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FOOD SECURITY STRATEGY

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Strategy for Food Security

I. Introduction

The Government of Ethiopia has announced its objective of doubling per capita incomes over 15 years. Since agriculture contributes 55 percent of the GDP, and its growth linkages are likely to be higher than those for any other sector, it must play a dominant role in achieving the income increases desired. Doubling per capita incomes in 15 years implies incomes growing at 4.75 percent per year in real terms. Since the population is growing at perhaps 3 percent p.a., GDP in real terms has to increase at more than 7 percent p.a. to achieve the desired growth per capita.

The Government has an even more ambitious target: of narrowing substantially the "food gap" within five years. To this end, it initiated, in 1994/95, an accelerated agricultural development program based primarily on diffusion of simple technologies already available, revolving around the application of fertilizer and improved seeds in foodgrain production areas with reliable rainfall. To complement this production strategy, tariffs on imports have been lowered from 30 percent to 10 percent, and will be further reduced to a minimal level. The strategy is based on principles of food security and comparative advantage, and its overall objective is to raise the level of food self-reliance. Nevertheless, continued food security assistance will be vital to underpin the strategy, and ensure its success.

Ambitious as the new production program is, it will not in the near future resolve the problem of food insecurity currently facing many in both the rural and urban populations. Each year more than four million people in the rural sector have problems securing enough food for themselves, and need help. Nor does the medium-term prospect of a surge in food production imply the establishment of sustainable agricultural growth for the decades ahead. Such a long-term sustainability entails deeper technological progress than possible at present, as well as a reversal of the population pressure on agricultural land.

The "development arithmetic" underlying targets for rates of growth of incomes, employment and food production, together with the knowledge that Ethiopia can expect dry conditions for agriculture in perhaps three years out of every ten, reveals the formidable challenges facing the agricultural sector. To hold, or reduce real food prices with increasing incomes, will need substantial progress in agricultural technology, and substantial reductions in marketing costs. The investments needed in agricultural research and extension, and in rural infrastructure, to make these possible, underlines the continuing need for food security assistance in support of the development program.

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The purpose of this paper is to highlight the strategic elements of the Government's plan to improve food security in Ethiopia. To start with the magnitude of food insecurity is assessed. In view of the problems discussed, an overview of the strategy is presented subsequently. Its main components - economic growth and employment; supplementary employment and income schemes, targeted programs, nutrition and health interventions, and emergency capabilities - are then further examined.

II. Dimensions of Food Insecurity

Obviously, there are many degrees of food insecurity, depending on the access to food by households. Considered at the broadest level of average calorie needs, the Government set the minimal acceptable weighted average requirement per person per day at 2,100 KCal. In the late 1980s, it was estimated that domestic food production provided about 1,620 KCal, while total availability, including imports, was about 1,770 KCal per person per day, or 16 percent below the minimal level accepted by the Government. An estimated 52 percent of the country's population is food insecure, or below the poverty line. The very fact that food insecurity is the best measure of poverty in Ethiopia underscores the immense magnitude of the problem of food insecurity. It also indicates that the solution of the problem is coterminous with poverty alleviation.

Both chronic and transitory problems of food insecurity are severe in Ethiopia. Chronic food insecurity exists due to the high ratio of urban unemployment and limitations of rural landholdings, where more than one third of the households farm less than 0.5 hectares which under rainfed agriculture is inadequate for subsistence production of food crops. Lack of draft animals (oxen) intensifies the vulnerability associated with excessively small holdings.

One result of this *chronic food insecurity* is high levels of stunting in children, especially in the eighteen months immediately following weaning. The 1992 national rural nutrition survey determined that 64 percent of children under 5 years of age were stunted, with little chance of "catch up" growth as they became older. The post-weaning period is characterized by very late introduction of solid foods, and repeated episodes of diarrhea and infectious illnesses. The studies also show seasonal weight loss in both children and adults in the four months of the year immediately preceding planting of the new crop. In adults this is attributable to heavy farm labor, and in children to sheer lack of food.

More than one third of children experience significant illness by the age of one year. On average, children suffer from 4-5 episodes of diarrhea per year, and diarrhea is associated with well over half of all deaths in children under five years of age. Only one quarter of the relevant population has been immunized against measles. Only 10 percent of the rural population has access to safe water supply, and an even lower proportion to adequate human waste disposal facilities. Conditions in urban areas are better, but still appallingly bad. These health and sanitation problems are closely related to food

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insecurity, because they reduce the efficacy of the already inadequate quantities of food available.

On the other side, there is *transitory food insecurity* arising from drought, displacement of people, and refugee inflows. Drought, in the case of Ethiopia, with its relatively high frequency, is, in fact, semi-structural and quasi-chronic. Moreover, in many areas of the country, there is an overlap of both elements of food insecurity, chronic and transitory, which expands the size of the vulnerable population.

For purposes of food aid intervention, both donors and government have taken a minimalist approach in setting the boundaries of food insecurity in Ethiopia. Primarily, the boundaries have been set by the threat of death due to famine. Rural populations which are exposed to hunger due to crop failures constitute the food insecure. Additionally, the problem of food insecurity in the urban areas has been given recognition, being assessed in terms of shortages of supply.

Table 1 shows the number of drought affected population since the big famine of the mid-1980s. The highest figure was 7.85 million in 1992, and the lowest 2.53 million in 1987. Drought shocks have been a relatively common occurrence in Ethiopia in the past. In the four and a half decades since the 1950s, there have been 12 events of drought, many straddling two years. It appears that the frequency of harvest failures has also increased over the years. Thus now, the probability of a drought shock occurring in Ethiopia is as high as 3 out of 10 years. Moreover, with growing population, the magnitude of food insecurity is likely to increase for each event of drought.

The distribution of rainfall, as per the old demarcation of provinces, is shown in Table 2 for the period 1961-87. There is considerable diversity in the amount of rainfall within the country, as well as significant variation between years. Kefa province had the highest average annual rainfall of 1322 mm, and Hararghe the lowest of 497 mm, while the country average was 913 mm. Variability of rainfall was highest in Tigray where the coefficient of variation was 29 and lowest in Gojam where it stood at 10. The worst decline in rainfall at the provincial level occurred in 1984 in Tigray, where it amounted to 44 per cent of the average, which in itself is the second lowest in the country.

Adverse changes in climate, combined with long-term factors which led to a decline of landholding per household, soil degradation, and a decline in yield per hectare, as well as policy-induced stagnation of agriculture and civil war during the Derg regime, resulted in Ethiopia's facing continuously for two decades since the mid-1970s a food gap that has had to be covered with food aid throughout this period. The extent of food aid since the mid 1980s, in comparison with production of grains, is shown in Table 3. Having peaked at abut 26.2 per cent in 1984/85, aid imports amounted to a significant proportion of domestic production of food crops, often about 10 per cent or more.

In the year 1995/96, for the first time, food aid switched into domestic sources of supply rather than imports as the food gap of the country declined. With pledges for

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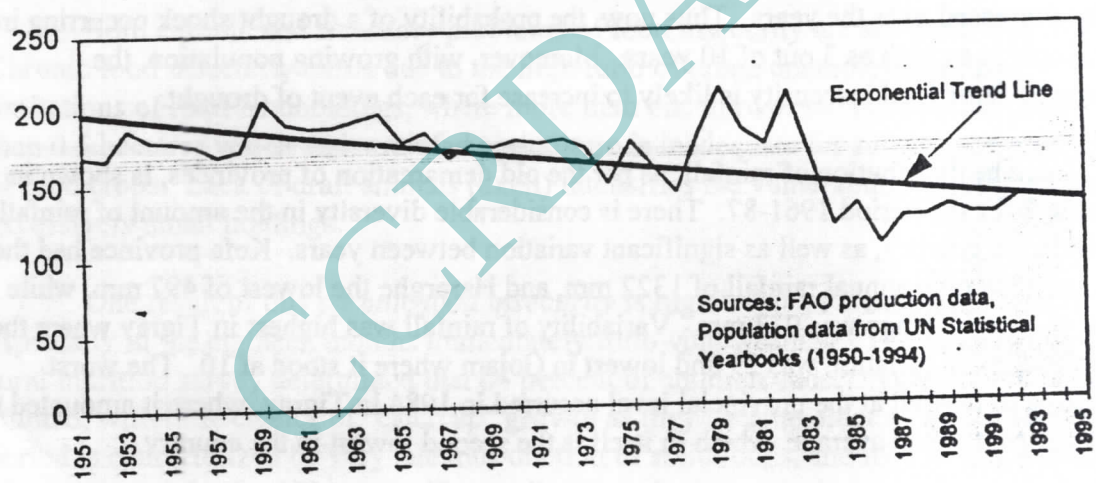
1996 (including program food aid) totalling 335 thousand tons, in the eight months up to August 1996 food aid deliveries amounted to about 134 thousand tons, of which 108 thousand tons were purchased domestically. Prices of locally purchased crops were, furthermore, lower than those of imports by a significant margin.

Cereals are at the heart of the Ethiopian diet, as they are in many Sub-Saharan African countries. For more than 45 years, Ethiopian cereals production has been steadily declining on a per capita basis. Chart 1 provides data through 1992 and extends the exponential trend line through 1995 to capture this important aspect of food availability. As population has grown from 15 million in 1951 to 55 million today, the production of cereals has dropped, on a per capita basis, by more than 25 percent—from more than 200 kg of cereal production per capita in the early 1950s to less than 150 kg by 1992. It remains to be seen whether the increased production of the past three years, boosted as it has been by good rains and a substantial agricultural extension effort, will continue, and reverse the trend line. That is the Government's aim.

Chart 1

Trend in annual per capita cereals production, 1951-92

(kg/capita/yr)

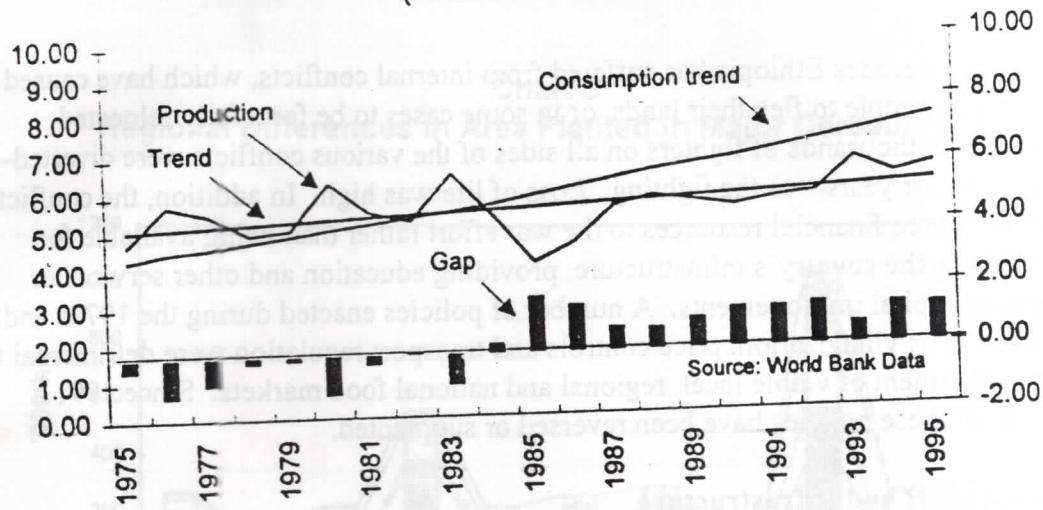


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The inadequate growth in production has led to increasing food scarcity in many parts of Ethiopia over the past decade. Chart 2 depicts trends in domestic production and consumption and the increasing 'food gap'—ranging between one and two million metric tons of cereals—starting in 1985 and continuing through 1995. This gap, formidable as it is, understates the real difference between average annual domestic production and food needed for adequate nutrition, because the consumption figure is based on estimates of actual demand, not nutritional demand. Actual consumption of calories is estimated to be on average 20 percent below minimally accepted nutritional standards.

