” (Gezahegn et.al, 2003). RELMA⁹⁵ (2005) sponsored a study which was conducted both in Ethiopia and Kenya concurrently and the study document had an extensive reviewed materials in the process of assessing the competence gaps in linking agricultural production with value adding and marketing. The agricultural technology evaluation, adoption and marketing publication of the Ethiopian Agricultural Research Organization (EARO) edited by Tesfaye et.al (2004) has different articles which cover the marketing and markets issues in broader and specific commodity lines, such as fertilizer. For example Legesse and Hailemariam work on fertilizer markets, in the same document. Besides, agricultural marketing issues both in the input and output markets, including policy, are covered in other publications by different authors. For example, Dawit (2005) made a condensed insight on the status and challenges of crop and livestock agricultural marketing in Ethiopia. Some of the recent policy and strategic moves the country has followed in the commercialization of Ethiopian Agriculture were highlighted by Demese’s (2006).

⁹⁴ Important sources of agricultural research policy are EIAR (Proclamation No. 79/1997), the Institute of Biodiversity Conservation (IBC, Proclamation No. 120/1998) and the ESE (Regulation No. 154/1993).

⁹⁵ Regional Land Management Unit of ICRAF

Trade related issues are extensively addressed in the MoTI/MoARD (1999) study report on the Implication of WTO's Agriculture, Sanitary and Phytosanitary Agreements on Ethiopia's Relevant Sectoral Economic Policies, Strategies and Laws. The Agricultural Economics Society of Ethiopia proceedings of the fifth annual conference were mainly dedicated to contributions on the international agricultural trade implications on Ethiopia's agriculture sector. In this document Demese (2000) made a contribution on trade agreements on agriculture and domestic support and what the position of Ethiopia should be in the years to come. A recent report on Ethiopia's Trade and Investment Policies is also made by Bulti (2008) as a contribution to the book published jointly by the Forum for Social Studies (FSS) and the European Union.

Cognizant of the above, as done earlier, selected policy stances of GoE on agricultural marketing, markets as well as trade are listed. Some reflect the broader GoE development directing principles.

- *Transform the traditional agriculture to modern and commercial agricultural through market driven development,*
- *Accelerate market based agricultural development, and be competitive in the international market,*
- *Accelerate private sector development by ensuring private operators remain abide by the rules of free market,*
- *Expand and improve domestic markets emphasizing on value chain,*
- *Expand export of agricultural products and their markets,*
- *Enhance the competitiveness of the country in the global market,*
- *Accelerate the process of Ethiopia's accession to the World Trade Organization (WTO)*

5.2 STRATEGY: A REVIEW

Inseparable from policy is the strategy to implement it. A strategy is a route to achieve the desired policy goals via specific elaborations of the resources to be mobilized (means) the institutions which will activate and control the means, and the conditions and situations which may constrain their use in a given development plan⁹⁶. Strategies link the policy goals to programmes that are set in a given plan period.

The Agricultural Development Led-Industrialization (ADLI) strategy was the first comprehensive strategy launched by the EPRDF government and it continued to influence the formulation of successive policy, strategy, and plan documents such as the Revolutionary Democracy document which includes both policy and strategic issues, and the sector specific policy and strategy documents such as RDPS and the Industrial Development Strategy documents as well as the two consecutive plans known as SDPRP⁹⁷ and PASDEP⁹⁸. ADLI also remained the lead strategy which Ethiopia's agriculture sector vision, past and future growth in the context of PIF are footed on. Chapters 3 and 4 of this report gave details on this⁹⁹.

Box2: Basic principles governing agriculture development policy (RDPS)

- *The labour intensive strategy*
- *Proper utilization of agricultural land*
- *A foot on the ground*
- *Taking different agro-ecological zones into account*
- *An integrated development path*

⁹⁶ A definition adopted in the CAADP Ethiopia study

⁹⁷ SDPRP is Ethiopia's First Generation PRSP and its successor development plan is PASDEP.

⁹⁸ Refer to Mekonen, 2002, for ADLI and the performance of the agriculture sector in the 1990s.

⁹⁹ It has been a practice to design strategies that are specific to chosen subjects, issues or agricultural commodities. It is important to note that the recent CAADP Ethiopia study has summarized the existing government strategies related to the four pillars addressed on the basis of broader subjects or issues. The strategies when listed in a form of statements are more than

According to RDPS the “*agriculture-centred rural development*” (ACRD) strategy, more specifically an **agriculture-led development strategy**, has been adopted as a major strategy and is expected to assist in the realization of the country’s economic development objective. This strategy, as an outshot of ADLI, is not set to develop the strategic sector of agriculture alone. It is also a strategy to create a favourable environment for the accelerated and sustainable development of the non-agricultural sectors. It recognizes that development of trade and industry in Ethiopia cannot be sustainable without the development of agriculture, since it is growth in this sector that will form the primary market and generate capital and labour necessary for their development. Through agriculture-led and rural- centered development, trade and industry will be directed to grow faster following and in alliance with agriculture. With this strategy, agriculture is tuned to accelerate trade and industry development by supplying raw materials, creating opportunities for capital accumulation and enhancing domestic market.

As clearly pointed out in RDPS, the basic directions of agriculture and rural centered development so far revolves around the extensive utilization of human labor; proper use and management of land, water and other natural resources; agro–ecology based development approach; integrated approach to development; targeted interventions for drought–prone and food insecure areas; encouraging the private sector; enhancing the benefits of the working people; and enhanced use of agricultural technical and vocational training. In this regard, in part two section one of RDPS the basic principles (Box 2¹⁰⁰) that govern agricultural development policy in Ethiopia are presented and explained as follows.

As highlighted above, ADLI and ACRD, among other sector strategies are used to lead the preparation and implementations of the two successive PRSPs: SDPRP and PASDEP. The latest reviewed and conditioned policies, strategies and programmes of rural and agricultural development, infrastructure, trade, and markets and market access are contained in PASDEP. In the chapter that deals with sector policies, strategies, and programs of the PASDEP¹⁰¹ there are six fundamental agricultural development strategies (see Box 3). These are expected to be spring boards and lead principles for for the PIF next ten years increased spending on on-going programmes and identification of incremental investment areas.

Box 3. Fundamentals of Ethiopia’s agricultural development strategy (PASDEP)

- a. Adequately strengthen human resources capacity and its effective utilization,
- b. Ensuring prudent allocation and use of existing land,
- c. Adaptation of development path compatible with different agro-ecological zones,
- d. Specialization, diversification and commercialization of agricultural production,
- e. Integrating development activities with other sectors, and
- f. Establishment of effective agricultural marketing system

In the next FYDP, which is going to be the first five years of PIF implementation, similar to the PASDEP period, small farmers are expected to play a leading role in agricultural development of the country. Still focusing on small farmers, as highlighted in chapter 2 of this report, the three fundamental strategic directives for the NFYDP of the agriculture sector are

- The scaling up of best practices and technologies
- Promotion of natural resources conservation and improved irrigation
- Transformation from low value to high value crop production and marketing

In the NFYDP of the agriculture and rural development sector the second major direction involves the private investor in agriculture development. According to the document, the private sector investment can be seen in two ways.

¹⁵⁰⁹⁹. Most of them (31%) are on inputs followed by strategies related to markets, marketing and trade (20%). Annex A5 present some of the strategies that are relevant for the PIF preparation and implementation.

¹⁰⁰ The trusts of these principles are presented in Annex 6

¹⁰¹ Chapter 7

- Using labour extensive on limited land size and producing high value products, particularly giving attention to horticulture, and
- Producing by using large scale with labor intensive interventions. This is expected to be practiced in low land areas, where there is ample arable land and where farmers can integrate this with other agricultural activities. In this connection the identification and use of land bank is expected to serve as a key instrument.

The government has a firm stand that the emphasis on small farmers, however, is not deterrence for specialized, commercial farms undertaking. As one of the fundamental strategies indicate, specialization, diversification and commercialization of agricultural production has been promoted based on agro-ecological zones¹⁰²). In view of this, farmers and pastoralists have been encouraged to focus on agricultural activities where they have the best comparative advantage. Besides, this strategy provides for the acceleration of agricultural development as well as the development of agro-industry, and there by contribute to the overall growth of the economy. Furthermore, the strategy gives prominence for **targeted interventions for drought prone and food insecure area**: areas that are characterized by erratic rainfall, soil degradation, and low per capita availability of farm land. In these areas the major agricultural development activity to be undertaken is aimed at increasing the income of the small farmers and pastoralists through activities focused to enhance food security with measures to reduce the volatility of production (for example through irrigation where feasible), and increasing off-farm income opportunities, and, where appropriate, voluntary resettlement to more productive areas. Livestock resource development with a special focus on small ruminants, small-scale irrigation and water harvesting are also part of this strategy.

5.3 INSTITUTIONS

5.3.1 THE POLICY AND INSTITUTIONS LINKAGE

There is no doubt that institutions are key elements of a policy formulation and implementation process. They can be seen from the aspects of organizational set-up and relationship or linkages among organizations. Both aspects are covered, in their relative importance, in policy documents including proclamations and regulations that notify the establishment and operation of the institute of concern. RDPS and PASDEP have explicit explanations on institutions which are responsible to implement the existing policies and strategies and programmes discussed in the previous section. It is possible to classify institutions in broader or detailed manner. Broadly the institutions can be referred as public versus non-public. Or as indicated in Annex 7, the institutions can be classified into seven categories. These are government (Federal, regional and woreda level); non-government organizations (NGOs); mass organizations including community based organizations (CBOs); private institutions; civil society organizations (CSOs); donors: bilateral/multilateral institutions; and domestic agricultural research and extension as well as CGIAR affiliated institutions¹⁰³. The role of these institutes and expected synergy is highlighted in CAADP Ethiopia study. Multilateral and bilateral donors are recognized as essential development partners in the execution of policies and strategies, while NGOs and CSOs are stakeholders and implementing bodies working in line with the GoE policies and strategies. RDPS also directs private sector institutions activities by providing favorable environment for production, investment, and market and trade. In this context, they are also stakeholders and beneficiaries of the agriculture and rural development policies and strategies.

¹⁰² It is important to note that Ethiopia has diverse agro-ecology. The analysis in this report, however, did not contain specifics by each agro-ecology and sub-agro-ecology because of scope and paucity of time. However, a glimpse of the countries agro-ecology setting is given in Annex 3.

¹⁰³ These classification was also used to assess the state of existing institutions in the CAADP Ethiopia study. The CAADP Ethiopia study has also included a table that shows the organizational setting, responsibility, synergy and partnership.

5.3.2 PUBLIC SECTOR INSTITUTIONAL ARRANGEMENTS

In the public sector organizational set-up follows Ministries, Authorities, Agencies, Bureaus, Commissions, and Offices. The relationship or linkage refers to the formal system in place in order to facilitate the working relationships and linkages between or among such organizations at all levels of government (federal, regional, zonal, and woreda). Of course, Kebele is the lowest level of government set up with its own institutional arrangements. The following gives a highlight of institutions at different levels of government as well as those operating as non-government entities. At present, it is difficult to get neat document that shows the organizational set up of the different public institutions. This is mainly due to the on-going BPR exercise. Despite this attempt has been made to collect and visualize the organizational and relational aspects of existing public institutions at different levels (Federal, Regional and woreda).

Federal Institutions

At the federal government level, the main development tasks are (a) building the rural development capacities of regions, (b) setting up Universities and Research Institutes oriented to rural development, and (c) providing financial and technical support. Currently there are 22 universities, of which 17 have colleges or faculties of agriculture or veterinary sciences. Agricultural research is done by these higher learning institutions. However, the mandate to conduct and coordinate agricultural research at national level is given to the Ethiopian Institute of Agricultural Research (EIAR) that has about fourteen Federal research centres. The Federal Government also has the responsibility of preparing country-wide technology packages and improving these in collaboration with the regions. This task is accomplished by the agriculture extension system directorate in the MOARD¹⁰⁴. ATVETS have played critical role in producing DAs that assist the promotion and use of technology packages. Further, the Federal Government performs the task of coordinating agricultural marketing and the supply of inputs on a countrywide basis. It performs these development tasks without any compromise to the decentralization policy of the Government (RDPS, 2002).

At Federal level, MoARD is responsible for the implementation of agricultural policies and strategies fostering a sustainable value chain development for the public and private actors engaged from the supply of inputs to the sale of raw or processed agricultural commodities using several directorates, institutes, and agencies¹⁰⁵. In addition, inter ministerial institutions in the forms of committees or Boards of MoARD, MoFED, MoFA, MoTI, MoWR, MoE, MoST, MoWUD, MoJ and EPA play substantive role in implementing pastoral, agricultural and rural development policies and strategies. For example, MoWR is a key ally to MoARD through meteorology agency and irrigation directorate. MoJ is an important ally too since more than 20 agricultural professional and non-professional, like trade, societies or associations are registered and monitored under it. The Quality and Standards Authority of Ethiopia (QSAE), and Revenue and Customs Authority are also among the institutions at federal level which are outside MoARD but directly or indirectly affect the agriculture development initiatives of the country.

¹⁰⁴ More on agriculture research and extension is said at the end of this chapter.

¹⁰⁵ For detail refer to Annex 7.

The relationship with MoFA is critical since the pastoral affairs coordination is handled by this ministry. Of course, in the PAP areas for the implementation of RDPS the institutional arrangement at the federal level include:

- Pastoral Standing Committee(PSC) in the House of Representative,
- Inter-Ministerial Board consisting of nine Ministers, coordinated by the Ministry of Federal Affairs,
- Pastoral Areas Development Departments, under the Ministry of Federal Affairs (MoFA), and
- Developing Regions Coordination Office in each of the nine Ministries.

The commodity exchange (ECX) and the warehouses receipt systems are also the two important institutional arrangements at the Federal level. As indicated in RDPS the establishment of commodity exchange centers was essential to facilitate the gathering of reliable, timely and complete information including market price information. The relevance and importance of international market information, especially commodity prices, is quite evident. Therefore, the commodity exchange center (ECX) is established to facilitate the gathering of such reliable, timely and complete information and it requires continues investment in terms of capacity building for wider coverage both in terms of area and commodities traded via the center.

Currently the Warehouse Receipts System is in place. It focuses initially on maize, sorghum and wheat, but currently works with other commodities and is strongly linked to ECX. It was initially initiated in the Ministry of Trade and Industry (MoTI) via a proclamation in October 2003 to provide a Warehouse Receipts System for stakeholders. Immediately the system became operational through establishment of an authority accountable to the MoARD.

Regional and Woreda Institutions

Every region, using its independent undertaking, has also similar institutional arrangements to that of the Federal Government. Institutions that directly or indirectly influence the performance of the agriculture sector at regional level include BoARD, BoFED, BoWR, EPLAUA¹⁰⁶, and RRA¹⁰⁷. At Woreda level, the Woreda Administrative Councils, WoARD and Kebele Administrative and development councils are the key players in implementing the agricultural policies and strategies. Annex 7 also gives examples of directorates, institutes, and agencies of BOARDS for the Regions visited during the PIF preparation.

Regional administrations are responsible in training professionals and technicians working in Woredas and Kebeles and deploy and promote them. Regional Councils approve annual budgets to Woredas, which is mostly is ARD budget, and support in implementing infrastructural projects, which are beyond the implementation capacities of Woredas.

In RDPS it is clearly stated that Woredas are mandated to coordinate the development initiatives of NGOs by creating a favourable environment in which the resources and technical know-how of local and international NGOs can be properly utilized. In the PAP regions, the civil service operational system starting from the regional level down to the lowest administrative rank is the same in terms of both organization and manpower. The important point that is underscored is that the political leadership and organizational structure could change depending on the particular conditions prevailing in each region. RDPS explicitly states that with regard to community based organizations structures, there is no need to make PAP areas the same as those to be set up in other regions. If development works can be performed more productively under the ethnic structures, RDPS states that it should be done that way. Besides extension workers assigned to the PAP areas are being given training mainly on livestock development and related subjects. Specifically, the agricultural extension services are increasingly focusing on livestock feed, animal health and related activities.

¹⁰⁶ Environmental Protection, Land Administration and Use Authority

¹⁰⁷ Rural Roads Authority

Agricultural Research and Extension

In the public sector, be it at Federal or regional levels, the two critical agricultural institutions which deserve attention are the agricultural research and agricultural extension institutions.

RDPS has endorsed that sustained agricultural development requires a continuous process of technological change. Such continuous progress needs to be supported by a well-resourced institutional system for research and technology generation, development, multiplication, extension and distribution. Therefore, the strategy embodied in RDPS was to significantly augment the research capacity in terms of volume and quality. Today as a result of this strategy, the country has several Agricultural Research Institutes established by Federal and Regional State Governments of Ethiopia or affiliates of the CGIAR. Leading in this aspect are EIAR, Regional IARs' and ILRI. Specifically, at the beginning of SDPRP the FDRE Government took a major leap forward to strengthen the NARS by committing itself to borrow more than 78 Million USD, which includes the finance to establish new research centers to cover the uncovered agro-ecologies particularly in lowland, pastoral and agro-pastoral areas of the country. This task has continued by incorporating the research and extension component in the ongoing Rural Capacity Development Project. In addition to these, to boost the national capacity on agricultural research, the nation is taking advantage of the many Universities and Colleges that are scattered in the different regions and agro-ecological zones.

The agricultural extension service system has also been in focus during the whole process of strengthening existing and establishing new research centers. As pointed out in RDPS the generation and selection of appropriate technologies need to be disseminated through strong agricultural extension service system, a system that is a major component of the agricultural and rural development strategy. In addition to the research and extension system, for a successful promotion and use of newly generated or selected, and imported agricultural technologies the entire technology transfer process should embrace both multiplication and diffusion efforts. The lead technologies in this regard are improved seed, fertilizer, semen and AI and veterinary services.

