7-4

Famine and Food Insecurity in Ethiopia

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Executive Summary

Ethiopia, the second most populous country in Sub-Saharan Africa, is home to about 75 million people. The country has a tropical monsoon climate characterized by wide topographic-induced variations. With rainfall highly erratic, Ethiopia is usually at a high risk for droughts as well as intraseasonal dry spells. The majority of the population depends on agriculture as the primary source of livelihood, and the sector is dominated by smallholder agriculture. These small farmers rely on traditional technologies and produce primarily for consumption.

Famine vulnerability is high in Ethiopia. With the rapid population growth of the past two decades, per capita food grain production has declined. Cereals constitute the largest share of food production in the country. Today, with recurrent famine threats, food aid is an important source of cereal supply.

Additionally, agricultural market dysfunctions are common in Ethiopia. Throughout history, the state has controlled the markets. With the enactment of a major market reform in the 1990s, the country saw some progress. Markets remain thin, however, with wide price spreads and volatility.

In 2002, despite good harvests in the previous years, Ethiopia was hit by another famine: Production was insufficient, and food did not flow from surplus to deficit areas. Apart from population pressure, the causes of this crisis include production, market, policy, institutional, and organizational failures.

Each time a food crisis occurs, there is a complex interaction of supply, distribution, and demand factors. It is these processes at work on national and household levels that determine outcomes for food security, food availability, access, and use.

Because the causes of famine are multifaceted, multiple actions are required to prevent its occurrence. On a broader level, two points must be emphasized. First, specific programs alone cannot effectively tackle famine. Micro-level interventions should be considered in tandem with macroeconomic policies. Second, market integration and price stabilization must be in place for individual projects to function effectively. The question of policy and program choice and sequencing arise in determining the optimal program mix for mitigating and preventing famine. But how is such a program mix determined under resource and time constraints?

Your assignment is to recommend a set of short- and long-term policies and programs to improve food security in Ethiopia that will be compatible with available government resources and reductions of Ethiopia's dependence on foreign food aid.

Background

Geography

Ethiopia, the second most populous country in Sub-Saharan Africa, is home to about 75 million people. Located in the northeastern part of the Horn of Africa, Ethiopia is landlocked and shares boundaries with Djibouti, Eritrea, Kenya, Somalia, and Sudan. The country has a tropical monsoon climate characterized by wide topographic-induced variations. With rainfall highly erratic, Ethiopia is usually at a high risk of annual droughts as well as intraseasonal dry spells (FAO 2005; World Bank 2007; CIA 2007).

Economy

As one of the poorest countries in the world, Ethiopia has a per capita gross domestic product (GDP) of US$160—no more than a fifth of the Sub-Saharan African average. The majority of the population lives in the rural areas and depends on agriculture as their primary source of livelihood. The sector accounts for almost 47 percent of GDP, 60 percent of exports, and 80 percent of employment. The main agricultural products include cereals, pulses, oilseeds, coffee, potatoes, sugarcane, cut flowers, fish, and livestock. Coffee is the main export commodity, with total exports of about US$350 million in 2006. The agricultural sector is dominated by smallholder agriculture. Most small farmers rely on traditional technologies

and produce primarily for consumption (Kuma 2002; Gabre-Madhin and Mezgebou 2006; World Bank 2007; CIA 2007).

Famine in Ethiopia

Ethiopia has a history of famine[1]: Between 1983 and 1985, the country experienced the worst famine in current history, with a series of rain failures and substantial livestock loss. About 8 million Ethiopians were affected, and 1 million were estimated to have died. The famine also had longer-term effects in that many of the poor had depleted their assets to deal with the famine, which left them even more vulnerable to future crises. Famine vulnerability continued through the mid-1990s owing to conflict in the northern regions and protracted drought in other regions of the country (Webb and von Braun 1994).

In 2002 Ethiopia was hit by another famine, despite good harvests in 2000/2001 and 2001/2002. Grain prices fell below the historic average. Maize prices in surplus regions fell by almost 80 percent. Although reduced prices favored the rural and urban poor, it created a disincentive for input use by producers. By late 2002 the increase in production and the lower prices were not sufficient to combat the chronic food insecurity that affected the majority of poor households; the number of people in dire need of food had more than doubled (Kuma 2002; Gabre-Madhin 2003).