Chart 2

Ethiopia: Long-term food grain consumption and production trends
(Million Metric Tons)



Some of the principal causes of inadequate growth in food production, and increasing food insecurity, are as follows:

a. Inadequate and Variable Rainfall

Although the 1995/96 rains have been the best in several years, the medium- to long-term lack of adequate rainfall in association with changing rainfall patterns, has been a major contributing factor to increasing risk of experiencing food shortfalls in any one year, and a trend downwards in total rainfall may have also contributed to declining food production, although that is harder to prove. Table 2 in the statistical annex provides, for the pre-1991 regions, a summary of rainfall, variance and worst years for the period 1961-1987. As can be seen, average rainfall figures in some regions (e.g., Hararghe and Tigray) are not only substantially below the average for the whole country, but they are quite low on an absolute scale. The majority of the regions are characterized by high coefficients of variation from one year to the next. This, in itself, increases the food security risk to the average Ethiopian farm family. With such varying magnitudes, not only in annual rainfall totals but also in the timing of the starting and stopping of the rains, farmers have a high probability of planting at the wrong time to capture the benefits of the rain and of not having sufficient seed stock on hand to replant, assuming that replanting is made possible by later rains.

b. Soil Degradation

The combination of high plateaus, deep river valleys, sporadic torrential rainfall, centuries of deforestation and poor cultivating techniques have resulted in serious-to-

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severe soil loss in some parts of Ethiopia. Even more important, centuries of crop production without fertilizer have resulted in net outflows of vital nutrients from the soils, which have increasingly not been replenished, as farmers have increasingly used animal manure for fuel instead of putting it back on the land. The soils have lost some biological productivity and physical properties needed for optimal plant growth, and in particular moisture retention has been adversely affected

c. Conflict

For decades Ethiopia has suffered from internal conflicts, which have caused large numbers of people to flee their lands, or in some cases to be forcefully relocated. Hundreds of thousands of fighters on all sides of the various conflicts were diverted—sometimes for years—to the fighting. Loss of life was high. In addition, the conflict diverted scarce financial resources to the war effort rather than being available for maintaining the country's infrastructure, providing education and other services or financing capital improvements. A number of policies enacted during the 1970s and 1980s such as villagization, price controls and transport regulation were detrimental to the development of viable local, regional and national food markets. Since 1991 a number of these policies have been reversed or supplanted.

d. Transport and Infrastructure

An estimated 75 percent of farms are more than a half day walk from an all-weather road. The average road density is estimated to be 21 km per 1,000 km^2 of land, or 0.43 km per one thousand population. These densities are lower than those in some other African countries (less than one fifth of those in Nigeria, for example), and far below densities in Asia. The trunk road net is mostly centered in the high production zones of the western highlands and is almost non-existent in many parts of the western lowlands and the southeast of the country. The very low proportion of villages that can be reached by all-weather roads makes delivery of food aid to drought-plagued areas extremely difficult. And for farmers to be able to market their produce it must be carried long distances by pack animal or by humans to a location where traders are willing to venture. This severely constrains the total farm production that can be physically marketed, and adds substantially to the costs of farm inputs.

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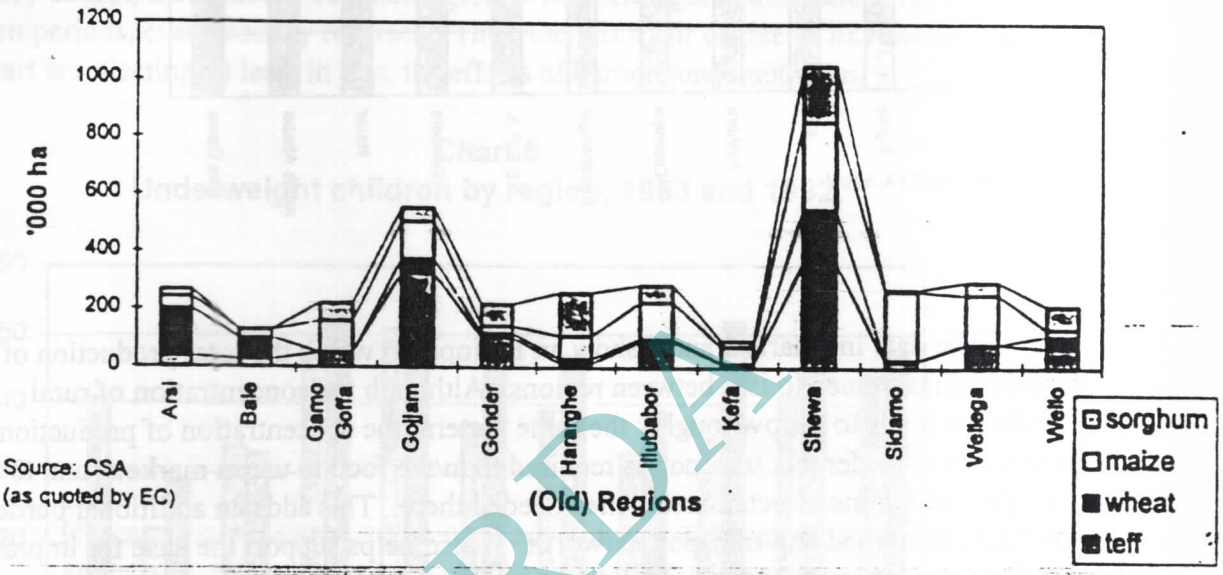
e. Land Tenure

Past problems with land tenure, first under the feudal system in which tenant farmers were required to cede large percentages of their production to their landlords, followed by the uncertainties associated with nationalization and villagization, have undoubtedly contributed to slow growth of production. Such insecurity has greatly reduced the incentives for households to invest in the measures necessary to arrest soil degradation or increase agricultural production.

f. Geographic Diversity

The diversity in the agricultural production of Ethiopia's various regions has been much commented on. As charts 3 and 4 show, there is a wide range in area planted and in total food production between the high and low potential regions of the country.

Chart 3
Regional Differences in Area Planted in Major Cereals, 1990



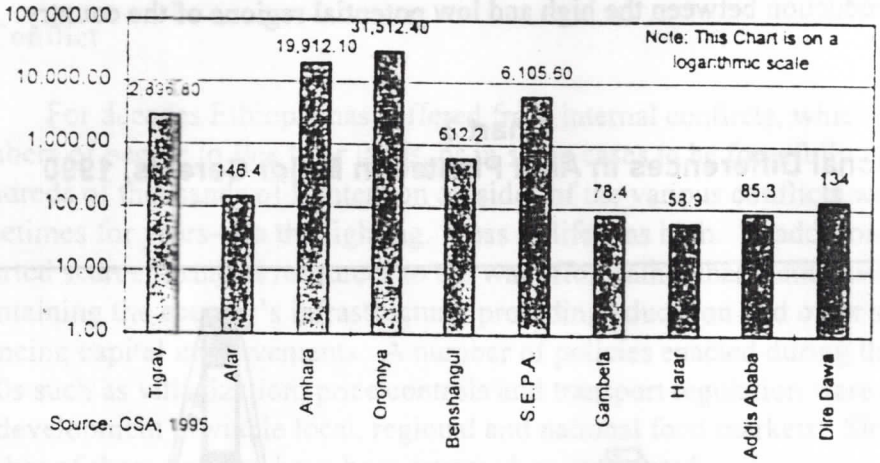
Source: CSA
(as quoted by EC)

In the new regional configuration the major producing regions of Gojjam and Shewa in Chart 5 are now distributed between Oromiya and Amhara regions, which as is demonstrated in Chart 6, still are the major cereals producing areas. It should also be noted that some regions of the country, notably Tigray, could not be surveyed in the late 1980s when these data were collected.

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Chart 4

Cereals Production, 1994 ('000 quintals)



Source: CSA, 1995

The data in Charts 3 and 4 show an Ethiopia in which the total production of cereals varies tremendously between regions. Although the concentration of rural population tends to follow roughly the same pattern, the concentration of production means that considerable transport is required to move food to urban markets, and to the drought and famine affected areas when needed there. This adds an additional burden to the dilapidated road and transport networks. It also helps support the case for improving small town markets and locally-based, as opposed to national, trading patterns.

g. Storage

There is inadequate privately owned food storage in Ethiopia, both in the major grain producing regions and in the regional centers. A large percentage of food storage facilities is still publicly owned. Much of the more recently constructed storage capacity is in areas where drought/famine conditions have prevailed and is intended to store food aid rather than locally produced cereal crops. The situation regarding total on-farm storage and storage capacity at the peasant association level is largely unknown.

h. Poor Nutrition and Health

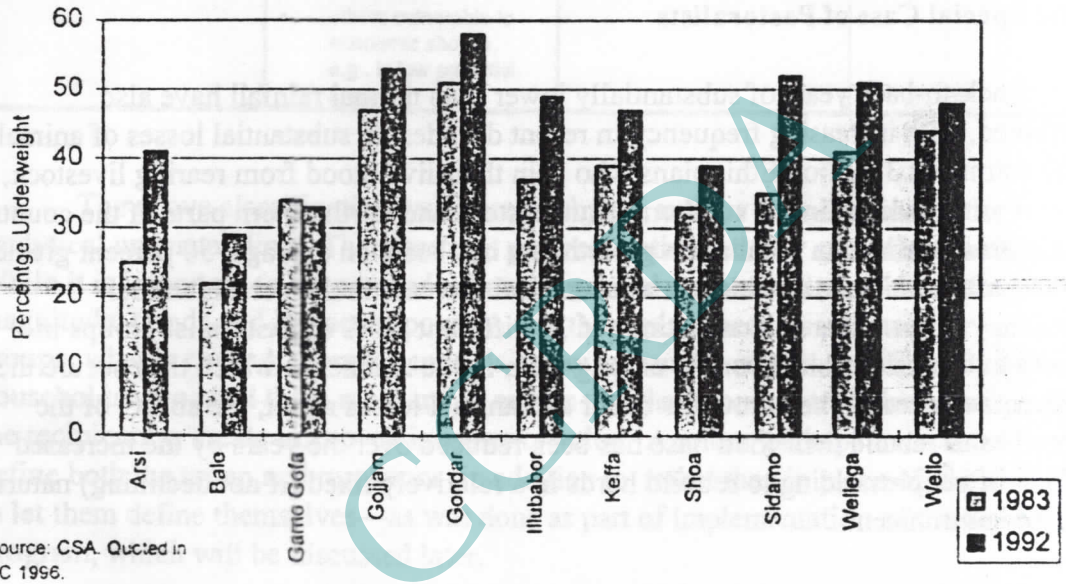
Ethiopia's population is among the most nutritionally deprived in the world, as a result of chronic undernutrition combined with health and sanitation problems. The adverse impact on the lifelong productive capacities of adults caused by undernourishment in childhood is relatively clear from international studies, particularly the impact on learning and cognitive ability. In addition, adult caloric deprivation leads to reduced ability to work, early fatigue and increased susceptibility to infections and

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diseases. For expectant mothers, deprivation of some micronutrients (e.g., iodine, iron, folic acid) can lead to impaired fetal development and increased risk of birth complications. Iron deficiency anemia in adults causes increased fatigue and reduces labor capacity.

As can be seen from Chart 5, child malnutrition may be worsening, although comparisons of underweight (as opposed to comparisons of stunting) are not reliable indicators of long-term chronic factors, but may rather be the result of short-term transitory factors such as very recent and temporary food deprivation. Nevertheless, it is revealing that the number of underweight children in 1992 was up from the corresponding 1983 figures for all but one of the regions. If it were the manifestation of transitory causes, there should be other regions where the figures were unchanged between periods, even possibly reversed. Thus, there is a fair degree of likelihood that this chart is reflecting, at least in part, the effects of chronic undernutrition.

Chart 5
Underweight children by region, 1983 and 1992.



Source: CSA. Quoted in EC 1996.

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i. Heavy Workloads for Women

No discussion of food insecurity is complete without emphasizing the particular importance of the adult woman or women in a household in achieving improved food security in that household. There are two main aspects of this: women's disposable income and their role as providers of nutrition to infants and small children.

Studies elsewhere in Africa show that household malnutrition rates are lower when women control some source of income which they can use for the purchase of food

intended for infants and children. This relationship is highly likely to apply also in Ethiopia. It therefore makes considerable sense from a food security perspective to support farm production activities in rural areas which provide opportunities for women to earn more, and keep the proceeds.