The seed multiplication system has several institutions in it. In the public sector the major ones are the Ethiopian Seed Enterprise (ESE), and the recently established Regional Seed Enterprises (RSEs). On the livestock side there is the National Artificial Insemination Center, which is currently operating through four sub-branches located in Oromia, Tigray, Amhara and SNNP Regional States. There is also the National Veterinary Institute producing and supplying animal vaccines and drugs. These institutions primarily focus on the biological technologies¹⁰⁸. In the private sector in the seed system there are Pioneer Hybrid and other Small Seed Enterprises. There are also institutions such as Agricultural Inputs Supply Enterprise (AISE) which procure and distribute fertilizers and chemicals via different agents. In addition to these, there are several Public and Private Enterprises that are engaged in the multiplication and distribution of farm inputs including implements. Cooperatives are the major importers and distributors of fertilizer recently.

It is also important to note that the agricultural extension system of the country has federal and regional arrangements. Core in this regard is ATVETs and FTCs. These two institutions are currently functioning to produce as well as use the human capital that is embodied in Development Agents. ATVETs train DAs and the DAs in turn use FTCs to train farmers so that the later can augment their knowledge to increase the productivity of farm resources and ultimately increase their income via increased production and better marketing. At present the agricultural extension system deploy four DAs at each kebele, crop production, livestock production, natural resource management, and home economics. In addition, there is one animal health assistant per three kebeles, and one cooperative expert serving five kebeles. Furthermore, as part of the system, Research-Extension-Farmer Linkage Council has been established to

¹⁰⁸ A detailed coverage is made in the Review Volume of this study.

oversee and advise technology generation, packaging and dissemination. It is structured from woreda up to the federal level with committed resources.

5.3.3 DEVELOPMENT PARTNERS: NGOS AND CSOS

NGOs, civil society organizations (CSOs), and bilateral and multilateral donors constitute the main development partners in the implementation of RDPS, specifically the development programmes. Currently there are more than 1200 NGOs in the country but less than 3% are working directly in agriculture development areas throughout the country. Most of them are under the umbrella of the Christian Relief and Development Association (CRDA). CRDA plays a leading role in facilitating the works of the NGO taskforce, but responsibilities of resources mobilization are that of the NGO. The government of Ethiopia considers that NGOs, Charities and Mass-Based Societies including professional associations, broadly the civil society¹⁰⁹, are recognized as actors to play a great role in the development of the country. NGOs and CSOs shall acquire legal personality upon registration by the Charities and Societies Agency of the government in the Ministry of Justice.

At present there are about 14 discipline based (like crop, animal, agricultural economics, etc..) professional CSOs registered by Charities and Societies Agency within the sector. The Ethiopian Association of Agricultural Professionals (EAAP) is an association that has members from the 14 CSOs and others. These or professional initiatives like the recently formed Professional Advisory Group (PAG), housed in the MoE, Higher Education Strategic Center, to advise and support higher education, academic and research programmes, in agriculture, natural resources management and veterinary sciences should be utilized at different levels of policy and strategy formulation and implementation.

5.3.4 DEVELOPMENT PARTNERS AID AND HARMONIZATION: BILATERAL AND MULTILATERAL

Broadly the donors can be categorized into bilateral and multilateral. On the part of the Ethiopian government, MoFED plays the key role in donor coordination and resource mobilization, whereas sector ministries implement specific programs and projects. Bilateral assistance includes technical cooperation, project/program supports and sector development. Mostly the support that comes through the bilateral and multilateral institutions follows a project approach. The projects often have two major categories that combine technical assistance with capacity building. These are designed with specific high level as well as grass root oriented development interventions. Some pursue non-project support which includes sector development programs in education, health, road and water.

At present among donors, the overarching coordinating body in Ethiopia is the Development Assistants Group (DAG) which bring together most of the bilateral, multilateral, as well as UN Agencies. This group gets engaged in some policy and strategy formulation process, and they have had a participation in the two successive five years plan, SDPRP and PASDEP. Recently REDFS is established. It is established in April 2008 with the government, specifically MoARD, initiative to harmonize and align development partner's assistance to its strategies, priorities and programmes. REDFS has three sub-components or pillars namely disaster risk management and food security; sustainable land management; and agricultural growth. Each has its own technical committee. Virtually all of the 18 development partners support REDFS and it receives a quarter of all aid provided by DAG members¹¹⁰.

Development partners are key implements to garner overseas development assistance. The recent state of such assistance is reviewed and presented in Annex 8. Overall, the review shows that in Ethiopia aid is increasingly becoming programmatic. The reliance of the government budget on aid has declined in

¹⁰⁹ Charities and societies proclamation No 621/2009, Negarit Gazetta (year 15th No.25).

¹¹⁰ For details refer to the REDFS SWG, Annual Report, November 2008-December 2009.

recent years although ODA still remains crucial for financing the balance of payments. However, in per capita terms, Ethiopia still remains among one of the lowest recipients of ODA. Sector wise, agriculture and natural resources distribution of aid in the budget has declined from 11% in 2003 to 4% in 2008 (Annex 8, Table A8.1). In terms of aid implementation, donors are increasingly using the national system for execution and auditing, while still preferring to use their own system for budget reporting and procurement.

In general, Ethiopia is a Rome Frontier Country and a harmonization pilot for the Strategic Partnership with Africa (SPA), Education for All-Fast Track Initiative (EFA-FTI), and the IMF. The Government of Ethiopia (GoE) launched its harmonization program in June 2002. In December 2002, at the first Consultative Group (CG) meeting since 1996 (and held in-country), GoE and partners agreed on the details of harmonization of development cooperation and improvement in aid modalities. They also agreed to review and monitor the results of their enhanced cooperation. One aspect of aid harmonization is the input provide for capacity building. In this respect, donors made substantial progress with 66 percent of technical assistance being delivered in a coordinated manner.

5.3.5 COOPERATIVES AND MFIS

In the RDPS document it is stated that neither meaningful agricultural development nor an efficient agricultural marketing system can materialize in Ethiopia without having a visible breakthrough in the development of cooperatives. Cooperatives play a significant role not only in creating improved marketing system and providing market information, but also to render facilities to collect and provide storage services; credit services to farmers; access to credit by expanding rural banking; facilitate trade transactions; and provide agricultural machinery, equipment and implements to farmers on lease. Hence, setting up and strengthening cooperatives is critical in implementing rural development policies and strategies in Ethiopia. To date the establishment cooperatives has gone to highest level starting from primary up to Federation levels. The cooperative federation in SNNPR already took full responsibility to procure and distribute fertilizer, among other activities. One cooperative Federation is also formed to function in Oromyia.

Most of the work of cooperatives requires a strong rural agriculture oriented finance institutions arrangements. The policy and strategies, as well as the institutional aspects of the rural financial system are addressed in RDPS. In this document as a strategy considerable weight is accorded to strengthen institutions engaged in rural finance and create new ones, because otherwise agricultural development can be sluggish, and its contribution to the development of other sectors will be undermined. In RDPS it is stated that the major financial institutions which can contribute significantly to rural and agricultural development are the existing commercial and development banks, rural banks and cooperatives. The National Bank of Ethiopia should develop an appropriate legal framework to promote rural banks and coordinate their operations. Efforts are being made to forge between rural banks and cooperatives through cooperative banks; exemplary in this case is the Cooperative Bank of Oromia, as this is vital for rural and agricultural development in general.

The GoE in its RDPS document also recognized that the promotion of comprehensive farm input retailing system can be achieved through strengthening and expansion of rural Micro Finance Institutions (MFI) in addition to service cooperatives and farm input retailers. Indeed the creation of efficient and effective agricultural credit institutions, which have been liaising with the existing formal and informal financial institutions to extend the agricultural credit to farmers has increased farm input consumption, particularly fertilizer.

5.3.6 MASS ORGANIZATIONS

To implement agriculture and rural development policies, strategies and programmes, among the institutions recognized by GoE are women and youth associations. RDPS has a detailed discussion on why it is important to mobilize youth and what has to be done in this regard. To effectively mobilize the youth, they need to have their own organization through which they can campaign for their own rights and economic interests. Youth associations contribute a great deal to the active participation of youths in rural development. Similarly women's associations organized at kebele level are expected to make a significant contribution to the political and developmental participation of women and the benefits they derive from such participation. Special development efforts targeting women have been made so that they can gain the benefits of rural development which they deserve. That is in order to ensure the participation of women in rural development, it was also necessary to increase their productive capacity so that women can be employed in all fields of activity on equal footing with men.

To date the establishment of women and youth associations has gone to highest level starting from kebele up to Federal League. The main task of these associations is to make them key players in the growth and development of the agriculture and rural economy both as self employed entrepreneurs or sources of skilled and unskilled labour for the growing and expanding rural agriculture industries. The government has promoted agricultural entrepreneurship to make the youth of rural areas stay around their communities via small business start up. Business start up, in addition to entrepreneurial ability, is receiving government support and facilitation for private sector expansion via Small and Micro Enterprises (SME).

5.3.7 THE PRIVATE SECTOR

It is important to address the private sector institutions role in the agriculture sector development in line with the specifics stated in the policy and strategy documents. Starting from the beginning of SDPRP period, the current GoE upholds the role of the private sector in cognizant of the sustained economic growth and employment generation, which is necessary for poverty reduction and that, requires enhanced private sector investment (SDPRP, 2002). In RDPS the government has stated the participation of the private sector to play an important role in implementing the development policies, strategies and programs. Of course, one may say that private investors have made significant contribution to the agricultural development of the country since the period of the Haileselassie regime. The efforts made during this regime, however, were curtailed during the Derge era. With the change of governments, EPRDF during and after transition period, has revitalized the role the private sector. It started by privatizing the State Farms and opening them for private commercial farming. The floriculture business has also flourished in recent years as a result of the favorable policy environment GoE created for foreign investors. In addition to commercial farms, financial, higher learning and export-import organizations have also emerged and are being expanding throughout the country. The private commercial banks have supported the domestic agro-industry growth. The private HLI have started providing training in specific agriculture disciplines. This is expected to expand, and also for the institutions to embark in agricultural research. As well as described in the RDPS, Ethiopia provides organizations, management and financial resources to establish connection with internationally known companies, and this has helped many organizations engaged in export-import activities. In the private sector, there are several associations including Ethiopian Live Animal Traders Association, Ethiopian Meat Exporters Association, Horticulture Association, Coffee Traders Association, Pulses and Oil Crops Traders' Association.

One very important institutional arrangement recognized and promoted by RDPS is the out- growers' scheme. Linkage between private investors and smallholders in the agricultural production, will make to maximizing benefit for both partners, and contribute meaningfully to make agricultural development efforts more productive. One such link the policy and strategy in the agriculture sector encouraged is the

out-growers scheme. Such schemes were strategic in densely populated highlands of the country, since could address the land shortage often encountered by private investors wishing to engage in the production of high value crops. As a result such schemes are expanding in the coffee and tea investment areas, and there are beginnings in the horticulture industry. This is in addition to formerly established out-growers schemes in the area of malt barley production, and the sugar cane production.

5.4 ACHIEVEMENTS ATTRIBUTABLE TO THE POLICIES, STRATEGIES AND INSTITUTIONS HITHERTO

Policy, strategy and institutional gaps or weaknesses that should be subject for review or dialogue are identified and discussed in the next Chapter. However, at this juncture it is logical to ask the achievements made so far due to the policies, strategies and institutional setups highlighted above. Below is a highlight of what has been achieved so far¹¹¹.

Due to the policies and following the ADLI and ARCD strategies and associated institutional arrangements Ethiopia's agriculture sector development in the last six years has been remarkable in terms of sector wide GDP growth and relative contribution of the sector to poverty reduction and increase in per capita food production. Since 2004/05 the average annual growth rate of the agriculture sector in terms of AGDP is about 13%, which exceeds the CAADP target of 6% (CAADP, 2009). This is a strong and sustained performance after a sharp decline which had hit bottom by 2002/03, including this ten year trend shows an average of about 10% growth rate (Fig 5.1). The last time the country experienced a continuous three years growth was between 1998/99 and 2000/01, even during this period the annual growth rate was on average around 6%. The economy is also showing a slight shift from agriculture dependence to non-agriculture sectors. The percent share of agriculture from GDP declined from 53.1% to 42.6% between 1995/6 and 2008/09¹¹² (Table 5.2). The food poverty head count decreased from 44% in 1999/00 to 38% in 2005/06 to nearly 33% and expected to be 28% by the end of the PASDEP period (2009/10)¹¹³. The per capita grain production increased from below 1.5 quintal in 2003/04 to 2.13 in 2007/08¹¹⁴ (Box 4).

CAADP Ethiopia study reported also the positive change registered in the agro-processing industry too. For example the number of manufacturing of food products and beverage establishments in 1998/99 was 228 and increased to 381 by 2006/07¹¹⁵. For the same period, leather and related products establishments increased from 49 to 72.

Box 4: Per capita grain production

Year	P/C grain Production
1997/98	1.23
1998/99	1.40
1999/00	1.45
2000/01	1.68
2001/02	1.53
2002/03	1.41
2003/04	1.52
2004/05	1.70
2005/06	1.86
2006/07	2.02
2007/08	2.13
2008/09	2.20

Source: Author, compiled from CSA data

Similar achievements have been made in the area of basic infrastructure development that are important for agriculture and rural development. The road sector has registered a remarkable success. Between 1997 and 2008 the road density/100sq.km, including community roads, increased from 24 km to 104km. Road density /1000sq.km, including community roads, increased from 0.49km to 1.45 km¹¹⁶. The provision of telephone services has shown a tremendous growth since mid 1990s. As of 1998/99 there were only 6740 mobile users in the country. These increased to 1.95 million users by 2007/08. Another remarkable change in telecommunication services is the coverage of rural kebeles having subscribed lines, which

¹¹¹ In terms of achievements made due to the existing policies, strategies, and institutional arrangements detailed information can be obtained from the CAADP Ethiopia study (2009).

¹¹² Data obtained from MoFED

¹¹³ Source: MoFED, PASDEP Annual Progress Report, 2006/07.

¹¹⁴ Ethiopia is almost meeting the 2100 Kcalorie per capita per day requirement. The equivalent of this in terms of production is 2.16.

¹¹⁵ CSA, Annual Statistical Report, various years.

¹¹⁶ Source: Ethiopian Road Authority, 2007/08

increased from 60 in 2004/05 to 8676 by 2007/08. The number of beneficiaries¹¹⁷ that got electricity under the Universal Rural Electricity Access program increased from 177 in 2005/06 to 1221 in 2007/08. The nation's capacity to generate and produce electricity has tripled since 1995. It increased from about 416MW in 1996 to more than 1300 MW in 2008/09.

Table 5.2: Share of agriculture, crop and forestry, livestock, hunting and fishing from GDP

Year	AGDP	Crop and forestry GDP	Livestock, Hunting and Fishing
1995/96	53.18	40.14	13.03
1996/97	53.01	40.11	12.9
1997/98	49.49	35.99	13.5
1998/99	50.82	34.08	16.74
1999/00	49.39	33.51	15.89
2000/01	50.43	35.27	15.16
2001/02	48.85	33.86	14.99
2002/03	44.62	29.88	14.74
2003/04	46.69	32.45	14.24
2004/05	47.05	33.66	13.39
2005/06	46.69	34.13	12.56
2006/07	45.7	33.58	12.12
2007/08	44.12	32.44	11.68
2008/09	42.62	31.26	11.36

Source: Author on the basis of data obtained from MoFED

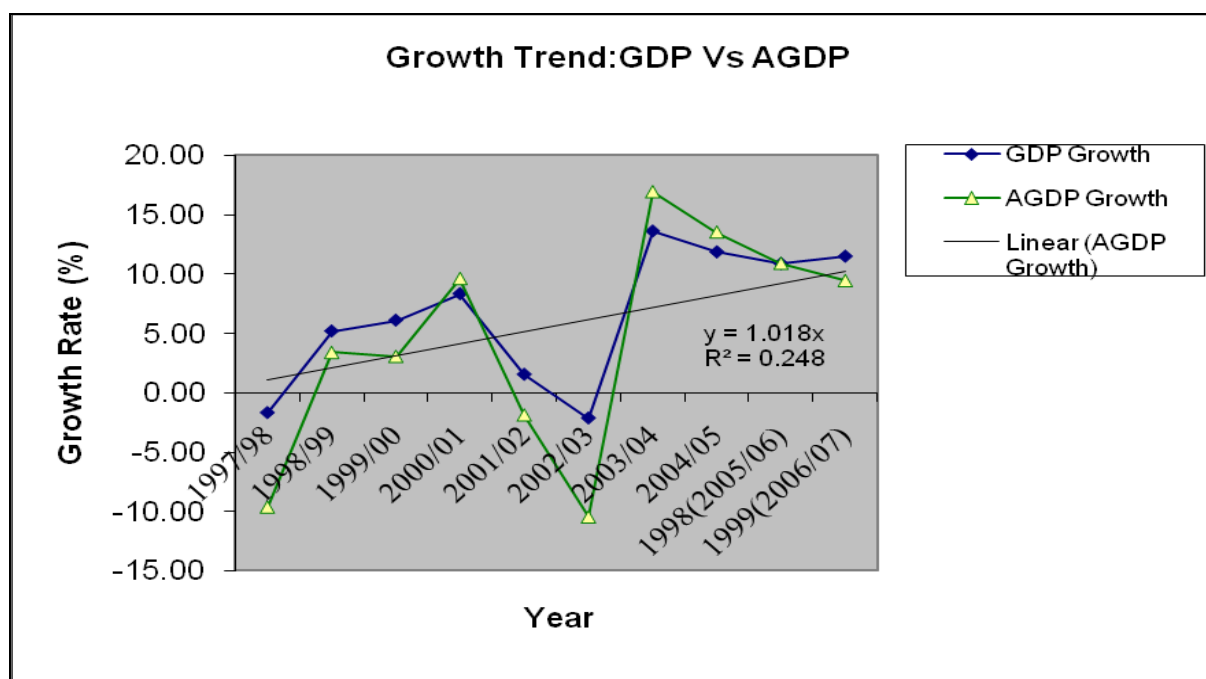


Figure 5.1 Growth trend for GDP and AGDP

¹¹⁷ Cities/kebeles/villages

In order to achieve the above and others that are reported in the CAADP Ethiopia study, the government has increased its budget for ARD and basic infrastructure sectors. The Federal government budget to the agriculture and natural resources sector has exceeded the CAADP target of 10% since 2005/06. Generally the total Federal budget allocated to agriculture and natural resources has increased from 9.4% in 1993/94 to 15.5% in 2007/08. The budget share allocated for non-salary items in the regular i.e., recurrent budget is also on the rise (Table 5.3). Recently the share of road construction is slightly exceeding the budget share of agriculture and natural resources, which still is a healthy move since the former is a critical input for the growth of the later.