About 6 million people were in need of urgent food aid, and 15 million faced the threat of starvation. Unable to supply adequate food to keep people alive, the Government of Ethiopia reached out to the international community for assistance. In the words of Ethiopia's Prime Minister, Meles Zenawi, "Even if we had the food available in the domestic market, the government doesn't have the money to buy this surplus food for redistribution" (BBC 2002). In January 2003 there was an actual decline of 21 percent in production and a 27 percent decrease in seed and fertilizer use, leading to an 85 percent price increase compared with 2002 (Gabre-Madhin 2003).

Food Grain Production Trends

With the rapid population growth of the past two decades, per capita food grain production has declined. Cereals constitute the largest share (about 88 percent) of crop production in Ethiopia. Five major food grains—*teff*, maize, sorghum, wheat, and barley—make up 95 percent of total production. With limited irrigation use, food grain production is almost entirely dependent on rainfall. Production is characterized by extreme variability in area cultivated and volume of output. In the past decade, although certain areas of the country experienced significant gains in yield, the country overall has experienced limited gains in crop yields. Owing to the dependency on rain-fed agriculture, yield variability is highest for wheat, sorghum, and maize (Gabre-Madhin 2001; Kuma 2002; Gabre-Madhin and Mezgebou 2006; Rashid et al. 2006).

Food Aid Trends

Food aid is an important source of cereal supply in Ethiopia: Between 1995 and 2004, cereals accounted for 95 percent of food aid flows. About 74 percent was food aid imported from donor countries, whereas local purchases accounted for approximately 19 percent. Seventy-eight percent of total food aid inflows entered during emergencies. The influx of food aid has attracted much criticism because it may create disincentive effects on local production in the form of declining producer prices and government incentives to invest in productivity-enhancing technology and policy reforms. Although food aid is controversial, many studies have found no evidence of disincentive effects on local production and prices in Ethiopia (del Ninno et al. 2007).

Agricultural Markets and Politics in Ethiopia

Throughout history, Ethiopian governments have been heavily involved in agricultural markets. In the mid-1950s the government controlled international trade through state-owned enterprises (SOEs) and discouraged the acquisition of property rights through extensive state ownership of land. The Dergue regime in the mid-1970s prohibited private

[1] According to Webb and von Braun (1994), "Famine is a catastrophic disruption of society as manifested in a cumulative failure of production, distribution, and consumption systems" (p. 11). It is the exact opposite of food security, which can be defined as "access by all people at all times to the food required for them to lead a healthy and productive life" (p. 12).

ownership of landholdings of more than 10 hectares, eliminated rural wage labor, and set production quotas and prices. The government controlled grain trade through an SOE, the Agricultural Marketing Corporation (AMC). The AMC set official prices below producer costs, thereby generating producer losses. Producers were required to deliver a fixed quota of grains for military and urban consumption. Private sector trade was barred in major producing regions, and traders in other regions had to supply 50–100 percent of grain turnovers to the AMC at prices below the market level. The AMC also administered food ration shops (Gabre-Madhin 2001; Rashid et al. 2006).

In 1990, under pressure from the international donor community, Ethiopia enacted a radical and sudden market reform. Restrictions on private interregional trade, officially fixed prices, compulsory delivery quotas, and grain rationing were abolished. The AMC, renamed the Ethiopian Grain Trade Enterprise (EGTE), was transformed into a buffer stock scheme. In 1991, at the demise of the Dergue regime, the Transitional Government of Ethiopia took office with the goal of replacing the centrally planned economy with a market-oriented economic system. In 1995 the Ethiopian People's Revolutionary Democratic Front (EPRDF) government came into power. The EPRDF favored a liberal approach, devalued the Ethiopian currency, and implemented various phases of the structural adjustment program[2] as well as other measures necessary for macroeconomic stability. The government also committed to improving the performance of the agricultural sector and ensuring food security (Gabre-Madhin 2001; Kuma 2002; Rashid et al. 2006).

