Grain Market Research Project

DESIGNING STRATEGIES TO SUPPORT A TRANSFORMATION OF AGRICULTURE IN ETHIOPIA

Daniel Molla
Hagos Gebre
T.S. Jayne
James Shaffer

WORKING PAPER 4
GRAIN MARKET RESEARCH PROJECT
MINISTRY OF ECONOMIC DEVELOPMENT AND COOPERATION
ADDIS ABABA
SEPTEMBER 1995

DESIGNING STRATEGIES TO SUPPORT A TRANSFORMATION OF AGRICULTURE IN ETHIOPIA

Daniel Molla, Hagos Gebre, T.S. Jayne and James Shaffer

This is a revised version of a paper presented at the Workshop on Agricultural Transformation in Africa, September 25-29, 1995, Abidjan, Cote d'Ivoire. The authors are participants in the Grain Market Research Project in Ethiopia, managed and implemented by the Ministry of Economic Development and Cooperation (MEDAC), Michigan State University, and USAID/Ethiopia. The views expressed in this paper are those of the authors as individuals and do not necessarily represent official positions of the Government or of MEDAC. Support from the Government of Ethiopia, USAID/Ethiopia, USAID/AFR/SD/PSGE/FSP, and USAID/AFR/SD/PSGE/TDT is gratefully acknowledged.

DESIGNING STRATEGIES TO SUPPORT A TRANSFORMATION OF AGRICULTURE IN ETHIOPIA

Daniel Molla, Hagos Gebre, T.S. Jayne, and James Shaffer

1. INTRODUCTION

Ethiopia has a new government taking up the challenge of governance following more than 14 years of civil war and a centrally planned economy. The challenge facing the new government includes designing and implementing the transformation of an economy with 85 percent of the population dependent upon semi-subsistence farming and frequently unable to produce enough food for its own livelihood, to an economic system that raises productivity and food security. It is commonly reported that Ethiopia ranks among the poorest countries in the world.

Agriculture dominates the economy and accounts for around 45 percent of GDP, 85 percent of the employment , and 85 percent of the exports. Crop production is estimated to contribute around 60 percent, livestock 30 percent, and forestry perhaps 7 percent of agricultural GDP. The poor performance of the agricultural sector over the past two decades, coupled with recurrent droughts has caused significant losses in human lives, decumulation of capital and assets and increasing dependence on food aid. While basically self-sufficient in cereals until the early 1980s, Ethiopia has not been able to meet its own food needs since the severe 1984 drought

Given the above situation in Ethiopia, food security and the transformation from low-productivity agriculture are intimately linked. Food insecurity is ultimately a manifestation of poverty. The transformation from a subsistence agricultural economy to a more commercialized system based on specialization and exchange is critical in promoting economic development.

The paper consists of three parts. The first part of the paper is a review of agricultural performance in Ethiopia over the past forty years. The second part diagnoses agricultural system performance and food security problems in Ethiopia and discusses some tentative practical strategies for promoting an agricultural transformation, and with it, increased productivity, income growth, and food security over the long run[1]. The third part describes the general approach to promoting an agricultural transformation and food security for Ethiopia. It is conceptual and procedural. It draws from the lessons of economic history and theory applied to the current situation in Ethiopia.

---

1 Agricultural transformation occurs when a substantial number of rural households (1) have incomes exceeding the poverty level, (2) produce for the market (selling a substantial portion of their output), (3) specialize in production at the farm level, (4) invest more on their farms, (5) use purchased inputs, including hired labour in significant quantities, and (6) adopt improved technologies on a regular basis. At this point a dynamic growth process takes place, with the agricultural sector modernizing, continuing to supply food cheaply, and releasing labour to the non-agricultural sectors (Seckler, 1993).

2. A GENERAL OVERVIEW OF ETHIOPIA'S AGRICULTURAL PERFORMANCE: PAST AND PRESENT

Our discussion of options for agricultural transformation and development in Ethiopia begins with a review of past agricultural performance and the current environment in which transformation is to take place.

2.1 Agricultural Performance Before the Land Reform of 1975

Agricultural performance in pre-1975 Ethiopia was highly influenced by the land tenure system that existed at the time. There were five different types of land tenure arrangements in pre-1975 Ethiopia: 'Communal' (*rist*), *Gult*, Church, State and Private.

Under the *rist* system individuals who could establish descent kinship ties to the original founder of a community were entitled to a share of the 'communal' land. The individual had only a life-time usufructual right over his share of land which was equally divided among his descendants upon his death but could not be transferred to others outside the kinship through sale, mortgage or gift, except through lease. Although this landholding system minimized landlessness and tenancy, it resulted in the fragmentation of farms and land holdings (Rahmato, 1984). Moreover, due to periodic redistribution of communal land to accommodate new claimants and costly litigations resulting from claims and counter claims by those claiming closer kinship of descent, insecurity of tenure was aggravated and the incentive for investments in land improvements was reduced. This form of tenure was widespread mostly in Northern Ethiopia.

The *Gult* were large estates granted to members of the ruling aristocracy in recognition of their loyalty to *the Crown*. The grantees had privileges to collect taxes and tributes from the people on gult property and exercised administrative and judicial authority in the gult area[2].

Church *(Semon*) land was land granted by the state to the church to support its activities which the latter leased to others in return for tribute or tax.

State land (*maderia* and *mengist*) was vast agricultural land throughout the country. The state gave this land to individuals in lieu of pension or salary (*maderi*a) or registered it as government property (*mengist*).

All the above tenurial types involved only usufructual rights as granted by the commune, the church or the state institutions. In all of these cases, individuals could not sell their holdings, bequeath them as gifts or mortgage them to others but could pass them on to their descendants or lease them out to tenant cultivators.

[2] Tributes differ from taxes in that they are paid in kind and delivered on ceremonial occassions such as new year, christmas and easter (e.g., sheep, honey, butter, etc.)

Private land was either land expropriated from peasants and local chieftains or unoccupied land given to officials and loyal servants of the crown. Much of the land thus acquired was converted into private tenure and could therefore be sold or exchanged.

Agricultural production in pre-1975 Ethiopia could be characterized as mostly traditional, involving small holdings, with little or no external input use. The commercial farms established towards the end of this period did nothing to improve the situation as there was little or no technology transfer between these farms and the smallholder peasants that surrounded them[3]. Even worse, in many instances such farms were established by evicting tenants to make way for mechanized farming.

Share-cropping was the most common type of rent payment between the tenants and their landlords. In general, the rent varied between 1/3 and ½ of final harvest, depending on local custom, availability of land and soil fertility.

Table 1. Pre-1975 Distribution of Farms by Size and as a Proportion of Total Rural Land

Percentage of:	***Size in hectares***						
	Up to 0.1	***0.11 - 0.5***	***0.51 - 1.00***	***1.01 - 2.00***	***2.01 - 5.00***	***5.01 - 10.00***	***10.01 +***
Total Farms	3.5	27.6	26.5	23.4	15.2	2.8	1
Total Rural Land	0.2	5.8	12.4	22.3	30.0	12.1	17.2

Source: Rahmato, 1984

As can be calculated from Table 1, 57.6% of Ethiopian farms were of one hectare or less in size in the early 1970s. By contrast, 1% of the landholders owned 17.2 percent of the country's rural land. According to 1974 Ministry of Agriculture figures, 30% of all holdings in the country had no oxen at all, and only about 29% had a pair of oxen. Only 8% of the holdings had more than one pair of oxen.

The effort of the imperial government of Ethiopia in transforming the national economy culminated in four Five-Year Development Plans. The First Five-Year Development Plan (1957- 1962) and the Second Five-Year Development Plan (1962- 1967) did not recognize the need to bring about fundamental changes in existing methods of peasant production. They heavily favored the expansion of large-scale commercial farms and export crops production (mainly coffee). Moreover, they gave priority to industrialization and saw the contribution of the agricultural sector only in terms of providing raw materials to the expanding industrial sector.