Table 5.3: Recent Trends of Budget Allocated for MoARD

Year	Budget Total in Billions	% Share		% share of salary	
		Recurrent	Capital	Recurrent	Capital
2006/07	3.62	2.22	97.78	60.87	18.93
2007/08	4.45	2.23	97.77	52.65	17.83
2008/09	5.01	2.75	97.25	41.40	21.82
2009/10	5.21	2.94	97.06	46.55	24.87

Source: Compiled from MoFED data

The agriculture sector's revenue base is also getting diversified. The export share of traditional export revenue generating commodities such as coffee is declining, while oilseed and new entries in the business such as flowers are increasing. In terms of value the share of coffee is declining from more than 65% in mid 1990s to less than 40% in 2007. This shows the government diversification strategy is resulting to expected change. Diversification is also noticed in the livestock species mix, where camel is gaining an increased importance since 2005/06 (CAADP, 2009).

Finally, it is important to note that despite the above positive changes in the economy, the GoE still believes poverty and hunger are the daunting challenges of the nation and needs a concerted effort to eradicate hunger and reduce poverty, at least per the MDGs goal, both by Ethiopians and external development partners alike.

CHAPTER 6

POLICY, STRATEGY, AND INSTITUTION: GAP ANALYSIS

6.1 LIST OF SUBJECT OR THEMATIC AREAS OF GAPS

In chapter five a review of existing agricultural policies, strategies and institutions is made. In this chapter analysis of the weakness of some of the existing ones and gaps are presented. Table 6.1 present the thematic list of areas where weaknesses or gaps are identified in the areas of policy, strategy and institutions.

Table 6.1: Policy, strategy, and institutional gaps

Subject or Thematic Areas of Gaps		
Policy	Strategy	Institutions
1. Agricultural investment and compensation 2. PAP areas land tenure and administration 3. PAP areas transformation 4. Land degradation and soil erosion 5. Gaps and lack of focus on livestock policy 6. The seed system 7. Investment on staple food crops and the credit system	1. Investment on AWD and water-led-women centered green revolution 2. Fertilizer: strengthening the private sector role 3. Reducing pre and post harvest losses 4. HIV/AIDs and labor intensive agriculture 5. Enhanced animal feed and pasture development 6. Synchronized control breeding on small ruminants through AI; 7. Bee forage; 8. Forest resources utilization;	1. Programme, project, and directorate 2. Sector-wide linkages and relationships 3. Inside NARS 4. Strengthening the PM&E system 5. Agriculture sector studies' coordination 6. Dichotomization and the rationale behind development resources allocation 7. Pastoral affairs coordination: Revisit 8. Livestock sub-sector institutional issues 9. Institute for land administration and use 10. Irrigation: Infrastructure- to- use 11. Seed system: The institutional dimension 12. Nutrition: Building on what has been done 13. Gender mainstreaming 14. Climate change and DRM 15. Institutional capacity: Sector-wide and critical spots

A brief explanation on the same is given in the subsequent sections. These weaknesses or gaps have to be rectified for the successful implementation of PIF. It is important to recall the conceptual underpinnings of the policy, strategy and institutional weakness or gaps analysis. As indicated in chapter 2, if the policies, strategies and institutes are not catering to lead or accommodate implementation mechanisms for farm and non-farm sub-sectors, or pertinent natural resources issues, and spatially for pastoral and non-pastoral areas alike then they become subjects for policy, strategy, and institutional weakness or gap scrutiny.

6.2 POLICY GAP

Given the policies, strategies and institutional setups highlighted in chapter 5, it is logical to ask whether there are not policy, strategy and institutional gaps that might have been hindrance to achieve more. Is the government willing to review and adjust gaps and weaknesses observed? To start from the last question, the answer is yes. Policy review as a policy stand by itself has not been also a problem in Ethiopia (see Box below).

The government has made it clear that policy reviews should be considered where and when necessary. It is important to note that no country has policies that are exhaustive and be able to cater for all needed development interventions. What is important is to recognize the dynamics of policy formation which is conditional to national and international economic affairs changes¹¹⁸.

In this chapter policy, strategy and institutional gaps or weaknesses that should be subject for review or dialogue are identified and discussed. In the process relevant suggestions are made to invoke review and dialogue on the weaknesses and gaps that are observed.

It is important to recall the adopted definition of policy in this report. Agricultural policy is defined as a statement of course of action set by the Federal and Regional State governments in the management of agricultural development affairs. The policies could be formulated and implemented in the form of laws, rules, regulations, directives and broad goal oriented guiding declarations that affect different economic and social agents and institutions. Based on this definition, the few areas that need to be revisited are highlighted below.

Policies and Strategies are Subject to Review

"Building on policies already on the ground and taking into consideration practical experiences and lessons learnt over the past ten years as well as considering the development experiences of countries which have attained rapid economic development, the Government has now formulated specific policies and strategies to guide rural and agricultural development. The government also stands ready to translate these strategies into concrete action. ...It is important to device policies, strategies and programmes that will help us implement the goals we have set. But it is perhaps even more important to be able to revise these as the need arises and to adjust our goals according to developments over time."

RDPS, MoFED 2003

6.2.1 AGRICULTURAL INVESTMENT AND COMPENSATION

In the 10 years ahead for the implementation of incremental investment areas the request for agricultural land will rise. Part of this may be fulfilled by having access to currently public land and part of it may have to be obtained via expropriation. The country's laws are becoming strict even for governments (Federal or Regional) to expropriate land for public development projects (PDPs). Proclamation 455/2005 stipulates that no expropriation should be made without compensation. The compensation may be in cash or kind. The option of compensating in cash also needs an adequate financial source. That means, for example, regional governments may face challenges to expropriate rural residents' landholdings for PDPs such as FTCs, TVETs or for rural roads without compensating in cash when substitute land increasingly becomes scarce. This will necessitate Regional administrations to allocate compensation budgets in lump sums or on the basis of sectoral requests as it is currently practiced by regions for investment in rural roads as well as for township expansion. However, the use of regional coffers for compensation purposes should, as much as possible, be minimized -- one way for this is to encourage rental arrangements to promote rural land based investment undertakings.

Although the practice of Regional budgetary allocations for compensation purposes is appreciable at the same time it is also arguable for reasons of sustainability¹¹⁹. As the extent of land based investment

¹¹⁸ Refer to Just and Rausser (1985) on "Uncertain Economic Environment and Conditional Policies."

¹¹⁹ Partially, obtained from Assessment of Rural Land Valuation and Compensation Practices in Ethiopia (ARLVCE) Study, MoARD/USAID-ELTAP, October, 2007, Addis Ababa, Ethiopia.

increases unless reliable and sustainable land and property related revenue sources is developed compensation using treasury fiancé becomes a daunting challenge. The option however, should be one which took in to consideration the nature of investment i.e., public versus private. Without denying properly vetted government budgetary allocations for rural lands to be expropriated for PDPs, when it comes to private investment promotion, the choice should be first to let the rural landholders rent their lands but through government regulated, legally binding contractual agreements. Such facilitation by the Regional administrations will reduce the compensation financial burden on governments, reduce bureaucratic costs of expropriation, valuation and compensation and at the same time reward farmers better and ensure that they have secure landholding rights, which are transferable for a preferred deal after the contract period expires in a market-driven competitive investment environment.

6.2.2 PAP AREAS LAND TENURE AND ADMINISTRATION

The next ten years development path in the agriculture sector should be well set to exploit the potential resources or commodities that can be produced both in pastoral and non-pastoral areas of the country. Already huge investment is being made in pastoral and agro-pastoral areas in terms of expanding road networks, water system be it for human and animal drinking and irrigation, electricity and telecommunication. All these social overhead capital investments should be used to attract incremental agricultural investment in PAP areas be it in the livestock or crop sub-sectors. In this connection PAP areas existing land tenure policy is one critical policy areas that calls for checking.

In Ethiopia land policy is one area of policy which has been extensively covered through legislations and studies. Despite this there are still gaps in terms of adequate coverage of the land tenure issues of PAP areas. The existing land administration policy is mainly designed to cater the problems of land administration and use in non-pastoral predominately highland and sedentary areas.

A very recent study¹²⁰ on this issue after exhaustively reviewing and analyzing exiting policies (proclamations, regulations and directives)¹²¹ did conclude that there are no policies and guidelines that could be applied by any existing institution towards the management and administration of land resources in PAP areas. Examination of the current policies and laws shows that pastoral areas are treated marginally and the blanket policy and legal frameworks on land use and administration cannot in the main serve the pastoral and agro-pastoral areas in this respect. For example, factors like population pressure, bush encroachment and expansion of crop agriculture, as well as drought have become main threats to pastoralism. In a situation where they get access to secure livestock feed, water, livestock and human health service, market place and education for their children; pastoralists repeatedly expressed their willingness to settle. The propensity to settle is accompanied with the search for and adoption of alternative livelihoods. For this they start enclosing piece of land. In fact some rich pastoralists are enclosing private grazing lands while at the same time they are also sharing

¹²⁰ Pastoral and Agro-pastoral Land Tenure and administration Study, MoARD/USAID-ELTAP, August 2008, Addis Ababa.

¹²¹ RDPS, and PASDEP documents; FDRE .1995. Constitution of the Federal Democratic Republic of Ethiopia. Federal Negarit Gazeta. 1st Year No. 1. Addis Ababa, 21st August 1995; FDRE 2005. Rural Land Administration and Use Proclamation. Proclamation No. 456/2005. Federal Negarit Gazeta. 11th Year No. 44. Addis Ababa, 15th July, 2005; FDRE Proclamation 89/1997; FDRE. 1997. Federal Rural Land Administration and Utilization Proclamation; FDRE. 2005. Expropriation of Landholdings for Public Purpose and Payment of Compensation, Proclamation No. 455/2005, Federal Negarit Gazeta: 3124-3132; FDRE. 2005. Federal Rural Land Administration and Utilisation Proclamation; FDRE. 2007. Payment of Compensation for Property Situated on Landholdings Expropriated for Public Purposes, Council of Ministers Regulations No. 135/2007, Federal Negarit Gazeta: 3622-3629; GPNRS. 1998 E.C. Rural Land Administration and Use Proclamation. Draft. Tahsas 1998; Ministry of Agriculture and Rural development (MoARD). 2004. PADS (pastoral areas development study) Phase I Report. Review of the Past and Present Trends of the Pastoral Areas of Ethiopia. Addis Ababa, Ethiopia; Oromia National Regional State (ORNRS). 2007. Proclamation No. 130/2007 to amend Proclamations No. 56/2002, 70/2003, 103/2005; Oromia Rural Land Use and .2007Administration. Finfinee; Sothern Nations,Nationalities,and Peoples Region (SNNPR). 2004. Rural Land Administration and Utilisation: Implementation Rule. 16/2004; SNNPR. 2007. SNNPR Rural Land Administration and Utilization Proclamation. 110/2007.

the communal grazing lands with others. In this process women remain disadvantaged. Women in PAP areas have no secure rights to land.

Resource management and administration in PAP areas is predominantly under the customary system and there are no adequately established and capable government land administration institutions. Some strongly demand instruments like land use plans in order to curb the afore-mentioned unregulated expansion of farms at the cost of pasture. On the other hand, while those who attempt cultivation consider it as right, customary practices seem not to accommodate such farming practices both in terms of land management and administration. As a result, many of those who are putting up farms are turning to the Kebele administrations to establish their rights to access and use land for farming.

Besides, urbanization is one major occurrence that is bringing challenges to traditional and formal institutions to administer land in rural PAP areas. Pastoralists have increased propensity to settle in small emerging and expanding towns. Because of this and the various public and private investors' development interventions, pastoralists and agro-pastoralists are taking their own measures including individualization of pasture land for residential and business purposes. The land use and administration issue related to the urbanization process needs an urgent reaction in terms of land use and administration policy and legislation provision and implementation.

In general, examination of the current policies and laws shows that pastoral areas are treated marginally and the blanket policy and legal frameworks on land use and administration do not fit the pastoral areas. There is a need to formulate new once and review existing land use and administration as well as expropriation and compensation policies and legislations.

6.2.3 PAP AREAS TRANSFORMATION

Existing policy documents have clear policy positions in PAP areas on issues of voluntary settlement, provision of socio-economic infrastructure, as well as the environment to work with traditional and customary institutions. What is not clearly covered is the policy to direct the transformation process to cope-up with alternative livelihood options in PAP areas. Individuals are changing from pastoral to non-pastoral occupations be it in agriculture, commerce, and urban businesses. Particularly the recent conducive local administration setting as a result of the decentralization policy which increased the expansion of road networks, water, rural electricity and telecommunication infrastructure, and the enhancement of urbanization created a new interest in pastoral communities to become part of the new domestic and international economic order. These are also attracting external investments. This complex process must be tuned to orderly socio-economic system supported by well designed visionary socio-economic policy that encompass *at and after* the transformation process period.

6.2.4 LAND DEGRADATION AND SOIL EROSION

Soil and water conservation as part of land management requires due attention by government to have clear policy and strategy which accommodate all the agro-ecological zones of the country. The current focus on soil and water conservation is either related to drought prone areas, relief operations or considers it as part of a strategy in watershed management (ESIF, 2008)¹²², while the issue of soil erosion is everywhere in the country.

6.2.5 GAPS AND LACK OF FOCUS IN LIVESTOCK POLICY

In general, the livestock sub-sector is not policy deficient nor is the existing policies are hindrance to its development. The problem lies on **gaps** and **lack of focus** which should have been addressed via

¹²² Ethiopian Strategic Investment Framework for Sustainable Land management. Prepared for the FDRE MoARD SLM Secretariat, august 2008, Addis Ababa.

regulations and directives. Recently, a livestock Breeding Policy and Strategy has been formulated¹²³, however, it has been criticized for not being comprehensive¹²⁴ enough to include related issues such as animal health, and animal feed. In turn this should not imply that there is no need for detailed separate policies on animal health and animal feed. A policy attention is still needed in terms of managing free grazing practices.

Besides, the livestock resources are untapped as they should because of less emphasis given to the policy of putting up the necessary development and regulatory programmes with visionary long lasting investment thinking in the core commodity groups i.e., dairy, meat, egg and honey with value chain concept. The dairy and meat industry is a highly potential industry to make Ethiopia gain more foreign revenue from niche markets in the Middle East, Asia as well as West Africa. But as reported by a recent study¹²⁵ Ethiopia is lacking an official policy specifically that could guide development direction in the dairy sub-sector. This study also indicated lack of policy against adulteration in the area of several products and more severe is in honey and beeswax production. Finally, the policy documents in the afore-mentioned areas should also include institutional mandates and responsibilities.

6.2.6 THE SEED SYSTEM

The policy issues revolving around the seed system are on the mandate of production, pricing and distribution among public and private enterprises, seed import and the issue of harmonization with other countries seed system, as well as the extent of government intervention in the private seed enterprises operations.

The government's FYDP scaling up strategy on farm production response needs explosive growth in production of certified seed. At present the certified seed production is handled both by the public and private sector and in the case of the later currently the certified seed production is growing hardly at all. This has to change radically and requires major changes on policy at each of the three stages in the process. The policy changes are to provide business like procedures at every step: breeder, pre-basic, basic and certified seed production.

Breeder and pre-basic seed almost universally is produced by the research system. The supply is currently grossly inadequate. It has to remain in the national agricultural research system (NARS, which includes EIAR and RARIs). Besides the following policy changes are essential to a monitorable, business like operation of the breeder seed sector. The breeder seed will continue to be produced within EIAR and RARIs, with overall responsibly with the Director Generals of these two sub-systems of NARS. Some of the specific policy measures to consider are

- a) Set up autonomous entity within the institutes under the overall direction of the Director Generals, to which the DGs will appoint a high level scientist/administrator with full responsibility to ensure adequate supplies of breeder seed for all commodities.
- b) This entity (the breeder/pre-basic seed multiplication) to have the responsibility to ensure fully adequate supplies of all breeder seed and rapid growth in those supplies. It must have access to land and all other inputs needed to meet the growth targets. It must be run on a no loss basis with the price of seed covering all costs or the Government providing explicit subsidies to that entity. It should build overtime substantial reserves to tide over any difficult periods.
- c) The entity will sell to ESE and RSE so that they can produce the basic seed meeting basic quality standards.
- d) The entity will make estimates based on research station information as well as extension sources of demand for each seed variety and ensure a fully adequate supply to certified seed

¹²³ The formulation process is coordinated by MoARD, for details refer to CAADP study vol. II (2009)

¹²⁴ It is important to note here that there are proclamations on animal diseases and control (Proclamation No.267/2002), meat inspection (Proclamation No. 81/1976), and public health (Proclamation No. 200/2000). These proclamations do give emphasis to animal health disease control and public health. But draft regulations on diseases prevention and control, animal movement and registration and licensing animal health professionals are on the process to be proclaimed.

¹²⁵ Tesfaye kumsa et.al., 2008, pp. 72-73.

producers. This is a change from the present system of estimates by the extension agents in a system that gives inadequate scope for new varieties.

Foundation seed sometimes called basic – international experience is varied on this, but to have it produced by Ethiopian Seed Enterprise (ESE) and emerging regional seed enterprises (RSE) would fit with common practice. The supply is grossly inadequate at present. At present basic seed for self pollinated crops is multiplied predominantly in the research system. It is also the practice the basic seed for hybrid maize is mainly produced at Bako ARC. This is changing as result of emerging RSE. In the future it should not be only ESE and RSE, both are in the public domain, but also the private sector should have entry at the basic seed production. Till the private sector gets fully engaged in this seed production, ESE and RSE will produce and sell to certified seed producers as well as directly to farmers. However their primary responsibility is to ensure fully adequate supplies of foundation seed.

