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Combating Food Insecurity and Rural Poverty in Ethiopia:

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Abstract:

This special journal review paper presents papers, most of which were contributions to Research Symposia on International Development Issues that convened at Western Michigan University on August 16-18, 2001 and in Addis Ababa and in Ethiopia on July 11-12, 2003i respectively. The selected the papers deal with the various dimensions of famine and food insecurity in Ethiopia such as food crop production technology, marketing, land tenure and management, agro-forestry, vulnerability to impoverishment, rural poverty, environmental degradation, and policy options for improving market participation for small farmers and livestock producers, and rural vulnerability.

Keywords: Food Insecurity, Rural Poverty,

JEL: Q11,Q13

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Introduction

The review is motivated with the aim of addressing the problem of recurrent famines and food insecurity that Ethiopia faces including the most recent famine in 2003. Among the questions that motivate the paper is why after more than a decade of World Bank/IMF market liberalization and structural adjustment, and agricultural-led Industrialization (ADLI) strategy, Ethiopia found itself in 2003 in a famine and food crisis equivalent to the Great Famine of 1984-85 famine? The selected papers also demonstrate that famine is a complex issue caused by various factors such as inadequate food production, marketing problems, land tenure, and natural resource degradation, and poverty, as well institutional and public policy or governance failures. While the relative contributions of these factors vary, we believe the role of the failure of institutions and public policies is most critical factor that drives the problems in case of Ethiopia and many other African states. The papers reviewed engage the various contributing factors to famine and poverty head on. In this summary review, our task is to briefly highlight the contributions of each authors listed in reference, and to provide synthesis that draw from the papers including our own perspectives on constructive policy options for combating poverty and famine in Ethiopia. In the review, we inject our interpretation of the issues including drawing policy implications from the papers reviewed. In this process, we take full responsibility for our views, which may or may not be shared by the individual contributing paper authors. We categorize the contributed papers into the following sections that capture sub-thematic dimensions of the Poverty and food insecurity/famine problem in Ethiopia

Combating Famine and Rural Poverty

The preface on Combating Famine and Rural Poverty by Carl C. Eicher, Distinguished Professor of Agricultural Economics at Michigan State University will be presented in full as follows:

Today there is an abundance of pessimism about Africa's food and agricultural outlook after 50 years of foreign aid and thousands of agricultural development projects scattered across the continent. But there was also a similar cloud of food pessimism hovering over Asia in the early sixties because of poor harvests, projected famines and evidence that the community development model was unable to increase

food production and generate a reliable food surplus. India's food crisis of the early l960s was repeatedly in the international news and it dominated the debates among the major donors at the time. But the crisis spurred Indian political leaders and planners to abandon the priority they were giving to industrialization and replace it with an agricultural-led model of investing in the prime movers of a modern agriculture: human capital, new technology, roads and irrigation and a favorable macroeconomic environment for farmers coupled with an agreement with donors to provide food aid to the cities until food self-sufficiency was achieved. India also was fortunate to be able to import high yielding rice and wheat varieties that laid the foundation for the Green Revolution of the sixties and seventies. Through concerted effort and outstanding political leadership, the government slowly increased food production over a 16 year period (l965-81) and it became self sufficient in food in 1981. In fact, the government of India contributed food aid to Ethiopia during its 1984-85 famine. Today, India has over 50 million tons of food in public storage. Looking back some 20 to 30 years, the agricultural success stories of India, China, Malaysia, Taiwan and many other countries in Asia and Latin America have demonstrated that poor countries in Africa, including Ethiopia, can also climb the development ladder to a better tomorrow by transforming agriculture. But it is important for Ethiopia to take the long view and build an institutional and policy environment for making farming profitable on a recurring basis and at an acceptable level of risk. What does this mean for Ethiopia? The challenge for Ethiopia is mobilizing the national political leadership to focus and concentrate on generating a reliable food surplus from local production, storage and imports and learning how to manage the regional and national food economy in times of abundance and in times of scarcity and threats of famine.

Much has been learned about what is takes to transform traditional agriculture and send famine to the archives. Nobel Laureate Amartya Sen has shown that increased food production alone cannot banish famine because famine is basically a product of poverty and the lack of resources to produce or purchase food in the market or secure it through food transfer programs. Nobel Laureate T.W.Schultz has also shown that traditional farmers are *efficient but poor* and they require a reliable stream of new technology to break the production and poverty cycles. But who is going to generate a continuous stream of new technology for small-scale farmers in Africa in general and for Ethiopia in particular? Africa's economic history has shown that an army of extensions workers, and NGOs cannot increase crop

yields and transform African agriculture and deliver Green Revolution technologies to farmers. History has shown that it takes long-term accretionary and step by step investments to build an agricultural science base for a modern agriculture. History has also shown that long-term investments in research will by and large have to come from public investment when countries are poor and at early stages of the development of a market economy. Has anyone ever heard of an NGO developing a modern crop variety?

Today there is an abundance of talk about general prescriptions to conquer famine and hunger in Africa, including developing a Marshall Plan for Africa and bringing the (Asian) Green Revolution to Africa. More recently Jeffery Sachs of Columbia University has made a strident case to double aid to Africa under the assumption that aid is the critical determinant of Africa's economic destiny. But Africa's history has revealed a high failure rate of generalized prescriptions for transforming African agriculture. The painful lessons include importing varieties from other continents, doubling and tripling the number of extension workers and blanketing the continent with the T &V extension model, structural adjustment programs and the U.S. Land Grant type of university.The long and the short of it is that the T&V extension model was aggressively promoted by the World Bank in 22 countries in Africa in the eighties and early nineties but it failed because it costed 25 to 40 percent more than the models it replaced. Likewise the highly -touted structural adjustment programs of the 1990s failed to develop efficient market economies and demonstrated that instead of privatizing government services such as extension and grain reserves, attention should focus on figuring out how African governments can build the institutional foundation and rules of law to support the development of a market economy.

Finally the U.S. multi-purpose Land Grant model of higher education floundered across Africa because it was designed as a system delivering three outputs –research, extension and teaching- in the United States and its proponents assumed that it could be adopted lock, stop and barrel throughout Africa. However, in most countries in Africa, agricultural research and extension had been firmly embedded in the Ministry of Agriculture since colonial days. After U.S. foreign aid dried up for the new Land Grant universities in Africa, the Ministry of Agriculture retained their mandates for research and extension and the land grant type of university focused on teaching, which was a valuable service even though it was only one of the three outputs produced in the

Land Grant universities in the United States. This example shows what happens when foreign institutions are imported into Africa in the absence of a basic understanding of the historical evolution of institutions and culture, and the need to craft institutional innovation based on the historical path dependence and prospects for long-term financial sustainability. Africa's development experience over the past two decades has highlighted the simple fact that institutions matter and that agricultural education must be crafted in Africa through pilot models, trial and error and learning by doing. There is now renewed interest in agriculture, in agricultural institutions and moving away from general prescriptions to the analysis of the particular country. We shall illustrate this point by comparing recent experiences of Zimbabwe and Ethiopia because both generated mini green revolutions and both were unable to sustain them. In Zimbabwe massive public investments were made in building a national road system in the sixties and seventies and similar public investment in agricultural research. In fact the government of Zimbabwe's invested in maize research over a 28 year (1932 to 1960) period until it hit the jackpot with a maize hybrid (SR 52) that increased on farm maize yields by 40 percent. Coupled with the SR 52 hybrid and an expansion of credit and marketing facilities and integrating the white and black extension services, Zimbabwe's smallholders doubled their national maize output in six years, i.e. from 1979 to 1986. Zimbabwe generated a mini Green Revolution but it squandered this success story in the late eighties and early nineties due to institutional and leadership failure, it is now dependent on the industrial world for food aid. But, why did Zimbabwe squander the success story?

Ethiopia generated a mini Green Revolution in maize from 1996 to 2000 because of favorable weather, market liberalization and the availability of high yielding maize varieties from the international NGO—the Sasakawa Global 2000 program. These factors and the hard work of Ethiopian farmers produced a record-breaking harvest of 12 million tons of grain. But, the government squandered this achievement and it was forced to seek one million tons of food aid from the United States in 2003 that was valued at US$475 million. The mini Green Revolution experiences of Zimbabwe and Ethiopia demonstrate that increasing food production must be accompanied by the complex task of managing the food economy during the collapse of prices following bumper harvests and the management of foreign exchange and food aid during price spikes following a poor harvest. Here, the public sector has a critical role to play in managing a buffer stock scheme and

developing a complementary division of labor between public and private grain marketing over time. Both are clear cases of government policy and institutional failures**.** The lessons that emerge from Zimbabwe's and Ethiopia's mini green revolutions are the need to move beyond making general policy and institutional prescriptions for the 54 countries in sub-Saharan Africa and focus on the particular case of countries such as Ethiopia, Zimbabwe and Mozambique. Who will provide the enlightened leadership and talent with long-term vision to develop an agricultural strategy for a particular country? Can Ethiopia provide leadership on this issue by mobilizing Ethiopian scholars and researchers at home and abroad to generate the needed information on the critical drivers or prime movers of agricultural development: human capital, agricultural extension, agricultural education, roads, and irrigation infrastructure that is complemented with economic incentives and political leadership for a period of several decades or longer**?** Looking back, the lack of African political leadership and budget commitments for food and agriculture and the high failure rate of many institution building projects led to a sharp decline in donor aid to African agriculture from about USD 1.7 billion in 1991 to USD 1 billion in 2001. The large drop in donor aid to agriculture in Africa is partially a function of the high rate of failure of donor projects, urban bias and new aid modalities such as Poverty Reduction support Projects that marginalized the crucial and strategic role of agriculture in African development, due to the fact that 70 percent of Africans still make their livelihood from Agriculture. Finally, NGOs and other special interest groups outmaneuvered the agricultural lobby in donor countries over the past 15 years and made the case for a disproportionately more investments in health, primary education, and food aid for emergencies. And the results show that the decline in donor support for agriculture in the nineties was almost exactly replaced by increased budgets for health, education and food emergencies.