The inability of domestic food production to support the growing population, which resulted in the country becoming a net food importer for the first time (45,000 tons in 1959/60),

2 The commercial farms did, however, offer some seasonal employment, particularly during the harvest period. Even then, they only covered roughly 1 to 2 percent of the total cultivated area, too small to have had any significant influence on traditional peasant agriculture.

brought about a shift in donor aid policies towards rural development and rural infrastructure construction (Pausewang et al, 1990:49-50).

The resulting pressure on the imperial Ethiopian government led the Third Five-Year Development Plan (1968 - 1973) to change its focus from that of the previous plans. It recognized the importance of the agricultural sector and accordingly had a more clearly defined agricultural strategy. The strategy adopted a projectized development approach to improve the sector by concentrating efforts on "high potential" areas, as simultaneous modernization of peasant agriculture in all areas of the country was deemed not feasible. The Third Five-year Plan was highly influenced by the "Integrated Rural Development" approach in vogue with donors at the time. Donor-financed comprehensive package projects were established in high-potential areas to bring about a gradual transformation of peasant agriculture. These were the Chilalo Agricultural Development Unit (CADU) in 1967, the Wolamo Agricultural Development Unit (WADU) in 1970 and the Ada District Development Project (ADDP) in 1972.

These projects focused on agronomic research, dissemination of research results, provision of modern farm inputs and credit facilities as well as promotion of cooperative societies. The comprehensive package projects could not be replicated in other places because of their high costs. This then prompted the launching of minimum package programmes, essentially providing fertilizer, credit and extension services.

The extension and 'minimum package' programmes launched by the government in late 1960's to improve peasant agriculture were far from adequate and often poorly implemented. For instance, in the 1960's, government expenditure in agriculture averaged only 6 percent of its total investment, and only 13 percent of this 6 percent was devoted to peasant agriculture.

In the Fourth Five-Year Development Plan (1974 - 1978), which identified cereals and pulses as priority crops, more attention was to be given to the agricultural sector, continuing with the package approach. However, this plan was not implemented due to the 1974 Revolution.

In summary, the efforts of the imperial government to transform agriculture were unsuccessful. Overall, the extension services, 'minimum package' programs, and public investments to promote private sector investment in the agricultural marketing system were not effective. Agriculture grew by 1.8 percent per year on average over the 1966/67 to 1973/74 period.

2.2 Agricultural Performance under the Derg

After the overthrow of the monarchy in February 1974, the new military government initiated a radical agrarian reform in the form of Proclamation 31 of 1975, prohibiting private ownership of land and its transfer by sale, lease, mortgage or similar means. The new law recognized only the use right (usufruct) of the cultivator over his holding. The law also prohibited the use of hired labor and set the maximum size of a holding to 10 hectares. Land in excess of 10 hectares and large scale mechanized farms were expropriated without

compensation, and the latter were organized into state farms or cooperatives or parceled up and distributed to landless peasants.[3]

In actuality, the land reform program redistributed very little land. Most peasants just kept the land they ploughed. Only where a landlord himself cultivated much more land than the average peasant was his land taken for distribution. In most villages, there was not enough land available for redistribution to the landless. The major positive effect of the Derg's land policy was not so much an increase in the amount of land accessible to peasants but rather the termination of contributions to landlords in terms of labor or part of their produce (Pausewang et al., 1990:45).

The few years that followed the land reform witnessed the government consolidating its power from the center to the peripheries and mobilizing resistance against internal dissent and external aggression from Sudan and Somalia. Thus, no other policy change was introduced in the agricultural sector until 1978. Following the establishment of the National Revolutionary Development Campaign and Central Planning Supreme Council, a series of annual National Revolutionary Development Campaigns began aimed at economic recovery and reconstruction. Six such campaigns were successfully launched, and the first three experienced noticeable growth rate of GDP owing to good weather, utilization of spare capacity in the manufacturing sector and successful mobilization of popular efforts in development activities. Nationwide promotion of agricultural producer cooperatives, increasing centralization of rural administration, the introduction of state control and the expansion of its role in the area of agricultural marketing became the order of the day.

Government grain marketing regulations required all peasants to sell a fixed proportion of their produce (in the form of quotas) to the Agricultural Marketing Corporation (AMC). Any available surplus above this quota could be sold on the free market by the producer within the region where he/she resided. Quotas were set by government each season on a regional basis then further disaggregated within each region, awraja, woreda and finally each peasant association. Quotas were assessed as a proportion of estimated marketable surplus and were fixed on a quantity per family basis. Private merchants were required to deliver at least 50 percent of their purchase to AMC, and irrespective if the size of marketing costs incurred they were paid birr 5 per quintal above the official farm-gate price[4]. However, in Gondar, Gojam, Arsi and parts of Shewa regions, which provided the AMC with 85-90 percent of its peasant sector purchases, merchants were required to sell 100 percent of their purchases to AMC. Inter-regional trade from these areas by private traders was prohibited. In Gondar, Gojam, Arsi and Shewa, AMC purchases were often well above the actual quotas allocated. AMC sales were restricted to specific buyers, principally the kebeles (the smallest administrative units) of Addis Ababa (about 34 percent), the state owned flour mills (27 percent) and the military (12 percent).

---

3 The land proclamation, however, had provisions to compensate for movable properties and permanent works on the land.

4 Birr is the currency of Ethiopia. As of August, 1996, 1 US$=6.35 birr.

The successful implementation of land reform was a remarkable feat that fundamentally changed the rural structure and removed a major obstacle to growth, namely the inequitable distribution of land and the consequent extortion of tenants. Farmers were given permanent land-use rights with areas based on family sizes, and were organized into nearly 20,000 peasant associations (PAs), which controlled land distribution and had broad administrative and legal powers. The agricultural growth potential thus created, however, remained largely unexploited as technology adoption and efficiency became secondary to the social transformation objective of a more equitable access to land for farmers.

Following the subsequent formation of peasant associations, peasants resented not the land reform as such but the frequent interference from the state which withdrew local autonomy in the way peasants administered their affairs, forced them to sell their crop produce at below-free-market prices to government parastatals, and higher taxes and contributions to support the "war effort". Towards the end of the Derg era, peasant associations had essentially become an extension of the state apparatus.

A steady decline in per capita agricultural output since 1981 and the government's determination to introduce central planning of the national economy prompted the replacement of the annual development campaigns with the Ten-Year Perspective Plan (TYPP) in 1984, when drought and famine severely affected economic performance and a further decline of GDP by 6.7 percent in real terms was recorded in 1984/85.

The main objective of the TYPP was to realize self-sufficiency in food production by the end of the plan period. The TYPP envisaged an ambitious annual GDP growth rate of 6.5 percent, a 4.3 percent growth rate in agriculture, a structural transformation of the economy, and an allocation of 22.5 percent of government investment to agriculture[5]. The strategy employed was to organize farmers in producer cooperatives and to expand large-scale state farms. To induce farmers to joining producer cooperatives, preferential treatment was to be accorded to the latter in terms of access to improved inputs and marketing of outputs (Pausewang et al, 1990:51).

Despite their comparatively minor contribution to agricultural output, producer cooperatives (PCs) received incentives not available to PAs. These included more land per capita in some cases, lower cost fertilizer, higher grain prices, lower land tax , interest-free loans from service cooperatives and other agencies, various grants and gifts from donors such as tractors and machinery, priority access to bank credit, and disproportionate support from extension staff of the Ministry of Agriculture. Moreover, PCs were also accorded priority for training at the farmers' training centers.