Certified seed – the product finally sold to the farmer. This too is grossly inadequate. Government has almost without exception found that constraints in government finance limit public sector seed producers from meeting rapid increase in demand. That problem shows itself as soon as the bulk of farmers are buying certified seed. Ethiopia is now in that situation. Besides, there is a shortage of adequately skilled seed producers in the private sector so the requisite expansion requires supplying (and supervising through certification) existing private sector suppliers and providing major technical assistance to bring new producers in. Innovations such as village level farmer producers are all to be encouraged as long as rigorous certification procedures are applied. Furthermore pricing policies need to be revisited so that to provide strong incentives for rapid expansion of the private sector. Seed production must be profitable for the required expansion to occur. Connected to this the recent directive of the government to make private sector hi-bred seed producers to allocate their seeds to government designated areas should be revisited. Government can do that on seed produced by the public sector.

Improved seed has become a strategic commodity to influence the productivity and production of the crop sub-sector not only in a given country but also continental and worldwide. The short run shortage of seed, particularly of hybrid maize, could be ameliorated by regulated imports if Ethiopia would sign the regional seed agreement. Since imports favor international companies it would be desirable to provide technical and other assistance to national producers. That would level the playing field in a manner that would ensure increased seed supplies to farmers. As of now, in Ethiopia the policy and strategy¹²⁶, as well as the proclamation did not have articles that direct regional and international harmonization issues (ASARECA, 2001). There was an attempt to harmonize the Ethiopian seed system with the East and Central Africa countries via the issuance of a regulation but which has not been finalized. This has to be revisited and the necessary policy and regulatory framework need to be in place in the soonest possible time since some of the East and Central African countries have already started to trade seed on the basis of the harmonization document they signed.

6.2.7 INVESTMENT ON STAPLE FOOD CROPS AND THE CREDIT SYSTEM

The production of major staple crops is still left for the many smallholders with traditional practices. The efforts made so far are to increase productivity at the small holder's level using mainly biological and chemical technologies such as seed and fertilizer. Investment on agriculture water development and improved farm tools and machinery is yet lagging. On the other hand, it is the core policy of the government to promote both smallholder and large scale commercial agriculture. But the available statistics shows very little progress has been made in this regard mainly because of paucity of capital. There is no strong rural agricultural finance system that caters for commercial emerging and expanding farms specifically that are tuned to produce staple food crops. The emergence and expansion of such farms would have saved most of the foreign exchange that is being spent for the imports of wheat in recent years. Besides, the agriculture sector would have been performed much higher than what it has had if it had been supported with increment to capital use, for example having

¹²⁶ The seed policy and strategy was first issued in 1993 followed by a Proclamation No.206/2000 in 2000.

access to capital goods by attaining up to 5% of the capital goods import of the country. In the last ten years the sector has been receiving less than 1% of the total import and less than 2.5% of the value of imported capital goods (Table 6.2). This indicates agriculture was subjugated to generate the foreign exchange which the other sectors benefited for their capital goods import while it is denied to have a fair share of the same for its own development in the form of having access to foreign exchange for the procurement of modern crop and livestock producing equipment and machinery.

The capital goods import share within agriculture also goes to commodities such as exportable horticultural crops and flowers. Moreover, these sub-sectors have enjoyed the 30/70 % own capital and investment loan arrangement, respectively while those in the staple food crop production have a problem of getting access to finance to cover the 70% of their investment project even if they manage to generate the 30%. If the country has to embark on irrigation agriculture, modern large scale private commercial staple grain producing farms, as well as agro-processing firms, there is a need for a policy review in terms of allowing investors in staple food production to enjoy fair loan arrangement and access to foreign exchange. Part of this may have to be addressed by setting rural agricultural credit system which will cater for the emerging and expanding domestic investment needs in small and large commercial crop and livestock agriculture and agribusinesses.

Table 6.2: Trend in Capital goods Import and the share of Agriculture

Year	Share of capital goods from the total import	Share of agricultural capital goods from total import	Imported capital goods percent distribution by sector		
			Agriculture	Transport	Industry
1990/91	45.27	0.70	1.55	46.96	51.47
1995/96	34.31	1.03	2.99	47.91	49.12
2000/01	28.57	0.51	1.8	34.61	63.61
2001/02	28.31	0.41	1.46	29.14	69.42
2002/03	29.60	0.32	1.07	31.67	67.26
2003/04	33.89	0.42	1.23	34.03	64.76
2004/05	33.01	0.66	2.00	30.98	66.96
2005/06	31.64	0.84	2.66	29.59	67.75
2006/07	36.45	0.64	1.77	33.92	64.31
2007/08	28.01	0.6	2.14	19.97	77.88
2008/09	32.02	0.41	1.26	15.53	83.21

Source: Author, compiled from National Bank Ethiopia Annual Reports.

Even from the list of incremental areas reported in Chapter 6, the future definitely requires increased investment in agriculture, for example in irrigation infrastructure development, in advanced research technologies and facilities, market infrastructure, ATVET and FTC facilities and equipment as well as for mechanized agriculture both at small and large scale farming. The smallholders have to start to use semi-automated tractors and harvesters to gradually exit from centuries' old oxen and hoe culture.

At this juncture it is also important to recall the suggestion made in Chapter 4 that the analysis of priority policies should put in scrutiny the investment disparity that has existed between the highland and low land areas of the country. In view investment on irrigation in that chapter it was pointed out that relatively in the low population density areas massive investment in roads, electrification, irrigation and land improvement are needed because in the already farmed areas large investments in land improvements, and support of the labor force have already been made. If those investments are made largely with foreign capital that is not available for development of the highlands it makes sense to have that development – of course with due attention to the needs of the people who are already there. More important, from a poverty reduction point of view development of large scale farms, necessarily highly mechanized does little to reduce poverty in the areas of concentrated poverty, at

present the highland areas. That is because much of the return to capital will be removed from the country and the expenditure patterns are in any case not oriented towards the employment intensive rural non-farm sector as is the case for the small commercial farms of the highlands.

6.3 STRATEGY GAPS

As discussed in chapter five one can find several strategies set in order to make different programmes achieve their annual and five year development plan goals. Despite this there is absence of strategy on the following¹²⁷:

6.3.1 INVESTMENT ON AWDM AND WATER-LED WOMEN- CENTERED GREEN REVOLUTION

Ethiopia's agriculture in the years ahead should be driven by enhanced investment and a paradigm shift in agricultural water development and management (AWDM). The future AWDM investment in Ethiopia should *avoid size, scale and spatial and agro-ecology biases* and investment on any appropriate AWDM initiative should be made based on a prior set vision and goal. In line with this there should be also a paradigm shift to *water-led women- centered green revolution*.¹²⁸

Enhanced gender main streaming is one key element of Africa's Integrated Water Resources Management framework. Cognizant of this the paradigm shift in AWDM entails women to be the lead actors of water led green revolution. In Ethiopia, where rural agricultural land is highly fragmented the need for such a revolution with women as decision makers and leaders in the AWDM projects is timely and appropriate. The revolution augments women labour which is currently inefficiently and ineffectively spent in many rural areas mostly to fetch water for domestic use and other domestic functions. Some initiatives, especially by NGOs, have demonstrated that women's empowerment in irrigation is feasible, particularly when financial, technical, and organizational support is explicitly targeted at women. As active participants in irrigated agriculture in most countries, women can bring their own perspectives and distinct sets of interests in how the water should be managed for the benefit of each rural agricultural household. Hence women should be systematically consulted, empowered, and closely associated in AWDM projects.

In this connection it is also important to use irrigation **for food crops and feed production**. So far irrigation is used for fruits and vegetable production in smallholders' case which are directly linked with markets and infrastructures. In large scale it is used for the production of industrial crops such as cotton and sugar. As a strategic input it should not be limited to these products only. It should be used even at smallholders' commercial agriculture for the production of high value staple food crops, fattening and feed productions which have a significant role in income generating at house hold level as well as in promoting import substitution strategy of the government.

6.3.2 FERTILIZER: STRENGTHENING THE PRIVATE SECTOR ROLE

It is known that ensuring adequate supply of fertilizer through domestic production and competitive and efficient fertilizer importation and marketing system is the center of the government's fertilizer policy¹²⁹. In the period of PIF implementation a tripling of the rate of growth of fertilizer use from the current approximately five percent growth rate to the 15 percent needed requires utilizing all potential importers and distributors of fertilizer. No doubt that the cooperatives need to expand and also there

¹²⁷ Some of these are reported in the CAADP Ethiopia study, 2009, too.

¹²⁸ Refer to the "New Paradigm for Agriculture Water Development and management: Analyzing Ethiopia's Position in Africa," by Demese Chanyalew in the Proceedings of the 10th Annual Conference of the Agricultural Economics Society of Ethiopia, July 27-28, 2007, Addis Ababa.

¹²⁹ In October 1993, the government of Ethiopia articulated a national fertilizer policy document, this is followed by revised National Fertilizer Policy, 1999 and the Fertilizer Procurement, Import, and Distribution directive in 2006 (Text in Amharic).

should be a means to bring other private sector traders in as a major component of the import and distribution system. For this the first requirement is that foreign exchange must be allocated fairly to both cooperatives and other private traders. Cooperatives and private sector shall import and distribute in a competitive environment with little involvement by the government in the domestic fertilizer market. The government needs to monitor the entire system to ensure that cooperatives; private traders and their private trucking systems are doing their job.

Cooperatives have a critical role to lay in keeping the distribution of fertilizer competitive and low cost. But in the new requirements for agricultural growth they must do this on a far larger scale than on the past. Besides, the cooperative system should continue as a core institution for input supply and marketing. The fertilizer import and distribution strategy must grasp the importance of tripling of the growth rate; take that as a real target for cooperatives with the complementary management decisions and investments in warehouses, trucking, membership encouragement and other requisites of such a major change in the growth rate of fertilizer distribution.

Fertilizer distribution is a trading activity – something the Ethiopian grain trade private sector is good at. Cooperatives do not reach all farmers. A broad international experience shows, e.g. India, Pakistan, and all the more developed countries, that when the private sector traders are brought into fertilizer distributing the growth rate and total quantities provided to farmers increase greatly. The large grain traders have broad contacts with farmers, access to credit, access to trucks, and knowledge of dealing in bulk commodities that facilitate immediate impact. Having competition between cooperatives and private grain traders will bring down costs to farmers. The cooperatives do well in competition with private grain traders to the clear benefit of farmers in grain trade. The same needs to happen on fertilizer distribution.

In addition to the above, private sector investment in fertilizer producing plant establishment should be encouraged. Given the skyrocketing energy cost these days that affects international fertilizer price and its consequent effects on fertilizer import, distribution and use in Ethiopia, it is highly timely that the government makes efforts and looks for means and strategies to invest in fertilizer producing plant in the country.

6.3.3 REDUCING PRE AND POST HARVEST LOSSES

Ethiopia has focused on the increase of productivity and production agricultural products to increase availability of food crops. More would have been gained had the nation was focusing with a well set strategy to reduce pre and post harvest losses. The country loses annually a tremendous amount of agriculture produce due to pre and post harvest losses. The pre-harvest loss is related to endogenous and exogenous problems. Endogenous is referring to farmer's failure to properly manage the necessary agricultural practices starting from land preparation to harvest. Exogenous factors are those related to natural uncertainties like drought and pest outbreak. Available data indicates annually 15-20% loss of potential grain production due to pre-harvest mal-practices and natural disasters. Similarly up to 30% of post harvest losses are reported due to inappropriate collection, transport, storage, treatment of pests and rodents, loading and unloading etc. For example, the data for 2007/08 indicates the nation would have gained additional about 32 million quintals of grain had it reduced the loss say to 10%.

6.3.4 HIV/AIDS AND LABOR INTENSIVE AGRICULTURE

For the country to continue with its labor and land intensive agriculture, a special strategic move has to be made to curb the incidence of HIV/AIDS in rural agricultural areas. Although there are extensive interventions by the MoH and MoWA¹³⁰, still the incidence and influence of HIV/AIDS in ARD and its effect on the availability and productivity of labour is being addressed through limited studies. In spite of the positive performance of agricultural growth, this sector is facing a serious challenge by HIV/AIDS. Hence, the existing limitations in expediting the assessment of the impact of HIV/AIDS in

¹³⁰ Ministry of Health and Ministry of Women Affairs, respectively.

the productivity of agriculture labour and as a consequence on production need to be addressed without ado.

6.3.5 ENHANCED ANIMAL FEED AND PASTURE DEVELOPMENT

Under PASDEP, livelihood and Asset Building, and Basic Social service strategies for the PAP areas are well addressed. However, the existing animal feed strategy gives attention to the development aspect and very little on reserve. Traditional feed reserve practices exist mostly in non-pastoral areas. This is highly associated with the annual crop cultivation practice which again is not the case in pastoral areas. Recently, the increased incidence of drought, particularly in PAP areas has exacerbated the problem of animal feed and is necessitating for a strategic intervention in feed reserve both in natural and commercial aspects. The strategy should be based on the emerging principle of disaster risk management rather than addressing emergency situation.

In general, improving animal feeds and nutrition are critical issues in the Ethiopian livestock development context. Feed shortage is becoming a very critical issue both in the highlands, where land shortage is prevalent, and in the lowlands, where range degradation and invasion by invasive weeds is spreading. In the midst of this, the expansion of compound animal feed industry by the private sector is non-existent. The households are still following the traditional livestock rearing system, which is open grazing. An alternative livestock rearing, feeding, and management system need to be sought. It is high time that, the traditional and subsistence livestock production system needs to be replaced by scientific management and production system. A system which can augment the productivity and production of the nation's livestock resources with a well designed policy and strategic goals, including the maximization of livestock owners income and improving their living standards.

6.3.6 SYNCHRONIZED BREEDING

Synchronized breeding¹³¹ is an artificial manipulation of the reproductive cycle of animals for the purpose of fixed time breeding through AI and as a result to achieve compact calving, lambing or kidding. The system allows aligning the breeding programme with feed availability and marketing. This programme can be accessible to individual farm household use through public services or undertaken by private investors through value chain development approach. Currently, this is reported to be practiced by some private firms. Its use in the public sector is still under discussion. The core issue here is whether it is to be practiced by the public or private sector or both, the country need to have a clear strategic direction.

6.3.7 BEE FORAGE

The current GoE policy on apiculture is to develop and expand honey production with special emphasis in irrigated areas, integrated with fruits and agro-forestry. Traditionally, honey production is common in almost all agro-ecologies that are endowed with water resources and vegetation that serve as a nectar source for bees. Recently, the need for bee forage practice is getting importance especially with the promotion of modern beehives in different agro-ecologies. All these are in place without a strategy on bee forage.

6.3.8 FOREST RESOURCES UTILIZATION

The Policy, strategy and the proclamation on forest development, conservation and utilization document compiled by MoARD (2007) does include statements with the term utilization. Most of it is related on how to collect, organize and analyze information or to undertake studies. It is not clear on the strategy of how to utilize forest and forest products with an apt forest conservation practices.

¹³¹ For details of this and on bee forage refer CAADP Ethiopia study, 2009.

In forest management and protection, all the policy statements concentrate on expansion of forest coverage through plantation. The utilization of forest and forest products and non timber products including dry land species products, management should get due attention from the economic value of the resources, example, incense, resin, bamboo, honey and forest coffee etc.

In our country the demand of household energy depends on woody bio-mass which contributes to deforestation and land degradation. To alleviate this problem it is recommended to look for alternative household energy through community woodlots development, use of fuel saving technology and renewable energy sources.

6.4 INSTITUTIONAL GAP¹³²

6.4.1 PROGRAMME, PROJECTS AND DIRECTORATES

In recent years it has been argued that Ethiopia has well written agricultural policies and strategies covering various sub-sectors but is not implemented efficiently and effectively. Mostly this problem is attributed to weaknesses in institutional arrangements and capacity¹³³. Specifically it revolves around how agriculture development activities are organized both from the technical and budgetary coordination and allocation perspectives as well as how the available human, financial and physical resources are used. The government has already embarked on a task to rectifying these problems via the BPR process. BPR primarily focuses on assessing on the way things are being done in view of addressing the ultimate beneficiary needs which the targets of the institute in focus is realized by putting together a group of logically related tasks that use time and resources efficiently and effectively. BPR expected to show changes on as-is in a manner that targets are achieved in an expedited manner without ado. It is a process embodying a critical performance measuring mechanism be it in terms of benefits to costs, quality, and promptness of services or goods delivery. Although in principle BPR is not an exercise to change the structure of an organization, the result of the exercise is not totally immune from bringing changes in this regard too.

Following the above basic principles of the BPR and the on-going BPR study the MoARD as well as regional BoARD may come up with a changed organizational structure inclusive of directorates (process owners) and institutes. Prior to this, however, the result must ensure to halt the haphazard formation of programmes, the confused use of the programme notion in the regular government budgetary process and that of externally financed projects, as well as the establishment of project implementing units and directorates at par which also derail the technical channel of communication to sub-sector leaders (State Ministers) by by-passing the programme (process) owners or directorates.

For PIF to be an effective framework for the next 10 years agriculture sector policy and investment implementation, both the technical and budgetary coordination and allocation systems and mechanisms should fall under the strict compliance of the programme definition and formation of the FDRE government. According to the FDRE government budget manual a programme is a broader cost center of a public body or a broad objective of expenditure. Expenditure has to be related to output.

¹³² In the draft report, in this section it was reported that there is a need to urgently institutionalize land administration and use at the Federal level. As of now, the GoE already acted and officially a “Rural Land Administration and Use Directorate” is established within the MoARD. The consultants also got the chance to meet and discuss with the appointed director (Tigistu G/Meskel) who revealed that the directorate has three case teams working in the areas of a) land registration, survey and law preparation, b) GIS and land information system building, and c) land use study and regulatory. According to the BPR study it will have 29 experts from diverse professional areas. Its major focus in the coming five year will be on land registration and certification (Steps 1&2), although given the available resources land use planning will be also undertaken concurrently. The consultants’ team appreciates government’s prompt response to such urgent programme/institutional arrangements needs. It is important to note that there are institutions established and operate, with minor variations, at Regional level For example, in Amhara, Environmental Protection and Land Administration and Use Authority (EPLAUA) is directly accountable to the Regional Administrative Council, whereas in Tigray EPLAUA operates under the Bureau of Agriculture and Rural Development. In Oromyia and SNNPR, rural land administration and utilization activity is handled by separate bureau named “Bureau of Land and Environmental Protection”.