The withdrawal of state control from agricultural markets in the 1990s was a boost to crop production. Prices increased in surplus markets and decreased in deficit markets. Consequently, there was a reduction in price spreads—that is, the price differences between surplus and deficit areas—but the volatility of price spreads remained high.[3] In 1999 more reforms were undertaken with the merger between EGTE and the Ethiopian Oil Seeds and Pulses Export Corporation (EOPEC). The new parastatal had the main objective of exporting grains for commercial profitability rather than stabilizing grain prices. No government unit has been assigned the role of stabilizing market prices (Gabre-Madhin 2001; Gabre-Madhin and Mezgebou 2006).

Policy Issues

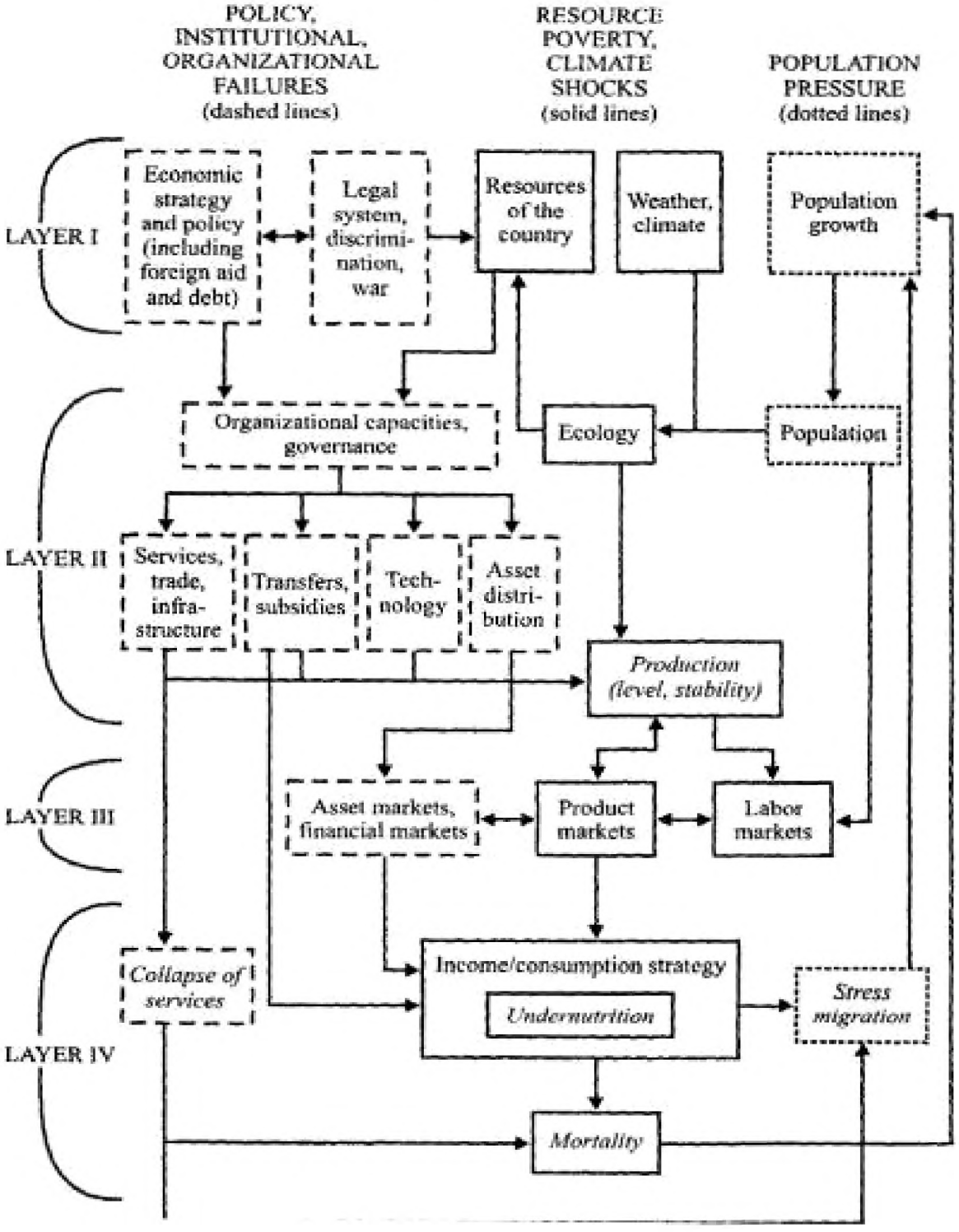
Each time a food crisis occurs, there is a complex interaction of supply, distribution, and demand factors. It is these processes at work on national and household levels that determine outcomes for food security, food availability, access, and use. Although production and market failures are recognized as root causes of famine, policy, institutional, and organizational failures also play important roles (Webb et al. 1992; Webb and von Braun 1994; von Braun et al. 1998). Figure 1 is a summary of the interactions in famines.