Another attempt at agricultural transformation was villagization of the rural population. It was planned that the entire rural population would be villagized about 1990. Achieving economies of scale in the provision of social services was a major justification for the

5 The share of agriculture in over all GDP was to fall from 45 percent in 1985 to 39 percent by the end of the plan period.

villagization programme. The villagization process was a costly and disruptive one. In most cases it was non-participatory and undertaken without the consent of the local people.

A World Bank report identified the then most important agricultural policy problems constraining peasant farmers from adopting improved technologies, producing greater marketed output, and investing in agriculture as being (a) grain market regulation, including compulsory quota deliveries by producers to the government at below-free-market prices, (b) land tenure uncertainties, (c) subsidizing agricultural producer cooperatives, (d) poorly planned resettlement policy (e) the social upheaval and uncertainties caused by villagization of peasants (f) state farm development absorbing comparatively large resources with little positive economic impact (World Bank, 1987).

In summary, the recurrent drought and famine, ill-designed agricultural policies, substantial defense expenditures, stagnation of economic activities due to neglect of the peasant sub-sector, protracted civil war and loss of territories under government control and the consequent dwindling of revenues became characteristic of the military government, the cumulative result being weakening of its political power. These culminated in the collapse of the military government in May 1991 and a subsequent formation of the Transitional Government of Ethiopia, led by the Ethiopian People's Revolutionary Democratic Front (EPRDF).

2.3 The Present Context and Efforts at Agricultural Transformation

Current efforts at agricultural transformation in Ethiopia are summarized in the Government's recently announced Five-Year Plan (EPRDF's Five-Year Peace, Development, and Democracy Program, unofficial translation from Amharic). The major thrust of the Government development vision is an economic growth rate sufficient to provide a surplus for investment, contributing to the cumulative growth process.

The plan targets an annual 7-10% growth rate of the economy to realize significant improvements in the standard of living. The Five-Year Plan's proposed major source of growth is a rapid improvement in the productivity of the agricultural sector, based upon the transformation of the Ethiopian agricultural economy from one of semi-subsistence farm households that use few purchased inputs and sell very little, to a rapidly expanding agricultural economy based on increased use of productivity-enhancing technology, through efficient input delivery systems and effective output markets.

Some important elements of the Government's Five-Year Plan are:

- Provision of improved seeds, fertilizer, pesticides, rural credit, improved extension services and small-scale irrigation schemes
- Due attention to the conservation and rehabilitation of the country's natural resources, mainly through soil and water conservation schemes and reforestation programmes

- Land will continue to be state-owned with farmers only having use right. Farmers can lease their land for a short and legally recognized period of time and can bequeath their land to relatives[4]
- Private investors will be allowed to develop commercial farms on lands not presently occupied by farmers on long-term and low-priced concessions (see footnote above)
- Construction of rural infrastructure will be mainly the government's responsibility.

An important element of the government strategy is the continued involvement in fertilizer marketing and the subsidy program for chemical fertilizer, not withstanding its plan to deregulate fertilizer marketing and phase out fertilizer subsidies over the next two years. The treasury costs of the fertilizer subsidy program over the past three years has ranged between 50 to 150 million birr per year.

Another aspect of the current effort to raise smallholder cereal production and productivity is promotion of the use of improved inputs. This was initiated by Sasakawa Global 2000 (also known as SG 2000) in 1993 and subsequently adopted by the government since 1995. The programme involves demonstration of a package of improved inputs on what are known as Extension Management Training Plots or EMTPs. The size of the EMTPs is a half hectare and adjacent farmers can join their plots to form an EMTP if they can not meet the half hectare requirement. Farmers are expected to graduate after one production season from the program and continue using the technology thus acquired without further assistance, save for advice from extension agents.

From 1993-94, SG 2000 implemented more than 1,600 EMTPs. This was expanded to more than 3,000 EMTPs by SG 2000 and another 40,000 EMTPs by the government in 1995. However, the feasibility and sustainability of the current government attempt to further expand the program to 400,000 EMTPs is questioned by many, including SG 2000 because of the high costs of the programme and limited fund availability.

In any case, the first priority of Ethiopia is to increase agricultural growth. In selecting policies and strategies for achieving this goal, efficiency considerations merit the heaviest weighting in the short term. Social and equity objectives are more likely to be achieved if agricultural and economic growth can be rapidly expanded while addressing the twin goals of increasing food availability and raising peasant farmer incomes. Unlocking Ethiopia's agricultural potential requires a development policy embracing three main strategies: i) improving production incentives ii) enhancing the efficiency of farm support services iii) revising investment priorities in the economy to reflect priority areas of investment in terms of realizable potential for growth.

Structural transformation is a long-run process. However, Ethiopia has pressing needs that require solutions in the short-run. The country is in constant threat of famine and chronically faces a 500,000 to 1,000,000 ton annual grain deficit, which contributes to its problems of widespread food insecurity, malnutrition, and low economic growth. The Government's

[4] The length of the lease period has not yet been specified which has important implications for long-term investment incentives.

strategy to initiate the process of structural transformation of the Ethiopian economy will require compatibility with its strategies to promote food access and availability in the short run. Agriculture employs 85% of the population, and thus *agricultural productivity growth* is likely to be the main engine for economic and employment growth in the Ethiopian economy.

Trends in agricultural productivity are not encouraging. Hybrid seed use is low: about 5-10% of total seed use for maize, and even less for sorghum, barley, and teff.[6] Use of improved open-pollinating varieties is considered to be higher. Fertilizer use is among the lowest in the world, at about 7 kgs per hectare on average. However, it is widely believed that the technology exists on the shelf to eliminate Ethiopia's food deficit, but further analysis is needed to identify the constraints on input delivery and adoption of existing technology by farmers.

While basically self-sufficient in cereals until the early 1980s, Ethiopia has not been able to meet its own food needs since the severe 1984 drought (Figures 1 and 2). The disruption to peoples' livelihoods and the decumulation of productive assets from the 1984 drought was of such a magnitude that the country has never fully regained its ability to feed itself. This underscores the potential effects of drought on agricultural productivity, and the need to have in place viable mechanisms for ensuring access to food by vulnerable groups as the first line of defense before they adopt more extreme coping mechanisms (migration, distress sales of assets) that cripple long-run productivity growth.

Figure 1 also shows that food aid (and to a much lesser extent, imports) have increasingly filled the gap between food production and consumption requirements. However, even when including food aid and imports, per capita cereal consumption has fallen from a range of 150-170 kgs per capita between 1979-1983 to a range of 125-140 kgs from 1984-1994 (Figure 3)[7].

It is widely believed that of the 6 to 7 million tons of cereal produced in Ethiopia, about 15% to 25% is sold and traded in markets. This would imply an annual marketed volume of about 1 million to 1.75 million tons, depending on the harvest.

The annual volume of cereal food aid has fluctuated from 200,000 tons to about 1.2 million tons over the 1984-1996 period. About 95% of this cereal aid has been in the form of wheat. In a normal year, the volume of cereal food aid could account for 25% or more of the total marketed cereal supply in Ethiopia. Depending on the manner in which the food aid was distributed, an addition of cereal supply of this magnitude could be expected to exert some influence on food market prices. In a drought year, food aid may account for up to 50% or more of total cereal marketed supply.