¹³³ As reported in the CAADP Ethiopia study, 2009 and others.

In the context of current MoFED practices, a programme by definition imply a framework that contains similar activities designed to bring developmental changes (result-based); and enhance growth with a continuous resource allocation from internal and external sources via annual recurrent budget or capital budget i.e., set in a project format. A programme can have sub-programmes and further contains projects as the government budget manual and the Public Investment Programme (PIP¹³⁴) document defines and bound by resources (human, financial, and physical) via the capital budget appropriation or non-project regular government development interventions with the recurrent budget (resources) provisions.

In recent years MoFED is increasingly tightening the programme concept by asking a number of federal institutes to start a pilot “programme budgeting”. This includes MoARD. This indeed is a essential and timely change in order to ensure that investment on on-going programmes or incremental investment areas in a project format be recorded under a given existing or newly approved programme. In this way the programme becomes subject for performance evaluation to ensure that each Birr invested is returning the expected benefit. Furthermore this entails that whether the finance is coming from treasury or external sources or whether it is a recurrent or capital budget activity, activities should be configured in a project format with a clear starting and ending time with a prior set, as much as possible, measurable targets. Implicit in this is that a programme cannot be solely footed on external finance. Any support that is coming from external sources shall take a project format which brings resources that are to be used for a specific life time known as the project period. In this context PSNP, SLM or AGP are projects and not programmes by definition. PSNP remains part of the GoE food security programme. AGP is a project with various components whose implementation should be conceived as activities contained in and lead by different programmes. Given the spatial coverage (regions and woredas) of the present AGP, in the coming ten years several AGPs are expected to be designed and become implements for the PIF proposed investment areas and components.

The present arrangements of programmes, projects and directorates in MoARD call for review. The arrangements in terms of Directorates, Authorities, Institute, or Agencies should be anchored on the programmes. Some of the projects have offices that are directly answerable to the State-ministers. For example, currently the Natural resources sub-sector of MoARD has only one directorate and institute (IBCR), but equally answerable to the State-minster are also the project offices including SLM. Implying SLM activities that are not financed by the SLM project are falling directly under the Director of Natural Resources, and those of the project areas under the SLM project coordination unit. The question is what will be the fate of the activities started when the project phased out. It is expected to be picked up by the regular programme. In this case either the SLM has to be established from the very beginning as a programme run by a Directorate or remain as part of the existing structure under the current Director for Natural Resources. In the PIF context it is recommended to have three directorates under the State-minster of the sub-sector, and a similar arrangement to be followed at regional levels. Uniformity is not a necessary condition, but projects should be under programmes, and programmes should come under a directorate or to be shared among directorates with clear intra-and-inter-institution coordination mechanisms, such as boards, technical committees of the REDFS types, or purposely crafted stakeholders platforms.

As a follow up of the work done during the CAADP Ethiopia study for PIF the agriculture sector is expected to have about 36 programmes at Federal level in contrast to the present 56 cost centered programmes listed in the budget registry of the agriculture sector. The PIF proposed programmes indeed calls for the government to take a bold measure to consolidate existing cost centers for efficient and effective use of resources. The consolidation enhances the technical performance while contributes to the reduction of process handling costs. It is expected also that the ongoing BPR exercise may end up with such consolidation requirements in order to make the sector gain from economies of scale and size to manage programmes. The wastage of resources will be increasing when

¹³⁴ PIP is a three year rolling plan for capital and recurrent expenditure which uses indicative planning figures for the resource envelope.

activities that can be put together under one programme or directorate are split in various programmes or directorates. Support resources (staff, buildings, equipment and machinery) should be used efficiently and effectively and resources gained from such efficiency be shifted to technical works. Any development project that is financed by it by treasury or external source for a specific time should fall under a programme but can be managed by a PCU, answerable to the director. It gives a room for a capacity building of the directorate itself in terms of running projects as well as ensures the continuity of interventions through the regular programmes even if they are started by projects.

Given the above explanations it will be thoughtless not to suggest the plausible institutional arrangements for the proposed consolidated programmes. Annex 9 presents a suggested directorate and institute arrangements for the agriculture sector.¹³⁵

6.4.2 SECTOR- WIDE LINKAGES AND RELATIONSHIPS

It was possible to identify institutional gaps related to linkages or relationships i.e., synergy. This includes issues of information exchange; linkages among GOs, NGOs, and CSOs; RE&D; quarantine, standard and quality control; warehouse receipts and ECX; irrigation construction and use; and pastoral affairs coordination. In the existing RE&D system the pastoral and agro pastoral issues are not adequately covered. Hence it is timely to review *the RE&D system putting the agro-ecology and integrated approach into perspective*.

Sector-wide institutional arrangements, specifically linkages and relationships, should be tuned to make farmers income increased and their standard of living improved in the coming 10 years to the level that commensurate with the national vision of having middle income country citizens whether they are in agriculture or non-agriculture occupation.

Inadequate vertical and horizontal collaboration among research institutes and weak research extension farmers' linkage tended to the woreda level appears to be some of the institutional challenges contributing to the lack of effectiveness in the RE&D chain that has to target increased farm income as a goal. Productivity and production gains should not be the major performance indicators of the R&E systems in the years ahead. Rather it should be the systems contribution to farmers' income and levels of living changes. Put differently, from relational aspects one area of investigation is the linkage among research and extension, technology development, multiplication and distribution, farming and agro processing, as well as marketing and trade institutions¹³⁶. The farming and processing can be examined in view of use of modern versus traditional technologies in both small and large scale set up. In economic analysis all of them can be examined in view of prices and incomes explained by the laws of supply and demand where final demand (consumption) may remain as the driving force for research and extension programmes designed to enhance farm and agro-processing and related businesses incomes.

Agricultural inputs quarantine, standard and quality control both in crop and livestock agriculture calls for a strong linkage among relevant institutions such MoARD's Animal and Plant Health Regulatory Directorate, Agricultural Marketing Directorate, Customs Authority, Private input producers and traders. As appropriate CSOs, particularly those established within the agriculture sector should come in a formal linked institutional arrangement in order to address national issues of agricultural inputs and outputs quarantine, standard and quality issues.

¹³⁵ By no means the proposed arrangement becomes hindrance to changes due to the up-coming BPR and BSC results within the sector.

¹³⁶ Marketing and trade encompass issues of infrastructure such as storage, transports as well as practices such as packing and assembling. Trade issues as usual require the assessment of the import and export activities.

6.4.3 *INSIDE NARS*

Above the relational aspects of the agriculture research and extension institutions is explained. However, there are organizational issues that need to be rectified within, particularly in the national agricultural research system (NARS).

The agriculture research system of the country, which is also referred as the NARS includes EIAR, RARIs, HLI, IBCR, and Ethiopia based CGIAR affiliated institutes such as ILRI. There are existing problems of coordination mostly institutional, though some say they are policy problems by feature. By proclamation it is EIAR mandate to coordinate NARS. But the coordination role and the activities related to it are not clear from that of the mandate of EIAR to conduct agriculture research at its Federal research centers. RARIs complain that EIAR first did not understand its coordination role, secondly because of this it has not build its capacity to coordinate over the years, and in turn remain weak to coordinate and share resources that are obtained from treasury and external sources. Thirdly they complain that EIAR is indulging in research programmes and activities that are the mandates of RARIs. The notion of “Center of Excellence” and the possession of some research center by EIAR for this purpose seem also to create a wage between some RARIs and EIAR. Similar blurredness exists between EIAR and HLIs. The linkage between EIAR and IBCR is also wanting.

The GOE has started to take a measure to rectify the problems between EIAR and RARIs. The PIF consultants’ team was informed that a document that seemingly contains the solution to the existing problems or lack of clarity in terms of institutional mandates was prepared in June 2008¹³⁷ but still not finalized. Even if it is finalized it is the feeling of some of the interviewed experts that it will have little value addition to solve the problem that is in place between the RARIs and EIAR. Some members of RARIs also relate some of the issues to the Federal and Regional Constitutions and the rights enacted for them to discharge their duties and responsibilities. Implying that even if the document gets finalized, they will continue to operate and discharge their duties and responsibilities provided that they are not negating the constitution and the mandate provision given to their institutes’ establishment. In short, there seems to be a serious institutional arrangement and coordination mechanism problem that needs to be resolved by the concerned bodies in the soonest possible time. This is urgent for the agriculture research system to remain one of the key players scaling up/out, enhanced interventions in natural resources utilization and management, as well as the commercialization of smallholders’ agriculture via the possible import substituting agro-processing business ventures development strategies in the NFYDP.

The above being on the technical side of NARS, during the PIF preparation it was also noticed the resource provision, budget, for agricultural research is also an issue to be addressed by Federal and Regional governments soon. For agriculture to excel within and without investment on agriculture research is a driving engine. Despite the problems highlighted above, Ethiopia is fortunate in having a highly competent NARS composed of EARI and RARIs with dedicated research staff. However, especially given the quality the expenditure is not sufficient to maintain a high response to the NFYDP scaling up and out specifically to increased use of biological (variety) and chemical (fertilizer) technologies as well as the use improved farm tools, equipment and machinery. In this regard there should be an increase in the expenditure on agricultural research to a modest level, for example, increasing it from the current share which is below 1.5% of AGDP to 2% as agreed by IGAD member countries. One strategic approach to solve resources constraints is to increase collaboration with the CGIAR member institutes.

¹³⁷ The document is in Amaharic dated June 2000 E.C.

6.4.4 STRENGTHENING THE PM&E SYSTEM

The next 10 years agriculture development programmes and incremental investments to be embarked on should be well fitted with sound planning, monitoring and evaluation (PM&E) systems. Good practices of PM&E need to be instituted in the sector and among related sectors at all levels of government and non-government agencies. Field visits and discussion with experts revealed that there is no coordinated development activities planning and implementation among federal, regional governments, as well as NGOs and donor communities. Sometimes different offices or NGOs intervene in the same woreda with identical development projects. Most of the programmes or projects run by bilateral donors are not known to the PPD of MoARD and regional BoARDS and the directors at different levels do not know what kind of gaps these projects are filling in. Some directors even say that they know about the existence of some projects/programmes of bilateral donors when they are invited to participate in a workshop that is arranged after mid-term or final evaluation, an evaluation arranged by the donors themselves. It has been pointed out, for example, that donors are good in agreeing quickly to have established joint programmes but drag a lot or remain unwilling to pool resources for the agreed programmes and plan and M&E the same from one coordinating body. This needs to be corrected. Besides, the programmes and projects run with government recurrent budget often fail due to lack of proper and adequate PM&E system. Activities are not planned from the local government up to the top level with participation which eventually pave the ground for follow up and accountability. Interviewed officials and experts in various institutions agree that it is good to decentralize development activities implementation and give more authority and responsibility to woreda administration. But at the same time there should be a clear guideline on how to plan, monitor and evaluate starting from kebele up to federal level. All these call for the setting up of a strong PM&E system within the PPD of MoARD.

6.4.5 AGRICULTURE SECTOR STUDIES' COORDINATION

Quite a number of agriculture and food sector studies have been conducted be it in sub-sector, commodity, thematic or sector wide manner be it by the commissioning of the government, NGOs, or donors. Most of the time these have been done without coordination for traceability and use throughout the nation be it by federal or regional research and development institutes. Besides, during and after conduct, each study has contributed very little in terms of building a national capacity for agricultural development and policy research. The need for various studies in the area of agricultural policy, markets, marketing, market access, prices and trade is explicitly stated in existing policy and strategy documents of the government. Following this even in recent years several studies have been done in the sector but mostly by institutes of external origin, say IFPRI. The capacity of undertaking such studies within the country by institutions such as EDRI and EIAR, RARIs, or HLIs are wanting and even in the case of EIAR it seems vanishing. Often, the private sector consulting firms are also engaged through external firms. In such a situation there is a need for a programme and a body that should be responsible within the MOARD to coordinate and document various agriculture, food, marketing and price policy or development studies. It is suggested in the CAADP Ethiopia study recommendation and also adopted here. To start with it could be placed under the Planning and Programming Directorate with an initial capacity building resources provision. The programme must be able to establish a system of researchable problem identification, identifying potential research institutes both in the public and private sector, soliciting finance for the study/research, *outsourcing* the research or study for national and international firms such as EDRI, EIAR, RARI, HLIs, and IFPRI. It should have its own planning, monitoring and evaluation (PM&E) system, and be responsible to prepare policy briefs to policy makers as appropriate.

6.4.6 DICHOTOMIZATION AND THE RATIONALE BEHIND DEVELOPMENT RESOURCES

ALLOCATION

Recent studies¹³⁸ indicated that classification of woredas as Food Secure (FS) and insecure (FIS) is creating resource provision disparity for works that are important to mitigate natural resources degradation as well as provide preventive assistance to those whose assets in rural agricultural areas are denuding due to natural catastrophist. This classification was the result of projects like PSNP. Similar derailing seems to emerge with the *Agriculture Growth Programme (AGP) which is appearing with a dichotomization of woredas as high versus low potential*. It is possible to have projects that are location specific and time bound. But it is a mistake to follow what they followed to specify their project area as a guideline for the overall government budgetary allocation procedure. They should not create any confusing regular recurrent or capital annual budget propelling derailment.

Let the annual development budget setting and allocation to woredas follow strictly core Federal and regional programmes and externally financed projects connect only to these programs. The present classification of woredas on the basis of one problem and one project is making the so called high potential, food secure woredas not to have fair share of available resources to work on natural resources conservation practices, engaging them in income and job generating public works such as community roads, as well as attracting fair share of NGOs and donors spending on basic socio-economic infrastructures such as water supply and sanitation, and health services that are targeting malnourished children and mothers.

In short, there is an urgent need to halt the current project coined dichotomization of woredas and the ways and means financial resources are allocated for various development activities in this regard. One should recognize that policy formulation should not be caught in the single problem trap¹³⁹. The future should be built on a programme and project management framework that opens up for resource allocation on subjects or problems to be solved without prior lump sum spatial fashionable dichotomizations.

6.4.7 PASTORAL AFFAIRS COORDINATION: REVISIT

There is a gap in terms of having a legalized body which have the mandate to mobilize internal and external resources (fund) and align indigenous traditional institutions with formal institutions (research centers, Universities, administration etc) for the purpose of development in the PAP areas.

The Government of Ethiopia has given a high priority for the wholistic development of the PAP areas. This is manifested through the establishment of the Pastoral Standing Committee in the House of Representatives, and Inter-Ministerial Board under the MoFA, and the special coordination Offices of the PAP areas. Currently, the pastoral institutions located in the different Federal institutions are not communicating systematically with strong legal base.

In this regard, on pastoral affairs there is a need to reexamine the role of coordination offices in various ministries and that of the technical committee¹⁴⁰. Each institute appears to take its own course of action. There is a gap in terms of having a legalized body which has the mandate to mobilize internal and external resources (fund) and align indigenous traditional institutions with formal institutions (Research Centers, Universities, Administration etc) for the purpose of development in the PAP areas.

¹³⁸ The Sustainable Agriculture and Rural Development in Mountain Regions (SARD-M) Study in Ethiopia, Global Mountains Programme, February 2009, Addis Ababa Ethiopia.

¹³⁹ Demese, 2004

¹⁴⁰ CAADP Ethiopia Study, 2009 has a detailed discussion on this issue.

6.4.8 LIVESTOCK SUB-SECTOR INSTITUTIONAL ISSUES

Recent extensive studies in the livestock sector argued that livestock sub-sector in Ethiopia warrants a much more organizational arrangement than it has at the moment. Specifically the study by Tesfay et.al (2008) recommended that the livestock sub-sector should grow to a Ministry level. By the time they made this recommendation livestock has had a mere Departmental level position under the MoARD. Besides fishery has been detached from its previous structural linkages and not received appropriate position in view of the role it can play to meet the associated food demand. It is high time to revise the livestock and fisheries status both in terms of programme formulations and organizational setting. As can be seen from Chapter 8, in terms of programmes three distinct ones are identified, and these at least deserve to be housed in one separate Directorate of livestock and fisheries (Tabl3 9.3), if not at a higher level, say with a state-minster portfolio.

6.4.9 IRRIGATION: INFRASTRUCTURE- TO -USE

The linkage between MoARD, MoWR, BoARD and BoWR on irrigation infrastructure construction and use still needs a reexamination. During the regional visits the PIF consultants' team has noticed quite a big jump in terms of institutional arrangement between BoARD and BoWR on the planning, construction and use of irrigation infrastructure. However, more should be done on institutionalized linkage between them and between MoARD and MOWR in terms of transfer of the physical infrastructure, the work to be done jointly till the actual targeted beneficiaries are in use of the facilities, as well as in terms of repairs and periodic maintenance of the physical infrastructure. Beyond the initial stage, they have to also have unambiguous task division in terms of repair and maintenance interventions and use of established and institutionalized CBOs, like those of Water Users Association in the small-scale irrigation facilities use and management.