The authors of the chapters in this Journal have assembled and analyzed the basic information for combating famine and poverty in the particular case of Ethiopia: making resources available to the poor to acquire land and gaining security of farm land title; increasing food production, improving family and national food security, generating new income streams through new technology, research and market development and trade in regional and global markets. These activities should be supplemented with designing food safety nets for the destitute by determining how to use food aid to put people to work building rural roads, and irrigation schemes. The papers

reviewed for this Journal are a product of decades of experience and research findings of the predominantly Ethiopian scholars and researchers at home and overseas. Donors who are trying to build the capability of Ethiopian scientists and policy makers should also carefully study the contributions in this book. Current and future political leaders and policy makers should take seriously the implications of their papers and views if agriculture in Ethiopia is to be transformed and modernized. The need for Ethiopian scholars and Ethiopian policymakers to learn from their own experience through a process of open, constructive, research, and periodic dialogue and conferences of the type from which these chapters are derived from and led by Professor Sisay Asefa of Western Michigan University, is brilliantly captured by Professor Gerald Helleiner of the University of Toronto who recalls who benefited when the government of Tanzania relied heavily on expatriates for three decades:*"A succession of expatriates learns more and more about development decision-making while the African below them in the hierarchy become progressively more alienated and discontented. The experience and collective "memory" which is accumulated during the process of development is thus appropriated by foreigners who subsequently leave the country carrying these invaluable assets (and knowledge) with them*" (Helleiner 1979).

The review paper for this journal assembled contributions that represent an innovative way for primarily Ethiopian scholars to dig deeply into the history, culture, bureaucracy, experience, and political economy and make a constructive contribution to combating poverty and famine in the country that current and future governments of Ethiopia must take seriously and move toward reforming agricultural development for Ethiopia to effectively combat food insecurity and poverty organized in the following sub-themes.

2: The Context and the Problem Poverty and Famine

The paper by Sisay Asefa and Adugna Lemi, is lead review paper aimed at exploring the issue of rural poverty and food insecurity in Ethiopia with a focus on the potential role of agriculture in alleviating the poverty-food insecurity problem.

The paper also addresses the general problem of 'Environment-Food Security- Rural Poverty cycle', with emphasis on the need to develop productive and sustainable technologies aimed at eradicating absolute poverty, food insecurity and natural resource degradation (soil erosion and deforestation). Based on data from the First Round Ethiopian Household Survey conducted in 1994, the paper develops an analytical model (known as Social Accounting Matrix or SAM) to show the

nature of linkages within the agricultural and rural economy. Household data from peasant associations (PAs), is used to analyze and show production trends and determinants or constraints of food crop production for selected provinces or zones. The paper reveals the weak nature of linkages among the sub-sectors of the rural economy in Ethiopia, and concludes by drawing some policy implications from the literature reviewed and the results of the analytical case model. An important policy implication of the paper is the critical need to develop market and institutions to increase agricultural productivity and to overcome crop production constraints and weak linkages in the rural economy, in order to alleviate absolute poverty and food insecurity. The paper reveals the critical need to view agriculture in the context of the non-farm sector in rural economy in order to create a dynamic rural economy where the farm and non-farm sector is interrelated or interact. The paper is part of work in progress that may be further developed and revised based on more up to data from Ethiopia.

The second paper in this section is Getnet Alemu who explores the conceptual and the macroeconomic dimensions of understanding famine in Ethiopia. The author points out famines in Ethiopia are results of long-term economic processes driven by decline in food availability over at least the past three decades. Getnet maintains that the development strategy of Ethiopia during both the imperial and socialist regimes, pursued an import substitution strategy that neglected and undermined agricultural development, in spite of leap service made using the peasant farmers for political reasons. In particular, during the 1974-91 period of socialist military rule, the most serious damage to the agriculture and socio-economy of occurred. Getnet takes an issue with the *entitlement approach* to famine analysis pioneered by Professor A.K. Sen, which focuses only on *entitlement failures* or the lack of income or access to food. Getnet points out Sen's approach undermines the role of historical processes and the peasant's vulnerability to famine created over a long period time through secular decline in food production and food availability driven by misguided agricultural policies and institutions. The author shows this trend by providing data that reveals consistent decline in food production per capita since early 1970s. The implication of his analysis is famine is both a supply (production) and demand (food access or poverty) problem, and emphasis on demand side implied by the entitlement approach is incomplete in enhancing the understanding of famines.

Getnet maintains that the primary contributing factor to the decline in per capita

food production since 1973, is the misguided macroeconomic policies and urban-biased strategy in Ethiopia, which undermined agriculture and the rural economy. This is especially true during the period of Military rule, 1974-91, where the misguided and top down imposed macro- policies of collective agriculture, peasant associations, forced resettlements, and state farming led to serious food crisis that culminated to the Great Ethiopian Famine of 1984-85. He points out both the earlier famine of 1972-73 during the Imperial rule, and 1984-85 famine during the rule of the Military Regime are primarily results of food production or supply failure where per capita food production declined by 24 and 29 percent respectively. Getnet concludes by emphasizing that famine in Ethiopia is not an outcome of short-run effects and external or exogenous shock to the growth process, but rather a result of a slow and cumulative process which is endogenous to the economic growth process driven by the Country's historic devolution of institutions and policy failures and by misguided urban-biased macro-economic policies. The author's main argument is famine in Ethiopia can best be understood in a historical, institutional, and policy context, caused by decline in food per capital availability due adverse impacts of misguided agricultural policies. But, the author's the argument does not ignore the importance of income generation or the lack of non-farm income and employment sources and lead to lack of access to food, and the high incidence of rural poverty that contributes to famine. The full and viable strategy to combating famine must effectively alleviate rural and urban poverty. Genet's paper finds the current land tenure to be a major impediment to increasing agricultural and food production in a sustained manner. He envisions the critical need to liberalize land markets, at least in part, with the aim of promoting both efficiency and equity. He maintains improving land policy might require a two- step policy action: 1. market driven consolidating farms to achieve optimal farm sizes, and 2.subjecting land transactions to clear and transparent institutional and legally secured framework under long land-tenure regimes. It is also important to adopt flexible land tenure systems specific to the cultural and agro-ecological conditions, instead of adopting one size fits all strategy of state ownership and control of farm land in all regions of the country. For a viable land policy that promotes both efficiency and equity to emerge there must be an honest and open dialogue between all stake holders, including farmers, agricultural scientists, and farm community leaders, informed politicians, researchers, civil society groups, and government policy makers at all levels. The current rigid policy of state monopoly of land

ownership is likely to continue to trap Ethiopia in the state of perpetual poverty and recurrent famines.

The 3rd paper by Tesfaye Teklu's paper explains the persistence of environment-induced famine conditions in rural Ethiopia.

He begins by sketching the geography of environmental stress and its correlation with impoverishment and famines, and traces changes in key factors that cause increased vulnerability to impoverishment and survival. His paper draws its empirical evidence from Ethiopia specific studies on environment, poverty and famine. Tesfaye discusses some important empirical findings that set the context. First, poverty is Ethiopia is widespread and deep. Officially reported poverty head-count measure based on the 1995 nationally representative consumption survey, for example, shows that 45.5 percent of the Ethiopian population could not afford costs of privately provisioned basic needs (MEDaC, 1999). The high-order poverty estimates also point poverty is deep and unequal among the poor. All the poverty measures indicate poverty is largely rural. Since the majority of the rural poor are primarily dependent on agriculture for their livelihoods, they exhibit agriculture specific poverty characteristics: land scarcity, poor quality of land resources, shortage of assets and working labor, low educational attainment, low technological change, and living in marginal areas with poor agricultural potential. Natural resources such as soil, water and vegetation in particular connect to poverty strongly as the most limiting inputs in agricultural production process (soil and water in particular) and direct source of income and consumption. Tesfaye points out that households experience years of consecutive agricultural production failures and engage in major food consumption and famine coping or mitigating strategies, as happened in 1973/74 famine. These strategies commonly involve: (1) lowering food consumption and quality (change in diet variety to basic food items, reduction in meal frequency and serving, and dependency on wild foods); (2) shifting to non-farm income sources; (3) disposing and dispersing assets; (4) greater dependency on kin and relations as sources of gift or food exchange, or place of residence for migrant relatives; and (6) abandoning communities and migrating collectively. However, household income and consumption smoothing strategies become ineffective where (i) the frequency and intensity of environmental stress such as drought is increased; (ii) income sources are positively covariate; (iii) share of covariant risk is large in total income variance; (iv) covariance between income and assets exists and strong (for example, livestock as shown in

Dercon, 2000) and (v) publicly provided safety nets are inadequate in their response –timing, level of support, targeting, and crowding out private transfers.

Tesfaye further sites the African case studies on famine establish that environmental stress such as recurrent droughts translate onto famine conditions where rainfall effect on household income is strong, markets are thin and fragmented (crop, livestock and labor markets), household and community support mechanisms are weakened, and public response is insufficient both in timing and scale of required intervention, (von Braun, Teklu, and Webb, 1998). In sum, the thrust of his paper is to underscore the persistence of famine conditions in Ethiopia to changes in these drought and famine links overtime. That is, persistence of famine conditions are due to increased aridity, greater exposure to rainfall-linked income sources, fragility of rural markets under stress, weakening of traditional community-based insurance mechanisms; and institutional failure and insufficient public response augment private coping strategies.