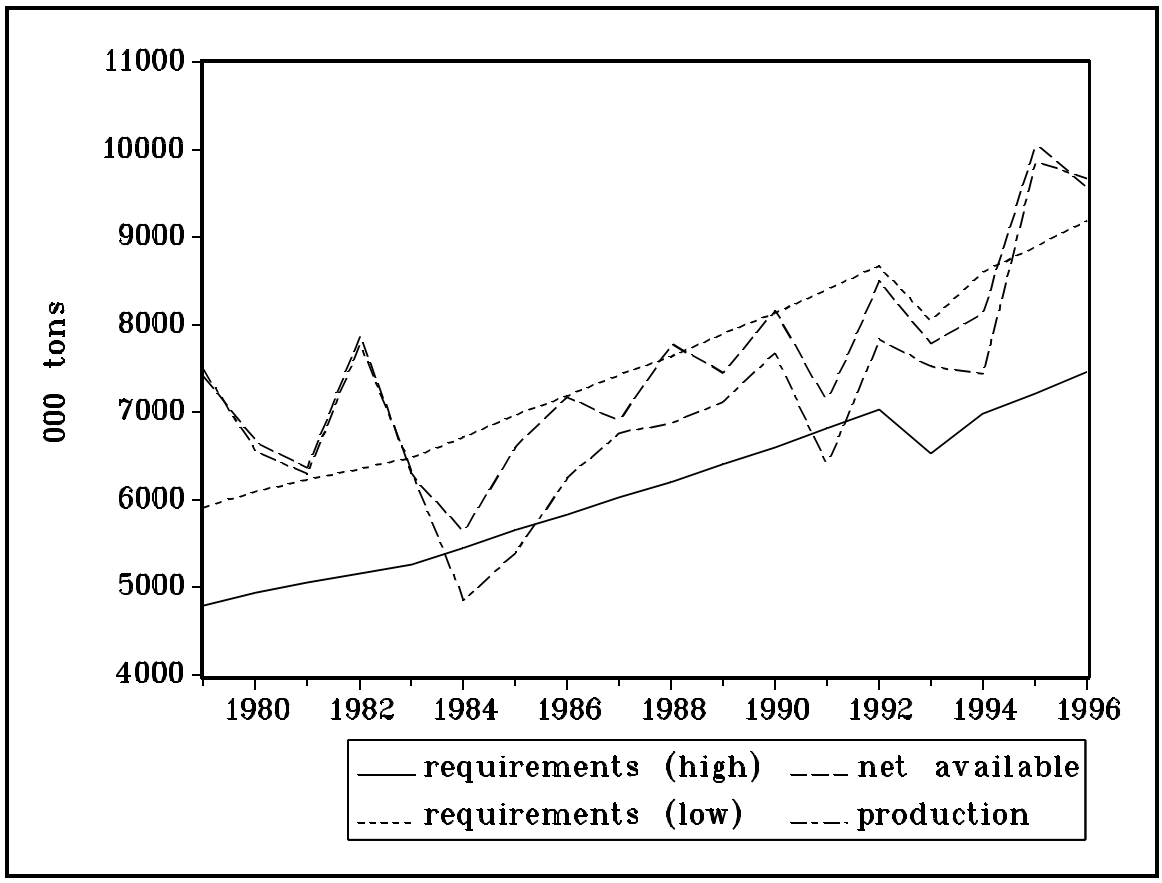
---

6 Wilfred Mwangi, CIMMYT/Addis, personal communication, 1995.

7 It should be noted that Central Statistical Authority food production statistics do not report Enset (false banana), which is a major staple for about 10% of the population, mostly in the south. In addition to empirical difficulties in determining Ethiopia's food deficit, it is also difficult to define conceptually. Food requirements are very different depending on the standard of adequacy set. It takes much less food to keep people alive than to assure healthy, productive life.

Strategies to promote rural productivity and income growth have been overshadowed by emergency and public-work food aid programs. By default, these food aid-driven programs have become the major forms of development assistance to rural households, but the long-run consequences of these programs on food production growth and the development of food markets are little known. While much effort has been recently focused on the need to design short-run disaster relief programs in a manner that contributes to long-run develop (the famous "relief to development" continuum concept), there are severe limits on the extent to which emergency assistance programs, however they are designed, can substitute for long-run development strategies. We stress that long-run productivity growth in agriculture, the likely engine of growth for structural transformation, will come primarily from input intensification, which requires a coordinated system of input supply and delivery, financial market development, reliable access to output markets, and an effective agricultural research and extension system. Food-aid driven public works programs can, with the needed technical expertise, create assets such as trees, roads, conservation investments, and dams to facilitate rural productivity growth. But these assets clearly cannot substitute for a coordinated food system that induces significant input intensification and generates the leaps in productivity required to close Ethiopia's massive food deficit and foster an agricultural transformation.

Figure 1. Grain Production, Food Aid, and Consumption Requirements, Ethiopia, 1974-1994



Source: computed from data provided by Central Statistical Authority

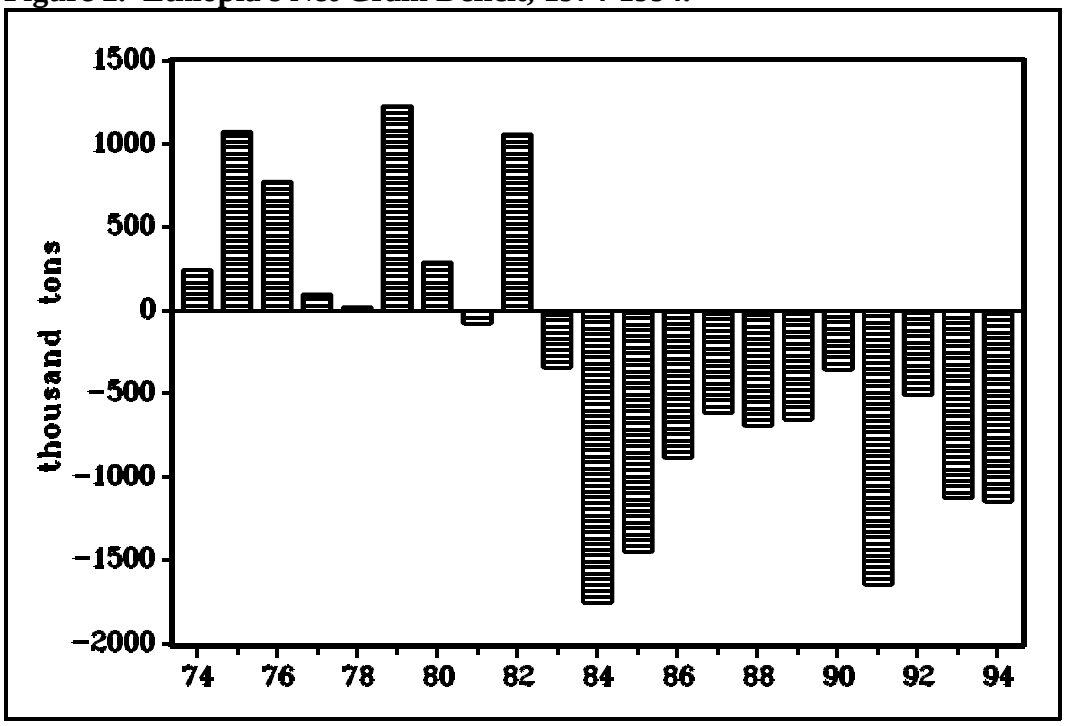
Notes: a. Production, availability and requirements include cereals only. Data is largely unavailable for *enset* (false banana), an important staple in some parts of the country.

b. Requirements (high): Cereal consumption requirements based on population * 225 kgs per person per year (recommended by the Ethiopian Medical Association) * 0.7. Cereals make up approximately 70% of the average Ethiopian's caloric intake.

c. Requirements (high): Cereal consumption requirements based on population * 182.5 kgs per person per year (DPPC estimated ration requirement for relief situation for non-working person) * 0.7. Cereals make up approximately 70% of the average Ethiopian's caloric intake.