6.4.10 SEED SYSTEM: THE INSTITUTIONAL DIMENSION

Improved seed as a national strategic agricultural input needs emphasis with its complexity starting from production up to marketing distribution and use. In cognizant of this, quality control and the integration and working relationship among public and private research, development and multiplication agencies have become vital to facilitate the production and supply of improved seeds to the farming communities. However, this relationship falls short of the desired level of integration and coordination and as a result there is lack of adequate quality control measure, and certification of improved seeds¹⁴¹. Furthermore, the existing system is not giving a fair competitive ground for ESE as well as private seed enterprises. ESE is at a cross road of being a profitable parastatal and a non-profit making development supporting enterprise of the government functioning with controlled prices and protected labour. The private sector is not supported to expand particularly in the area of having support to access credit. Recently it is also facing intervention in terms of where and how much to sell, negating the profit driven competitive market business deal. Besides, the linkage between the ESE and the emerging RSEs need to be clear not only in the marketing sphere but also in the use of sole basic and pre-basic seed supply ARCs like Bako, in the case of hybrid maize. Both ESE and RSEs as public enterprises need also to adjust to the production of pre-basic and basic seed living space for the private seed producers, including farmers, to handle the certified seed production. In general, the system should be reassessed in terms of organizational and relational aspects so that all actors can work closely i.e. the public, private sector dealers, CSOs, specifically the newly organized Seed Association, NGOs, development partners as well as those enterprises working in the seed business but located in neighboring countries.

¹⁴¹ Refer CAADP Ethiopia Study, and also the Report on Assessment of the Formal Seed System in Ethiopia, October 2, 2009.

6.4.11 NUTRITION: BUILDING ON WHAT HAS BEEN DONE

The availability and access to food is the responsibility of MoARD while the utilization and dietary health and care is that of the MOH. On the basis of this nutrition strategy has been drafted and revised about five times in the last two decades. During this time claims of ownership of nutrition programmes by different institutions specifically MoARD and MoH has contributed to prohibit effective implementation of designed strategies. Currently it seems this problem is getting a solution. The recent National Nutrition Strategy (NNS) issued by MoH,¹⁴² which was based on the study coordinated by MoARD/UNICEF in 2005¹⁴³ indicates clearly that it is the MOH which will form and lead a national coordinating committee, and in turn this committee is expected to ensure the presence of integrated and wholistic nutrition programme designing and implementation at different levels of governments. The consultants team appreciated the coverage of the latest NNS document but still additional focus and efforts are needed to integrate adequately and appropriately the nutrition issues of PAP¹⁴⁴ communities, the standardization and explicit nutritional values of the diverse crop and livestock products and by-products, and to adequately address the productivity effect of malnutrition on food insecurity¹⁴⁵.

6.4.12 GENDER MAINSTREAMING

The rural workforce is proportional in terms of sex distribution. However, the women labour is still not adequately and properly used in the direct agricultural productivity and production enhancement and farm income augmenting context. As has been explained the next ten years high priority investment areas, natural resources management and irrigation, are those which need these labour source utilization to an optimal level. The small scale irrigation schemes use should be women centered. These and other agricultural development practices require an aggressive mobilization of the resources through increased gender mainstreaming works from the grass root up to the top development management echelon.

It has been noticed that efforts of mainstreaming gender are put in place in the various programmes of the agriculture sector. But they are not done as fast as expected. Some stakeholders relate the prevalence of problems in adopting appropriate processing technology and post-harvest to gender issues. For example, in the rural Ethiopia, whole milk is not marketed, but butter and cheese, locally processed, are. But both the processing and marketing is done mainly by women using traditional methods. Attempts to improve the traditional processing methods have not been successful so far partly because the gender conflicts related to the control of cash income from sale of these items. Same is true in poultry rearing. Similar efforts to promote high value cash crops, specifically horticultural crops are being challenged with the gender issue. It is mostly women that practice home gardening or have time to manage small-scale irrigated agriculture. But rewards to labour are not often going in terms of labour contribution made to such activities. In general gender mainstreaming needs to be strengthened and expedited in order to increase the marginal benefit obtained from rural labour (men and women) and in aggregate to enhance value addition in the agriculture sector.

6.4.13 CLIMATE CHANGE AND DRM

Climate change has recently become the major concern of the GoE. Particularly the government has given due attention to the impact of climate change on meeting the goals of reducing hunger and setting a sustained food secure country. Ethiopia at large and its agriculture sector specifically is extraordinary sensitive to climate change that impact everyday practices. Global warming (carbon

¹⁴² FDRE, National Nutrition Strategy, MOH, January 2008, Addis Ababa (Text in Amharic).

¹⁴³ An Assessment of the causes of malnutrition in Ethiopia: A Contribution to the Formulation of a National Nutrition Strategy for Ethiopia, November 2005.

¹⁴⁴ The NCs are aware of recent undertakings in this regard. (See USAID, 2009)

¹⁴⁵ For details refer Demese's contribution (Chapter 3) of the above study.

emissions, high fuel consumptions, and environmentally unfriendly manufacturing and consumption practices) will seriously affect Ethiopia's agriculture. Reports indicate that by 2020 up to 250 million people in the Sub-saharan Africa are expected to have less water. In areas where agriculture is dependent on rainfall yields will drop by 50% and many livestock breeds may not be able to tolerate the climate change.

A rise in temperatures as well as increases in rainfall variability are expected to reduce crop yields, exacerbate livestock losses, and as a result impose food stress on households livelihoods, and undermine development interventions. Therefore during the next FYDP implementation period the Disaster Risk Management (DRM) wing of MoARD and BoARDs have to design various interventions to mitigate the problems of climate change in the country at large and the agriculture sector specifically. In this regard two points are worth noting. First, climate change is a long term process and therefore requires well thought out long term solutions – what happens in a few years time is not climate change. Secondly, research must provide much of the solution to the climate change problem – shorter season varieties, more risk tolerant, etc. need research on what the problems will be, defined in detail and then research to help solve them. Also vital to reach the Governments growth and transformation vision so can better deal with the range of climate change problems. Very poor countries will be helpless.

6.4.14 INSTITUTIONAL CAPACITY: SECTOR-WIDE AND CRITICAL SPOTS

At the start of this sub-section it was mentioned that among the reasons given for poor or failed policy and strategy implementation is problems associated to institutions be it in the form of organization, linkages or capacity building. It is obvious that ultimately MoARD and BoARDs role is not to produce but to ensure those who are producing, more than 95% are private entities, are producing to the level best in terms of input use including knowledge and technology. For this to happen most of the public investment in the sector may have to go for service rendering and tangible public goods production in the areas of natural resources management, research, extension, and marketing and as recently started to the promotion of agricultural investment. In the context of the first three most of the investment has to be done at the woreda level, specifically in the form of capacity building.

Capacity gap indeed is a serious one in its entire dimension i.e., human resources, working premises, equipment, machinery, furniture and other facilities. BPR is bringing new and encouraging way of doing things. As one of its guiding principles BPR is to make efficient and effective use of available resources. Tasks are expected to be accomplished with least number of staff, timely with a support of modern equipment such as computers. But according to the discussion with various stakeholders, the problem is that the means to provide the necessary support and hence to achieve the designed change is not in place. Because of this, pressure is mounting on few individuals who are not equipped as expected in the BPR principles. In general the good intentions of BPR are being challenged by the practical absence of the needed capacity in program implementing institutions from Federal up to woreda level.

The problem is severe at the grass root, specifically at woreda levels. In ARD core in programme implementation are the woreda ARD offices. But most of them have no adequate and appropriate offices, equipment and furniture; hence the recent effort to put trained and educated human resource is subjected to underutilization. ATVETs and FTC require incremental capacity building interventions in terms of DAs/SMS skills up grading, providing them with the minimum instruments such as housing and means of transport, putting in place the least required FTC infrastructure, furniture and equipment, and ensuring demonstration farms to be exemplary in terms of centers of research results demonstration and revenue generating entities with innovative practices that did not derail their major responsibility of demonstrating new things or new ways of doing things to farmers.

CHAPTER 7

BUDGET AND INVESTMENT PROJECTIONS

7.1 ASSUMPTIONS FOR BUDGET PROJECTION OF ON-GOING PROGRAMMES

The next section presents the analysis and the 10 years annual budget requirement of the on-going programmes. Following that the results of incremental investment areas identification and costing are presented.

It is important to recall the findings of the previous chapters in order to grasp the rationale for the basis to calculate the budget for on-going programmes.

- In Ethiopia in the coming 10 years agriculture is still the key sector to lead the development of the economy towards industrialization.
- Agriculture can satisfactorily play this role even if it continue sustainably to grow at least at the CAADP target rate i.e., at 6%
- Agriculture may continue to lead but for industry to pick agriculture's growth rate must be higher so that its share to GDP declines at a faster rate, say close to 30% in 10 years time. (It is now, about 43%).
- Agriculture's share to GDP should decline but itself should remain a significant employment creating and poverty reducing sector.
- For agriculture to satisfactorily reduce poverty and eliminate food insecurity, while contributing to employment creation it requires a change in focus sources of growth. There is a need to shift gradually from a predominately cultivated area expansion and labor-based growth to scaling up of technologies such as improved seeds, breeds, fertilizer, AI services etc; appropriate shifts in the use of cooperatives and private traders in the input and product markets; investment in storage and transport; increased credit; strengthening of agricultural research and extension services; expansion of irrigation schemes that fit well to different agro-ecologies and geographical areas; as well promoting innovative and income augmenting natural resources conservation practices.
- The ODA for agriculture should shift its focus from relief to the above growth propelling interventions.
- Government is ready to review the proposed policy, strategy and institutional improvements in order to attain more than what it has achieved in the recent past.
- Government should take a bold action to consolidate sectoral programs and donors to align their support to government approved MoFED cost center sector programmes.

Given the above understanding budget projection for on-going programs in the sector requires the following assumptions:

Assumption 1: No major change within the sector in terms of programme arrangements. Donors support, whether they are part of RED&FS or not, have been aligned and harmonized with sector programmes. Put differently, national sector wide (MoARD and BoARDs) institutional arrangements programme, and projects that are shown in the latest available approved budget, i.e. 2007/8-2009/10¹⁴⁶ are the bases for the budget projection.

¹⁴⁶ For example, in the case of MoARD the list of institutions, programmes and projects are provided in Annex 10. Similar structure also prevails at regional levels.

Assumption 2: The budget projection has to commensurate with the GoE target growth rate (10%) for the sector and the economy at large in the coming development plan period. This is a key assumption which shapes the base for the calculation of the budget for the coming 10 years.

In Chapters 3&4 analysis of Ethiopia's agriculture sector growth was made using a 6% and 8% growth scenarios. The findings indicate that the economy is assured of attaining what it wants to accomplish in the sector if the sector growth rate is at least 6%. Recall also that the last section of chapter 5 shows that the agriculture sector has been growing on the average more than 10% since 2005. The government NFYDP is anchored on an expected 10.4% annual growth rate of the economy when the agriculture sector is expected to grow at least at 10%. In the last section of chapter five, and also in several other studies, it is reported that the performance of the agriculture sector and the overall economy, measured by GDP, is highly and positively correlated. Hence given the above any budget projection to be made should ensure that the budget should facilitate for the achievements of the targets set by the GoE.

It is important to emphasize that what has been achieved in Ethiopia is not because Ethiopia tried to copy what other countries have done but because it designed its own economy wide and sector specific strategies (ADLI and ARDC) and mobilized domestic and international resources with a determined and committed leadership for change. Because of this in terms of allocating budget for poverty reducing sectors, particularly in terms of allocating an annual budget for the agriculture sector which is more than the CAADP target of 10%, the country has become exemplary and same is assumed to continue during the coming FYDP and PIF period.

Assumption 3: The policy, strategy and institutional reviews suggested in chapter 6 are assumed to take place and unless there is a justifiable reason not to accept, the suggested changes will be in place immediately to drive the economy in the desired direction.

7.2 BUDGET FOR ON-GOING PROGRAMMES

During the assessment of the existing programmes for the PIF period budget requirement of on-going programmes, it was found out that 87 programmes are listed under five sub-sectors namely Agricultural development; Agricultural marketing; Natural resources development, conservation and utilization; Disaster risk management and food security; and Administration and management (support services). On the basis of MoFED definition and budget appropriation framework, there were 56 cost center programmes¹⁴⁷ distributed in these sub-sectors. The fifth sub-sector, in the context of budget center categorization, is adopted in order to capture public expenditure activities on administration, management, planning, and M&E.

The recent years' budget for the agriculture and natural resource sector is collected both at federal and regional levels. As shown in Annex 11 Table A11.1, in 2001 E.C (2008/09) the total adjusted budget for the sector was Birr 7.13 Billion¹⁴⁸. Overall, the share of capital budget increased from 58% in 2003/4 to 80% in 2008/9 (Table A11.2, and A11.3). For the Federal MOARD capital budget takes a higher share at 85% to 95% in the last five years. This shows at the federal level, indeed, the recurrent budget is mainly for coordination purpose and the bulk is going for investment programmes/projects that are contained in the capital budget. In the regions the share of capital budget has been less than 30%. It is worth noting that during the last three years (2007/8-2009/10), an average budget distribution of MoARD by sub-sectors shows that from the total capital budget, 82% was under the

¹⁴⁷The CAADP Ethiopia study final document did reduce them to 41 inclusive of modified and new ones. It is important to note that some parts of the CAADP Pillar may not be directly related to the agriculture sector development plans including this PIF preparation. Because pillars related to infrastructure development or trade are having tasks to be accomplished by other sectors such as transport and road as well as MOTI. Recently, there are attempts to refine the CAADP proposed programmes in line with the next five year development plan framework after examining the existing programs. For the details see Annex 9.

¹⁴⁸ The exchange rate by the time this report prepared was 1USD=13.4 Birr

food security programme. This is the recipient of the PSNP budget¹⁴⁹. Because of this, when the budget is examined on a sub-sector basis about 66% of the total budget of MoARD goes to DRMFS. It is followed by the natural resources and agricultural development taking a share of 15% and 10%, respectively.

Based on the available data and information¹⁵⁰ the consultants' team has made budget estimation for the agriculture sector on-going programmes. In order to do the projections, it was essential to follow some of the targets the government set for the NFYDP. The team adopted the 10% minimum growth rate of GDP set by the government for the years ahead. It is assumed that this will also be a driving growth rate to make the country reach its 2025 middle income country status. In order to ensure that the budget allocated to the agriculture sector is in alignment to the expected GDP growth rate, first the ratio (put in %) of the agriculture sector budget to that of GDP for recent years was calculated. The average ratio between 2003/04-2008/09 was about 4.10%¹⁵¹. At the beginning of the PIF period it is estimated to reach 5% and at the end to 7%. The trend of various years' ratio was analyzed, and on the basis of the calculated ratio a curve that fits the trend was estimated (Fig A11.1). Following this, the value of GDP for the years 2010 to 2020 was projected on the basis of the 10% growth rate. Then, using estimated agriculture budget to GDP ratio the PIF period budget for the agriculture sector on-going programmes is estimated (Table 7.1).

As shown in Table 7.1 the agriculture sector budget for on-going programmes is expected to be tripled by 2020 (end of PIF period). The budget which was Birr 7.12 Billion (including both recurrent and capital) in 2008/09 is expected to increase to Birr 9.6 Billion by 2010/11 and Birr15.8 Billion by 2014/15¹⁵² and reach Birr 27.9 Billion by 2019/20¹⁵³. It is worth noting that the agriculture sector budget share in GDP is to increase at a decreasing rate. This is because agriculture has to give way for the growth and expansion of other sectors with a proportionate shift of government budget share to the other sectors, too. This is also in line with the ADLI strategy.

The total estimated budget for the on-going programs of the sector during the PIF period was further distributed to the different sub-sectors. Annex 11 shows the distribution on the basis of the current allocation. Currently, natural resources get only about 8% of the capital budget. Assuming that natural resources interventions contained in programmes such as PSNP and AGP will be under the appropriate development sub-sectors, same as other sub-sectors, the analysis in CAADP study and the priority indicators in the next section suggest that the capital budget allocation should be changed to 31, 48, and 21 percent for natural resources, agricultural development (farm income improvement pillar), and agricultural marketing improvement interventions, respectively.

In general, in the years ahead about 60% of the total budget for the sector is expected to come from treasury and the rest from external sources in the form of grants and loans. Analysis of the agricultural capital budget data for the last 7 years (2004 to 2010) shows that, on average, treasury resources account for 60% of the budget while foreign assistance and loan took the share of 31% and 9% respectively

¹⁴⁹ For details refer to Annex 11.

¹⁵⁰ It was not easy to get and compile budget in all areas and regions. The best have been done in this regard.

¹⁵¹ For the procedures and the base figures used refer to Annex 11.

¹⁵² By the time PIF preparation came to an end the GoE did issue the NFYDP (PASDEP II). In this document the agriculture sectors five year budget is shown. The sector budget for the NFYDP for 2010/11 is 12.1 Billion while estimation by the PIF is 9.6. For 2014/15 theirs' is 18.1 Billion while PIF estimation is 15.8. This shows that the estimated PIF budget for on-going programmes is less than the government's own projection in the base year and at the end of NFYDP, respectively. For detailed comparative analysis results which also shows the discrepancy in terms of capital and recurrent projections, please refer Annex 16. The difference is mainly in the capital budget which plausibly means the government is expecting external support in a form of aid, grants and loans more than what it is getting in recent years and perhaps the recent trends of increased foreign support from non-traditional ones, like the recent appearance of mid-east and Asia countries, specifically China, as well as Bill & Melinda Gates Foundation support is to increase.

¹⁵³ The share of capital and recurrent budgets is kept constant at 77% and 23%, respectively.

Table 7.1: PIF period agriculture sector budget estimates for on-going programmes

Year	Estimated budget ('000 Birr)	Estimated budget ('000 USD)
2010/11	9,621,882	718,051
2011/12	10,965,654	818,332
2012/13	12,437,691	928,186
2013/14	14,055,081	1,048,887
2014/15	15,835,788	1,181,775
2015/16	17,778,719	1,326,770
2016/17	19,965,598	1,489,970
2017/18	22,358,133	1,668,517
2018/19	25,001,396	1,865,776
2019/20	27,922,550	2,083,772
Total	175,942,493	13,130,037

7.3 INCREMENTAL INVESTMENT AREAS: IDENTIFICATION, PRIORITIZATION AND COSTING

One of the major tasks of PIF preparation is identification and prioritization of incremental investment areas for the agricultural sector and estimating the magnitude of investment resources required over the next ten years. While the existing programs and projects in the sector need to be continued with allocation of budgets and development resources that commensurate with the agricultural sector growth plan targets, the investment areas identified during PIF preparation are those which need additional finance through *a project approach*. These investment areas are expected to accelerate Ethiopia's agriculture achieve a faster growth rate that paves the way for a faster decline in its share of GDP, which in other way means to transform the economy to an industry based one. This is the ultimate objective when ADLI is put in place.