3: Food Production, Land Management, and Land Tenure

The first paper in this section by Brhane Gebrekidan clearly lays out perspectives on the role and constraints of food crop production for combating famine in Ethiopia. The paper starts with the notion that "*the grand challenge for Ethiopia is restoring and improving the environment and the natural resource base for crop production that has been abused and misused for centuries.* Brhane focuses on the critical role of the technology required for increasing food production aimed at combating famine and poverty in Ethiopia.

He maintains that "the realistic option under the current Ethiopian scenario is to increase food production by increasing productivity per unit of land". The author further points out that "*the science and the technological options to realize higher productivity than what the Ethiopian farmers currently get are widely available"* globally. In focusing on the technological options to curtail famine, he suggests that the traditional low yielding crop production practices in Ethiopia must give way to modern and high yielding approaches, if the rising population is going to be fed adequately. Brhane discusses a number of major production technology components and options required to transform Ethiopian agriculture to achieve food security such as: 1, improved seed, which may be a hybrid or open pollinated and which, he views, is "central to any production system", 2. The promotion of fertilizer use with animal

manure and supplements, and the need to provide reliable water supply from rain and irrigation. We are reminded by the author that the overall water resource potential of Ethiopia are generally good, and what is required is the proper conservation and utilization of water that can come about through private and public investment. The author emphasizes that extensive use of investment irrigation is critical to reduce dependence on rainfall, and to conquer chronic food insecurity and recurrent famines in the long-run. He also identifies various water conservation methods such as water harvesting, building ponds and micro-dams, the use of underground water and bore holes, as well as efficient use of streams and river waters to supplement irrigation water. All of these factors require significant investments on land and appropriate land policy guided by enlightened and informed public policy. Irrigation system requires sufficient technical knowledge and management know-how that can be imparted by extension service organizations. The paper further points out the use proper use of improved farm power and implements for land preparation, cultivating, weeding, harvesting and threshing, and the optimum land management and cultural practices and seedbed preparation to be necessary for a good yield, which are all components of good crop management system. In the area of land use, Brhane underscores the need for greater proportion of farm land under tractor power and modern machinery, which implies the need to consolidate farms to capture economies of scale, and to move away form the increasingly fragmented farm size driven by population growth. National farm size is currently about one hectare or less and will decline in the near future with population growth with out flexibility in land tenure that allows for consolidation and market-driven re-organization of farm land in an optimal and equitable manner. Farm mechanization is a complex issue intersecting with consolidation of land, availability of technical services like repair and maintenance and management skills, and farm commercialization**.** He provides the view that

Ethiopia without land reform policy that allows for market driven consolidation of farms toward optimal pattern of farms grounded on secured land tenure is unlikely to transform agriculture necessary to conquer famine and poverty.In the area of improved farm implements, Brhane points out that there is some presence of such technologies in Ethiopia since national research centers such as Ethiopian Agricultural Research Organization (EARO)[ii] have developed a number of prototypes of tools and implements on the shelf which have been tested and found promising. These

technologies include improved versions of traditional plow, planters, improved bee hives, and improved grain storage. To develop and to widely disseminate these technologies requires private investment, as well as public support in the area of extension, credit, and the adoption of a land tenure that promotes security, incentives, equity, efficiency, and flexibility. One of the intermediary mechanisms that facilitate mechanization is promoting tractor-based farm operation services by farmer cooperative groups or private enterprises. Brhane's paper further identifies other critical operations in crop production such as timely weed control, crop protection through Integrated Pest Management (IPM), timely harvesting to prevent physiological maturity and crop losses to pests and diseases, as well as proper storage facilities that minimize moisture and loss due to insects, rodents, and diseases. The final components listed by the author include marketing and value-added products. In terms of marketing, it is pointed out that more production and bumper harvest without proper market channels are not sufficient for farmers to sustain high productivity level and improve their incomes necessary to alleviate famine and poverty.

Finally, Brhane stresses the critical need of creating developing agro-industry by promoting value added products that can be stored and transported to get higher prices for the farmer or the producer. For example, the author points out that the creation of these value added products in the form of corn flakes, tortilla chips, oil, and potato chips are ways of developing a viable agro-industry that will raise employment and incomes of farmers that results in poverty reduction, and the implementation of an agrarian based and poverty-focused economic development in Ethiopia. Without massive private investment and public support on these critical areas indicated by the author, the current strategy of Agricultural Development Led Industrialization (ADLI) will not be successful. It is further suggested there is a need to develop science based crop production strategies to enhance the currently low productivity of diverse indigenous crops with valuable genetic diversity in the Country such as teff, sorghum, finger millet, barley, chickpea, lentil, noug, sunflower, and enset many of which have high protein and nutritional value. Currently, these crops are grown by subsistence farmers under rain fed conditions. There is also a need to improve the yields of these crops for each major ecological zone to combat the high level of malnutrition in Ethiopia. According Brhane, current yield levels on Ethiopian small farms are extremely inadequate and low. Yet, the results of yields in experimental stations for major crops such as Maize, Wheat, and Teff

show 500% to 700% greater than yields under traditional conditions. For example, results of experimental stations reveal 10 to12 metric tons/ha. for Maize, 5 tons/ha. for wheat, and 3 tons/ha. for teff, compared to only 1.5 tons/ha for maize, one ton/ha for wheat, and 0.6 ton/ha for teff ,under traditional methods. The paper further notes even under the Sasakawa Global 2000 (SG 2000), yields for these crops can increase by about 300% compared to traditional methods. Crops such as potatoes, a major food crop around the world, are estimated yield as high as 400 tons/ha in the experimental stations, compared to an average national yield of only 14 to15 percent of this potential. What these figures suggests is the fact that Ethiopia is yet to capture the benefits of Green Revolution that has transformed agriculture and took millions out of mass poverty and famine in other parts of the developing world such as India and China. Brhane argues that enhancing food production is a major way of combating famine effectively in Ethiopia. He proposes two fundamental strategies for enhancing food production, i.e., restoring and improving the natural resource base of agriculture, and increasing crop productivity mainly through science based improved technology. Although it is beyond the scope of his paper, the author has also briefly highlighted on the roles of other factors like poverty, off-farm employment, population growth, policies and institutions, markets and agro-processing industries, land tenure security, and the critical role of research and extension in combating famine in Ethiopia.

The author uses his long professional and field experiences in both national and international research and agricultural institutions to clearly reveal the importance of technologically improved basic inputs in transforming the low-productivity agriculture into high productivity market-oriented agriculture in Ethiopia. The primary technologies emphasized in the paper are improved seeds, chemical fertilizer, irrigation water, farm power and implements, and crop management and protection practices.

Another important issue noted in Brhane's paper that requires further attention is the role of the immense agro-ecological diversity of Ethiopia's agriculture, and its strong implications for technology development and dissemination in terms of the required manpower, finance and institutional capacity. The paper reveals the potential of the available food crop production technologies observed on research plots and extension demonstration fields implies the importance of pragmatic and efficient strategy for extension and input supply systems to realize the potential yield on farmers' fields. An key factor, which requires more attention, is the role and mechanisms of farmer participation

in research and extension system. The past experience of farmer participatory research in the country needs to be carefully evaluated in order to come up with appropriate participatory research approach that strengthens efficiency of development of appropriate technology targeted for specific biophysical and socioeconomic contexts. This measure needs also to be accompanied by development of market infrastructure and institutions such as quality control, grades and standards, contract enforcements and market information, in order to sustain productive and commercializing smallholder agriculture. Brhane also correctly emphasized the importance of irrigation and crop-diversification in combating food insecurity in the country. Under the existing conditions of erratic and unreliable rainfall amount and timing, irrigation development of small and medium scale irrigation systems, along with development and transfer of improved irrigation technologies and management practices, is one of the essential measures required to forge sustainable food security in the country. There is a critical need for farm diversification into farming non-staple food crops such as cash crops, horticultural crops, dairy, poultry and other farm products, based on the appropriateness of the existing natural resource base and market availability, which is also an important path to food security and farm commercialization that needs promotion. Finally, the author concludes by emphasizing the need to promote technology generation and transfer guided by a nationally coordinated and a publicly well-supported national agricultural system. Based on the experiences of other countries that have modernized agriculture, agricultural Research is best guided at a national or federal level. Agricultural research is an area which needs national public policy direction and coordination, although the implementation and the scientific works can be done at the regional and local level and adopted to local agro-ecological conditions.

Policies that fragment agricultural research to various regions without a clear direction at the national or federal level are unlikely to promote successful scientific knowledge base to transform agriculture. Limited research funds may be squandered on unproductive services that do not enhance agricultural productivity. Agricultural research policy should be driven by informed opinion and knowledge of agricultural scientists linked to local level extension systems.

In sum, it is the view of the editors that the insights expressed by Brhane are likely to help transform Ethiopian agriculture and contribute to combat famine and achieve food security under proper policy environment that will last in successful implantation.

The second paper is by Workneh Negatu who analyzes land tenure system and its impact on the use of land management technologies. His paper begins with the hypothesis that less sustainable land technologies are applied on leased land parcels compared to owned land parcels.

Based on case studies from three districts in East and North Shewa Zones of Central Ethiopia, the paper is organized as follows. 1. A brief introduction is provided, 2. Some conceptual issues of land tenure and sustainable use of land are discussed, 3. The case study areas and the data collected are described, and the results of data analysis and summary conclusions are presented.