Despite the major market liberalization in Ethiopia and food surpluses in recent years, food availability remains at low levels and food insecurity persists. Markets remain thin, with high price spreads and volatility. Why was plenty not enough? What happened to the 2002 surplus? Why is the flow of food from surplus to deficit areas limited? Why are prices still volatile? These questions raise a number of issues, including that of market dysfunction in agriculture.

[2] Structural adjustment programs are economic policies for developing countries that have been promoted by the World Bank and International Monetary Fund (IMF) since the early 1980s through the provision of loans conditional on the adoption of such policies (WHO 2007).

[3] Although favorable weather can explain the shift in price levels, it cannot explain the concurrent price increases in surplus areas and decreases in deficit areas. Other reasons suggested for the decrease in price spreads include lower transaction costs, the end of civil war and trade disruption in the northern regions, the termination of the activities of the former monopoly, and the fact that traders did not have to sell at below-market prices (Gabre-Madhin 2001).

Figure 1: Determinants of and Relationships in Famines



Source: von Braun et al. 1998.

Production Failures: Water and Land Management

Agriculture is the main water-consuming sector in Ethiopia. Despite the country's endowment of water resources, the notable potential of Ethiopia's surface water remains untapped. Although the Government of Ethiopia (GOE) has not been proactive about the development and protection of large wetlands, external initiatives have emerged. Based on water and land availability, technology, and finance, Ethiopia's irrigation potential is estimated at approximately 2.7 million hectares. As of 2001, only 11 percent of this potential had been exploited. Current irrigation projects are categorized as traditional, modern small-scale, modern private, and public.[4] An assessment of small-scale irrigation projects revealed that some projects operated below full potential whereas others were nonfunctional. Reasons include water shortage, damaged structures, and poor water management (FAO 2005).

Ethiopian highlands suffer from degradation, a major threat to current and future food production. Soil erosion by rainwater is one of the main causes. Other causes include physical, socioeconomic, and political factors and poor land policies. On average, soil erosion causes soil loss of about 42 tons per hectare per year on arable lands and an annual reduction of 4 millimeters in soil depth. Soil infertility due to erosion has adversely affected agricultural productivity. By 2010, with the current pace of soil removal and loss, soil erosion is expected to reduce per capita income in the highlands by approximately 30 percent. Although the GOE and international donors have recognized the threat of rapid land degradation, previous soil and water conservation efforts have not been very successful (Bewket and Sterk 2002; Aklilu and de Graaff 2006).

Farmlands in the highlands are small. According to a national study, the average farm size is about one hectare. As specified by the Ethiopian Constitution, the government remains the only landowner, and local governments are required to adhere to this statute in the design of land reforms. Thus, the GOE holds land tenure rights, and land sales and mortgages are outlawed. Nevertheless, the growing land rental market is a notable outcome of the recent land reforms implemented by local governments. Land transfer between users is often informal and nontransparent. As such, the land lease market lacks clear rules and regulations that ensure transparency and security of land transactions, and farmers lack confidence in the ability of government agencies to enforce contracts (Negatu 2005; Pender et al. 2006).