Incremental investment areas were identified based on the criteria, clustering and pair-wise technique reported in Chapter 2. The consultants' team has identified about 24 incremental investment areas by the time it submitted the inception report. With a strict scrutiny and clustering of the investment needs by related thematic areas, finally, the list of areas of investment were condensed into 10 intra-sector and four inter-sector areas. These are divided into two¹⁵⁴, those within the sector and those that are cross-sectoral. The identified investment areas within the agriculture sector include irrigation, agricultural research, the seed system¹⁵⁵, livestock, natural resources management, agricultural cooperatives, market system and infrastructure, agricultural extension, private sector support, and agricultural credit¹⁵⁶. In the cross-sectoral category are rural roads, rural energy, nutrition and climate change.

¹⁵⁴ Details with elaborated focus issues or commodities are given in Annex 12.

¹⁵⁵ While the team was in Amhara region, the issue of farm tools and implements has been raised to be considered as one of the incremental areas. The team recognized it but to keep the uniformity of the prioritization exercise with the rest of the regions it was not reflected in the prioritization table. For detail see in Annex 12.

¹⁵⁶ One of the suggestions came out of the national workshop was to consider the food security programme (FSP) and disaster risk management (DRM) as one area of incremental investment. The Consultants' team has already included them as budget holders in the on-going programme. This includes the FSP's four components, namely, household asset building, safety net, settlement, and off-farm income generation. The DRM on-going programme budget also includes financing for additional silos and reserve storage capacity building. Cognizant of this, the government's strategy and goals including poverty reduction and attaining food security, the consultants' team still urges for the prevalence of a mind shift from relief to growth, growth that reduces the need for relief. Put differently, the PIF preparation team, after thoroughly analyzing government's strategies, directions and goals, started with a premise that in 15 years time (by 2025) the bulk of poverty and food insecurity

During the national workshop¹⁵⁷ there were two views on the clustering and prioritization of incremental investment areas. One view is to put agricultural research, extension, seed, fertilizer, and part of the livestock investment components, such as the promotion of improved breeds, veterinary and AI services in one cluster and leave the rest as listed by the consultants' team. The proponents of this also suggested after this change to consider a means to give priorities based on the rankings given by the three working groups of the workshop¹⁵⁸. The other view, which came from one working group during the workshop, is to leave the investment areas clustering as given by the consultants' team. The proponents of this view also said there is no need to prioritize among the 10 incremental investment areas identified by the consultants' team. They argued that growth will be achieved only if all the 10 identified investment areas are financed in a balanced, phased and sufficient manner dependent on location, depth and magnitude of the problem to be solved in the chosen location, and the urgency to solve (the time dimension). This group also argued that soil and water conservation is an essential entry point for sustained agricultural growth. Seemingly succumbing to the need for prioritization and is an indication for top priority position of the natural resources conservation and management area.

After the national workshop and the consultants' analysis of group deliberations, the intra-sector clusters are reduced to 8. This happened by introducing an investment cluster which contains systems and inputs that are closely associated with the government's next five year development plan that aims at scaling-up strategy of technologies and proven practices. These include research and extension systems strengthening with special emphasis on various components of the crop and livestock agriculture including seed, fertilizer, improved breeds, veterinary and AI services which are expected to be major sources of production and productivity growth in the short-to mid term of the 10 year PIF period. This cluster is labeled as agricultural production and productivity augmenting systems and inputs investment area (Table 7.2). Natural resources conservation and management includes incremental investment needs on soil and water conservation, watershed management, management of acid, saline and vertisol; land rehabilitation, land registration and certification, land use plan, fuel wood production, agro forestry and reforestation. Irrigation development investment area envisions investment which will be appropriately studied to fit the size and scale choice of the various agro-ecologies and geographical areas¹⁵⁹. The livestock development incremental areas, other than those contained in the new cluster, includes among others investment to upgrade vaccine production centers, establish regional semen centers, and establish laboratory management information system. Similar details for the other investment areas are also given in Annex 13.

With the new clustering arrangements, the top priority incremental investment area became agricultural production and productivity augmenting systems and inputs. Including this, the top five investment areas which the nation has to put in development projects and seek funding at the early stages of the coming FYDP are natural resources conservation and management, irrigation, livestock development infrastructure, and strengthening agricultural marketing systems and facilities. These top five choices closely go with the government agricultural development direction set for the NFYDP. The other investment areas that did not join the top five are not by any means less important than others. Ethiopia needs support in these areas, too. Hence, both the government and donors are expected to design development projects and solicit funding in these areas.

The benefits to accrue by having development projects that contain the above investment areas at large remain to be inclusive of gains in terms of making Ethiopia expedite the elimination of hunger, reduction of poverty by the end of the MDGs period (2015) and fulfilling the nation's goal of becoming a middle income country by 2025. These investment projects are also expected to ensure the

will be eliminated, hence there is no need to make incremental investment, other than the on-going financing, on food insecurity. Every effort during the PIF period should be made to orient relief measures towards growth.

¹⁵⁷ Annex 19 presents the comments and suggestions compiled and forwarded to the consultants by the PIF steering committee and the reflections of the consultants' team on the comments and suggestions forwarded.

¹⁵⁸ See Annex 19

¹⁵⁹ Annex 13 gives details of the sub-components or focuses of the investment area.

nations endeavor to make agriculture give the path way for the industry sector to lead. They are also expected to guide the shift from relief to growth oriented ODA.

The incremental investments which will be implemented in the sector following a project approach require estimating the cost of funding the procurement of human resources; physical facilities and capital that will enable them contribute to the achievement of the development targets of the Ethiopian agricultural sector. Costing of the investment areas basically refers to the costing of those critical elements (technologies, materials, institution capacity needs, facilities, etc) that are expected to affect and increase agricultural production and growth in relation to the expected targets set for the sector during the next 10 year plans.

Depending on the data availability, cost build up has been made using components and detailed activities of the chosen incremental investment areas. Table 7.2 gives total incremental investment finance requirements of each of the priority areas. Overall, a total of USD 9955 Million (Birr 133.3 Billion)¹⁶⁰ is expected over the PIF period for investment in the selected incremental investment areas. It is important to note that though irrigation is showing the largest share it is because of the high unit cost of irrigation infrastructure. Besides it should be known that irrigation is among the inputs to augment agricultural production and productivity both in the crop and livestock sub-sectors and it is solely for center of attention that it is listed as a separate area of incremental investment. The 8 incremental investment cluster areas are expected to come in a project format and be part of the annual budget (mostly capital) when availed. These investment projects require the government, particularly MoARD, to put in place bankable projects together with interested donors to finance them.

Table 7.2. Incremental investment needs of the selected priority areas

Rank	Investment areas	USD (Million)	Share of Total (%)
1	Agricultural production and productivity augmenting systems and inputs	706	8.00%
2	Natural resources conservation and management	1891.2	21.5%
3	Irrigation development	4648.3	52.8%
4	Infrastructure for livestock development	11.12	0.13%
5	Agricultural marketing systems and facilities	20.3	0.20%
6	Cooperatives support and strengthening federal and regional coop agencies	301.7	3.40%
7	Rural credit	343	1.30%
8	Private sector support	115.6	3.90%
	Climate change	770	8.70%
	Sub-total	8,810	100%
	Contingencies	1,145	13%
	Total	9,955	

Source computed by the Consultants' Team.

Table 7.3 provides the estimated incremental investment budget by CAADP pillar (climate adaptation is added here) When analyzed in the context of CAADP framework food production and food security attract the bulk (61%) of the incremental investment followed by natural resources (watershed management and land administration (21%) and climate change adaptation (9%)¹⁶¹. Here irrigation

¹⁶⁰ An exchange rate of USD 1: Birr 13.4 was used in this calculation. In each investment area a capacity building investment cost estimate is included (see Annex A11.11). The national workshop group deliberation suggested and agreed that this shall cover among other things investment to fill in system gaps related to ICT, critical physical facility gaps, and support to strengthen PPD of MoARD specifically in the area of PM&E.

¹⁶¹ In the identification of priority investment areas, climate change adaptation was designated as cross-sectoral issue. But it appeared in the investment cost estimate while the other cross-sectoral are not. The others have their own sector plans and are housed in well known sectors like roads in the ministry of transport, energy in the ministry of mines and energy, and nutrition

development is considered under food production and food security, which in the content of Ethiopia's agriculture sector means agricultural production and productivity enhancement pillar. Secondly, even if it is the food production cum security that takes a big chunk, it is tuned to growth rather than relief.

Table 7.3. Distribution of PIF incremental investment finance by CAADP+¹⁶² pillar

	Natural resources (watershed and land admin)	Rural infrastructure and market access	Food production and food security	Research and extension	Climate change adaptation	Total
Total '000 birr	28,637,149	3,809,328	81,146,396	8,141,622	11,659,340	133,394,375
Total '000 USD	2,137,101	284,278	6,055,742	607,584	870,100	9,954,804
%	21%	3%	61%	6%	9%	100%

Note: the budget in table 7.2 includes contingency allowance of a 13% variation due to price and/or physical changes.

7.4 NOTES ON THE INCLUSION OF CLIMATE CHANGE AND DRM

In the identification of priority investment areas, climate change adaptation was designated as cross-sectoral issue. But it appeared in the investment cost estimate while the other cross-sectoral are not. The others have their own sector plans and are housed in well known sectors like roads in the Ministry of Transport/Construction, energy in the Ministry of Mines and Energy, and nutrition in the Ministry of Health. Climate change is a recently emerging and highly important area of investment which still needs guidance in terms of formal sectoral placement. The consultants, however, believe the agriculture sector has quite a big interest and relevance for actions related to climate change adaptation and disaster risk management.

It is a well recognized fact that today the issue of climate change adaptation is among the top development agendas facing nations. Ethiopia has been facing serious climate change related natural hazards like frequent droughts (that sometimes lead to famine), floods and infrastructure damages. Climate related hazards have been causes for the instability of the performance of the national economy though weather uncertainties and losses in agricultural and natural resources production. Hence, adaptation to climate change effects is becoming not only a global strategy but also one of the major national development strategy options.

Despite the high significance of climate change effects, adequate and workable methods are not yet on the ground to estimate costs of adaption to climate change. Hence, data on cost estimations are lacking. In this study, attempt was made to solicit any information available in this respect. The World Bank recent study (Word Bank, 2009) indicates that climate change adaptation will cost Sub-Sahara African countries a 0.7% of their GDP per annum during the coming decade (2010-19) estimated at a 2005 USD price. Following this, it will cost Ethiopia in the range of 60.4 million to 156 million USD per annum during the coming years (2011-2019/20) depending on the growth rate and level of GDP. However, given the prevalence of climate related hazards and its multi-sectoral effects, this seems to be a low and conservative estimation of cost of adaptation.

The World Bank, in its multi-country study that includes Ethiopia, has recently conducted a study entitled '*Economic of Adaptation to Climate Change: global and country track*'. The study was

in the Ministry of health, roads. Climate change is a recently emerging and highly important area of investment which still needs guidance in terms of formal sectoral placement. The consultants, however, believe the agriculture sector has quite a big interest and relevance for actions related to climate change adaptation and disaster risk management.

¹⁶² The + is to emphasis the attention given to climate change separately and which is further elaborated in section 7.4.

conducted in 2009/10. This study has made detailed (and model based) estimation of the cost of climate change adaption, and impacts of investment in adaptations. Although this latest study provides a better insight on the subject and cost estimations, unfortunately, it is not possible to quote the study results as the report is not yet officially launched.

The Ethiopian National Adaptation Program of Action (NAPA) prepared by the Ministry of Water Resources (MoWR) and national Metrological Agency (NMA) (MOWR and NMA, 2007), has identified 11 national projects for the agriculture and natural resources sector for intervention in climate change adaptations and development measures¹⁶³. The document estimated that 770 million USD is needed to implement these projects. In addition, it was indicated that some 3.5 million USD will be needed to prepare the details of these projects. The estimated 770 USD climate change adaptation cost is added to the other agricultural sector incremental costs as elaborated above. According to the list of program and projects proposed by the Ethiopian NAPA, the major aspect of climate change adaptation has to also do with disaster risk reductions. In addition, the PIF team strongly believes that the proposed incremental areas of investment, especially, water resources and irrigation development, natural resources and land management largely contribute towards building the country's resilience to disaster risks.

¹⁶³ The identified program/projects are: promoting drought/crop insurance; strengthening drought and early warning system; development of small-scale irrigation and water harvesting; improving range lands resources; community based sustainable use of wetlands; capacity building for climate change adaptation; realizing food security through multi-purpose large-scale water development projects in Genale Dawa area; community based carbon sequestration projects; establishment of national research and development center for climate adaptation; establishment of malaria containment program in selected areas of Ethiopia; promotion of on-farm and homestead forestry and agro-forestry.

CHAPTER 8

ETHIOPIA IN THE CONTEXT OF INTERNATIONAL EXPERIENCE

8.1 RELEVANT FEATURES

Each country is a unique development experience. The historical background, the resource base, the level and spread of formal education, institutional structures, and the nature and orientation of leadership are among the many sources of differentiation. Nevertheless there are many constants about the evolution of economies, the process of economic growth and particularly the characteristics of rapid growth in agriculture. The experiences of other countries are of special relevance with respect to these constants. In a brief chapter the lessons must be simplified and only a few of the more relevant features discussed. Six of the constants are of special importance to Ethiopia. They are as follows:

- a. Development is a process of transforming an economy from largely agricultural to largely service and manufacturing. Agriculture can accelerate that transformation.
- b. Most farmers are constrained by limited land area. Therefore growth in their production and income is largely a function of technological change and shift to high value commodities –both raising the value of production per hectare.
- c. Farming is most efficiently pursued by a family size labor force, with consequent lack of ability to realize scale economies in many complementary activities, and therefore government plays a critical role in provision of technology and some of its accompaniments.
- d. The small size of farms, in terms of labor force, requires organization of farmers to provide scale economies for many aspects of the agricultural value chain.
- e. The nature of agricultural production processes requires specialized agriculture oriented financial institutions.
- f. Market prices and private business play a key role in rapid agricultural growth
- g. Roads and other physical infrastructure are vital to growth

These seven constants are discussed in the context of experience of five countries that have special lessons for Ethiopia. They are Taiwan (with brief mention of related features of Japan and the United States); Ghana (with brief mention of Malaysia and Rwanda); China; India, and Egypt. Obviously the most that can be provided in this chapter is a set of very judgment based vignettes. There is however a vast literature lying behind these vignettes and they do serve a useful purpose in setting Ethiopians efforts in a comparative perspective. It is important to note that in learning from other countries one should learn from errors and the corrections of those errors as well as from what was done right from the beginning. National agricultural credit institutions are a good example of learning from correction of earlier errors. In general the Ethiopian effort is commendable in those contexts. Next a brief on the experiences of the selected countries is presented. The specific lessons on economic transformation; government institutions

and technological change; farmer organizations; agriculture credit; market prices and private business and infrastructure, focusing on roads are briefly discussed¹⁶⁴.

8.2 LESSONS FROM SELECTED COUNTRIES

8.2.1 TAIWAN

Taiwan is the striking success story in pursuing the vision and ADLI model espoused by the Government of Ethiopia. It used agriculture to accelerate the economic transformation¹⁶⁵. It built highly productive agricultural research and extension systems in the public sector. It is a small farm model, averaging less than one hectare per farmer, in which farmers went from being very poor to very prosperous with little increase in size of farm. Within the context of ensuring stable food supplies and prices to consumers and taxing agriculture quite heavily market prices generally prevailed. Farmers were organized into powerful farmer run institutions.

Taiwan followed and implemented the Japanese model of facilitating growth in agriculture through strong research and extension, especially for the food crops. Taiwan is the clearest example of a country that reduced cost of production in agriculture through research based technological change and used that success to accelerate growth in the non-agricultural sector. It could be said that the most striking feature of Taiwan is the development of public sector research and extension to increase farm productivity and income and from this success in agriculture to assist the rapid growth of the industrial sector.

Throughout its history Taiwan has had strong farmer's organizations that were able to adapt to changing conditions providing farmer market power and organization to meet changing market needs. Again, consistent with the Japanese model Taiwan has amongst the highest coverage in the world of institutional credit with the government playing a major role in its development.

The government of Taiwan has throughout played an important role in determining basic cereals prices to ensure urban labor force stability.

8.2.2 GHANA

Ghana has much in common with Ethiopia. It had a multi decade long period of instability and rural insecurity, followed by a government explicit in its support of agricultural growth. Like Ethiopia it has had a few decades of rapid agricultural growth, based heavily on area expansion. Increased area devoted to cocoa has been the primary driver of agricultural growth. Like Ethiopia the strategy will have to move in the direction of increased yields based on rapid growth in fertilizer use and improved seed and expansion of additional tropical export crops. The resource base as compared to Ethiopia is much more low fertility, high rainfall tropical areas suited to tropical tree crops – including rubber, oil palm, and cocoa. The relative role of the export crops is as a result greater than in Ethiopia. Nevertheless there are several useful lessons in this major success story.

Like Ethiopia and unlike most African countries, Ghana has put substantial resources into the agricultural research and associated extension system. Unlike almost all countries agricultural research is within the

¹⁶⁴ Annex 14 gives a more elaborated country based discussions on each of these areas as well as on issues related to family size farms also covering some experiences from Japan, USA, Malaysia, and Rwanda.

¹⁶⁵ . This section draws heavily on the definitive book on Taiwan by T. H. Lee. Lee worked for many years in the Taiwan equivalent of a Ministry of Agriculture, won the US Agricultural Economics Association award for best Ph.D. dissertation for the predecessor to his definitive book and served as President of Taiwan during the period of rapid democratization. Work by Bruce Johnston also influenced this section.

Ministry of Science and Technology, not agriculture. This has certainly impeded gaining a practical orientation and the links with extension. Nevertheless the need for those links is recognized and modest steps taken to develop them.