Workneh begins with the fact that land is a state property in Ethiopia, where farmers have only *use right to cultivate land* which includes the right to transfer or lease farm land. Land is allocated by local and regional government officials. But, farmers lease farm land for a limited time such as a maximum of three years, which is too short to make long term productivity enhancing investments. He identifies several types of informal and formal transactions such as inheritance, cash renting, sharecropping and gift, and that this process is non-transparent. He further notes current land lease practices are constrained by the lack of clear rules and regulations; and lack of transparency in transactions, and short time horizon. Workneh defines *production intensification* as a process of increasing farm output and value per unit of land. Sustainable land use calls for intensification using improved or Green Revolution productivity increasing technologies and inputs. Agricultural intensification is necessary to enhance farm production under increasing land scarcity due to rising population growth, and to promote labor-intensive rural employment. But, for intensification to increase production, it is necessary to promote private and public investments on land productivity enhancing and sustainable technologies and practices such as stone terraces, soil bunds, drainage ditches, crop rotation, and contour plowing, including the use of improved inputs in the form of improved seed and farm implements. These technologies have to also be complemented by public investments on irrigation, and human capital in the form of quality education and extension training.

In discussing land tenure and management, Workneh points out that farmers production and investment decisions depend on factors that enhance profitability of crop production, and that application of sustainable practices such as crop rotation, control of soil erosion, agro forestry, and inter-cropping are influenced negatively by increasing fragmentation of farm plots. These

calls for land consolidation toward optimal farm land sizes in order to make economic use of land and takes advantage of economies of scale from production.

Moreover, insecurity of land tenure due to the currently undefined and uncertain land-holding patterns or tenure rights provides *disincentives* to farmers to invest in better land management. Legally secured land tenure and transaction is likely to improve land use efficiency and lead to long term investments on land that improves land productivity. This is also necessary for transformation of agriculture aimed at reducing famine and poverty in Ethiopia. In discussing the need for institutional support services and land management, the author stresses the development of institutions that provide access to inputs, knowledge and skills including marketing and credit services. The data from the case studies is drawn from three districts in Shewa area, where four types of land tenure systems are identified: 1. "Own land" or land officially allocated and subject to transfer through inheritance, 2. sharecropping systems or land obtained from sharecropping agreements, 3. cash rental system or land parcels obtained as a result of cash rental agreements, and finally, 4. Gift/borrowed system; land obtained from gifts and borrowing from parents, relatives or friends for a short period of time or permanently. The author's findings show that the dominant land tenure in the study area is "own-land", and this constitutes 90 percent of farms. Land transactions are limited, and land size ranges from 2.5 ha to 4 ha. In Zuway area, for instance, participation of farmers in land lease marketing is limited to 24 % in sharecropping and 26.5 % in cash rental. Farmers prefer short term share cropping because of fear of losing land. The findings show that the lack of clear legal rules and procedures on land leases with perceived risk of losing land holdings is a major problem of land lease markets in the area.

Workneh's paper summarizes the major constraints and problems of land management as follows: 1.Farmers in the area do not have clear and transparent rules and regulation on leased land under sharecropping and rental practices, and that most of the land transactions are done informally. 2. The main constraints of technological inputs are lack of cash and credit and insufficient supply of inputs. 3. The constraints for sustainable land management are lack of compatible trees, high yielding legume varieties and lack of know how and skills, which call for stronger research and extension in the area of agro-forestry and mixed cropping systems. 4. The policy implications points to move toward transparent and legally secure operational

rules and regulations that govern private land transactions among farmers, and complemented by a land policy that formalizes and secures long-term lease in order to enhance farm land security aimed at improved and sustainable input use and land management technologies.

Third paper is by Berhanu Gebremedhin and co-authors paper is also on land tenure and management issue based on a case study from northern Ethiopia, with a primary concern to improve land productivity aimed at enhancing the welfare of the predominantly agrarian population.

The authors stress that for land markets to develop and to function efficiently, it is important to reduce transaction costs and improve land-tenure security. The paper points out to the need for public support and institutions without which markets cannot develop. Beyond its contribution to efficiency, the study reveals *"farmers perceived land tenure security is significantly and positively related with long term soil conservation investments and practices such as use of stone terraces".* Moreover, the authors maintain that, since 1991, a new economic liberalization policy in Ethiopia has led to input and output liberalization and greater institutional support for agriculture. However, the authors maintain that the long term impact of these measures will depend on the nature of the incentives available to farmers. Whether these incentives and policies are translated into sustainable use of natural resource base is an empirical question that needs further studies according to the authors. The paper is based on econometric analysis of data from 50 communities and 100 villages in the Tigray Region,1998. The authors find that informal land markets (leasing and sharecropping) is emerging in the area, and that while the quality of land is an important determinant of rental price in fixed lease, quality appears to play a limited role in determining land holder's share in share copping. Berhanu and his co-authors further find landlessness is increasing in the Region, implying the need for more land productivity increasing investments such as irrigation. The authors find, like the previous paper by Workneh, that greater tenure security has positive effect on land investments or that it is an important determinant of farmer's incentives to invest on land and use improved farming practices. The authors reveal that perceived tenure security was associated with investment in tree plantation and soil bunds, confirming improved tenure security improve land management in the study area. Their paper further finds that land titling that took place in Tigray region, combined with the legislation that prohibits further land redistribution, is an important positive step. But, the authors recommend that role of

public policy to facilitate fledgling land markets should be further discussed and explored, and current restrictions on land transactions should be reconsidered.

Berhanu and his co-authors conclude by stating, "*The wishes and preferences of farmers regarding land tenure arrangements and land administration should be considered as an important and crucial input in the design of future policies on tenure arrangements in the region*."

The key challenge and question is how these wishes and preferences can be realized in a free and non-politicized environment. Such preferences should be informed by empirical studies, free, open, and inclusive dialogue among the local population, researchers, policy makers, and other stakeholders.

The 4th paper is by Tesfaye Teklu, begins by stating the fact that despite the apparent abundance of land, agricultural land with a dependable growing period represents a fraction of the total land area in Ethiopia. Moreover, land degradation is extensive and severe, particularly in the highlands above 1500 meters above sea level, which account for about 40 percent of the total land area but home for 90 percent of the total population and 70 percent of livestock. Population continues to grow rapidly in these highlands and exert pressure on diminishing supplies of agricultural land, particularly arable land for cultivation and pasture. There are signs of declining farm size and fragmentation, and excess demand for land such as pushing cultivation onto marginal lands (i.e., steep slopes, low rainfall zone), rural landlessness, and increasing land rentals. As the current econometric evidence shows, land is one of the

Inputs that limit agricultural production. Moreover, land is the main source of rural livelihoods since options other than farming are scarce. And, since the majority of the farmers are subsistence producers, food security problem is closely linked to food production and hence to land. Studies on poverty in Ethiopia also confirm that being poor is statistically related to subsistence farming, shortage of assets for agricultural production (land and oxen), and quality of land. As land becomes scarce and hence threatens survival, farmers demand for change in land rights that permit them a broad choice of access and secured rights that are enforceable at low transaction costs. The specific type of tenure arrangement that emerges, however, depends on the interplay

of demand and supply factors. The African evidence indicates that as land becomes scarce, tenure regimes (or, property rights) evolve towards individualized land rights. According to the author the evolutionary process is not, however, a smooth progression; either indigenous institutions are not capable to meet sufficiently the growing demands for individual land rights and/or public policy acts in a way that negates the evolutionary process. The Ethiopia case reviewed in this chapter exemplifies the retarding effect of a deficient and rigid public policy on land that is not fully informed by underlying demand and supply conditions that necessitate tenure change. Despite the government policy to do away grossly with the past tenure systems, there is evidence that indicates farmers are expressing preference towards individualized market-based tenure system for agricultural land such as land rental. But such self-evolving process is not as operative and effective. Paradoxically, constructive government intervention is still necessary.

However, it has to be informed to meet the changing demands for land rights that are consistent with the desirable societal goals of equity, efficiency and environmental sustainability**.** The thrust of Tesfaye's paper focuses on three questions. First, what has been the policy change that has influenced tenure change in contemporary Ethiopia, especially after the mid-1970s? Second, what has been the consequent change in tenure system?

Third, what has been the effect of tenure change particularly on access to land, command over land rights, tradability of land rights, productivity and investment in land, poverty, and land dispute and conflict? In this chapter Tesfaye systematically synthesizes and presents an analytical framework that is consistent with evolutionary theory of land tenure and the history of land tenure in Africa at large with implications for Ethiopia. The chapter is organized in five sections. Following a brief introduction aimed at motivating the paper, section two presents a brief analytical framework that is based on a review of the African evidences. Section three traces the major land tenure policies that have guided tenure changes since the mid-1970s. Section four focuses on synthesis of the empirical evidence on the efficacy of evolving tenure systems. Here, the thrust is on key issues that are of prime importance in land tenure debate in Ethiopia at present: access to land and its distribution, uncertainty and command over land rights, tradability of land rights, connection of tenure to poverty, and tenure deficiency, insecurity and conflict. Since public policy is dynamic, the paper tracks the recent policy change particularly at

regional administration levels and identifies public policy gaps. The final concluding section highlights the key findings, lessons learned and recommendations for future research and policy on critical issue of land.

The final paper in this section, is by Tesfaye Lemma and co-authors discuss the reasons for and the effects of the dramatic expansion of Chat or Khat production as a Cash Crop in the Hararge Highlands for Ethiopia. Khat is a crop with stimulant effect consumed by the people in Ethiopia and the Horn of Africa including the Middle East. Despite the Ministry of Agriculture's deliberate attempt to marginalize and discourage Chat production, farmers continue shifting their resources to chat production due to its profitability. The authors use rural livelihood survey form 197 randomly selected households, identify the economic and non-economic factors that contribute to the expansion of chat production including its food and nutritional security impact. This case study confirms the power market incentives in encouraging activity of peasant famers even in absence of functioning research and extension systems. The study shows that farmers producing chat achieve food security by converting more cash into food and therefore present a policy dilemma to the government: i.e. Should the government promote or discourage chat production?