Market Failures

The segmented and uncompetitive nature of Ethiopian agricultural output markets leads to high fluctuations in grain prices. Small farmers, unable to store grain because of low storage capacity, receive very low prices. And although storage capacity increased after the market reforms, storage facilities remain scarce, and the private sector does not have access to the limited facilities available in the country. Consequently, 79 percent of grain sales occur during the primary harvest season (January–March) owing to farmers' fear of storage loss and urgent need for cash. Loan repayment is the major reason farmers need to sell at low prices (Gabre-Madhin 2001; Gebreselassie 2006).

In terms of infrastructure, the country has one of the lowest road densities in the world. Road transport, which is the only means used to move grain, is dominated by the Ethiopian Freight Transport Corporation. Transaction costs are high owing to a lack of truck capacity to meet peak demand, lack of private competition, high operating costs, poor roads, and low capacity utilization. Additionally, the majority of rural people do not have access to modern transport, which is a major constraint to their ability to reach grain markets in the major production zones (Gabre-Madhin 2001).

Access to market information also remains restricted. Even in nearby markets, farmers have limited information on current prices. Likewise,

[4] *Traditional* irrigation projects vary from 1 to 100 hectares. The projects are constructed through self-help programs with farmers' own initiative. *Modern small-scale* irrigation projects are constructed by the government and nongovernmental organizations. Projects make use of technologies for irrigating up to 200 hectares. *Modern private* irrigation projects re-emerged when the market-based economic policy was adopted. By 2000 private investors had developed 5,500 hectares of irrigated farms. *Public* irrigation projects consist of medium (200–3,000 ha) and large-scale (greater than 3,000 ha) irrigation projects. These projects are owned, constructed, and managed by public enterprises (FAO 2005).

grain traders with limited access depend on brokers and transporters for market information. The Ethiopian grain market chain is fairly short—that is, little value is added along the chain and handling costs are high owing to the lack of quality control measures. Other reasons for the short market chain include the lack of specialization of wholesalers and low levels of commercial processing. The market structure has improved since the market reforms, but there is still significant capacity to increase market scale and sophistication (Gabre-Madhin 2001).

Policy, Institutional, and Organizational Failures

Modern technology use is extremely low, particularly in smallholder agriculture. Between 2000 and 2001, only 5.4 percent of total cereal farmland was grown using improved seeds. High prices and farmer preferences for local seeds saved from the previous harvest constrain demand. Organic and chemical fertilizer use is limited to about 38 percent of the total cultivated area. In 2000 around 14 percent of total cereal farmland was cultivated with the use of fertilizer. Tillage practices are also obsolete. Conventional tillage tools are inefficient and lead to prolonged periods of land preparation. Crop yields are both low and highly variable. Between 1995 and 2002, total crop yield grew by only 0.2 percent (Demeke 1999; Negatu 2005; Gebreselassie 2006).

Ethiopia's extension system—the Participatory Demonstration and Extension Training System (PADETS)—faces many problems in supplying and promoting better technologies. PADETS provides input credit packages in the form of improved seeds, fertilizers, and postharvest technologies like grain storage systems to farmers through collateral arrangements with local governments. Some studies have shown that when weather conditions are uncertain, repayment requirements involve high risks for resource-poor households in Ethiopia. Bad harvests result in loan defaults, and farmers often face harsh penalties. Given these high risks, farmers prefer to keep input costs low. Indeed, a recent evaluation of the PADETS smallholder intensification program showed that only 22 percent used the complete package and that at the end of their participation in the project, only 8 percent continued the use of improved seeds (Carlssona et al. 2005; Gebreselassie 2006).

Lack of access to finance is a key impediment to technology adoption. Short- and long-term finance remains scarce in the rural areas because the country lacks financial institutions that respond to the needs of the smallholder sector. The demand side also presents its own challenges. Small farmers lack collateral and have consumption needs that compete with resources that could be used for farm investments (Gebreselassie 2006).

Conflict has also exacerbated the effects of famine in Ethiopia, and the costs have been huge. The government's large expenditures on conflict have taken economic resources away from development efforts (von Braun et al. 1998). Debt repayments by the GOE have also put pressure on resources available for social development.