Again, like Ethiopia the agricultural financial systems are not well developed on a broad scale. This is characteristic of most late developing agricultures because of the widespread view that the occasional problems of specialized rural credit institutions meant that all were failures. Similar to what the GoE is currently doing, the government of Ghana is spending heavily on road construction with the basic grid largely provided but the farm to market road system way underdeveloped.

8.2.3 INDIA

India has tried many approaches to agricultural growth, with a huge amount of measurement and analysis and adaptation. In a sense most approaches that do not work and most that do work have been tried and measured. Most important programs have evolved over time. The economic transformation has proceeded rapidly, but with a less explicit strategy than Ethiopia's ADLI. Rural infrastructure has grown very slowly and been a major retardant to agricultural growth. States like Punjab are an exception with all villages on all weather roads and electrified and have shown huge agricultural growth.

The lessons to learn from India are that small farms need to be assisted in access to technology and capital, they then maintain the labor input advantage but do not lose out on technological advance. In the area of farmers organization Ethiopia has a much clearer national policy on cooperatives than India, even though Ethiopia could learn from the most successful large scale cooperatives such as Amul in the dairy industry.

Indian has a huge national credit system that reaches a high proportion of farmers. Commercial Banks are required to lend ten percent of their funds to farmers – helping large farmers and bringing a useful competitive element. Lessons can be learned to avoid those problems as Ethiopia moves to forming a national specialized rural financial system. In India, the government provides massive subsidies – to consumers for subsidized food and to farmers for subsidized fertilizer. The former is done for political stability in urban areas and along the way has stabilized basic cereals prices to farmers (something most Asian governments do.) The lesson for Ethiopia is that if subsidies are to be introduced it is important to lay out the exit strategy at the beginning. In general India has left the private sector free to distribute inputs, in the case of seed gradually loosening the monopoly of state seed enterprises so that the private sector has become strong throughout the seed industry. Before that loosening the public sector was unable to meet demand and agriculture was held back by lack of seed.

8.2.4 CHINA

China is of course a virtually unique case of a radical shift from large scale cooperative and state farming to small scale family size labor force farming with a host of other changes accompanying that shift. From that unique experience comes several useful lessons.

In China, education was expanded and made roughly universal even in rural areas and the road infrastructure was expanded in rural areas. A wide range of public institutions essential to agricultural growth were also instituted. Hence much was put in place for rapid agricultural growth, except for the farmer incentive system.

The Government of China has from long before the Communist period had a strong agricultural research system and has constantly increased expenditure and upgraded it so that it is now a leading system by

world standards. That has been the technological base for rapid growth. From the commune system also came a strong legacy of farmer's organizations, encouraged by the widespread education system. The Communist system emphasized rural roads and made huge progress. There continues to be such an emphasis.

Compared to Ethiopia, China has a highly developed broad based agricultural credit system. China has always controlled prices – during the Communist period keeping farm prices very low to finance the urban labor force and industrial growth and more recently to provide stability of urban and farm prices.

8.2.5 EGYPT

Egypt is a middle income country, a status to which Ethiopia aspires. Overall, Egypt has transformed its economy to one dominated by industry and services. Agriculture is well under 20 percent of the GDP.

The agricultural research system is excellent, it is linked well with the extension service and there is a national rural credit scheme that works well. The government, with significant help from foreign assistance has provided a large, diverse national research system that is reasonable well integrated with extension. Cooperatives and other farmer's organizations are widespread.

It has a private sector run high value crop export sector that is efficient. Ethiopia can learn much as it develops its potentials in these crucial areas. The rural non-farm sector driven by farm incomes is far larger than that of Ethiopia, demonstrating the potentials for Ethiopia. Egypt has invested heavily in roads for a long period with resultant excellent rural road system.

There is a widespread national agricultural credit system. Ethiopia can learn from the Egypt experience in both of these areas. Egypt has a long history of interference in market prices. The most ubiquitous intervention is huge subsidies of bread to consumers. That has played a major role in holding poverty levels at a low level but at very large fiscal costs that preempt funds from productive investment. Poverty rates are substantially lower than would be predicted from the average income level.

8.3 OVERVIEW

In all of the countries examined¹⁶⁶ the economy has been substantially transformed from largely agricultural to largely industrial and services. In most cases agriculture contributed substantially to that process – through export earnings to finance industrial capital, providing low cost food and conserving on use of foreign exchange for food imports, and in some cases through direct and indirect taxes on agriculture.

In all cases the government played a major role in agricultural research and extension and provision of specialized rural credit institutions. Ghana, for reasons explained is somewhat laggard compared to the ideal with respect to these institutions, but still more developed than most other low income countries. In most cases farmers organizations, particularly cooperatives have played a major role with the role of government in helping or hindering that development varied. Similarly for specialized rural credit institutions. The countries vary among themselves and over time in degree of market price orientation and role of private business. Interference with prices is substantial in several of the countries, primarily in order to ensure low cost food to urban populations, but over time that has evolved towards protecting incomes of farmers through price support, usually enforced through import controls. China had the most radical change from the highest degree of interference with market prices and private incentives to a

¹⁶⁶ In this chapter as well as Annex 14

radical reduction – that change was concurrent with a very large acceleration in the agriculture growth rate. That in turn is clearly related to greatly improved incentives to farmers, but in the context of technologically based potentials to drastically reduce cost of production. Without exception, the private sector handles fertilizer distribution and in most cases multiplication of certified seed and sale to farmers.

The lessons to Ethiopia are clear. Most important Ethiopia is on the right vision and strategic track – better articulated than most of the countries – in its ADLI vision and strategy. Countries that have pursued a reasonable approximation to that strategy have had more rapid transformation of their economies than others. Taiwan is the poster child for this. Ethiopia is on the right track with a large scale extension system and building indigenous agricultural research capacity. All the countries cited here show very high marginal returns to research – they are all under spending on research and most are spending much more than Ethiopia. Ethiopia is right in building the cooperative movement as a strong institution and in being explicit about not using force in that effort and in minimizing the role of government in management of cooperatives. Ethiopia has done less well in building specialized agricultural finance institutions – perhaps better than Ghana but way behind all the others. That will become an increasingly important issue in the future

A notable feature of these comparisons is the large role of foreign assistance in developing the three key public sector oriented institutions for research, extension and credit. In all the earlier developing countries (excluding China) foreign assistance to higher agricultural education, research, extension, credit and development of cooperatives has been very large both in financial transfers and technical assistance. That was true for Ethiopia in the 1960's as well. However in recent decades that type of support at the national level has largely disappeared. Ethiopia and Ghana have made significant national investments in these areas, but would have benefited immensely from large scale foreign aid. The CGIAR system has filled some of that gap. However, empirical studies by Robert Evenson at Yale University show that the more a government spends on its national system the more it draws upon other countries and the international system. Thus national expenditure on research is a complement to the international system not a substitute. Note that in the investment chapter investment in research is rated either number one or number two depending on the rating group – but foreign aid does not give that priority.

In summary, the comparisons strengthen the case for Ethiopia's vision and basic strategy. They offer useful lessons for developing agricultural research, extension, credit and cooperative systems as well as in several policy areas. They confirm the value of freeing areas appropriate to the private sector for those activities. In general Ethiopia is following the positive lessons. It needs foreign assistance in the key areas that were historically important in foreign assistance.

CHAPTER 9

CONCLUSION AND RECOMMENDATION

9.1 CONCLUSIONS

The assessments and findings of Ethiopia's agriculture sector PIF preparation reaffirm that the GoE vision of reaching a middle income country status by 2025 is possible but conditional to its adherence to the ADLI strategy. Agriculture should continue to lead the transformation of the economy to industrial with a slight adjustment to the ARDC strategy. The adjustment required is to pursue a combined land, labour and capital using strategy in the short run following the directions set in the NFYDP base document and in the mid to long run by availing capital for the public and private sector investment in conservation of natural resources, development of appropriate irrigation schemes, in farm inputs, farmers organizations, specifically cooperatives, as well as the promotion and expansion of market oriented value adding private sector that particularly exploits the livestock and the high value exportable crop sub-sectors. Put differently in the short run, i.e., in the coming 3-5 years priority investment areas are those related to agricultural production and productivity enhancing systems and inputs. All these require a mind shift from donors' side to support Ethiopia's agriculture growth by garnering resources for this purpose. Spatially the low land areas should receive increased capital investment particularly in promoting irrigation agriculture and modern livestock husbandry, processing and marketing.

Agriculture, based on extensive land and labour use, has contributed to the recent years registered economy wide as well as sector specific growth in terms of increased revenue and foreign exchange. Most of the benefits gained from the growth of the agriculture sector have been diverted to the growth of service, industry, energy, and telecommunications sectors, as ADLI imply. Now it is time to invest in agriculture by investing more on the investment areas that hasten the transformation of the economy to industrialization. This requires a change in focus of sources of growth. There is a need to shift gradually from the predominantly land and labor based growth to scaling up of technologies such as improved seeds, breeds, fertilizer, AI services etc.; appropriate shifts in the use of cooperatives and private traders in the input and product markets; investment in storage and transport; increased credit; strengthening of agricultural research and extension services; expansion of irrigation schemes that fit well to different agro-ecologies and geographical areas; as well promoting innovative, income augmenting natural resources conservation practices. These are also captured in the identified PIF incremental investment areas. The investment portfolios should be diversified and specialization should be encouraged with the backing of increased investment in crop and livestock high value and specialty commodities, specifically those which promote commercialization and out growers scheme linked with agro-processing businesses. In the later case government efforts to promote the private sector expansion should be matched with donors support to generate and avail financial resources and capacity building of the sector.

In terms of investment framework the PIF preparation process end result is the identification 8 incremental investment areas within the sector and 4 outside the sector. The GOE and its development partners should work in harmonized and coordinated manner following a project approach to invest in these areas. Specifically the assessment done indicates that in the coming 10 years Ethiopia's agriculture will make the expected contribution to sector specific and economy wide development goals if augmented investment is made in natural resources wise use and management, irrigation, and agricultural research and development as top priorities. Donors should work closely with MoARD's Planning and

Programming Directorate to make Ethiopia have well known, sustainable and efficiently managed agricultural programmes which transcend project periods and changes of donor's interest.

Finally, the documents reviewed and the discussions held revealed that the GoE has made tremendous efforts to perfections in terms of setting policy, strategy and the necessary institutions. But as it is everywhere in the world policies are conditional and subject for review. The government in its RDPS (2003) document also clearly stated that policy review is part of its working imperatives. Hence, on the basis of this the gaps and weaknesses identified and listed in chapter six of this report should get focus and be subjected for review for the PIF implementation. If this and the afore-mentioned concluding remarks are considered then reaching a middle income country level with an agriculture sector that will grow fast but with more rapidly declining GDP share can be achieved concurrently by making agriculture to absorb significant employment, high contribution to reduction of food insecurity and income poverty.

9.2 RECOMMENDATIONS

9.2.1 BROAD ISSUES

Programme consolidation and the project approach: In the agriculture sector program consolidation has to be made to take advantage of economies of size and scale in the future. Programmes' management overhead costs can be reduced tremendously through this effort and the saved amount can be redirected to productive development augmenting investment areas. The PIF proposed 36 programmes need to be adopted as a framework for coordination and harmonization of agriculture sector interventions nationwide. They should become the cost centers whereby any other projects and interventions financed by treasury or external sources will be registered under them. Donors should provide their support to the sector under these programmes. There should not be any programme within the sector without being known by the sectors coordination body, MoARD, and specifically by its Planning and Programming Directorate (PPD) which has the responsibility to integrate all via a well established, transparent and accountable PM&E system.

Programme budgeting: Programme budget should be practiced. Programme (process) owners (directorates, Institutes or Agencies) should set appropriate program specific *monitoring and evaluation* mechanisms that is well integrated with the overall PM&E system of the sector to efficiently and effectively implement existing programmes with available resources. It is only through this way that one may be able to see how much each Birr invested in the public sector (be it by treasury or external sources) is returning positively by benefiting the target group considered at the planning stage.

Preparation of bankable project documents: PIF has identified incremental investment areas which should come in the sector through a project approach. MoARD, specifically PPD, has to take the initiative to prepare bankable projects and present them to development partners who may have special interests in specific investment areas part or in full coverage. It seems there is a CAADP platform initiative that can finance the preparation of bankable projects and this should be used by PPD as an advantage and gullible opportunity.

Partners support, accountability and institutional arrangements.

One of the objectives of the PIF assignment was to identify where and how partners could provide external assistance with a view to maximizing its impact/return for the country. This study start covering this issue early enough, in chapter 3, by suggesting that development partners, particularly bilateral agencies to shift their focus of support from relief to growth promoting development projects, such as

supporting the irrigation development, conservation of natural resources, or the promotion of private investment in high value exportable agricultural commodities. The study has shown that although donors contribution to the government budget will be scaled up on the basis of the budget projection and given the conditions set a prior, their annual support to reach to 6.4 Billion Birr (USD 478 Million) by 2014/15, 11.2 Billion Birr (USD 835 Million) by 2019/20¹⁶⁷. This is by considering at least a 40% contribution of the donors/development partners in support of the budget requirement for the on-going programs during the PIF period. In addition, the investment requirements for the incremental investment areas will be largely solicited from the donors/development partners depending on their area of competence and interest to the support the country's development visions. It is also indicated that for a higher growth and a faster decline of the sector's relative contribution to GDP, donors should embark on investment projects designing, fund solicitation and financing of the same in the 8 intra-sector and four inter-sectoral areas. In doing so donors should align and harmonize their support in line with government recognized and MoFED registered sector programmes. It has been found out that there are several programmes/projects run by bilateral and UN agencies which are not known or not well integrated in the PM&E system of MoARD. It is partly due to this that in chapter 6 suggestion is made for MoARD to establish an agriculture sector studies and donor support coordination unit as well as the need to strengthen its PM&E system. The handling of the donor support programmes and projects raises questions of integration and presence of mutual accountability both for inputs used and results achieved from government bodies and donors side. The already started RED&FS institutional arrangement should be strengthened to accommodate these issues as well as to bring on track the agriculture programmes/projects of donors who are not yet members of the RED&FS platform and those who are resurging such as those from the Middle East, Asia especially China, and foundations such as Bill & Melinda Gates Foundation.

9.2.2 SPECIFIC ISSUES

Agriculture research and extension: Although the government policy and strategy documents, starting from the Revolutionary Democracy, specify the role and importance of agricultural research and extension in development and the required integration and coordination among research and extension institutes, still much is desired to be done. There is still a gap in terms of integrating education, research and extension in the agriculture sector institutions. Specifically the NARS needs a revisit either in search of a policy or institutional solution to the many problems that are being raised by the RARIs, and HLIs and other stakeholders of NARS. Rectifying this problem the GoE has also to take a policy stance that the budget for agricultural research becomes 2% of the AGDP.

The livestock sub-sector: The livestock sub-sector despite its huge potential seems a forgotten sub-sector in the national economic development endeavors and specifically in the agriculture sector development initiatives. The sector has still several problems to be resolved in the area of animal feed, health, bred improvement and associated production, processing and marketing activities. In order to enhance the national contribution of the livestock sub-sector to GDP it should get appropriate position in the agriculture sector ministerial and bureau level arrangements. The least should be that it has to have its own process owner (Directorate) in the MoARD and regional BoARD.

Agricultural Credit: The agricultural credit system in the country does not provide a comprehensive national system of competitive agricultural credit to small and large scale commercial farmers. The current system of MFIs can probably sustain the credit growth required for the many traditional smallholder farmers and rural small-scale entrepreneurs. Over the longer run major changes are needed.

¹⁶⁷ This is on the basis of PIF budget projection. But the GoE NFYDP projections are higher than that of PIF (see Annex 16) indicating more is expected to come from external sources be it traditional or non-traditional ones in a form of aid, grant or loan.

Commercial agriculture and agro- processing by smallholder individual farmers, cooperatives, or large-scale commercial agriculture investors has to take place. In this context, the credit requirements of the agriculture and rural sector will be highly specialized and require a comprehensive national system. Such a system is the norm in countries with successful agricultures ranging from the United States, to Japan, South Korea, Taiwan, India, and many other countries. However, in view of the challenges that these countries face, the GoE should first commission a study that makes a thorough assessment and recommend for a sustainable agriculture and rural credit system and institutional arrangement. The chosen system must of course be adapted to the conditions in Ethiopia and the existing institutional structures. Given the very large and varied experiences of other countries the study can benefit by having members with extensive international experiences. Thus a composition that includes both Ethiopian nationals experienced in Ethiopia and international experts experienced in a range of other countries with successful systems should be members of the study team.

Integrated approach in farm inputs policy and strategy design

It has been mentioned that the promotion and introduction of improved farm tools and implements should be considered along the major investment areas during the PIF period. During regional visits it has been also mentioned that the disintegrated approach to address the policy , strategy and institutional aspects of some farm inputs, particularly seed and fertilizer, makes the sub-sector capacity building erratic in seeking solution for the old traditional and backward technology using Ethiopia's smallholder farming. Besides, unlike the past and recent efforts to introduce seed-and-fertilizer based green revolution what Ethiopia needs is water centered, specifically small-scale irrigation and water harvesting technologies, centered green revolution. Such revolutions should be also focused on the strategic use of the available abundant labour, particularly women labour to lead the small scale irrigation interventions. These indicates that in the agriculture sector it is important to give appropriate and adequate attention to all types of farm inputs, hence any revolution to take place in rural-agriculture Ethiopia should be water and women centered.

Guiding the dynamic economic development of PAP areas: GoE has made huge investment on infrastructure development in PAP areas. The investment in roads, electricity, and telecommunication and water resources, both for agriculture and drinking purposes, is attracting investors from outside as well as ignited changing livelihoods within the PAP community itself. Pastoralists' livelihood changes and diversification in alternative income generating enterprises including agriculture and non-agriculture alike is taking place. All these are searching for appropriate policy measures to guide them. Besides, the emergence and expansion of small towns as part of the urbanization process is further adding to this complexity of the dynamic economic development undertakings, calling for ex-ante policy and institutional formation or reviews

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