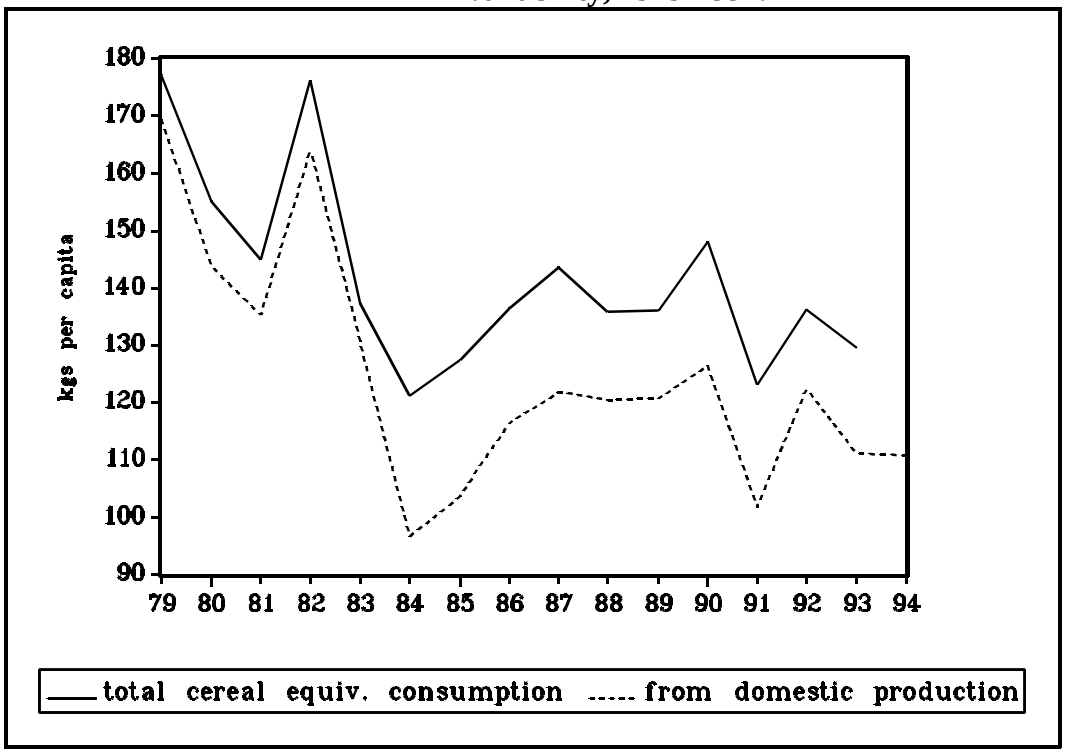
d. Years refer to August of the indicated year to July of the next year. For example, 1996 refers to September 1996 through August 1997.

Figure 2. Ethiopia's Net Grain Deficit, 1974-1994.



Source: computed from data provided by Central Statistical Authority.

Figure 3. Per Capita Grain Consumption from Domestic Production and Total Grain Availability, 1979-1994.



Source: computed from data from Central Statistical Authority.
Note: The difference between the two graphs in the above figure represents food aid.

3. DEVELOPING STRATEGIES TO PROMOTE AGRICULTURAL TRANSFORMATION

Given the objectives of the Five-Year development Plan, there is a need for a program of research that would inform policy makers about the best alternative courses of action to achieve the stated objectives. A program of research is therefore required to provide policy relevant information for Ethiopian policy makers. This program of research and information to support the achievement of the agricultural transformation and food security would include:

1. A process for identifying a coherent set of strategies (policies, investments, actions) by Government agencies and associations of participants consistent with the Government vision of the economic transformation and food security.

2. A program of research and analysis dedicated to the generation of information required to inform the public, private sector and policy makers of strategies and actions consistent with the vision.

3. An activity designed to inform, promote dialogue and facilitate networks among those in position to influence decisions related to the agricultural transformation and food security.

4. An activity designed to monitor the political and economic situation in order to provide timely information to decision makers about the current situation and trends, consequences of past actions and events and actions under consideration.

The basic idea is that (a) economic development is a process which results from favourable political-economic environments that provide incentives for participants to engage in productivity-enhancing behavior, and that (b) it is possible to identify strategies that influence the economic environment to promote development based on the generation and analysis of information to identify opportunities and make sound decisions.

Promoting development in a market-oriented economy

The Government of Ethiopia has stated its commitment to a market-oriented economy. What does it mean, then, to develop strategies for transforming the economy? The concept is very different than planning for a centrally-planned economy. The commitment to making a decentralized, market-oriented economy as the basic process for determining resource allocation is not a commitment to government inaction. The challenge for government in a market-oriented political economy is to take full advantage of the capacity of markets to coordinate economic activity by providing strong incentives to increase private investment, cost-effective use of productivity-enhancing technology, and employment growth. The tools at governments' disposal include key public investments and policies to influence or modify economic performance to conform more closely with politically-defined social objectives. But identifying the correct set of public investments and policies requires information on how the current system works, a vision of the intended future system, and knowledge of the processes involved in getting there (Boughton et al., 1995).

The policy levers to promote development in a market-oriented economy include the rules and regulations of the economic game, taxes, investments in different types of public goods, various entitlement and resource distribution policies and programs, and information (all of which channel agents' behavior in particular ways). The analytical task of the research and information program is to identify feasible strategies involving these policy levers for promoting desired behavior consistent with politically-articulated objectives, and assessing the benefits and costs of alternative actions. The performance of the food and agricultural economy is determined by many resource-allocation decisions. A comprehensive understanding of these many decisions and all alternative decisions which might influence agricultural performance and food security are, of course, far beyond the limited resources available for a research and information program. A strategy for the research program is needed to focus limited resources on the most promising policy options.

More specifically the proposed approach puts high priority on understanding the ongoing process of the transformation and the identification and design of the most cost-effective strategies to achieve a rapid economic transformation consistent with assuring food security. This requires attention to strategies focusing on:

1. Reducing the real costs of having adequate food available at all times for all people, but with special attention to costs to those facing potential food deficits, including entitlement to food or other resources to enable those households without means to acquire adequate food. Improving the functioning of output markets is a key component in achieving this goal.

2. Increasing productivity on farms based upon improved knowledge and other inputs;

3. The effective production and distribution of inputs to farm households to support productivity growth, to provide lower cost replacements for goods and services previously produced for household consumption, and additional low cost consumer goods offering incentives to increase production and improving real incomes;

4. The development of firms offering employment opportunities with real incomes at least equal to opportunities on farms and reliable markets for farm commodities offering incentives to farmers to invest in food production and assuring consumers (including specialized farm households) of reliable supplies of affordable food. Especially important are the development of firms to supply the inputs to farm households.

5. Achieving sustained investments in productivity enhancing human and physical capital.

Economic transformation and economic coordination

The Ethiopian Five-Year Plan basically outlines a process of structural transformation, although it does not use the term directly. In general, the processes of the economic transformation are well known and generally accepted by economists (Mellor and Johnston, 1975). Structural transformation involves a movement away from subsistence-oriented, household-level production toward an integrated economy based on specialization and exchange. The movement away from autarky makes possible a new set of production

possibilities using inputs acquired through exchange, allows the household and the economy to benefit from the economies of size that accompany specialization, spreads risk of supply and demand shocks over a broader geographic area, and ultimately broadens the household's consumption choices (Staatz et al., 1994; Bromley and Chavas**,** 1989).

The process of transformation that makes higher living standards possible also makes farm households more dependent on the performance of a broader set of exchange systems for inputs, consumer goods, and income. Rural households have little control over these systems. The risk of relying on unstable markets is particularly high for households operating at the margin of survival, where small fluctuations in real income can have disastrous consequences. Many households and firms have responded to the uncertainty and transaction costs of markets by internalizing exchange within highly personalized social or kinship arrangements (e.g. within the village or along ethnic or kinship lines) and through self-sufficiency or subsistence production patterns (Jayne et al**.,** 1994).