4. Environment & Natural Resource Management Issues: Land Tenure, Agrofersty & Soil degradation:

Two papers in this section address the serious problems of deforestation and soil erosion in Ethiopia based on case studies in different parts of the country.

The first paper by Badege Bishaw and Abdu Abdelkadir, is a discussion of the interrelated problems of deforestation, soil erosion, and land degradation in Ethiopia. Their paper is concerned with the continued trend toward conversion of forested and marginal lands to agricultural lands; driven by population growth and land scarcity, resulting in massive environmental degradation and a threatening sustainability of agriculture and forestry. The authors define Agro-forestry as "*dynamic, ecologically based natural resource management system that, through integration of trees on farms and agricultural landscapes, diversifies and sustains production for increases social, economic and environmental benefits for land users".* The paper also presents different agro forestry practices and their potential and research needs on the Ethiopian Highlands. The authors supplemented their analysis based on a case study of rural tree planting on farm and community lands in the Alemaya Basin of the

Hararghe highlands in eastern Ethiopia. The study was conducted in the 1980s by Alemaya University and funded by the FAO. The policy implication of the results of the study is that agro-forestry should be viewed as a strategy to overcome the lack of access to tree planting by providing opportunities for food and tree production on the same unit of land. Agro-forestry can also serve as the model for sustainable agriculture and forestry practices in some locations and local communities in Ethiopia. The authors maintain that the approach can provide both food, fuel, and fodder for farmers in an integrated and sustainable manner, provided there are there is availability of compatible tree species and appropriate agro-forestry management technologies and practices. Badege and Abdu provide clear conceptual pictures of agro-forestry and community forestry systems in general and a helpful glimpse of agro-forestry systems and community forestry in Ethiopia. Their paper reviews briefly the land degradation and deforestation situation in Ethiopia before it dwells extensively on the concepts of agro-forestry and community forestry. Deforestation, soil erosion and land degradation in general are among the key constraints of agricultural development and productivity. Agricultural productivity is a result of multiple factors, demanding a comprehensive approach that comprises land degradation, technology, and economic and social factors. As indicated by the authors, household energy supply is also an important issue connected to natural resource management, for scarcity of fuel sources always place heavy pressure on household livelihood, forest and soil fertility. The conceptual description of agro forestry and community forestry given in the article is instrumental to understanding of agro-forestry practices in Ethiopia and the case of Alemaya basin community forestry (afforestation) project. Accordingly, the authors provide classification of agro-forestry systems – agrosilvopastoral, agrosilvocultural and silvopastoral systems. Clear characterization of the systems helps to develop and promote appropriate strategy of agro-forestry practices in the country.

The pattern of combining trees/shrubs with crops and or pasture/fodder on a farm defines an agro-forestry system. Their discussion on agro-forestry practices is based on the five common agro-forestry practices in Ethiopia. Although the classification is not exhaustive and detailed enough, as also noted by the authors, it is an important initial work that focuses future research efforts on issues for identifying various types of agro-forestry practices or systems. This section highlights important areas or topical issues for further study for each of the five common agro-forestry practices that the paper identified.

Further works are, however, needed on the accomplished and on-going research in the country in order to specify actual research gaps prevailing. The authors have also correctly point out that although further specific knowledge is required on different aspects of agro-forestry systems under different scenarios, an important agro-forestry problem in Ethiopia is the lack of sustained and committed implementation and diffusion of the available and feasible agro-forestry practices. Lack of action deprives the stakeholders of experiences that would reveal missing knowledge and constraints for further investigation. The definition of community forestry provided by the authors shows the connectedness of community forestry with social, economic, resources and ecological aspects. Households, communities, government and non-government agencies are crucial stakeholders in community forestry. The case of Alemaya basin community forestry project carried out in 1980s by the Department of Forestry of Alemaya College (now Alemaya University) was used by the authors to demonstrate the complexity and at the same time the potential role of community forestry. The experiences gained and the fate of the project was not however sufficiently discussed, for the project's life was short to deliver much experiences. Accounting of the current trends and problems of community forestry in the country, although important, has not been discussed in the paper, since it is beyond the scope of the article. Community forestry is controversial in terms of its management, benefit sharing, sustainability and social and economic implications. Achievements and failures of other similar projects or attempts would enrich experiences for use in future agro-forestry programmatic interventions. The case project presented has not existed long enough to evaluate its success and failures. The initial establishment of the project was however successfully effected even though it lacked implementation of a sustained operation according to the management plan envisioned by the founding resource persons. There is, however, a need overlooked in the article, of the presence or absence of any follow-up study or evaluation of this community forestry project that was abandoned after 1990, diminishing the great lessons that could be gathered. The conclusion on the relationship between land tenure and community forestry expressed correctly draws from general observation and experience than from the concrete lessons gathered from implementation of the project.

In the early 1990s, and at the eve the collapse of the Derg's collectivization policy and the emergence of the turn of new EPRDF government in 1991, vandalism, cutting of community trees and abandonment of

collective resources and properties was common in most part of the country. The paper has illuminated on the useful experiences of the project in methodology and on the potential of community forestry. More studies, are however, needed to examine many issues related to community forestry management, relations between land tenure and community forestry, and roles of incentives for participating stakeholders - communities, individual households, governance offices and development agencies.

The second paper by Senait Regassa and Werner Doppler is an analysis the impact of adopting soil conservation strategy at the family farm level in the highlands of Ethiopia, where soil erosion is major factor that reduces land productivity. Their study was conducted based on a survey data of 111 farm families in the Ankober district. By using an analytical model of multi-period linear programming, the authors found the adoption of a soil conservation strategy to have a positive impact on farm income of farmers, especially when credit is available to make investment on conservation feasible.

5: Agricultural and Food Marketing Issues: Grain, Livestock Commercialization and Marketing

Three papers in this section analyze the important issues of agricultural marketing in Ethiopia including an attempt to commercialize cattle and Livestock production. The first paper by Eleni Gabremadhin analyzes the role of grain brokers or *Dellalas* in the Ethiopian food grain markets. She points out that grain brokers promote anonymous exchange among unknown parties by matching buyers and sellers for a fee. Her paper examines the features, operations and functions of brokers in the grain markets, and analyzes how brokers enable grain traders to circumvent what she calls 'the commitment failure problem' that prevails in a weak marketing environment. Eleni's paper demonstrates that *agency relations* are long-term, reputation-based, non-ethnic, and relatively conflict-free. She maintains that conflict is avoided and agency relations are sustained by the underlying *incentive-compatible norms*, in absence of market-making and flat commissions. Eleni's paper is on the role of markets and market failure in combating famine and food insecurity in Ethiopia. Her paper explains the puzzle of why in spite of relative success in production between 1996-2000 period due to favorable weather and market liberalization that resulted in a "record-breaking grain harvests of 12 million metric tons, Ethiopia found itself in 2003 in food crisis of equal or greater proportions than that of the 1984-85 famine, and a

decline of 25% in agricultural production relative to the preceding seven year average". Eleni points out that the reality of this dilemma is complex and is it is linked to primarily three factors: 1. poor policy, institutions, and governance at all levels, 2. structural problems in agricultural production and marketing, and 3. draught and natural factors. She maintains that structural food insecurity problem is related to "*decline of people's assets and the collapse of their livelihoods, as well as the lack of infrastructure and markets in poor communities, which creates vulnerability to famine and starvation".* She further points out that the failure of rains is only the proximate cause of famine, merely revealing the width and depth of chronic poverty. This implies that famine is essentially a problem of poverty which cannot be overcome without lifting millions out of mass poverty, in a country where at least 50% of the population is below the global poverty line. Eleni recognizes that famine and food insecurity involve consideration of complex issues such as production technology, natural resource management, infrastructure, income, and safety net, and focuses on the role of markets and market failure in Ethiopia. After presenting production and market trends between 1996 and 2001, she finds inadequate performance of the Ethiopian grain markets. She further discusses the general role of markets in transforming agriculture and reducing food insecurity, and concludes by drawing policy implications. Eleni finds weakness of agricultural marketing system in Ethiopia as a serious challenge to transforming agriculture to a viable sector as laid out in the country's Rural Development Strategy, aimed at transforming subsistence agriculture to commercial agriculture. Eleni's paper also discusses the structure and conduct of grain markets by defining the various types of market participants such as wholesalers, retailers, farmer-traders, brokers, and assemblers, processors, consumers as well as the government parastatal- EGTE . Eleni maintains, despite the positive impact of reforms during the post 1991 period in terms of increased entry of private traders, more competition, and improved transport infrastructure, significant constraints remain. These constraints include limited access to finance and credit, lack of access to adequate storage, absence of processing linkages, and inadequate legal recourse for contract enforcement, and weak or missing trade associations in which market participants can freely air and discuss key policy issues. The author shows that the marketing chain depends on the terminal, regional and local spot markets, where grain is sold unprocessed with exception of wheat which is sold in the form of flour.

The presence of local marketplaces with sufficient density of traders, connected to producers and higher level market centers or channels through efficient transportation system can serve as important incentive for semi-subsistence farmers to strive to produce more for market or agriculture.