Population Pressure

Ethiopia's rapid population growth is also an important cause of famine. The current population growth rate is about 2.3 percent. Thirty-nine percent of the population lives below the national poverty line. Furthermore, 46 percent of the population is undernourished, and 47 percent of children under the age of five suffer from malnutrition. The return of Ethiopian refugees who fled to Sudan will also contribute to the population increase, especially in the rural areas (World Bank 2007; UNDP 2006; CIA 2007).

Stakeholders

It is important to recognize the role played by key stakeholders in policy design and implementation. A stakeholder analysis provides an assessment of the interests and resources of key stakeholders for policy administration. It also helps determine how these interests and resources affect program outcomes (Crosby 1991). Table 1 identifies the key stakeholders that may be involved in famine mitigation and prevention in Ethiopia.

Table 1: Stakeholder Analysis of the Key Players in the Mitigation and Prevention of Famine in Ethiopia

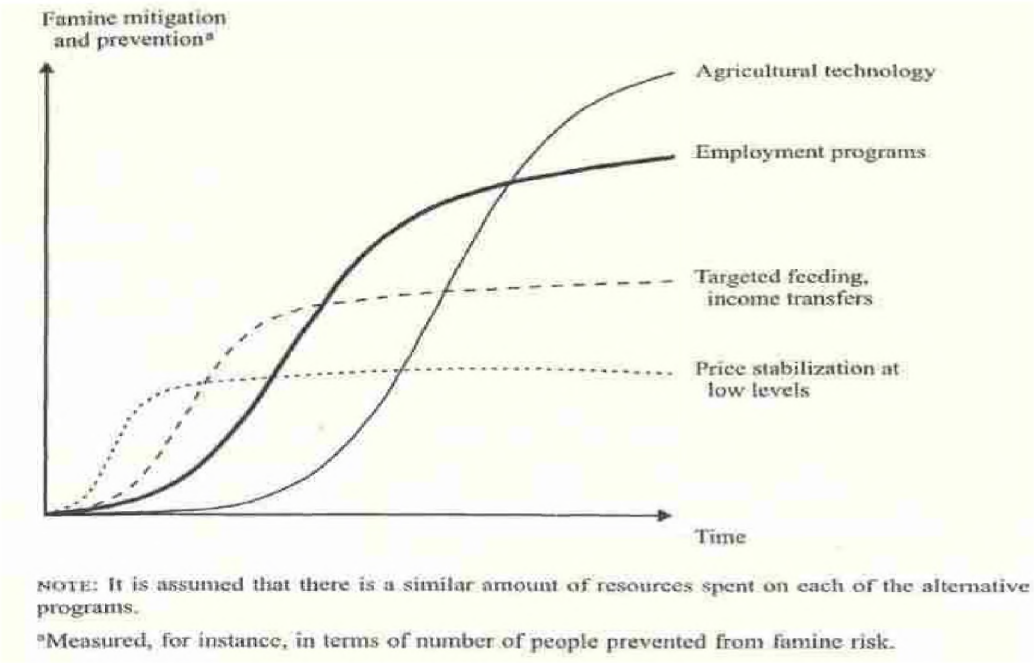
Stakeholder	Role/Interest	Resource Mobilization Capacity	Degree of Involvement in the Issue
Small farmers	Increased agricultural productivity and incomes	Low	Primary
Ethiopian Grain Trade Enterprise (EGTE)	Grain marketing and food policy	Moderate	Primary
Participatory Demonstration and Extension Training System (PADETS)	Smallholder intensification	Moderate	Primary
GOE (such as Ministry of Agriculture and Ministry of Economic Development and Cooperation)	Agricultural development and food security	High	Primary
Rural financial institutions	Provision of credit	High	Primary
Ethiopian Institute of Agricultural Research (EIAR)	Agricultural research for development	Moderate	Primary
Universities (such as Alemaya University)	Agricultural education and research	Moderate	Secondary
International research institutes	Food security, policy advice, plant science research, capacity strengthening	Moderate	Primary
International donors	Foreign assistance (food aid, debt relief, capacity strengthening)	High	Primary

Policy Options

Because the causes of famine are multifaceted, multiple actions are required to prevent its occurrence. On a broader level, two points must be emphasized. First, specific programs alone cannot effectively tackle famine. Micro-level interventions should be considered in tandem with macroeconomic policies. Second, market integration and price stabilization must be in place for individual projects to function effectively. Questions of policy and program choice and sequencing arise in determining the optimal program mix for mitigating and preventing famine. The solution is to combine short- and long-term interventions (aid and development) in a mutually reinforcing manner (Webb and von Braun 1994; von Braun et al. 1998). The dimensions of time and relative impact of alternative polices and programs are shown in Figure 2.