One useful way of looking at the transformation process is to approach it as a problem of getting the institutions of economic coordination right. Based upon economic history we understand that structural transformation and associated productivity growth requires specialization in what people do and the means of coordinating the inputs and outputs of the specialized activity.

More specifically, physical transformations -- the combining of two or more inputs to produce a product which in turn is an input for further transformations -- are coordinated by transactions among participants in production-distribution-consumption sequences. Various kinds of coordination arrangements have evolved to deal with the risks, transaction costs, and asymmetric information attendant in different kinds of production/distribution/consumption sequences. For example, transactions coordinating economic activity take place within organizations (households, firms, agencies), in markets, and between organizations using extra-market relationships (private agreements, for example). Economic transformation requires solution to increasingly more complex coordination problems in the type of transactions that are often required to bring about higher levels of productivity. For example, forms of forward contracting are often necessary to provide the incentives for investment in more efficient production processes that involve dedicated assets not easily transferable to other uses (sunk costs). Failure to develop the information, institutions, and practices to solve these coordination problems is a major barrier to an effective economic transformation.

In attempting to understand the coordination problems limiting the economic transformation it is conceptually useful to consider at least four levels of coordination.

Level 1: Coordination within firms, households and other organizations. Productivity depends upon the effectiveness of the allocation of resources under the control of organizations. A major barrier to the transformation within organizations is the reluctance or inability to adopt more productive plans and practices because of lack of knowledge and skills, and difficulties in ensuring access to needed inputs and reliable markets for outputs. Also, vested interest within the organization often blocks such changes.

Transactions within firms are worked out among the members of the firm based upon some hierarchy or authority. The most economical size of firm is based, at least in part, on the relative costs of coordination within firms compared to coordination across markets. Rules and customs which limit firms to sizes below that is necessary to capture economies of scale also limit productivity.

Level 2: Coordination between firms and between firms and households. In order for the economic transformation to work firms, have to be able to coordinate their activities with those of input suppliers and demands of successive firms and households in the production-distribution-consumption sequences. For specialization and exchange to be beneficial in increasing productivity firms must have reliable supplies of inputs at costs below their own costs of production. Households must have reliable supplies of food and other consumer goods at costs below the cost of self production.

Markets are required to solve many problems of matching supply with demand. The problems involve matching attributes and quantities. Nuts must fit bolts, plugs must fit electrical outlets, fertilizer of the correct formulation must match the requirements of the seed, soil and climate. Most importantly, the contributions of thousands of specialized workers must be coordinated in the production-distribution sequence to provide consumers with products at prices they are willing and able to pay and that are above the costs of producing and delivering the products.

The failure of markets to effectively perform the firm-to-firm and firm-to-household coordination functions is a major barrier to economic transformation and increased productivity. There are many reasons for the coordination failures, especially related to the incomplete information and the rules instituting the markets. The research task is to understand these failures and design rules and public services to mitigate them.

Level 3: Industry-wide supply-demand coordination. The third level of coordination problems is matching aggregate quantities of commodities and products supplied with those demanded at prices consistent with costs of production. Individual firms may get the attributes right and have effective channels for transactions with other firms or consumers but collectively fail to match supply with total demand at prices above costs. Producing too much wastes resources, and producing too little misses economic opportunity. Very important to the economic transformation process, the resulting price and revenue uncertainty reduces the interest and capacity to invest in productivity-enhancing inputs.

Level 4: Coordination of economy-wide aggregates. The fourth level of coordination problems involve matching aggregate demand and supply in such a way that labor and physical assets are fully employed, investment is expected to be profitable and other coordination functions of the market are not disrupted. Coordination at this level is the domain of monetary and fiscal policy, including policy influencing foreign exchange rates. Economic transformation requires the movement of resources (including workers) to different production activities (not necessarily to other places). This movement requires investment in roundabout processes of production. The incentives to make such investments depend upon the effectiveness of the capital and labor markets, which in turn depend upon maintaining adequate aggregate demand while maintaining predictable values of the currency. It should be

said that economists understand how to improve or worsen the fourth level coordination, but do not have an adequate understanding to design an optimal strategy.

One of the reasons governments adopted central planning was a belief that markets and prices are not effective methods of coordinating economic activity. Both productivity and equity were considered to be better achieved with central planning. But central planning has very serious information and incentive problems in effective coordination at levels one and two. Markets have the potential to provide much more effective economic coordination at least at levels one and two, but performance is dependent on collective actions in providing public goods and rules of the economic game.

Knowledge and Technology

The production and distribution of knowledge and technology are particularly important in the economic transformation to more productive economies. And the characteristics of these outputs create special coordination problems. Knowledge tends to be under-priced and under-produced because of the problem of capturing its contribution to productivity. Much knowledge is available free of charge to those who know how to access it, but the distribution of knowledge may be very expensive. Much knowledge is embedded in inputs. However it is often the case that a set of complementary inputs including additional knowledge is required to make productive use of technical inputs and technology. Acquiring the capacity to access and make effective use of the vast store of productivity-enhancing knowledge of the world is a prerequisite to achieving increased economic growth. Thus the policy of rapid agricultural growth emphasizing technology transfer with high potential for increasing productivity. This includes a combination of technical inputs and extension information.

4. THE RESEARCH PROCESS AS INPUT INTO POLICY FORMATION

A practical strategy to promote structural transformation must be based on educated guesses of future conditions in Ethiopia and the world food system, a vision of the desired objectives in the country, and a set of strategies for getting there (Boughton et al 1994).

Our approach is to view research as a part of a coordinated and coherent strategy to achieve food security. Considered part of the dynamic process of economic development, research must be both reactive and proactive. It is proactive when it follows a line of inquiry from problem diagnosis to initial policy formulation, to design and evaluation and testing in the political market. It is reactive when it responds to inquiries of policy makers or provides policy makers with information about the consequences of existing or proposed policies.

Cost effectiveness is as important for research as in other strategies to achieve food security. What is certain is that there are many more questions to be answered than there are resources to find the answers. But because strategies to achieve food security require information related to many areas of policy, working on one problem at a time is not likely to be an effective research strategy. Surveys of food system participants are important tools of economic research. Because the design and implementation of surveys and analysis of the data is expensive, a cost-effective strategy is to spread the cost to answer questions relevant to

several strategies and to coordinate surveys of different participants to achieve more comprehensive data sets to reduce the number of relevant questions with no data. Thus, the design of survey research starts with a tentative analysis of strategies and the identification of missing information. The strategies to be evaluated originate with a conceptual framework and the pressing questions of policy makers and participants in the system.

Strategic research, planning, and action a process. At any point in time, policy will usually be made on the basis of the currently available information. Subsequently, through research and discussion, questions about the details of design and implementation will be raised and answers sought, again through research and dialogue.

5. AN INITIAL IDENTIFICATION OF PRACTICAL STRATEGIES TO PROMOTE AN AGRICULTURAL TRANSFORMATION AND FOOD SECURITY

An economic approach to development puts first priority on identifying and implementing actions that are low cost, low risk, and with high benefit-to-cost (B/C) ratios. While our approach is to emphasize the systems nature of the agricultural transformation (*i.e.*, that the B/C ratio of an investment at one stage in the system is likely to be influenced greatly by investments made at other stages of the system), we also adopt a pragmatic research strategy consistent with the B/C concepts[8]. The Grain Market Research Project (GMRP) in Ethiopia has conceptualized its research program in terms of three components: (a) strategies to raise food systems productivity, (b) improving the performance of food markets; and (c) strategies to promote household access to food, especially by vulnerable groups.

Strategies to raise food systems productivity

In the long run, the transition to a much more productive economy is the means to achieve food security. To achieve the rapid rates of growth required to break out of the poverty trap, a strategy of coordinated actions will be proposed as the GMRP progresses. The following are some initial observations relevant to such a strategy.