It is also clear from studies elsewhere that rural women throughout Africa are highly stressed by the competing demands on their time and energy inherent in their many roles as farmer, fetcher of water and woodfuel, caregiver to children, the aged and the ill, preparer of meals and income earner from off-farm employment (most commonly food and beverage preparation and marketing in the informal sector). To the extent that women confronting all these roles are already malnourished themselves (including, commonly, iron deficiency anemia) they find it difficult to perform all the roles well. Often what is not done well—for a variety of reasons—is tending to the necessary food intake and nutritional requirements of their infants and small children. This time pressure is compounded by lack of knowledge about good nutrition, and by use of unboiled water, unhygienic living conditions and the lack of sanitation.

j. The Special Case of Pastoralists

Back-to-back years of substantially lower than normal rainfall have also contributed, with increasing frequency in recent decades, to substantial losses of animals for the estimated 3 million Ethiopians who gain their livelihood from rearing livestock, in the semi-arid lowlands in the southern, southeastern and northeastern parts of the country. In these areas the human population growth rate has been, on average, 50 percent greater than that of the animals, resulting in a substantial increase in the person/animal dependency ratios. There are an estimated 30 different types of pastoralist groups in Ethiopia and considerable diversity among them in the manner in which they secure the nutrients they need. When droughts occur and animal losses result, the ability of the pastoralists to rebuild their food base has been reduced over the years by the increased numbers of people needing to rebuild herds in a relatively fixed (if not declining) natural resource environment.

It has been estimated that during the 1983-85 drought years, many Borana pastoralists lost 30-35 percent of their animals, and were forced to sell another 20 percent for cash to buy the food they need to survive. A herd reduction of this magnitude takes very many years to rebuild. Most of the pastoralist groups rely on a strong traditional community network for mutual assistance and support to cope with diversity, but poor pastoralists are probably more vulnerable to famine in the 1990s than they were in the early 1980s.

The net result of all these elements has been increasing food scarcity in many parts of Ethiopia, and an increase in the numbers of people who are failing to gain access to enough food. Following is a classification of food insecure groups in Ethiopia:

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Chart 6
Classification of food insecure households in Ethiopia.

	Rural	Urban	Others
Chronic	Resource poor households: • landless or land-scarce • ox-less • poor pastoralists • female-headed households • elderly • disabled • poor non-agricultural households • newly established settlers	Low income households employed in the informal sector Groups outside the labor market: • elderly • disabled • some female-headed households	• Refugees • Displaced people • Ex-soldiers
Transitory	Less resource poor households vulnerable to shocks, especially but not only drought: • farmers and others in drought-prone areas • pastoralists • others vulnerable to economic shocks, e.g., in low potential areas	Urban poor vulnerable to economic shocks, especially those causing food price rises	Groups affected by temporary civil unrest

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The above classification was intended by the authors to underpin a better analytical understanding. There are also programmatic needs for such classifications. While it is important to deepen and refine the general understanding of the nature, magnitude, trends and impact of poverty, and the coping mechanisms used by various groups, what is needed, more urgently, is a way to transfer resources efficiently to those households who need them most and to ensure that the resources transferred are used by the recipients to create improved incomes or value. Another, perhaps even better, way to define both the urban and rural poor (in addition to, rather than in place of, the above) is to let them define themselves—as was done as part of implementation of the Safety Net Program, which will be discussed later.

III. Overview of the Strategy

Ethiopia's medium term strategy is premised on two principles: (i) that food security would be sought within the context of comparative advantage in international trade of food crops; and (ii) that food security assistance should continue so as to enable the transition to self-reliance. The first principle implies minimum tariff barriers (i.e. 5 per cent or below); removal of subsidies to smallholder agriculture, except for limited and temporary circumstances; deregulation of input prices; and a flexible exchange rate to avoid overvaluation. Together, these policies would establish a necessary framework for resource allocation in agriculture, that conforms to sustainability at home and international competitiveness externally. The second principle implies the persistence of

food insecurity at the household level in the medium- to long-term period, the need to transfer resources to the vulnerable population, shifting assistance from in-kind to financial flows, and shifting procurement of food for relief distribution from imports to domestic supply. This provides for an interregnum within which food entitlements can begin to be met by enhanced self-provisioning of food and purchase capacities of the vulnerable population themselves. For, ultimately, the national aim of self-reliance in food security would have to be translated into the self-reliance of those households which under today's conditions would have remained exposed to the risk of under-nutrition, and ultimately famine and starvation.

The strategy for food security will address both the supply and the demand sides of the food equation, which will be interpreted in this paper as availability and entitlement, respectively. The strategy has *three components*: economic growth and employment; additional entitlement/access and target programs, including nutrition and health interventions; and emergency capabilities. Each of these will contribute to availability and entitlement, in its own way, and with its own target groups in view. Each will be driven from two sources, increasing domestic self-reliance, on one side, and maintaining aid assistance, on the other. Furthermore, the components, though separable, constitute a unified whole. The components of the strategy are outlined next, and then each is examined in turn. A final section sums up the proposals for food security assistance, and outlines a plan for graduation.

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Components of the Food Security Strategy

I. Economic Growth and Employment

(a) maintain sound macro-economic policies and population policies
(b) give priority to rural development, and focus on agriculture
(c) hold, or lower real food prices through:
- increased production [short term: sustainable extension, inputs]
[medium term: research, credit, land policies]
- lower-cost marketing [roads, transport, competition policies]

(d) encourage rapid growth of small business enterprises that create jobs
(e) agricultural diversification and exports in support of food trade
(f) develop measures for regions with less reliable rainfall, and pastoral areas

II. Additional Entitlement/Access and Targeted Programs [because growth is not enough]

1. Supplementary Employment/Income Schemes

(a) link with priorities for rural areas, agricultural production/marketing, natural resource management, and nutrition/health focuses [i.e. roads, irrigation, soil conservation, water supply, sanitation]
(b) link with lower real food prices [which support labor-intensive public works and job creation generally]
(c) decentralize administration
(d) build on critical assessment of experience already available in Ethiopia
(e) develop sustainable financing plans [including donor assistance]

2. Targeted Programs [for very poor and vulnerable groups]

(a) build on the successful Safety Net Program
(b) establish strong monitoring arrangements
(c) focus especially on women
(d) plan graduation from targeted programs

3. Nutrition and Health Interventions

(a) children's immunization and diarrhea prevention
(b) nutrition education and family planning
(c) better weaning foods, micro-nutrients, school feeding programs

III. Emergency Capabilities [to be maintained and strengthened]

(a) monitoring, surveillance, and early warning arrangements
(b) food and relief distribution capabilities

IV. Economic Growth and Employment

(a) Macro-Economic policies and Population Policies

The economic reform program started in mid-1992 has made considerable progress. The exchange rate has been realigned, a foreign exchange auction introduced, and external trade liberalized. The maximum tariff rate was reduced from 230 percent to 60 percent, with a further reduction to 50 percent intended for end- December this year. Direct price controls have been almost completely eliminated, and many restrictions on the private sector eased. The labor market has been de-regulated, and the distribution and transport of nearly all commodities have been liberalized. A start has been made on de-centralization of the political system, and civil service reform. Gross Domestic Product grew by more than 6 percent per year in real terms from 1992/93 to 1994/95.

The government is committed to reducing poverty through broad-based economic growth (of over 6 percent per year in real terms) in a stable macro-economic environment. This will arise from higher agricultural output, and strengthened activity in the industrial and service sectors, driven by a one-fifth increase in the proportion of GDP going to investment over the next three years. Government investment would remain at a stable ratio of GDP, while measures would be adopted to encourage private investment to grow by more than 40 percent to just over 14 percent of GDP. A move to market-based interest rates is aimed at mobilizing domestic savings, and encouraging an adequate expansion of credit to meet the needs of the growing private sector. The government will continue to foster both domestic private investment and foreign investment, and re-orient public investment towards urgently needed physical and social infrastructure. Social policy will focus on strengthening human resources, and promoting family planning.

To encourage private investment, the government will set up one-stop investment offices in the regions, streamline registration procedures, and take steps to increase the efficiency of contract enforcement. Privatization of public enterprises will be speeded up. In agriculture, the government will disengage itself from direct sales of fertilizer, and encourage the emergence of private retailers. The state farms will be privatized, and government-held land released to commercial farmers through a market-based system. Steps will be taken to streamline land leasing procedures for smallholders.

In the context of deepened civil service reform and reduced fiscal deficits, budget shares for recurrent outlays on primary education and basic health services will be increased. The aim will be increased primary school enrolment, expanded immunization coverage, and increased basic health and nutrition services to mothers and children. Laws and regulations will be revised to guarantee equal access of women to resources, property, and business activities.

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The *population* has been projected to double in the 23 years from 1987 to 2010, implying that it would rise from about 48 million to over 95 million. The Government adopted a national population policy in April 1993. Among other things, it aims to improve the data base for family planning services, and expand education with the aim of reducing the total fertility rate from more than 7 at present to about 4 by the year 2015, and the prevalence of contraceptive use from 4 percent to 44 percent over the same time period. To implement the policy, a number of institutions are already engaged, including the National Population Council chaired by the Prime Minister, the National Office of Population (NOP), a Multi-Sectoral Technical Committee, task forces for each population program sector, the Population and Development Planning Unit in the Ministry of Economic Development and Cooperation, the Population Analysis and Studies Center, and the Demographic Training and Research Center.

In addition to all these, the implementing line ministries (especially the Ministry of Health, with focal points in four other Ministries), the Family Guidance Association of Ethiopia (FGAE), and 23 NGOs are involved in population activities, the latter organized under a national consortium of NGOs on population, under the leadership of the NOP. The latest population action plan (1994-1999) has a total budget of US$56 million. The program is receiving financial and technical support from UNFPA, USAID, NORAD, GTZ, SIDA, IPPF, UNICEF, WHO, and the World Bank.

(b) Agriculture and Rural Development Priority

Under plausible assumptions about growth rates of the agricultural, service and industrial sectors, agriculture is likely to account directly for up to two thirds of the employment growth needed in the economy in the medium term. And the agricultural sector will need to underpin employment in the rest of the economy by increasing production of food (the primary wage good) enough, in conjunction with more efficient marketing, to hold down increases in real consumer food prices, thereby keeping real wages from rising rapidly and choking off employment growth.

In Ethiopia agriculture makes a particularly large contribution to the raw materials needed for industry. For the 500 manufacturing establishments covered by the census of 1993/94, domestic agriculture accounted for 84 percent of the local raw materials used, and 39 percent of all raw materials. The costs of the raw materials from domestic agriculture amount to 29 percent of total industrial and non-industrial costs of the 500 establishments surveyed, and 53 percent of the value added at factor cost. Furthermore, if the industry groups which use the most raw material from Ethiopian agriculture are aggregated together (Food, Beverages, Tobacco, Textiles, Leather and Shoes, Wood and Furniture), it can be noted that they get between 90 and 100 percent of their raw materials from local agriculture, employ almost 80 percent of the persons engaged in all the industrial establishments, and account for two thirds of the paid up capital. The Food Group alone, which gets all of its raw materials from agriculture, employs almost one fifth of the persons enaged in all establishments, and produces 16 percent of the industrial

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value added at factor cost. Therefore, increasing agricultural production is vital for industrial growth.

(c) Agricultural Production and Marketing

The government has embarked on an ambitious set of actions to narrow substantially the food gap within five years. Before the accelerated food production program began, the food deficit was estimated to be in the vicinity of 750,000 to 1 million tons of foodgrains (equivalent). To eliminate this deficit within the space of five years would imply food production growing substantially faster than has ever been experienced in Ethiopia on a sustained basis. If the population continued to grow at 3 percent p.a., food production would have to grow at a rate of at least 6.25 percent p.a. to close the gap in five years. This would, however, leave the population no better off in terms of nutrition than it was before the program began. If average incomes were to grow at the target rate needed to double incomes per capita in 15 years, there would be additional demand for food, over and above what is regarded at present as the "need" of the population. In fact, if the income targets are achieved, incomes might be 26 percent higher in five years, and demand for food might be 15 percent greater per capita. In that case, to meet the additional food demand from domestic sources, food production would have to increase by more than 33 percent over five years, or more than 6 percent per year (higher in some years, if other years fell below the trend because of unfavorable weather).

To increase food production as quickly as possible, the strategy focuses on the diffusion of simple technology packages, off the shelf, within smallholder agriculture in areas of reliable rainfall. There are substantial agricultural areas for this purpose. Although the available time series data for rainfall are patchy, as they are gathered from only a few places, table 2 indicates that the coefficient of variation is relatively low in the provinces (former designation) of Gojam, Kefa, Gondar and Shewa, containing almost 45 percent of the rural population. In the entire period of 1961-87, the lowest annual rainfall in these provinces was around 80 percent of their average for 27 years. A detailed coverage at Woreda level would have shown a more comprehensive and reliable picture of the distribution of rainfall countrywide. It is estimated that 60 percent of the farmers could be reached within regions in which the lowest annual rainfall was around 60 percent of the 27-year average.