The many causes of food vulnerability in Ethiopia that have been highlighted include rapid population growth; high rainfall variability leading to drought; land degradation and tenure constraints; inadequate access to inputs, credit, and extension; poor market structure and infrastructure; and policy-induced constraints. Strategies to improve food security and availability must address these issues. Some options to reduce food vulnerability are discussed here.

Figure 2: Patterns of Time–Dependent Impacts of Alternative Policies and Programs on Famine Mitigation and Prevention



Source: von Braun et al. 1998.

Irrigation

Given that Ethiopia's irrigation potential has not been fully exploited and that small farmers in rural areas lack access to modern irrigation, irrigation development is necessary. Although not a panacea, irrigation projects that are managed by farmers can contribute significantly to food security by enhancing production and farmer incomes.

Integrated solutions must tackle the full scope of the problem. Thus, a viable small-scale irrigation project should include these seven basic requirements: (1) availability of suitable land, (2) availability of water resources, (3) availability of labor, (4) availability of non-irrigation production inputs, (5) access to markets, (6) capital resources, and (7) appropriate water-lifting technology (Norman 1992; IFAD 2005).

Improved Access to Land, Technology, and Credit

Small farmers need secure property rights to make long-term investments in agriculture. Efficient allocation of land to alternative uses may be impractical if land markets are imperfect. Policy and administrative regulations that ensure the security of land tenure, as well as transparent and legal rules that facilitate open land transactions, are needed for the use of sustainable land management technologies. Small farmers also need access to credit for farm investments in areas like irrigation,

seeds, fertilizer, farm machinery, and postharvest processing technologies. The smallholder intensification programs in Ethiopia can be improved. Agricultural technologies should be properly tested for technical performance, cost-effectiveness or economic profitability, and sustainability. To ensure availability, emphasis should be given to creating incentives for adoption and making modern technologies affordable (Negatu 2005; Gebreselassie 2006). The private sector can also play a contributing role by administering outgrower schemes and participating in more market chain activities such as processing.

Market, Policy, and Institutional Reforms

The GOE needs to address the market constraints that small farmers face and invest more in road infrastructure. An improved road network can significantly reduce transaction costs. Additionally, since market risks are high, smallholders require institutionalized support for risk sharing and management (Gebreselassie 2006). Price stabilization, forward contracting, and insurance are important steps to mitigate price risk.

Although public resources for famine mitigation and prevention are limited, increased resource mobilization is necessary for short-term interventions to contribute to long-term efforts. In the short term, targeted feeding schemes and public works are helpful for income and food transfer during and after a famine. Proper management of food aid flows, particularly timely and efficient distribution of food assistance, is crucial (von Braun et al. 1998).

The role of the international donor community will remain critical to famine mitigation and prevention. International capacity must be strengthened to provide the assistance needed to those most vulnerable to famine (von Braun et al. 1998). Debt forgiveness such as the Heavily Indebted Poor Countries (HIPC) initiative will also play an important role. Savings in debt service as a result of the assistance can free up resources for safety net programs.

Research and Extension

Research and development (R&D) efforts can help to identify appropriate water-lifting technology for irrigation. Investment in drought-resistant and high-yield crops can boost production. Proper dissemination of production and market information by extension agents is also essential. Since research and extension activities require adequate resources, collaboration with international institutes is helpful.

Assignment

Your assignment is to recommend a set of short- and long-term policies and programs to improve food security in Ethiopia that will be compatible with available government resources and reductions of Ethiopia's dependence on foreign food aid.

Additional Readings

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