She finds a deficient capacity in private trade to effectively distribute food from farmers to consumers and limited asset base, limited human and financial capital faced by trading firms. Indeed, the traders consider lack of financial capital and credit as a major constraint in expanding their operation and achieving long-term storage needed to alleviate annual volatility in prices. In her discussion of the role of markets in agricultural transformation, Eleni identifies "market gaps" a situation which arises when farmers are pushed to commercialize agriculture without the development of institutions that meet input requirements such as seed, fertilizer, better information, contract enforcement, credit, and market coordination. These gaps constrain successful agricultural transformation needed to combat famines. In discussing markets in the post-reform era, she identifies the fundamental problem of knowledge and information gap related to the lack of understanding of the role of institutions in agricultural transformation, and how to design institutions that reduce transaction costs. As agriculture becomes more complex, she points out the willingness to commit resources to productivity enhancing activities depends on the development of clear property rights and coordination systems that minimize transaction costs of trade in the expanded market. Eleni further maintains that transaction costs are influenced by institutional environment, laws, social norms, culture and contracts and organizational structure of human interaction. These factors are also influenced by infrastructure and technology as well as the *incentives* embedded in the policy and external environment. In order to move and transform subsistence agriculture, it is crucial to develop institutions that reduce transaction costs. She shows a schematic model of critical areas of transaction costs such as:1. Infrastructure (roads, market facilities, storage and processing), 2.Institutions (laws, contracts, social norms and culture) and incentives embodied in agricultural policy, political economy, macro-economy and global trends. These factors in combination with the development of input and financial delivery system and access to markets for smallholder producer are necessary for increased adoption of technology and eventual modernization of agriculture will reduce poverty and famines in Ethiopia.In sum, in discussing the role of public policy, Eleni maintains that the major effort should be

focused in reducing *transaction costs* to improve market performance. She further maintains that the cycle of 'feast and famine" is not unique to Ethiopia. It is also present in many Africa economies where similar deeper structural problems are present. While the private sector in the post reform period in Ethiopia appears to function more efficiently than markets under complete state monopoly during the pre-reform period.The Ethiopian grain markets suffers from slow responsiveness, undercapitalization of the private sector, and operates with personalized exchange system with considerable risk and no formal legal enforcements contracts. She identifies the problems in output absorption or output markets, and in input delivery.

In terms of policy intervention the author emphasizes the critical role of reducing transaction costs of trade by reducing risk, providing better market information, providing access to finance and credit, and establishing a clear legal and institutional framework for market transactions. Finally, Eleni probes whether food insecurity and famine can be eliminated with out developing viable food marketing system in Ethiopia. She concludes by stating that production alone cannot lead to income gains in farm incomes or reduction in poverty and vulnerability to famine without the development of efficient markets, and that such market *are necessary but not sufficient* condition for reducing hunger and eliminating the scourge of recurrent famine from Ethiopia. This paper is a background paper to her innovation in establishing Ethiopian Commodity Exchange(ECX) in Ethiopia for which she is founding CEO.

The second paper in this section is by Simeon Ehui, Samuel Benin, and Zelekawork Paulos, is an analysis of policy options for improving market participation and sales of smallholder livestock producers in Ethiopia. Livestock is an important component of agriculture in Ethiopia, as the country posses the largest number of livestock in Africa. The consideration of livestock in this book is both necessary and appropriate due to its significance in combating poverty and food insecurity. Indeed, livestock plays a crucial role as a source of investment and a source of food and labor. Farmers in Ethiopia practice mixed farming where they keep both livestock along with crop production, and livestock is a major source of investment and a way of smoothing consumption over time. Based on data from 934 households conducted in the highlands of northern Ethiopia, their analysis shows that physical capital (defined as livestock and landholdings) and financial capital (crop and non-farm income) are the main factors that influence market participation and sales. The authors also find education to be positively impact on value of

sales of dairy products. Their findings show constraints such as capital to purchase animals, feed, and processing equipment to be the main factors limiting market participation and sales of livestock. In particular, Ehui and his co-authors find that since livestock are used for transport to markets, the ownership of pack animals such as mules, donkeys, horses and camels to be critical in promoting market participation. Pack animals in Ethiopia are used both for transporting commodities and people. The authors find that education has a positive effect on value of sales of dairy products, implying that improving the quality of education (especially for females) can improve the quality of products such as milk, butter, and cheese which in turn will improve incomes of farm households by attracting higher prices. The third and the final paper in this section by Asfaw Negassa and co-authors is an analysis of the commercial offtake of cattle and under smallholder mixed crop-livestock production system in Ethiopia and its determinants and implications for improving live animal supply for export abattoirs.

It is a fact that Ethiopia has the largest number of livestock population in Africa and therefore does have a comparative advantage to engage the regional and global economy in this area. Recently several large scale meat processing abattoirs have been established in Ethiopia to respond to a growing meat export markets to the Middle East and North African Countries.

These developments are aimed at generating foreign exchange and improving the livestock producers and pastoralists as well as others engaged in livestock related activities. But, the challenges remain that the abattors are not competitive and underutilized in their processing capacities operating less than 50% operational capacities. There is a urgent need to for export abattoirs to devise alternative strategies to ensure adequates market supply of live animals to meet their processing needs in order to improve their efficiency and competitiveness based on understanding the livestock and pastoralist producers ownership patterns and market behavior including addressing the question of whether small scale pastoral livestock system can provide sustainable live animal supply to meet the demand for domestic consumption and export markets. Asfaw and his co-authors study addresses these issues by: 1. Analyzing the ownership and marketing behavior of livestock products and identifying factors that affect market participation and commercial offtake of live animals by livestock producers. Using statistical and econometric analyses and based on secondary data obtained from Sample Household Survey conducted the

International Livestock Research Institute (ILRI) and International Food Policy Research Institute (IFPRI) in 1999.2000 and a sample survey of livestock conducted by the Central Statistical Authority (CSA) in 2005/5, he presents key findings from his descriptive and economic analysis and draws policy implications to toward improvement of Livestock export sector making six recommendations toward the end of the paper the first of which is expansion of purchases of animals from the hinterlands to meet exporters and concluding with recommending closing the lack of reliable database line to support business and policy of decision makers in the livestock sub-sector. The specific focus of the paper examines the factors that influence the commercialization of cattle production by the small-scale farmers in the highland areas of Ethiopia following a two-step household decision making process. In the first stage, the factors that influence the smallholder farmers' ordered discrete market participation decision whether to be a net buyer, autarkic, or a net seller was investigated using a three-choice ordered probit model. In the second stage, conditional on the choice of net market position, factors that influence the decision on the volume of net sales or net purchase of cattle was analyzed using Tobit regression model. For this purpose, data collected through sample survey of 1054 farm households from three highland regions of Ethiopia, namely: Amhara, Oromiya, and Tigray were used.

The results indicate that the key variables affecting farm households' choice of net market position for cattle are the sizes of livestock herd owned and land holdings by the farm households. The herd size is positively associated with household ordered cattle market participation while the total land holding is found to be negatively associated with a household ordered cattle market participation

6 .Institutions and Public Policies for Combating Poverty and Famine:

The final section of this review paper presents three chapters that provide an xploration of institutions and policies related to food insecurity, recurrent famines, and rural vulnerability in Ethiopia from a development perspective. The first paper by Alemayehu Lirenso is a comprehensive discussion involves various issues related to food security, food aid management policies and practices, and alternative strategies for combating risks of future famines in Ethiopia.

Alemayehu lays out the reasons for lack food security and famine, which includes: the historical recurrence of famines and increased number of the population affected by famines, the growing national food gap

estimated to be of about 1.4 million MT required by rapidly growing population of over 70 million, which is expected to reach 120 million by 2025, and which places Ethiopia to be the 12th most populated country in the world. The author notes underdeveloped road network, the large population of about 85% currently in agriculture, and subsistence nature of farming that has resulted Ethiopia to have the highest number of "food insecure" people in Sub-Saharan Africa. Alemayehu focuses on the current stated of food security by stating some positive developments such as a record harvest experienced since 1995-96. In particular, the UN report revealed a production of 10.5 million MT from 1998-2003 that showed a record in the country's recent history. This production level led to some 100,000 MT of maize to be exported to Kenya in 1996, and led the Federal Government of Ethiopia to declare to stop receiving food aid. However, these positive developments were short-lived and could not be sustained, as the number of food insecure population peaked to 12.6 million in 2002 involving some 20 percent of the population and constituting 42 percent of the total emergency relief for Sub-Saharan Africa. Thus, the current situation is one of occasional food abundance due to good weather that co-exists with widespread food insecurity and famines, implying problems of spatial and marketing regional distribution, and poverty, and entitlement problems to be the key problem rather than production. In the discussing the underlying causes of food insecurity, Alemayehu points to the following factors discussed in detail: draught or failure of rains, war and ethnic conflicts arising from, ethnic-based regionalization or federalism, land degradation, insecurity of land tenure, and corruption in targeting of food aid to the needy areas.

For example, the author presents two case examples of the adverse impact of: 1. ethnic federalism or the *Killil* system on food security and vulnerability, and 2. the failure of effective and equitable targeting of food aid targeting to the needy areas during famine periods. The current constitutionally imposed policy of ethnic federalism or *killil* system in Ethiopia is such that peasants cannot easily migrate across ethnic regions, even though the constitution does not explicitly prevent such movements. But, implicitly and in practice, ethnic regionalism or the *Killils* retard the free mobility of labor and capital necessary for market based development strategy in the country.