In these regions, a participatory demonstration and training extension system is being implemented by the regional administrations, with a steeply increasing number of demonstration plots each year. The extension package includes improved seeds, fertilizer, and better crop husbandry methods for maize, sorghum, teff, and wheat, as well as a component addressing post-harvest handling of cereals to reduce losses. Investments in training the extension service and equipping it to increase its field mobility will be supplemented over the next five years by major investments in seeds and fertilizers, both designed to lay the foundations for broad-based, competitive supply of these vital inputs. In each case, this includes restructuring a public sector enterprise from a centrally managed parastatal to a decentralized and commercially oriented enterprise, while

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simultaneously encouraging the development of private sector entrepreneurship. In two projects with donor assistance, the government plans to invest more than US$32 million in seeds, and US$ 230 million in fertilizers over the next five years.

Because of the urgent need to decrease the country's reliance on rainfed agriculture to the extent feasible, the government will also pursue opportunities for cost-effective irrigation, in areas with less reliable rainfall. In Tigray, the recently-completed regional development plan includes construction of hundreds of small catchment dams, with local irrigation to fields around the perimeters of these dams. This massive undertaking would also be a major employer of unskilled and semi-skilled labor for many years. Similar plans are being developed for parts of Region 3 (Amhara). Such water catchment and local irrigation schemes would be expanded for the whole of semi-arid northern and north-eastern Ethiopia as a matter of priority. Donor financial assistance is required over the long term to supplement local currency resources from the regional government. In the context of chronic food security, it would be a mistake to look for unpaid self-help as a form of local contribution to this effort. Instead, all laborers would be paid in cash, food, or some combination, since their labor is all that many of these ultra poor rural households have to offer in exchange for food, or cash to buy food.

In these regions with lower than average rainfall but also higher than average variation, the strategy would also include disseminating appropriate technologies and products for dryland agriculture. This would include shorter duration crops with more drought tolerance, and technologies for better water harvesting, together with continuing the program to construct small dams to store water. The Government would welcome increased donor assistance with both financial support and ideas about technologies which have been successful in arid and semi-arid areas elsewhere.

Despite high population densities in some areas of Ethiopia, there are still considerable areas of potentially good quality land that remain uncultivated. Only about 13 percent of the potential cultivable land is currently used for annual crops. Some of the anticipated growth in agriculture would come from opening up *new lands for cultivation*, partly through the promotion of medium-scale modern private farms, but more importantly through expanded irrigation in low lying areas. At present, about 160,000 ha of land are under irrigation in Ethiopia, but the Government envisages this could more than double using the considerable quantities of untapped ground and surface water resources for small scale irrigation schemes in some of the major river basins of the country.

The need for irrigation is a major factor constraining horizontal expansion of cultivated land since most of the areas of the lowlands have too little rainfall to support rainfed agriculture. There are a number of potential problems in expanding irrigation at the rate envisaged: insufficient knowledge of good soil and water management, international riparian issues, problems of salinity, absence of effective rural financial markets for the provision of credit, and lack of satisfactory arrangements for community management and maintenance of community based irrigation schemes. In addition, apart

from the Awash valley where irrigation is already quite widely developed, the lack of adequate roads and other infrastructure could add to the costs and threaten the commercial viability of both large and small-scale irrigation schemes.

The Government will promote *irrigation* where the water resources exist to allow development at reasonable cost. This may include areas where rainfall is more reliable. In these areas, the focus would be on creating conditions for year-round agricultural activity, and for diversifying into much higher value-added enterprises. In order to encourage such commercial farming, the government will streamline access to land, within the existing tenure system, and open up new areas for large-scale agricultural production. The government is developing master plans for various types of irrigation, diversion/gravity schemes from major rivers, pumping from rivers, and small storage reservoirs (up to 200 hectares). Priority will be given to smallholder schemes, with indicative costs up to US$1,500/ha. While the government would participate in studies, design, repairs beyond local capacity, water use planning and regulatory activities, private contractors would be encouraged for construction, and irrigation cooperatives for operation and maintenance.

Irrigation development would have the following objectives, in order of priority:

(a) improved food security in drought-prone areas;
(b) production of high value crops, especially fruits and vegetables;
(c) production of crops for export (possibly fruits and vegetables) or import substitution (especially sugar, cotton);
(d) opening up of agriculture land in marginal climatic areas;
(e) increased volume of production from rainfed areas.

Livestock development is also a high priority for the government. Some 30 percent of agricultural GDP arises from livestock production. There would be three emphases on the output side: (a) smallholder dairying, to increase incomes of farm families and meet the rising demand for dairy products expected to accompany increasing incomes; (b) meat production both to meet rising domestic demand, and to earn foreign exchange through exports to the Middle East; and (c) hides, skins and leather products, to increase foreign exchange earnings from adding more value in processing. Intensification of smallholder dairying, which would be the main focus of future actions, would aim to achieve yield levels in the range of 5 to 15 litres of milk per day per cow on a substantial number of small farms. These yields would be based on improved cross-bred cows, substantially better nutrition of dairy animals, and better animal health services. A program for raising livestock production is in advanced stages of preparation, based on the results of extensive studies of its various components over many years.

Scaling up the numbers of improved cross-bred dairy cows will involve establishing groups of farms within villages, each clustered around one or two farms maintaining improved breeding bulls, as well as investments in artificial insemination systems in urban and peri-urban areas and along main roads. The former would be totally

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private enterprise schemes, with dairy breeding services provided for profit. Breeding of selected indigenous stock will also aim at meat production. On the nutrition side, the general aim would be to assist farm families to become largely self-sufficient in fodder production and in feeding dairy cows. Production of feed would be based on combinations appropriate to the region of fodder crops (such as oats and vetch, and in some areas fodder beet), fodder trees, Napier grass, and other species to produce a better balance of energy and protein. In some areas there would be scope for improving local species of clovers and other legumes.as well as introducing new species of legumes. Improving animal health services would be based on encouraging privatization of both veterinary medicine and the distribution of vaccines and drugs.

On the marketing side, the principle would be again to encourage the private sector to invest in processing schemes to handle additional production. Only a portion of milk produced would be find its way into consumption in liquid form in major urban centers. The majority would be preserved by processing into a number of products in smaller scale plants in rural areas. Extension services would focus on training farm families in herd management, fodder production, milk handling, storing and processing. Improvements to the tanning industry would be based on privatization of all tanning plants now in the public sector, coupled with intensive efforts to increase value added in export industries through training of operators and introduction of improved grading schemes.

Accelerated food production can only go so far with existing technologies. Initial results from the participatory demonstration and training extension activities show that maize yields on demonstration plots, using the recommended package of better seeds, adequate inputs, and improved practices, were more than three times those achieved using traditional practices. For wheat on vertisol soils, the demonstration plots achieved increases over traditional yields ranging from 85 to more than 200 percent. On non-vertisol soils, initial increases for wheat ranged from 60 to 180 percent. And for teff, initial achievements were a more than 50 percent increase over traditional practices.

These yield increases need to be sustained and deepened. Furthermore, they need to be extended to other crops, initially barley, sorghum, and grain legumes, and then to oil seeds, and to higher value crops important in the longer term drive for diversification, and increased earnings of foreign exchange. This will require two distinct responses from the agricultural research system: first, a more intense focus on "maintenance" research, in support of sustaining the higher yields already obtained for the core food crops; and second, broader and deeper research on other crop and livestock activities.

The government has almost completed preparation of an agricultural research and training project which would carry technology generation forward into the medium term future. It is designed to support the government's objectives over the next five years of moving towards food self-reliance, reducing ecological degradation, and increasing the competitive advantage of Ethiopia's agriculture. As well as focusing on food production and natural resource management, agricultural research will be also concerned with increasing production of raw materials for industry, and expanding production of

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agricultural exports and import substitutes. An Ethiopian Agricultural Research Board will be established as the ruling body of the newly created Ethiopian Agricultural Research Organization. The project will aim at improving research planning and review, as well as research-extension linkages.

The project will expand the national research network into agro-ecological zones so far not covered adequately, especially the more drought-prone environments of the northern and eastern parts of the country. The program will strengthen most programs in crops, livestock and natural resource management, and will emphasize high value crops. The project will also initiate biotechnology research in crops, livestock, and natural resource management. This will be done phase by phase, including tissue culture, molecular genetic marker technology, rhizobiology to enhance production of important legume crops, and animal breeding and genetics. The project would also strengthen the facilities, depth and breadth of training and staffing of Alemaya University of Agriculture, to meet the critical need for graduates in all agriculture-related areas.

To promote commercialization of agriculture the government will strengthen security of access to land by developing regulations to frame a market-based

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leasehold system of transferrable land property rights, throughout the country, and establish the administrative arrangements to support this. This market-based system will draw upon assessments of present land holding patterns and uses through surveys and inventories. Furthermore, the government will extend such a market-based system in particular to unoccupied rural lands, in order to ensure their release to commercial farmers in a uniform and systematic way throughout the country.

To encourage development of a modern competitive *financial system,* the government will take both macro and micro actions. At the macro level, more use will be made of indirect monetary policy instruments (such as interest rates and open market operations with government securities), and less use will be made of reserve requirements. Supervision and regulation of financial intermediaries by the National Bank of Ethiopia (NBE) will also be improved, in the context of a new legal and regulatory framework for the entire financial sector. The government will move to market based interest rates, in order to mobilize savings and allow for expansion of credit to meet the growing needs of the private sector, including smallholder agriculture. Recognizing however, that the present formal financial system is not well place to provide medium and long term financing, or credit to small and micro enterprises, the government will encourage the formation of rural banks for which the legal framework has been put in place. Furthermore studies will be made to establish workable links between the formal institutions and the cooperatives, money lenders, traders, and rotating savings and credit associations which comprise the informal financial system in rural areas.

To reduce *marketing costs*, and improve distribution of food, the strategy will include extensive construction of new roads, and rehabilitation of existing roads, in rural areas. The *road* sector development program aims at increasing the road density in the country, currently 21 km/1000 km^2, by 80 percent to 38 km/1000 km^2, within ten years (1997-2007), while simultaneously increasing the proportion of the network in good condition from 40-50 percent at present to 68 percent. This will represent an increase in the network from 0.43 km per one thousand population to 0.54 km per one thousand population. This program, to be carried out in two five-year phases, is estimated to cost US $3.9 billion, and will require substantial financial assistance from foreign sources. The program will, among other things, construct more than 15,000 km of new regional roads and rehabilitate more than 8,000 km. The use of labor-based construction and maintenance will be further intensified, especially on the regional road network.

This improvement of infrastructure will be combined with *promotion of competition* in the transportation, trade, processing and distribution of food, as well as in the marketed inputs critical to increasing its production. One of the focal areas of the roads sector development program is the improvement of rural travel and transport services. A pilot project aimed at this will be undertaken, with extensive community participation. Barriers to food and agricultural inputs distribution within and between regions will be reduced, with special attention to lowering the transactions costs involved. Measures will be adopted to try to increase the numbers to traders involved, and to enhance their efficiency management skills, and financial capabilities.

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The issues related to making more efficient use of grain storage capacity remaining in the public sector will be addressed, and development of warehousing services encouraged. A substantial improvement in the provision of market intelligence will be sought in order to increase integration of markets, with further reduction of costs. The issues of price stabilization for cereals are under intensive study, with the aim of developing, in the short term, plans for dealing with the fluctuations. The government will also study the need for improving regulatory framework for agricultural marketing, with a view to promoting and maintaining competition, and reducing transaction costs. Examples of the latter will include establishing and enforcing a standard grain classification system, and moving towards a system of standard, enforceable grain trading contracts. Standard grain classification would be a pre-requisite for reducing transaction costs by moving towards bulk handling of grain.