Priority is given to increasing productivity of the system of food production and distribution. The basic conclusion is that the most important barrier to sustained growth in productivity are failures in economic coordination between the various stages in the system, which limit investment in, and adoption of, productivity-enhancing technologies and practices.

The Global 2000 Project and related agricultural research and extension studies have proven that with assured delivery of a package of inputs, including seeds, appropriate fertilizer formulated to the needs of the seeds delivered on time, complementary protective chemicals, credit and, importantly, persistent technical advice, farmers can raise their yields of major grains by three times or more on demonstration farms. And with assured markets at assured

8 The food system refers to all the stages involved in putting food on consumers tables, including agricultural research and extension, input supply, farm production, distribution, storage, processing, and consumption. Bottlenecks at any particular stage in this system will be felt by those involved at the other stages, and impede the performance of the entire system.

prices farmers are willing to make the investments in the inputs and their time to achieve these yields. We also know a failure to meet any of these conditions may greatly reduce the benefits of investing in this technical package, and may create unacceptable risks for many households living close to subsistence.

The strategy to promote rapid agricultural development starts with coordination of policies and programs to contribute to an economic environment consistent with reliable markets for inputs and products and the delivery of complementary public goods. The essential complementary public goods include agricultural research and extension, market information, and the minimum transportation infrastructure.

The problem of the incomplete package of inputs could possibly be solved by the development of systems of dealers who would deliver technical inputs, information on their use, credit, and an agreement to purchase commodities at or above a minimum price as a means of repaying loans. This, in turn, requires that the dealers face sufficient demand downstream to offer remmunerative prices (dependent in part on transport infrastructure). The strategy would be to take advantage of the strong incentives of private enterprises by facilitating their participation in selling the technical inputs, and credit and making specific information part of the package. "Facilitate" in this case means eliminating legal obstacles, assuring cooperation from the research and extension services, access to credit, and some technical assistance to firms attempting to set up dealerships or franchise systems. In the absence of competitive, domestic alternatives, a means needs to be found for generating exports to earn the necessary foreign exchange to buy the inputs. Evaluation of the potential for increased exports of speciality crops, including coffee, needs to be examined.

Many reports suggest that land degradation is a major problem limiting productivity advances on many farms. Identifying the magnitude of the problem and cost-effective strategies to limit continued degradation is also included on the project agenda.

Improving the performance of food markets

The GMRP research program is designed to identify and implement low-cost actions of government and market participants which have high potential benefit-to-cost ratios for improving the performance of agricultural input and commodity markets, thus reducing the cost of a more assured food supply. Possible examples, subject to further analysis, may include:

1. Modify current trade policies that tax importation of food commodities, with the possible exception of luxury foods and beverages.

2. *Enforce* the rules allowing free movement of agricultural commodities. Taxes or fees charged at check points increase food costs and, because they are uncertain, increase risks of traders and thus increase marketing margins. One caution, however, is that there may be political and implementation costs of enforcing the law which are not taken into account here. For example, if civil servants' salaries are so low that they need to extract bribes from commerce in order to secure a living wage, then the problem is a manifestation of a broader crisis of public finance.

3. Expand and improve a public market information system. A market information system can facilitate a low-cost market solution to at least part of the problem of failure to move agricultural commodities from areas of relative surplus to areas of relative deficit.

4. Evaluate current functions and standard operating procedures of the Ethiopian Grain Trade Enterprise (EGTE) and modify them to enhance its role of contributing to a competitive and low-cost grain marketing system.

5. Allow EGTE to promote and provide high-quality grain storage services to Government and aid agencies and to private traders at prices designed to make a normal profit. Provide traders with guaranteed warehouse receipts, which could be used as collateral for loans from banks or other lenders.

6. A potentially useful complementary service which EGTE would be in a unique position to offer would be a brokerage service for transportation services. EGTE has a communications network, access to market information, a large fleet of trucks and employees with background and access to information useful in managing a brokerage for contracts for transportation services. The brokerage would facilitate communication of demand for services to those with trucks. Given the very high costs of transportation and the high costs of failure to provide needed transportation, brokerage services could offer significant return at a low cost. Consistent with the proposed role of EGTE, the brokerage service would be offered for a fee. A small start-up subsidy by Government or by a donor would be appropriate.

Many research studies have been carried out recently on the subject of market integration in Ethiopia. These analyses have been devoted to understanding the degree to which price information in one market is transmitted to other markets. In addition to methodological difficulties in establishing whether markets are integrated or not (Baulch 1994; Harris 1979), there remains the practical difficulty of assessing the implications of such analyses for policy. Given the Government's objectives of promoting structural transformation, agricultural productivity growth, and food security, one of the most important factors determining all of these are the level of costs at various stages of the food system, including production and marketing (which incidentally are the most important factors determining market integration). Given limited research resources, our effort in this area is not to measure the extent of past market integration using historical data (although this has its purposes), but rather to identify strategies to promote gains from exchange and structural transformation through reducing the costs of marketing[9]. Analysis that identifies policy and public investment options to reduce

9 "Marketing" in this context is defined broadly, including physical transformations in product across space (distribution), time (storage), and form (processing), as well as the non-physical costs associated with exchange that are affected by the form of coordinating a transaction. The latter set of costs include negotiation costs, information gathering associated with exchange, supervision and monitoring of compliance to terms of exchange by trading partners, enforcement costs in case of non-performance, etc. In this framework, marketing costs are determined partially by the technology of marketing activities but perhaps more importantly by the institutional coordination mechanisms involved in the non-physical aspects of exchange.

unit costs of grain distribution would provide direct input into the Government's effort to implement the Five-Year Strategy.

Strategies to improve vulnerable groups' access to food

Inadequate access to food is primarily a problem of inadequate real incomes and resources. The strategic planning question is what are the most cost- effective strategies for expanding food access toward the goal of universal access to adequate food. It must surely be the case that many strategies reducing food costs and expanding opportunities to earn sufficient incomes to acquire needed food (or inputs to produce food for farm households) are more cost effective in expanding access than food entitlement programs.

Nonetheless, it is inevitable that at any time there will be households who do not have access to adequate food through participating in the economy. In Ethiopia, a large number of households are in this situation. As long as the economy fails to provide the employment and incomes to acquire needed food, then programs to provide them are needed. But an important strategic question is what portion of the resources currently spent in direct food aid programs could be diverted to strategies to expand opportunities and reduce food costs, resulting in more cost-effective means to expand access.

Recent developments in world commodity markets, and international trade agreements, changes in political-economic policies in general and farm policies in particular in many countries strongly suggest that agricultural commodities will become more expensive in world markets and less available as food aid in the next decade than is currently the case. Also international markets will likely become more volatile as OECD countries hold smaller stocks. This will change the food security assistance programs of donors, creating additional incentives to develop more cost-effective management of resources available for food assistance.

The strategy for food aid procurement and reserve stocks would start with a policy of using markets to create the incentives and signals for efficient storage of food commodities. This requires that commodity prices be allowed to rise seasonally in a reasonably predictable manner consistent with the costs of providing storage. Because in Ethiopia food aid imports are large relative to total quantities marketed they can influence market prices and have negative effects on private storage (including that of EGTE). The strategy calls for a policy of timing commodity imports and releases of food aid in a way that will contribute to orderly pricing, including more rather than less predictable seasonal price movements. At a minimum, this requires transparency in import intentions and arrivals and commitments to manage release of food imports and stocks through the season in a predictable manner.