For example, it is noted in the paper that, "*In the past, scarcity of farmland and lack of employment opportunities has forced young peasant farmers from Kambata, Hadiya, and Wolayita regions of Southern*

Ethiopia to engage in off-farm earnings and employment opportunities outside their regions. This strategy has helped augment their meager farm incomes and helped them cope with food shortages during planting season. The migrants were hired as casual laborers in coffee harvesting in Keffa, cotton harvesting in Tendaho, and maize harvesting in commercial farms in the Rift Valley. However, since the Killil system was introduced, inter-regional migration of labor has declined or ceased adversely affecting off-farm earnings of the rural poor. … In another incident non-oromo subsistence farmers who resided in the Arsi Region for decades were forcefully dislodged for being in the ethnic enclave, and civil servants such as school teachers, and health professionals, who were employed in the "wrong region" either lost their job or denied employment and were sent back to their ethnic home regions or districts. As a result the seasonal farm laborers and unemployed and harassment. Youth cannot leave their ethnic home regions for job search due to fear of discrimination. …This and similar cases are a clear indications that the ethnic federalism has restricted or retarded inter-regional mobility of labor and capital and increased rural vulnerability to famine and poverty by adversely affecting traditional coping strategies" of rural Ethiopians.

The proper policy under an enlightened political leadership is the quick removal such major policy impediment to resource mobility and market-based economic development through a peaceful and democratic constitutional process. In addition to the economically retarding policy of *Killil* or ethnic regionalism, the land policy has the effect of immobilizing rural people by restricting seasonal and permanent migration of rural labor from labor-surplus to deficit areas, since farmers are required by local officials to show a proof of permanent physical residence to be able to use the land which they only have user rights continuously, and have no legal ownership rights.

Those, who migrate in search off-farm or seasonal jobs lost their land, thereby creating a major disincentive to land investment by tying the farmer to continuously fragmented plots of farm land. This, according to Dessalegn Rahmato, this reflects an implicit goal of the current ruling party to tighten control over the peasantry and rural people. It is constitutionally imposed top down political instrument of monopolizing and sustaining political power.

Alemayehu calls for a careful and objective analysis and evaluation of government policies that directly or indirectly make the population more vulnerable to poverty and famines. The second case raised

in the paper is a failure of food aid targeting and political corruption that points to some evidence of a regional bias and inequality. For example, there is evidence where households in Tigray region have received more food aid than households in other more needy regions of the Country. For example, the estimated mean Kcal of food aid distribution was 829 kcal per person per year in Tigray compared to 99 Kcal in Amhara region, 23 Kcal in Oromia, and 30 Kcal in southern region, and 35 kcal in other ethnic regional states, enabling Tigray to receive a disproportional greater food aid per capita than any other region in the country.

Field surveys reveal low correlation coefficient between regional concentration of food aid and regional concentration of the food insecure or the famine stricken population, suggest possible evidence of corruption and political bias in the spatial distribution foreign humanitarian food aid.

The second paper is by Sisay Asefa and the late Tesfaye Zegeye, begins by presenting a conceptual synthesis aimed at the challenge of reducing poverty, food insecurity and natural resource degradation, and combating recurrent famines in Ethiopia. Their paper is based on extensive review of the pertinent literature that points to three basic challenges: 1. the challenge of developing and managing human resources and population growth, 2. the challenge of developing and reforming enabling and developing democratic institutions for responsible governance, and 3. the challenge of promoting poverty-focused economic growth policies. The paper is based on the premise that agricultural and employment strategy of development is most relevant for Ethiopia at its current stage of development, given the fact that 85% of the Country's population is engaged in farming and related economic activities. While the paper sees great merit to pursue agricultural development as a strategic goal at the current stage of Ethiopia's development, the authors maintain that, such strategy will only succeed if *productive* and s*ustainable* technologies and viable institutions are developed and adopted under an enabling policy environment. Sustainable institutions include those that are market *incentive compatible* such as secured land tenure, credit markets, and agricultural research and extension.

The authors draw from a study based on data from a survey of farmers in two districts in South Central Ethiopia.

Based on this case study, they recommend the need to develop policies that have positive-sum or win–win outcome. Such policies, include investment on agricultural research and technology; the development of institutions that provide access to modern

inputs, credit, marketing, and extension services, irrigation systems; the removal of structural and policy impediments to mobility of labor and capital among regions; and policies that enhance farm productivity and sustainability by reducing natural resource degradation such as deforestation, soil erosion, and water depletion. A key policy implication of the study, which is consistent with the issues in some of the previous chapters in this book, is the critical need to provide secured land tenure by vesting property rights and legal ownership to farmers. The third paper is on institutional building for agricultural development by Efrem Bechere on Agricultural Reasearch and Development. Efrem reviews past and current agricultural development research experience and discuss some challenges and opportunities toward its improvement. After providing the historical and the current background on national agricultural research system including its organization, Research and extension system as well as agricultural development institutions such as Agricultural credit, Technology development and Dissemination,, agricultural research, an biotechnology, demographic change, and land policy, infrastructure, and scientific staff development and training he lays out key challenges and opportunities for agricultural development and reform. Efrem's paper speaks clearly based on relevant data and facts on the ground. The policy implications of how to move forward is clear and direct. These ignoring of these policies will only lead to further decline of agricultural development and more poverty, recurring famines and permanent food aid from which no one stake holder in Ethiopian society including governments will benefit. Finally, we conclude this introductory chapter by listing some of the policy implications and recommendation that follow from Ephrem's Bechere paper in key areas of identifying the problems and their solutions:

- Irrigation : The Problem – Out of 11 million hectares presently farmed, only 190, 000 hectares are under irrigation. Ethiopia is the water tower of Africa. Rainfall is becoming more erratic and unreliable.Suggestion – Low cost water harvest irrigation technologies such as construction of earth dams, river diversions, and hand pumps should be expanded and encouraged. On the research side, crop varieties and management practices for irrigated agriculture should be given due emphasis.

- **Fertilizers: The Problem** – Ethiopia totally depends on fertilizer imports. Even though farmers are fully aware of the use of fertilizers, cost is becoming prohibitive. One hundred kilogram of DAP and Urea costs 318 birr and 380 birr, respectively.

Fertilizer and others inputs totally cost the farmer about 1000 birr/hectare. A poor subsistent farmer can not simply afford this. Suggestion – Until such a time that farmers can afford these inputs, the government should help with subsidies or reduce the current interest rate of about 7.5 %.

- I**mproved Seeds:** **The Problem** – Only about 2% of the seeds used by farmers is improved seed. The rest are all local, low yielding, disease susceptible landraces. Suggestion – The increase and distribution of improved seeds at a price the farmers could afford should be given serious consideration.

- **Population Growth: The Problem** – One of the key development problem facing Ethiopia today is population explosion. Research achievements and other development outcomes are negated by the astounding increase in population number. At the current rate of growth of 2.9% by the year 2050 Ethiopia's population will be 169 million, the largest in Sub-Saharan Africa. Suggestion – A national population policy to reduce the current birth rate should be in place. Education and family planning should be expanded to the rural communities. All avenues, including contraceptives and other birth control methods should be pursued. Of course, historical experience of population shows sustainable development is the best contraceptive. Here we are not prescribing population policy of China which led to unintended consequences of human disaster during Mao period of cultural revolution.

  A better model in population management for Ethiopia is a multi-ethnic country such as India, who has reduced its huge population through economic development and engaging the global economy

- **Land Policy: The Problem** – The security of land tenure is vital for a successful agricultural development especially in Ethiopia where 85% of the population lives in the rural area and Ethiopia cannot create a miracle by monopoly control of land by the Government. Tenure security will provide the right incentives to invest or make improvements in land and natural resources. In the central and northern highlands, land holdings have dwindled form 0.5 hectares/per farmer in the 1960s to only 0.11 hectares/farmer in 1999. Several studies by Ethiopian economists and agricultural economists have uncovered this issue. Suggestion – These fragmentation and abuse of land will continue until land is privatized and the average land holding of farmers

increase. The population pressure on the land has resulted in loss of fertility, degradation and ecological imbalances with far reaching consequences. The government's and the private sector's responsibilities will be to create alternative sources of employments for farmers displaced from their lands.

- **Underdeveloped Rural Infrastructure**:

  The Problem – Road networks are limited and do not reach many villages in the rural areas. Farmers do not get fair prices for their produces. This discourages farmers from adopting new technologies to increase yield of their crops or livestock. It is also difficult to transport heavy items like seeds and fertilizers especially during the rainy season. Suggestion – The government should consider investment in rural roads a serious priority. Railways will be a cheaper alternative and these will carry much heavier loads. We can add that the government has made a major advance in rural infrastructure which is highly commendable.

The 4th and the final paper is a case story of the challenges of an agricultural investor who tries to invest on commercial agriculture in Ethiopia by Selashe Kebede. Selashe asks why are private investors are not coming to agriculture to Ethiopia . He notes this question is asked by many Ethiopians and tourists coming to Ethiopia? He does not claim to know the full answer. But, he is sharing his personal experiences from a practicing businessman with training in agricultural science at the PhD Level. The question why investors including the Diaspora are not coming to Ethiopia has bothered even some government officials too and myself for many years. In trying to find the answers through conversations with foreign investors from the USA and Europe, he gathered information that informs his own personal experience trying to invest in small commercial farm in Oromia Region. Although he gathered information from few responses from potential visitors exploring investment opportunities, most of the information in his case study is from personal experience over the years while managing various companies in Ethiopia. He tried to bring to attention of top Ethiopian officials, but they simply ignored his concerns and recommendations and perhaps due to due to fear and lack of confidence about the political situation created from the top down. But, he tried to speak on the subject with some courage and confidence the story based on his personal experience in managing profitable companies in both countries, Ethiopia and the United States of America in his life and why he is having road blocks in the current effort to transform agriculture through investing

in small commercial farm that may be a model for future investors.