(d) Rural Enterprises

The above aim to achieve a vigorously growing, technologically modernizing agriculture, is expected to lead to large indirect growth in nonfarm incomes and employment. The linkage will work partly through the increased use of farm inputs, partly through the processing, marketing and transport services needed to handle larger outputs, and most importantly from increases of household expenditures on consumer goods and services. The successive rounds of induced growth springing from the agricultural growth impetus will be mainly concentrated in rural areas, and among goods and services produced in small, labor-intensive enterprises. Examples are transportation, personal services, health, distributive trades, housing and residential construction, hotels and restaurants, and entertainment. In agriculture the examples are fresh fruits and vegetables, fish and livestock products (especially dairy products and meat), which it is anticipated will make an important contribution to rural employment. The beneficial growth linkages of agriculture, however, will occur both in rural and urban areas. The growth multipliers from agriculture, which are generally higher than those from other sectors, will be made higher still by establishing a conducive policy framework, and investmenting in productive infrastructure. The demand structure of increased rural incomes is expected to encourage economic growth that is both decentralized and employment-intensive, with increases to employment underpinned by increases in food production, which would moderate the upward pressures on real wages which might otherwise accompany employment-intensive growth.

The three main areas of public policy which will influence the patterns of such growth are: provision of infrastructure, encouragement of competitive marketing of inputs and outputs, and taxation of certain goods to shift the consumption patterns of the newly better off, with the funds used for employment-producing public works which also add to the productivity of farming and other enterprises. The Government will aim to remove bottlenecks to expanding production of domestic consumer goods industries. These industries are expected to be be dominated by agro-processing, especially of nonfoodgrain agricultural commodities (such as meat, milk, fruits and vegetables), and

the constraints they face will be in marketing (of perishable commodities), credit, research and extension, risk and uncertainty, education, and infrastructure (roads, transport services, electricity, telecoms).

(c) Agricultural Exports and Diversification

The natural resource base of the country provides many opportunities for diversification into non-coffee exports at farm and regional levels. Oilseeds, vegetables and pulses can all be grown in Ethiopia and already contribute to some degree to exports, and the potential of further meat exports to the Middle East needs intensive exploration and development. The major constraints to realising these potentials, however, are the problems of accessing markets, the difficulties in securing adequate transport for products resulting in higher costs and a loss of competitiveness, and problems of ensuring adequate quality for the export market. Agricultural research, in which substantial investment is envisaged over the next ten years, will have as one of its focuses, increasing the yields of the main crop and livestock products with export potential, in order to sharpen their competitiveness. The infrastructure investment program, too, will be located on the basis of supporting efficiency in the production and marketing of both food and export commodities.

Over the next two years, the volume of Ethiopia's exports is projected to increase by more than 10 percent per year. After increasing food production, increasing exports is top of the agenda, as the second leg of the food security strategy. It is the Government's intention to move in the direction of insignificant food aid, except in emergency situations, and to purchase an increasing proportion of food import needs from the country's own export earnings. The Government expects to go some distance with increases in the traditional export commodities. For instance, coffee will continue to dominate exports, and efforts will be made to reduce wastage and increase production, but other agricultural products (especially pulses and oilseeds), and non-agricultural commodities, especially leather products, are also expected to increase substantially. A heavy emphasis will be placed on the garment and leather industries in the medium term. With respect to the former, the textile quota system will end in the year 2005; when it does it will be more difficult for Ethiopia to compete in international markets, and this requires action to be taken urgently to increase competitiveness. Through the leather industries, the Government will aim for adding value to traditional hides and skins exports. Its main levers to do so will be privatizing all productive entities in the tanning industry, and maintaining an economic climate conducive to private sector development.

Over the medium term, external sector policies will emphasize further liberalization of both the import tariff regime and the foreign exchange market, along with measures to attract foreign direct investment. Over the next two years the average tariff level will be reduced by 5 percentage points. Steps will be taken to eliminate the parallel market foreign exchange premium, by increasing the frequency of auctions and

the numbers of foreign exchange bureaus, as well as phasing out over the next two years the surrender requirement for export proceeds.

(f) Pastoral Areas

Pastoral communities occupy around 60 percent of Ethiopia's land area, and provide livelihood for perhaps one tenth of the population. Among them they manage around 20 percent of the national cattle herd, one quarter of the sheep, and almost three quarters of the goats. They have extensive links with the agricultural areas through trade in draft animals and cereals, and provide perhaps 90 percent of the live animals for export. Any threat to the livestock economy strikes at the heart of pastoral communities, such is their fundamental reliance upon livestock, for direct products or trade. During droughts, not only do large numbers of the livestock die, but the terms of trade between livestock and cereals deteriorate enormously. Furthermore, recovery from drought takes much longer in the pastoral economy than in the agricultural one, because livestock must first renew their health and strength before beginning a renewed reproductive cycle. A study in Borana areas in 1994 showed livestock numbers still not recovered to levels attained in 1990, before the drought of 1991/92.

Measures to improve food security in the pastoral areas will include:

(a) developing an early warning system that addresses the special characteristics of pastoral systems;

(b) supplementary feeding of livestock, especially of calves to ensure decreased calf mortality and enhanced recovery rates;

(c) encouragement of small cereal plots in pastoral areas in the post-drought year;

(d) better veterinary systems to reduce losses from disease during dry periods;

(e) development of community water supply schemes, especially low-cost surface schemes, and improved use and maintenance of existing schemes;

(f) establishment of processing plants nearer to the sources of supply;

(g) improvement of marketing to preserve the purchasing power of pastoral households during times of drought stress;

(h) encouragement of carefully researched diversification in local economic systems, including the introduction of small areas of forage legumes adapted to arid areas;

(i) encouragement of better management of livestock herds, with a focus on calf growth rates, and management of water supplies.

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V. Additional Entitlement/Access and Targeted Programs

Although economic growth and employment will both add to food availability and increase incomes (and therefore entitlements) over the medium term, they will not be enough in themselves to ensure access to sufficient food for everyone.

Within the reality of constrained budgets, priorities will have to be set for the additional programs. The overwhelming first priority is to establish firmly an *operational basic safety net*. This is to address the mandate stated clearly in the Government's National Policy of Disaster Prevention and Management (September, 1993): "No human life shall perish for want of assistance in time of disaster." The short-term objective of food entitlement is avoidance of death by starvation, while the longer-term aim is building the capacity of households, both rural and urban, to attain food security on their own. While holding or reducing real food prices (as noted above) is an important part of improving entitlements because of the resulting increases in real incomes, the main elements of the strategy include building the resource base of poorer rural households, increasing employment and incomes in both rural and urban areas, and providing targeted transfers to selected households in special poverty, or with special needs. The focus throughout the programs to increase food entitlement will be on the most vulnerable groups and households.

Ethiopia's strategy of securing food entitlement for the vulnerable population is, in the medium term, founded on food security assistance. Although the country is expected to keep narrowing its food gap, the strategy envisages continuation of such assistance to address the problems of household level food insecurity that will certainly persist, at least over the medium term. Reliance on food security assistance is necessitated by fiscal and macroeconomic considerations. There are limits to the burden of food subsidy on the government budget which can be borne at this stage of implementation of adjustment policies. It is vital not to undermine the framework of macroeconomic reform that is currently underway, although the aim would be to phase out donor assistance in this regard.

There are three components of the entitlement strategy: employment/income support schemes, targeted programs, and nutrition/health interventions. In each of these it is envisaged that the central government would play, as much as possible, a facilitating rather than an implementing role. Implementation would be largely through regional administrations, NGOs, and communities. The overall aim is the transfer of resources to the vulnerable population, following three important principles: (i) resource transfers would be designed as much as possible to enhance the capacities of the recipients for self-provisioning in the longer term; (ii) targeting would be through self-selection, wherever possible; and (iii) a distinction would be made between those in the vulnerable groups who are likely to be able to provision themselves in the short to medium term, and those who are a long way from being able to provision themselves.

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As part of the effort to foster greater regional autonomy the Government is in the process of devolving power to the administrative regions. There is a pressing need for the process of decentralization to be completed and clear guidelines set out, defining financial and administrative procedures and responsibilities , and carrying out agricultural policies. A vital issue is to strengthen the revenue base for agricultural support services such as extension, particularly for the poorer regions. National and regional policies need to be made congruent with one another, to reduce confusion.

1. Supplementary Employment and Income Schemes

These schemes will be supplementary to the employment and income generation arising from economic growth, because that growth is not likely to be enough to transfer resources to the most vulnerable of the population. The schemes will be linked with priorities for rural areas, namely the food production/marketing and nutrition health focuses mentioned earlier, in that they will contribute to the construction of roads, small-scale irrigation, water supply and sanitation needed to increase food production, reduce real food prices, and improve health. They will also address environmental rehabilitation and protection through soil conservation. Rural roads and the small-scale water supply and supplementary irrigation catchment dams recommended earlier for the drier northern and north-eastern parts of the country would be prime parts of these employment generating programs. In urban areas, the program would rehabilitate roads, construct public latrines, build flood control walls, and implement similar activities, some of which would be aimed at helping small traders and other entrepreneurs improve their business earnings.

Experience has shown that some proportion of those employed on such projects sell some of the food they receive and purchase other complementary foods and household necessities. The lower real food prices arising from the agricultural production and marketing programs underpin such labor-intensive investments. Furthermore, such schemes enable the *shift of food security assistance from relief to development*. And finally, they address the targeting problem associated with all resource transfers. Except for persons unable to work (because of disabilities or age, for example), whose needs will be addressed under targeted programs, the vulnerable population is expected to surface through self-selection for employment in schemes to rehabilitate natural resources, or build economic and social infrastructure. This self-targeting would be achieved through distributing, in food-for-work schemes, foods generally eaten by the poor, or by offering cash wages at below market levels.

The concept of *linking relief with development* is not a new one in Ethiopia. It has been discussed widely, and embraced by the Government when it made it focal to its National Policy of Disaster Prevention and Management. The underlying idea is to direct development towards reducing vulnerability, and relief towards enhancing long-term development. Such a course will increase substantially the return from food aid by using it to underpin the construction the valuable assets. In the past, Ethiopia has received up to one million tons of food in a drought year, which has been used almost exclusively for

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distribution as relief. If used to support public works, it could pay for 300 million days of work at standard work norms, equivalent to more than one million people working for a year.

It is important to note that using food aid for development in this way incurs substantial additional costs over just distributing food. Among them are the additional calories of food energy required by persons engaged in work (perhaps up to 1,000 Kcals per day), the costs of planning and administering labor intensive public works efficiently, and the possible opportunity costs of investing in vulnerable people in resource poor areas if larger growth opportunities are foregone elsewhere in the economy. For all these reasons, it is crucial to ensure that the works undertaken have a good rate of return, are done as cost-effectively as possible, and above all that sound provisions are made to assure their sustainability. Therefore the Government will develop new employment generation schemes with careful attention to all these matters. The Government will prepare a "shelf" of viable projects which can be undertaken during normal years and accelerated, where necessary, in years when lower rainfall or other shocks place many more people at risk for losing their access to food.. It is likely to take several years before the full-fledged program is in place. This careful, deliberate elaboration of the employment programs is also mandated by the limited resources, and the need to give priority to a basic safety net for all people.

Employment generation schemes have to be adequately programmed and managed. Current experience seems to indicate that generally, between NGOs and Woreda administrations, the former could be better suited to take the lead for urban areas, and the latter for rural areas, in the implementation (and maintenance) of infrastructure, although NGOs will certainly play a substantial role in all areas, especially those where they have already taken a lead. In fact, it will be important for NGOs to include among the objectives of projects they are managing the development of local government capacity. For employment generation schemes, the Disaster Preparedness and Prevention Commission (DPPC) would have only a coordination, and not an implementation role.

Programming, execution and maintenance of infrastructure entail a significant degree of empowerment of the community along with ability to animate the local community, and ensure the long term survival and maintenance of the infrastructural works. This will apply to most areas, although in some areas the work can be programmed and executed without similar requirements of animation, as employment is based on self-selection, and protection of the infrastructures is the responsibility of the government. Whenever the target population in rural areas are found to reside close enough to markets, transfer of resources will be made flexibly either in cash or in kind depending on the preference of households. Apparently, even now when transfers are being made in kind, a significantly large proportion of the recipients of aid engage in some exchange of food for cash.

Many employment generation schemes have been undertaken in Ethiopia under relief programs over the past two decades, with food-for-work projects more common

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here than elsewhere. In the latter, donors focussed on providing food assistance for non-policy related projects such as soil-conservation, reafforestation, rural roads and dams. The largest food-for-work initiative was WFP project 2488 administered by the Ministry of Agriculture, but many NGOs had small projects administered through the Relief and Rehabilitation Commission. Plans for co-ordination of food-for-work projects through these two different agencies sometimes became trapped in the bureaucratic system. There were problems in project implementation resulting from the lack of technical support, counterpart funds and non-food inputs from donors, the logistical problems of scheduling, transporting and storing thousands of tons of wheat and vegetable oil for food for work during emergencies, and political issues such as who should receive fuel wood from trees planted under the projects. The limited absorptive capacity of the Ministry of Agriculture also caused problems, and a decision was made to run smaller programs of higher quality, rather than continue to increase their size and number.