Rules for accumulation and release of stocks should be designed to respond to changes in the supply and demand conditions and be consistent with objectives to promote incentives for profitable storage and increased production as well as meeting the direct objective of filling critical transitory gaps in food availability. Most importantly, the program should be designed to be as cost effective as possible given the objectives and limited resources. Preliminary concepts relevant to the strategy include the following:

- A stocks program has to be designed to deal with the transitory problems of fluctuating supplies and demand. It cannot solve the problems of low productivity and poverty. Nonetheless, food which maintains health during periods of shortfalls will improve the capacities of households to recover and be more productive in he future and needs to be considered in a benefit-cost analysis.

- A cost effective stocks program must compare the cost of storage with the expected costs of imports and the probabilities attached to time delays in delivery from international markets.

- Available evidence strongly suggests that lack of reliable markets for commodities is a significant barrier to increased production and marketing of commodities by African households. To the extent this is true in Ethiopia, purchasing for stock accumulation from the national market in a way that improves revenue expectations of farmers would increase national production and supplies for sale. A program contributing to more reliable farm revenue may be cost effective. Programs designed to maintain farm prices above long-run market levels turn out to be very expensive.

- While predictable revenue, not stable prices, are important in promoting agricultural productivity, predictable prices are important to promote efficient private storage.

The history of security stocks and price stabilization through stock management programs is that they fail to develop the standard operating procedures and discipline required to keep the costs within the limits of acceptable budgets. Thus a modest program with twin objectives of meeting emergency requirements in response to crop failures and to add some stability to farm revenues is more likely to be effective and sustainable than one with politically popular targets for visible stocks and price supports.

A conversion from food security assistance in the form of donated commodities to funding food procurement from the sources most beneficial to Ethiopia consumers and farmers has the potential make a major improvement in food security. A simple rule of purchasing commodities for food aid from the least cost source would expand the market for domestically produced commodities when prices are lower than prices of commodities from international sources, thus adding stability to markets as well as purchasing power to farm families and at the same time reducing the real costs of food assistance. EGTE could participate in procurement and management of pipeline stocks contributing to more reliable markets and benefitting from economies of scale from the increased volume of business.

Strategically the time seems to be right for the Government to attempt to negotiate such a policy with all food donors.

Even the most efficient markets can not guarantee adequate access to food by all individuals. A strategy is required to provide access to food to households who fail to produce enough food or income to meet minimum requirements. The strategy must be to identify cost effective entitlement programs and to use the food assistance in a way that promotes future productivity. This includes distributing food aid in ways that strengthen markets to the extent compatible with other objectives. It is important not to distribute food aid in such a way that

it creates incentives to move from rural areas to cities. A proposal to provide entitlement in the form of cash, food vouchers and/or farm inputs vouchers deserves attention because it could possibly be cost effective.

Stocks policies based upon targets for minimum supplies have implicit assumptions about who counts. If stocks are based upon some notion of difference between supply and demand resulting in unacceptable prices then those without purchasing power receive little weight. There has been a history in Ethiopia of using public grain stocks to assure food in urban areas, neglecting rural residents (and especially rural residents outside of areas identified with serious crop failures) either because of the assumption that farmers must have food or due to differential political power.

Finally it must be clear that supply management programs based on stocks do not address chronic food deficits. Stocks programs attempting to stabilize supplies and prices may reduce the availability of food or increase its costs to food deficit groups, at least in the short run. And, of course, the short run is especially important to people who are hungry.

Especially important and missing from the list of strategies are those dealing with the development of off-farm enterprises and employment opportunities. The transformation to a much more productive economy cannot go far based only on increased productivity on farms or within the food system. A challenging problem is the creation of productive employment for workers no longer required on farms. And great social problems follow the movement of large numbers of people off farms to urban areas which do not have employment opportunities. Given the limited capacity of the Ethiopian economy to produce a surplus for investment, at least in the short to the medium run, and the investment requirements apparently needed to finance employment in manufacturing and construction, rapid development seems to require a strategy which can attract investment and technology from the world markets. Most promising are joint venture types of enterprises which are effective in transferring a package of technology, credit and market access. The potential output is not only the products for the market but the learning-by- doing of the local participants in the enterprises. Since this leaning has some of the characteristics of a public good, it may justify some public investment to facilitate and promote such enterprises. Certainly government has an important role in enforcing equitable contracts for the joint ventures. Farm household productivity and incentives for production would be increased by increasing the supply and reducing the costs of farm inputs and consumer goods, thus sustaining the transformation.

REFERENCES

Aredo, Dejene and Mulat Demeke (eds.), 1995. “Ethiopian Agriculture: Problems of Transformatioin”, Proceedings of the Fourth Annual Conference on the Ethiopian Economy, Addis Ababa.

Baulch, Robert , 1994. .....,Ph.D. dissertation, Stanford University, Palo Alto.

Buchanan-Smith, Margaret and Simon Maxwell, 1994. "Linking Relief and Development: An Introduction and Overview," Institute for Development Studies Bulletin, Vol 25, No. 4.

Dercon, Stefan, 1993. "The Consequences of Liberalization and Peace for Food Markets in Ethiopia," mimeo, Centre for the Study of African Economies and Nuffield College, Oxford, and Catholic University, Louvain.

Duloy, J.H. and Gebremeskel Dessalegn, 1992. "Toward Poverty Alleviation and a Social Action Program," Working Paper #2, World Bank, Washington, D.C.

Eshete, Dagnew, 1994. "Food Shortages and Household Coping Strategies by Income Groups: A Case Study of Wolaita District in Southern Ethiopia," paper prepared for the Fourth Annual Conference on the Ethiopian Economy, November 1994, Department of Economics and Ethiopian Economic Association, Addis Ababa.

Ethiopian Grain Trading Enterprise, 1995. Unpublished data files, Addis Ababa.

FAO Quarterly Bulletin of Statistics, various years, Rome, FAO.

Gebre, Solomon, 1993. "Urban Poverty and Food Insecurity: The Case of Addis Ababa," Famine and Food Policy Discussion Paper #8, IFPRI, Washington, D.C.

IMF (International Monetary Fund), 1995. "International Financial Statistics," Washington, D.C., International Monetary Fund.

Jayne, T.S., David Tschirley, John M. Staatz, James D. Shaffer, Michael T. Weber, Munhamo Chisvo, and Mulinge Mukumbu, 1994. "Market-Oriented Strategies to Promote Household Access to Food: Experience from Sub-Saharan Africa," International Working Paper 15, East Lansing, Michigan State University.

Pausewang, Siegfried, Fantu Cheru, Stefan Brune and Eshetu Chole (eds.), 1990. “Ethiopia: Options for Rural Development”, Zed Books Ltd., London and New Jersey,

Rahmato, Dessalegn, 1984. “Agrarian Reform in Ethiopia”, Scandinavian Institute of African Studies, Uppsala.

Seckler, David, ed., 1993. “Agricultural Transformation in Africa”, Winrock International, Arlington

Staatz, John M., T.S. Jayne, David Tschirley, James D. Shaffer, Josue Dione, James Oehmke, and Michael T. Weber, 1994. “Restructuring Food Systems to Support a Transformation of Agriculture in Sub-Saharan Africa: Experience and Issues”, in “Post-Green Revolution Agricultural Development Strategies in the Third World: What Next?”, C. Delgado, D. Colyer, and M. Rosegrant (eds.), Baltimore: Johns Hopkins University Press.

USDA, 1995. “Situation and Outlook Report: Feed Grains”, various issues. Washington D.C.: Economic Research Service.

USDA, 1995. “Situation and Outlook Report: Wheat”, various issues. Washington D.C.: Economic Research Service.

World Bank, 1987. “Agriculture: A Strategy for Growth”, a sector review, Report no. 6512-ET, Washington

World Bank, 1992. "Commodity Trade and Price Trends," Baltimore: Johns Hopkins University Press.

World Food Programme, 1995. "World Food Programme and Food Aid in Ethiopia." WFP, Addis Ababa.