In summary, the papers reviewed presented promise to bring about meaningful dialogue and knowledge toward sustainable development in Ethiopia including effectively combating poverty and famine, these issues, among many others need to be addressed by the Ethiopian Government in an inclusive manner through a process of dialogue on key policy research issues. Research and development policy issues do not function in vacuum. Realities on the ground should create enabling environments for research results to translate into success and lead the country to food self-sufficiency and combating recurrent hunger and poverty for the vast majority of her people. The most important issue is to get the institutions of Governance right at regional and local level and remove red tape and provide a level playing field for private investors compared to government related investors to develop successful agricultural development and combat food insecurity and rural poverty and reduce on permanent food aid.

7: Concluding Remarks and Synthetic Reflections

In the this review paper we have tried to wetted the appetite of readers to explore what each contributor this review has to say in their own words about the complex factors to persistent famine and food insecurity in Ethiopia. None of the authors claim that there is a simple solution to the famine and poverty problem, but the papers provide important perspectives about constructive ways of combating the famine problem in Ethiopia and other African countries with similar problems. It also noteworthy to remember that Ethiopia has been historically recognized the potential *Comparative advantage* in agriculture that can contribute to defeating the famine and substantially poverty problem in the near future. Ethiopia can achieve a specific target of reducing poverty by 50 percent in 20 years with enabling policy and institutional environment.

The agricultural potential to achieve this has been recognized over 40 years ago by feature article in *New York Times* published on December 1, 1963 as follows: *In 1944 during the Second World War, Ethiopia through the Middle East Trading Center made up the grain deficiencies for the whole of the Middle East. As a result the agricultural yield of the Ethiopian farmer was depended upon to feed the area during a period of shortages. The agricultural potential has since been extensively surveyed, and it has been established that, properly exploited, Ethiopia can feed and clothe over one hundred million people. The crops of Ethiopia are rich and diversified. Cereals, pulses, oil seeds,*

vegetables, grasses, roots, fiber and timber crops are grown all year round. The wide variation of soils, climate and altitude are largely responsible for this extensive range of Ethiopia's agricultural production. The products of field, farm and forest have increased considerably since the war years. With applications of modern scientific methods of production, as has been introduced in recent years, there is no doubt that Ethiopia can live up to the reputation of being the granary of both the Middle East and Africa".

We believe that potential is still can be realized in the future under enabling political and institutional environment that injects massive capital and knowledge to agriculture and the rural economy based on full and secure property rights of farmland. In spite of optimism reflected in the *New York Times* article featured 45 years ago, the current reality in Ethiopia is of course different. Today, Ethiopia finds itself in serious poverty and recurring famines, and distinguishes itself at the largest recipient of food aid in Africa. The country is globally known for recurrent famines, just like India was in the 1960s. Without engaging in the blame game, it is important for current and future leadership and policy makers of the Country to learn from historical experiences and draw correct lessons from those developing countries such as India and China who have conquered famine and poverty by transforming their agriculture and economies.

We also want to remind the reader that famine and food insecurity is <u>not</u> an isolated problem from poverty and lack of economic development, and that it indeed primarily driven by poverty and lack of good governance that can build effective institutions for agricultural development. This is a basic concept which is also reflected in the title of this book. But, our view is that famine is a problem that can only be overcome by developing a dynamic socio-economy and alleviating poverty under enabling policy and institutional environment and responsible governance guided by enlightened leadership. In general, success in combating famine and poverty in Ethiopia depends on bringing private and public efforts to bear to effectively address at least five interrelated and interlocking challenges: 1.Strengthening democratic institutions of governance by promoting accountability, efficiency and equity in managing natural resources, 2. investing in people, since people are both the beneficiaries and the means of what makes economic development people. Investing in people here means investment in quality education, health care, and combating the HIV/AIDS Pandemic. 3. Transforming agriculture by adopting science and

technology based and location specific research, aimed at reducing rural poverty, food insecurity, and recurrent famines.

Modernizing agriculture involves abolishing or reforming institutions that retard mobility of labor and capital among regions such as ethnic regionalism, undertaking appropriate land reform, as well as developing institutions such as marketing, credit, and extension system linked to research. Ethiopia also needs to invest in labor-intensive agro-processing and manufacturing industries aimed at reducing dependence on narrow range of agricultural exports such as Coffee. 4. reducing foreign aid dependence including on food aid and external debt and 5. attracting and promoting private domestic and foreign investment and strengthening trade partnerships with other countries, including promoting regional peace and stability. It is important to be clear about the meaning and concept of institutions used this book in general and last chapter in particular. Institutions are rules under which individuals and organizations including governments behave and act. Viable and democratic institutions produce or derive enabling policies. On the other hand faulty institutions lead to misguided policies. Indeed, massive destruction of societies and economies around the world is caused by individuals and organizations that act rationally, but operate under faulty or non-democratic institutions*.

Thus, a critical task for any society is to develop a set of institutions and rules that enable and constrain individuals and organizations to behave in constructive rather than destructive manner. Depending on the institutions that provide the *incentive structur*e, individuals and organizations and political leaders are capable of behaving and acting both in productive or unproductive manner.

Development economist Van Den Berg captures this idea aptly in his recent book entitled the Economics of growth and Development, when he states *"Economic disasters are caused by rational behavior of individuals and organizations reacting to incentives by faulty institutions*" (Van Den Berg, P.409). Thus, the challenge of overcoming poverty and famine in any society is to develop democratic and enabling institutions of governance that support and promote economic growth. In order to promote economic growth, institutions should provide and environment conducive for individuals to work hard, to save and invest, and for entrepreneurs to take risks and to actively pursue economic opportunities, for firms to improve their production methods, for governments to use public revenue efficiently and equitably in order to provide

public goods and to design cost-effective programs to meet socially well-defined goals. Institutions that enhance human welfare are those that channel individual and organizational efforts to productive activities by encouraging innovation. Such institutions are best established in democratic and market-based economies and societies where: *property rights* including land rights are well defined and secured, and laws are clearly defined and fairly enforced.

For agrarian economies like Ethiopia, the establishment of *secure and clearly defined land tenure system* becomes crucial due to the predominance of Agriculture in such economies. One of the limitations of neo-classical economics to fully explain the process of development is its failure of explicit consideration of institutions in its analysis. Yet, the development and effective functioning of the market or the capitalism itself critically depends on democratic institutions that establish and secure private property rights. Clearly defined and legally protected property rights are essential to motivate people to engage in voluntary efforts and transactions based on contracts that benefit themselves and also benefit others, often people they do not know.

Any policy impediment whether intended or not, that impedes this process will raise *transaction cost*s and lead to *market failure*. This basic idea was recognized in basic economics as the principle of the *invisible hand* principle of Adam Smith who is regarded as the father of economic science in his book The Wealth of Nations. The idea is not just an abstract topic of relevance to big corporations or business firms. It affects everyone's daily economic life and activity of how to save and invest, whether one's labor can be employed to best advantage, and whether one can thrive with one's inspirations and resources. This is true for peasant farmers in Ethiopia and the rest of Africa, as well as owners of large corporations.

According to Nobel laureate economist Douglass North, the primary causes of economic growth are the development of institutions that lower *transaction costs*, but that many governments may not promote such institutions due to two reasons:

First, the rulers may be able to increase revenue or income by restricting transactions, by undermining property rights, and by focusing on certain groups or regions easier to exploit or to tax for benefit others. Second, efficient and democratic institutions that minimize transaction costs may not benefit special interest groups that are vital for the survival of the rulers or the oligarchy (North, 1987). In sum, political expediency and quest for monopoly of political power

prevents the rise of efficient economic institutions that enhance economic growth and alleviate poverty. The prevalent institutions both formal and informal (cultural values and norms and customs) need to be carefully studied and understood by Ethiopian scholars and policy makers and taken into account in designing any food insecurity/poverty combating strategy. In order to break out of the poverty and famine trap by transforming the rural and agricultural economy, changes are required in both in formal and informal institutions such as: social values or norms; incentives; market and credit services; research and extension services; cooperative works, and; the nature and operation of property (land) institutions (rules) and public agencies and organizations. All these factors and challenges are related, and cannot be faced up to with out forging a unified national objective that defines a framework guided by a far-sighted and enlightened leadership and enabling policy environment.

Whether correct historical and comparative lessons will be drawn by the current and future generation of political leaders, scholars, agricultural scientists, and policy makers remains to be seen. The agenda for sustainable development for Ethiopia and the other African economies must be developed internally with scholars and intellectuals of both at home and abroad. It cannot be left or driven by foreigners, donors, and their advisors. But, foreign countries can help once the critical homework of building democratic institutions for combating poverty and famines is done at home. We close by simply stating the time for reversing more the long-term economic decline of more than 30 years, of human and natural capital depreciation, and therefore combating famine and poverty in Ethiopia is way overdue. It must begin now!

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[i] *All Chapter chapters except the Preface and the Introductory Chapter. The Chapters were contributions to International Symposiums on Development Studies (ICEDS) that convened on August 16-18, 2001 in Kalamazoo, Michigan, USA and July 11-12, 2003 at the Ghion Hotel, Addis Ababa, Ethiopia. The latter Symposium was co-sponsored by the Ethiopian American Foundation and the Institute of Development Research (IDR), Addis Ababa University, and Center of African Development Policy Research (CADPR), at Western Michigan University..*

[ii] *The Ethiopian Institute of Agricultural Research (EIAR) was formerly known as the Institute of Agricultural (IAR). It is a national institute of agricultural research of Ethiopia that was established in 1966.*

*** This and the following 3 paragraphs draw from the Sisay Asefa's recent paper entitled "Perspectives on Institutional Reform and Development in Ethiopia: The Critical Role of Building Enabling Institutions for Economic Development" *In Northeast African Studies 109.1, Michigan State University Press, issue edited by Sisay Asefa and Paulos Milkias , North East African Studies 2007)*

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