Independent reviews of food for work projects were carried out in 1989. An evaluation of the Merti-Jeju Multi-Sectoral Employment Support Programme (supported by WFP) was finished in November, 1994. Among lessons learned from these reviews are the following:

(i) projects were successful in terms of physical achievements but greater technical expertise was needed, for example in bund construction;

(ii) projects reduced soil erosion and enhanced water conservation but could have been more strategic in their interventions, among other things by increasing the feeder road components;

(iii) the food wages paid were a significant income transfer and nutrient supplement to those in the food deficit areas, and the labor of the poor was used in activities from which they benefited;

(iv) a significant group of vulnerable households, as many as 11 percent of all households in one project area, did not have enough able-bodied labor, and could never benefit from employment generation schemes;

(v) to distribute food aid in kind was sometimes an inefficient means of transferring capital because of all the inherent logistical problems; in some projects this gave rise to difficulties in paying laborers on time, even within one month of the work having been done, and this problem was still being observed in 1994, despite having been raised at least five years earlier;

(vi) there were problems in the centralized planning processes of the implementing Ministries which did not encourage integration of the food-for-work activities with other Ministry activities or the involvement of the local communities;

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(vii) it was not clear when the soil conservation activities would become independent of continuing inputs, and therefore self-sustaining; a longer period would be needed to assess this accurately;

(ix) there were concerns about the sustainability of all project works, least of all about ponds and dams, a medium level of concern about roads, and most concern about soil conservation and water harvesting structures on individual farms, because of uncertainty about security of land tenure, which discouraged many farmers from making land investments and also because the particular catchment activities undertaken often made no contribution to increasing farm incomes; this emphasizes the importance of establishing committed local ownership of assets, by communities with the financial and manpower resources to maintain them; without this, the benefits of the projects are confined to the immediate employment generation.

2 Targeted Programs

These programs will be designed to transfer resources both to develop capacity for self-provisioning, and to support selected particularly vulnerable groups who will not be capable of self-provisioning in the short medium term. An example of the first is provision of inputs such as seeds, fertilizers, and tools to resource-poor, small farmers vulnerable to food insecurity, or small loans to destitute women, in order that both groups might develop sustainable livelihoods. Examples of the second are cash transfers to orphans, aged and handicapped, or self-targeting food subsidies for especially vulnerable groups.

There are two common themes which should govern the types of programs undertaken: (a) to the extent possible, the programs will aim at transferring purchasing power to the poor by increasing their employment opportunities and their capacity to generate incomes, while avoiding introducing market distortions; and (b) the programs will aim at providing the poor with more, rather than fewer opportunities and choices i.e. to the extent possible the poor themselves should be able to decide what to purchase and what to produce, rather than having that choice made for them by the program. The targeted programs should be developed with careful attention to their compatibility with macro-economic and social goals, the likelihood that the programs will actually reach vulnerable groups, ease of implementation, cost effectiveness, sustainability and administrative feasibility.

These themes and considerations point to a program based, to the extent possible, on employment opportunities, assistance with acquiring productive assets, and vouchers that provide entitlements to secure a broad range of essential consumer goods typically purchased by the poor.

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A key consideration in targeted programs is developing and applying a workable definition of the food insecure. Furthermore, within the two target groups of rural and urban populations, there should be operational mechanisms for the identification of specific households and individuals that are endangered by lack of access of food. In the rural areas, once the amount of food security assistance to a given Woreda(county) is capped by the regional/tonal administration, specifying the households and individuals will essentially be left to the community, which has to follow explicitly laid out criteria and transparent procedures. A different approach - again relying on self-selection as much as possible - is used in the urban areas due to absence of a reliable community network that can be entrusted with the task of targeting households and individuals. In both rural and urban areas, robust, transparent monitoring arrangements are essential to ensure targeting is successful, and to learn lessons continuously which will allow the programs to be modified if necessary in the interests of cost-effectiveness. There should be provisions for phasing out programs when they have attained their goals.

The Safety Net Program implemented in Ethiopia in 1993/94 provided very valuable experience, and proved to be a low overhead, low cost operation able to deliver assets to well targeted food insecure households quickly and effectively. Furthermore, these transfers, while only one-time events, were in some regions designed to help the recipient households to increase their productivity and incomes on a continuing basis. While only a small percentage of the poorest actually were able to receive the assets and inputs, because of the relatively modest scope of the program compared with the enormity of the problem, the selection process was transparent, understood by all and accepted by all. An independent evaluation found that a significant proportion of recipients were able to start or expand small rural or local enterprises, or to increase their productivity as a result.

This targeted program will continue over several years, not just a single year at a time as did the original 1993/94 program. As before, it would be implemented by regional bureaus responsible for programs aimed at particular sets of target recipients. The emphasis would be on simple, straightforward small loans or flexible vouchers to targeted recipient households selected by the peasant association or kebele. The zonal and woreda administrations would be involved once more but this time, given that the program would be multi-year, a major emphasis would be put on repayment of the loans.

The loans themselves would be extended for similar purposes to those of the original SNP - to increase productivity by small farm households, assist the urban unemployed by providing works programs in regional and woreda administrative centers or other towns, and to provide loans to both urban and rural households to start small enterprises or family businesses. This time, there would be a system of on-going monitoring and information feedback to managers which was not part of the original .

CRDA

SNP. The program would be implemented and assessed in the context of development of the financial sector, especially in rural areas. Wherever possible financing will be undertaken by credit institutions that will eventually develop into rural banks. Alternately, the loan schemes will be administrated by the regional administrations.

Selected small towns in the most food insecure areas would be targeted for investments in microenterprise activities to increase sustainable growth amongst small town households that have wage-earning members. The objective would be to begin the process of increasing purchasing power among the inhabitants of these towns which would increase effective demand for locally-produced food. As a first step, a survey of a number of candidate small towns should be undertaken to determine what the opportunities would be for small enterprises in each of the towns. A pilot program would then experiment with two or three different approaches to small enterprise employment creating activities in eight or ten towns. The activities might include tailoring, restaurants, petty trading, small-scale grain milling, small hotels and restaurants, bakeries, the blaksmithing of farm tools, and retailers of a large and varied number of product lines ranging from clothing to house-building materials to pots and pans, small radios and other consumer goods, durable and non- durable, as well as services.

The regional, zonal and woreda administrative structures would focus on the nature of the relationship between rural farm households and the inhabitants of small and medium towns in their areas. It will take a long time to rehabilitate and create new elements of a national food market. Much can be done to make the smaller urban and peri-urban areas better able to increase effective demand for the agricultural products of the neighboring rural hinterland. Continued expansion of the microenterprise effort above is one specific contributor, while the urban and rural infrastructure works programs described earlier is another. In addition, rehabilitation and expansion of municipal marketplaces, bus departure areas and other facilities will help increase commercial activities in these towns and thus incomes, which will help to increase demand for the production of neighboring farms.

3. Nutrition and Health Interventions

In addition to the income-generating and price support initiatives outlined already, a set of targeted nutrition and health interventions is envisaged in support of reducing the

very serious levels of undernutrition observed in the country. In view of the Government's stringent fiscal situation, such interventions will need to be supported by considerable assistance from donors, among other things for the following:

(i) further development, through the Ministry of Health, of its programs for immunization of children, diarrhea prevention, family planning, and targeted nutrition initiatives through hospitals and clinics (including growth monitoring and promotion, nutrition education, and distribution of the special weaning food, Faffa);

(ii) promotion of proper weaning practices through developing a nutritional formulation of Faffa using local materials, seeking ways to reduce costs of local production and support increases in such production, and expanding the educational campaign on weaning practices through the mass media;

(iii) developing community-based nutrition and health interventions based on lessons learned from the most successful of these interventions in Ethiopia, and elsewhere in Africa;

(iv) support for micronutrient programs, especially Vitamin A, Iodine and Iron;

(v) developing the institutional capacity of the Ethiopian Nutrition Institute (ENI) through expansion of staff and training, in the context of a plan for a greater role for ENI in collaboration with DPPC and other organizations concerned with nutrition; and

(vi) increased investments in environmental sanitation - sewage and water supply - through labor based public works programs, as discussed already.

The highest priority area here is addressing the needs of those with both the highest risks and the most serious consequences of malnutrition: children under five, and pregnant and lactating mothers. The targeted nutrition program addressing their needs would be administered by the Ministry of Health, with widespread community outreach and participation. The program would be integrated at the primary health level, and its main focus would be preventive, with some rehabilitation and feeding components in addition. There would be a substantial role for NGOs specializing and skilled in these areas, especially in assisting with the development of local capacity. The training of health care and community workers in integrated primary health care delivery would include training on basic nutrition. Over the medium term, the institutional capacity of the Ministry of Health to deliver integrated maternal and child health services (immunization, diarrhoea control, and nutrition) would be very important for meeting nutrition goals. Throughout the program, the linkages between better nutrition and improved domestic water supply and sanitation in both rural and urban areas would be emphasized.

Women Headed Households - A high proportion of the poorer households in both rural and urban areas are headed by women, whose debilitating reproductive and work burden

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are well-known. Special efforts are needed to assist them in finding labor saving ways to prepare food, secure firewood and water, and as well ensure that they receive priority in income generation programs, and have access to child care initiatives where feasible. Nutrition education, and better feeding and health care for women are also envisaged, since the levels of undernutrition they themselves experience are often serious.

VI. Emergency Capabilities

The Government will continue to strengthen its emergency capabilities, including the monitoring, surveillance, and early warning arrangements, the capacity for food and relief distribution, strategic reserves of foodgrains, and its analysis of the international food trade and aid situation. At the same time, the methods used to judge the onset of food insecurity will be further fine-tuned, so that from the observable indicators, trained persons will be better able to assess the risk of occurrence of an event which will affect food security, the likelihood of adverse impacts, and the levels of vulnerability of households within the region of risk.

Given that resource constraints will almost certainly prevent massive infusions of development resources into the food insecure areas of Ethiopia, the need for constantly improving targeting mechanisms will be undiminished well into the future. Surveys, monitoring and evaluations will be essential elements for improving targeting mechanisms and for determining impact. Periodic household surveys and rapid appraisals of both targeted and non-targeted households will be carried out to determine whether the infusion of resources under a renewed SNP program is reaching the correct target audiences and, to the extent that is the case, to determine what food availability, income and nutrition effects the program may be inducing. Expanded and improved monitoring of the financial and implementation management effectiveness of the implementing organizations is also very important. Among other things it would be important to monitor and assess the success of the Government strategy in decreasing the incidence of food insecurity over a twenty year period.

The strategy for strengthening response capability for cases of emergency would build on the successful experience in 1993/94 with the Safety Net Program, which was intended to help many thousands of poor, food insecure, and highly vulnerable households weather a period of great economic and political stress combined with drought. The SNP was particularly successful in developing viable mechanisms for targeting vulnerable groups, and future elaboration and strengthening of emergency response capacity would focus on developing decentralized distributive arrangements.

The purpose of the Strategic/Emergency Food Reserve up to now has been to cover emergency requirements of food for about four months, until food aid deliveries.

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can be made from abroad. The Government is proposing to set the level of the Reserve at about 324,000 tons, based on the amount of food estimated to be needed to feed on average 4.5 million people. It is proposed that the current management of the stock will continue, namely by the autonomous Food Security Reserve Administration (EFSRA) in the Disaster Prevention and Preparedness Commission (DPPC), with a Technical Committee comprising four donor representatives and five government representatives. It is proposed that the mechanisms already in place for stock releases would also continue.

Most of the food would be procured locally using cash assistance. This process, which has taken up to six months in the past, would be reduced to 4 months by streamlining procedures. The stock had previously been set at 307,000 tons, and at the middle of the year was at approximately 284,000 tons, of which 73 percent was wheat, 18.5 percent maize, and 8.5 percent sorghum, not markedly different from the targeted proportions of these three grains. The Strategic Reserve will be located in Mekelle, Kombolcha, Shinille, Nazareth, and Shashemene, with further dentralization to Gondar, Sodo, and Bedele areas for quick response to drought vulnerable areas in the north west, south east, and western parts of the country. Currently available storage capacity (which includes 130,000 metric tons recently constructed) may need to be further augmented. A detailed study would be made before constructing additional warehouses, in view of capacity available with the Ethiopian Grain Trade Enterprise, around 770,000 mt in 21 major grain market towns in the country. In good years, stocks will be recycled by using them for permanent food-for-work and labor intensive employment generating schemes.

Growth in domestic food production may bring about significant changes in the approach towards this reserve. To the extent that the country produces surplus over its food requirement, the strategic reserve would assume the nature of an inter-seasonal buffer stock, rather than a bridging stock for the replenishment of external food deliveries. As domestic production continues to grow, there would be increasing reliance on domestic production to meet emergency food requirements. The purpose and size of a strategic reserve under such favorable conditions would need to be re-assessed, depend on the cost of holding stocks, and the possibility of exports. From this vantage point, it would be logical to presume that as the magnitude of surplus production increases, more emphasis should be placed on exports and establishment of a foreign exchange fund as an integral part of the strategic arrangements for ensuring food security. And with such a development, in turn, it would be reasonable to foresee increasing privatization of inter-season stockholding, as traders develop capacity for arbitrage over time as well as space.

There should be no reason for food security assistance to be affected negatively by such a turn of events, since the need for it arises from a fiscal gap, which is quite a separate matter. Becoming food self-sufficient is not the same thing as achieving fiscal balance.

At the same time, the government has noted the changed set of circumstances in international grain markets. At the end of the 1995/96 marketing system, the carryover

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grain stocks in the world were estimated to be about 14 percent of normal annual world consumption, or a little over 1.5 months of consumption. This is the lowest ratio of carryover stocks since before 1960, and raises the pressures on the markets in their allocation of scarce grain supplies between people and livestock, and between the rich and the poor countries. World market prices for wheat and maize increased significantly over the past two years to reach a peak in April/May, 1996. For example, an indicator price for wheat rose from US$142/mt in September 1995 to US$247.5/mt in April/May, 1996, a rise of 74 percent. A comparable price rise for maize was from US$97.5/mt to US$204/mt (109 percent). The supply response in the exporting countries, however, by September 1996 had wiped out more than half of these price gains, with wheat trading at US$170/mt, and maize at US$145/mt. It is not expected that these prices will decline much over coming months, since world stocks are low

Furthermore, analysis of the global grain stocks situation shows that "buffer stocks", those deemed available to even out supplies over time, may comprise somewhat less than 40 percent of world stocks (the balance being "pipeline stocks"), and that the "buffer stocks" held in the main exporting countries are close to total depletion at the end of the 1995/96 marketing year, with 95 percent of "buffer stocks" held in countries where they are likely to be consumed. Until the stocks recover in the main exporting countries (and stock re-building is unlikely to be completed in a single year), the chances of world grain prices becoming more unstable in the short run are heightened. In these circumstances, there are likely to be increasing domestic political pressures to limit exports (and food aid) from the main exporting countries, and Ethiopia (like other poor countries) will be unable to outbid wealthier countries in any competition for scarce grain supplies.

VII. Food Security Assistance

Until 1994/95, the bulk of food security assistance was food aid in kind. This had to contend with perennial arguments concerning the possible negative consequences for domestic prices and production. Presently, due to the conjuncture of several factors within the donor community and world trade in food crops, the emphasis is shifting towards assistance in cash, which is tantamount to balance-of-payments support. At the same time, Ethiopia is making progress towards closing the food gap through domestic production. This creates a fortunate coincidence of interest in the progressive switch of food security assistance towards cash. In 1995/96, more than three-fourths of the food aid to the country was provided through domestic purchases. Some major donors of food aid can incorporate local purchase, while the rules of others preclude this. Cash assistance has the obvious advantage of shifting outward the demand for food, which helps to keep producer prices from falling precipitately due to the lack of effective demand, thus providing implicit producer price support. This is not incompatible with further reductions in real food prices at the consumer level achieved through a combination of technological change in food production and reducing marketing costs through increased competition. Of course, food aid in kind will also be needed, as the primary purpose rests with food entitlement.

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Between 1984 and 1995, the average level of food assistance to Ethiopia has been about 729,000 mt per year, the highest being 1,272,221 mt in 1985. The government envisages not only a gradual reduction in the magnitude of external food assistance but also a shift from assistance in kind towards financial food assistance. Although local food is cheaper to procure, and increasing production makes domestic procurement economically sensible from various points of view, these shifts have to be implemented cautiously, and must be dictated by objective conditions in the country so as to avoid unnecessary disruptions of food aid-supported programs. Very reliable information on market situations and marketable surpluses will be needed to implement the policy. The gradual reduction in food aid needs would be achieved by increasing more food domestically, refining need assessment techniques, improving targeting of beneficiaries, and achieving steady and broad-based economic growth.

The country's financial capacity to purchase food from either local or international markets will be extremely limited in the short and medium term. Therefore international assistance will continue to be sought to fill critical gaps, especially for supporting development projects focusing on water and soil conservation, terraces, checkdams, small-scale irrigation, microdams, access roads, clinics, schools and so on.

VIII. Food Security, ADLI and Economic Reform

The strategy of food security is closely tied in key ways with the overall development strategy of ADLI (Agricultural-Development-Led-Industrialization), and the economic reforms currently underway.

ADLI places emphasis on agriculture as the engine of growth, on account of its potentially superior growth linkages, surplus generation, market creation, and provision of raw materials, foreign exchange, and labor, thus setting the stage for a process of mutual reinforcement between agriculture and industry. Over the long-term, growth of industry and, more generally, the non-agricultural sector, will, it is hoped, reduce the proportion of the labor force engaged in agriculture, thereby reducing population pressure on land. In the meantime, growth of non-agricultural activities, both in the rural and urban areas, should contribute to the improvement of access to food by creating purchasing capacities for the food insecure population. The employment intensity of such non-agricultural enterprises is in proportion to the ability of technological progress in agriculture, and improvements in the efficiency of liberalized marketing, to lower food prices in real terms.

Finally, there is also coherence between the strategy of food security and economic reform in two critical respects. Firstly, the strategy is consistent with free trade policy. Secondly, the switching of food security assistance to procurement from domestic sources fits with the objectives of macroeconomic stabilization.

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Table 1. Ethiopia - Drought Affected Population, 1981-1995

Year	Total Population (million)	Disaster/Drought Affected Population (million)	Proportion Affected %
1981	31.90	2.82	8.8
1982	32.77	3.70	11.3
1983	41.03	3.30	8.0
1984	42.18	4.21	10.0
1985	43.35	6.99	16.1
1986	44.65	6.14	13.8
1987	46.17	2.53	5.5
1988	47.52	4.16	8.8
1989	47.64	5.35	11.2
1990	49.14	3.21	6.5
1991	50.74	7.22	14.2
1992	52.40	7.85	15.0
1993	54.09	4.97	9.2
1994	55.81	6.70	12.0
1995	57.59	3.99	6.9
Weighted Average			10.5

Source: Disaster Preparedness and Prevention Commission

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Table 3. Ethiopia - Food Aid and Foodgrain Production, 1985-1996

Year	Food Aid[1] ('000 metric tons)	Foodgrain Production[2] ('000 metric tons)	Food Aid as Proportion of Production (%)
1985	1,272	4,855	26.2
1986	926	5,404	17.1
1987	277	6,684	4.1
1988	1,096	6,902	15.9
1989	461	6,676	6.9
1990	657	6,579	10.0
1991	925	7,078	12.0
1992	840	7,055	11.9
1993	519	7,619	6.8
1994	980	6,945	14.1
1995	683	7,492	9.1
1996	334[3]	10,328[4]	3.2
Totals	8,970	83,617	10.7

[1] All food delivered, including local purchases. For the period 1985-1994, 27 percent from USAID, 24 percent from WFP, and 19 percent from the EEC, 10 percent in addition from individual member countries of the EEC, 7 percent from Canada, 23 percent Others. [Source: Disaster Preparedness and Prevention Commission]

[2] Total of Maize, Teff, Sorghum, Barley, Wheat, Millet, Pulses, Oilseeds [Sources: Samia Zekaria Gutu, Rachel Lambert and Simon Maxwell, Cereal, Pulse and Oilseed Balance Sheet Analysis for Ethiopia 1979 to 1989, Institute of Development Studies, Sussex, August 1990; Central Statistical Authority Crop Surveys]. Foodgrain production for the crop season, which straddles two calendar years, is attributed to the second year e.g. 1995/96 to the 1996 year

[3] Commitments for the 1996 calendar year

[4] 90 percent Meher season, 10 percent Belg

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Table 2. Ethiopia: Rainfall - Average and Variation; and Population Affected, 1961-1987

Province	Long-term average rainfall) (mm)	Percentage of Ethiopia Avg.	Coefficient of variation	Rainfall in worst year		Rural Population 1988	
				Year	% of average	Number (m)	%
Arsi	872	96	16	1980	69	1.73	4.4
Bale	766	84	26	1965	69	1.05	2.6
Gamo Gofa	747	82	21	1963	48	1.33	3.4
Gojam	1,170	128	10	1983	82	3.38	8.5
Gondar	986	108	19	1966	78	3.03	7.6
Hararghe	497	54	27	1984	49	4.34	10.9
Illubabor	1,304	143	13	1965	67	1.02	2.6
Kefa	1,322	145	11	1980	81	2.60	6.6
Shewa	830	91	11	1965	77	8.36	21.1
Sidamo	837	92	24	1980	51	3.97	10.0
Tigray	571	62	29	1984	44	2.44	6.1
Wellega	1,210	132	20	1970	48	2.63	6.6
Wello	837	92	24	1980	51	3.81	9.6
Ethiopia	913	100	7	1984	78	39.69	100.0

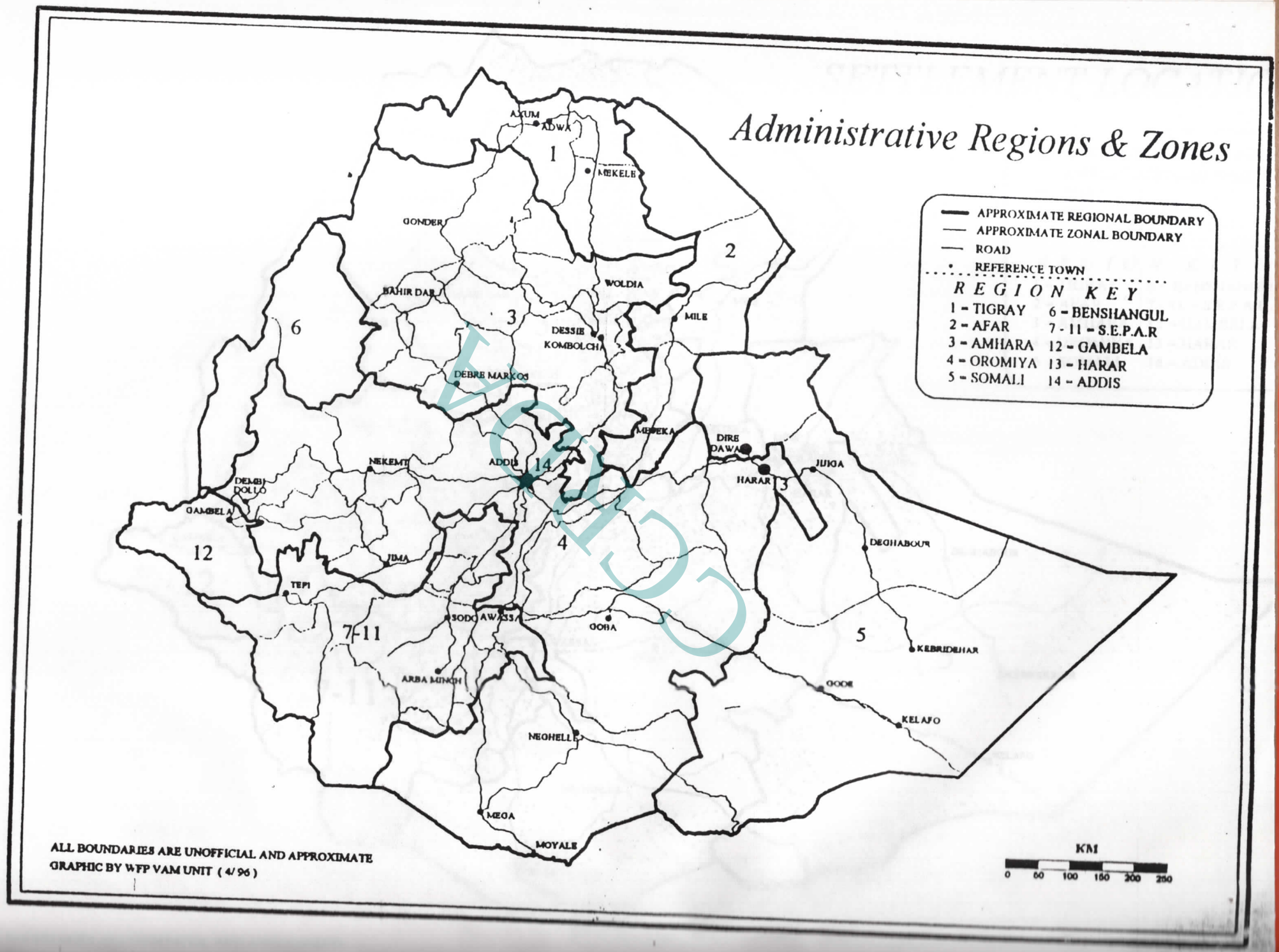
Source: Rainfall: Patrick Webb, Joachim von Braun, and Yisehac Yohannes, Famine in Ethiopia: Policy Implications of Coping Failure at National and Household Levels, International Food Policy Research Institute, Research Report 92, 1992, p. 24.

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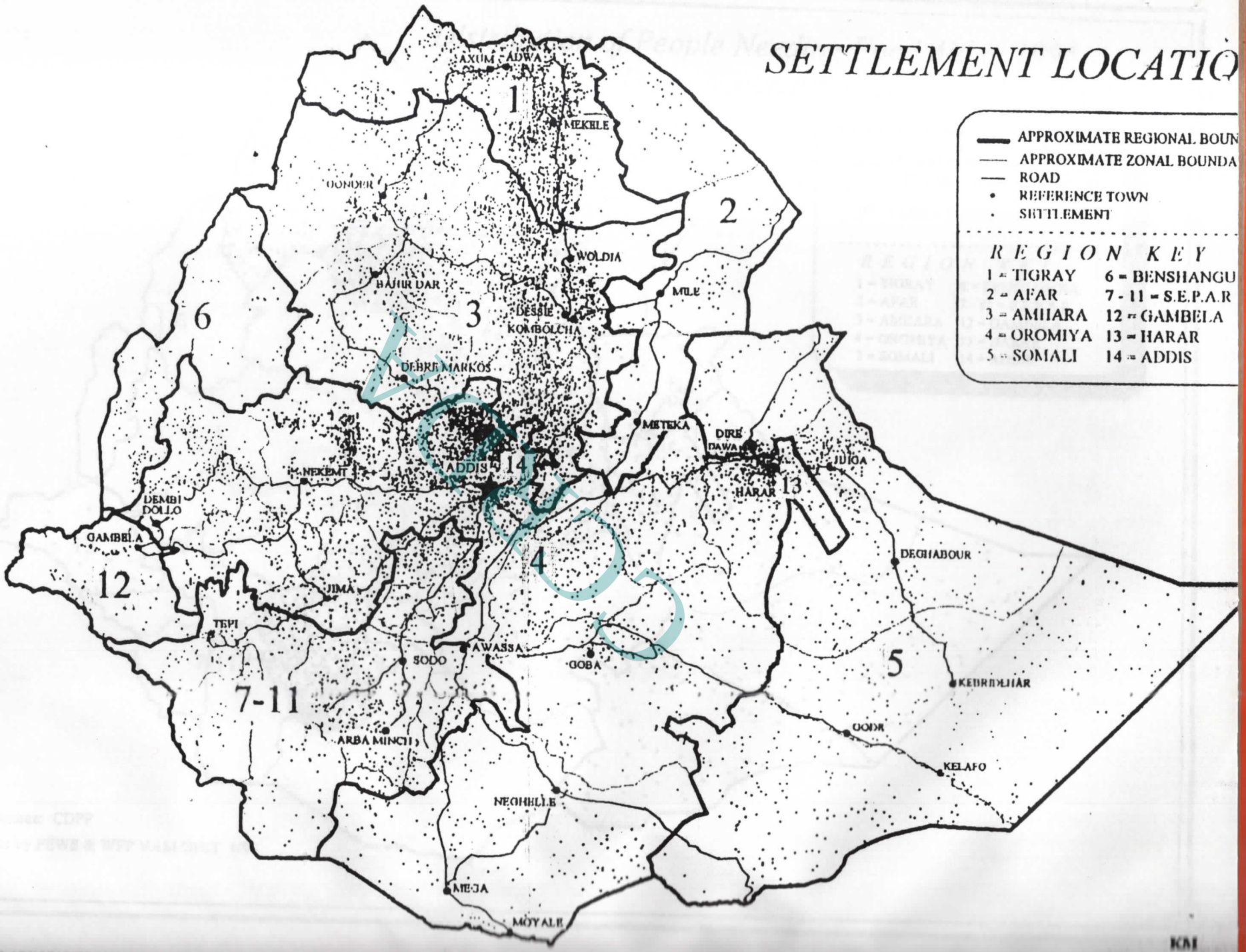
Table 4. Ethiopia - Food Aid Deliveries by Commodity, 1992-1995

Commodity	1992 Amounts (mt)	%	1993 Amounts (mt)	%	1994 Amounts (mt)	%	1995 Amounts (mt)	%	1992-1995 Amounts (mt)	%
Wheat	767,245	91.3	399,071	76.8	768,877	78.4	543,724	79.6	2,478,917	82
Wheat Grain	724,454	86	393,971	75.9	740,327	75.5	543,724	79.6	2,402,476	79
Wheat Flour	42,791	5	5,100	1.0	28,550	2.9	0	0.0	76,441	3
Other Grains	4,227	1	64,416	12.4	148,355	15.1	113,925	16.7	330,923	11
Maize	3,415	0	31,843	6.1	27,752	2.8	24,816	3.6	87,826	3
Sorghum	0	0	19,462	3.7	117,795	12.0	88,509	13.0	225,766	7
Rice	812	0	13,111	2.5	2,808	0.3	600	0.1	17,331	1
Other	0	0	0	0.0	0	0.0	0	0.0	0	0
Oils and Fats	30,326	4	27,551	5.3	25,523	2.6	14,011	2.1	97,411	3
Vegetable Oil	28,036	3	25,334	4.9	24,523	2.5	14,011	2.1	91,904	3
Other Oils/Fats	2,290	0	2,217	0.4	1,000	0.1	0	0.0	5,507	0
Pulses	18,326	2	12,843	2.5	16,337	1.7	5,443	0.8	52,949	2
Beans	12,338	1	8,178	1.6	8,647	0.9	2,300	0.3	31,463	1
Lentils	2,242	0	1,214	0.2	7,690	0.8	2,963	0.4	14,109	0
Peas	3,746	0	3,451	0.7	0	0.0	0	0.0	7,197	0
Other Pulses	0	0	0	0.0	0	0.0	180	0.0	180	0
Other Foods	20,047	2	15,445	3.0	21,024	2.1	5,853	0.9	62,369	2
Sugar	2,603	0	86	0.0	287	0.0	1,000	0.1	3,976	0
CSB/WSB	8,109	1	10,066	1.9	11,670	1.2	2,700	0.4	32,545	1
Faffa	600	0	2,716	0.5	8,151	0.8	1,447	0.2	12,914	0
CSM:DSE/DSM	4,378	1	2,335	0.4	100	0.0	195	0.0	7,008	0
Other	4,357	1	242	0.0	816	0.1	511	0.1	5,926	0
Totals	840,171	100	519,326	100.0	980,116	100.0	682,956	100	3,022,569	100

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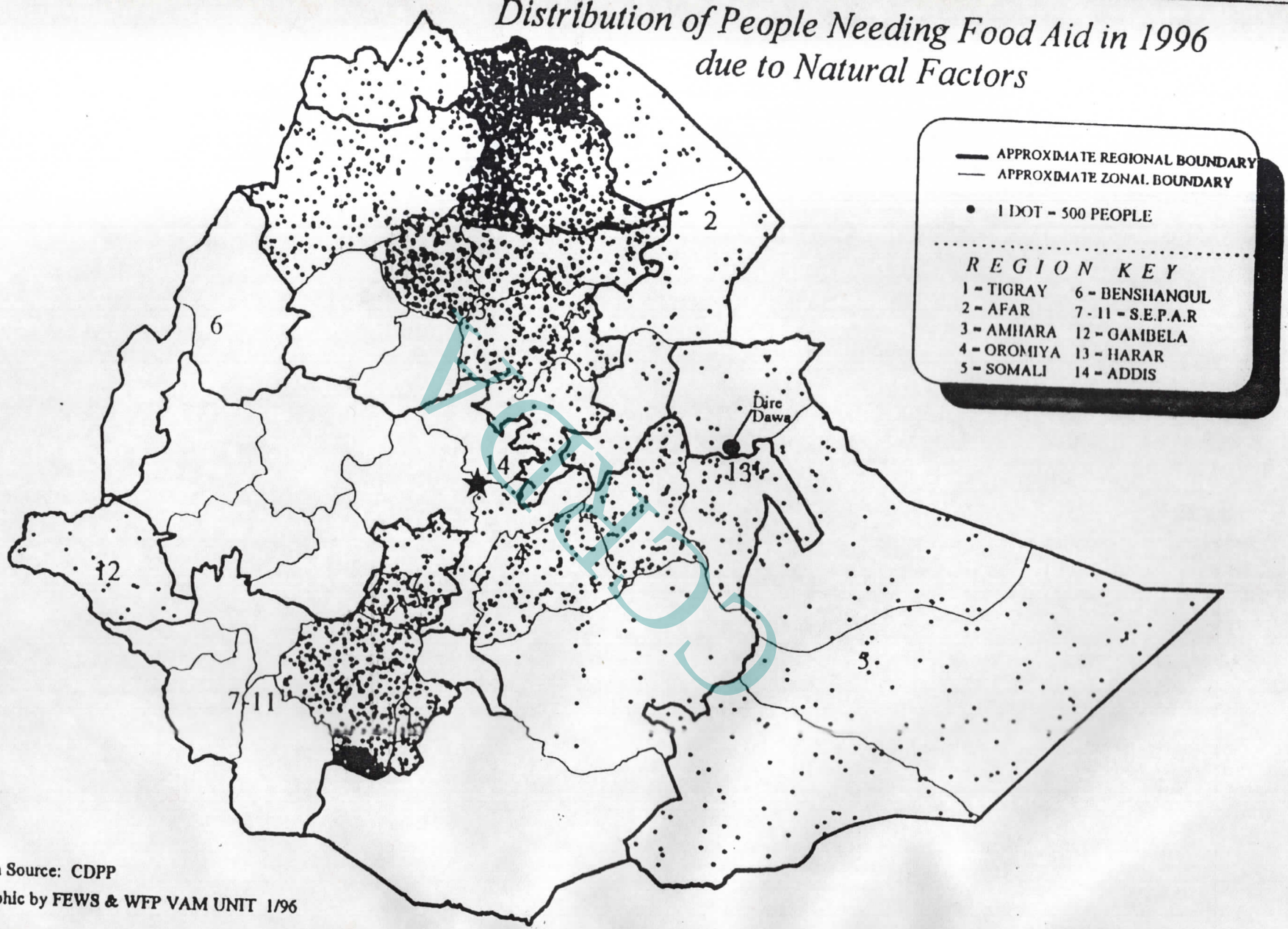

Administrative Regions & Zones
APPROXIMATE REGIONAL BOUNDARY
APPROXIMATE ZONAL BOUNDARY
ROAD
REFERENCE TOWN
REGION KEY
1 - TIGRAY
2 - AFAR
3 - AMHARA
4 - OROMIYA
5 - SOMALI
6 - BENSHANGUL
7 - 11 - S.E.P.A.R
12 - GAMBELA
13 - HARAR
14 - ADDIS
AXUM
ADWA
MEKELE
GONDER
WOLDIA
BAHIR DAR
MILE
DESSIE
KOMBOLCHA
DEBRE MARKOS
MEDEKA
DIRE DAWA
HARAR
JIJIGA
NEKEMTE
ADDIS
DEMBI DOLLO
GAMBELA
JIMA
DEGHABOUR
TEPI
SODO
AWASSA
GOBA
KEBRIDEHAR
ARBA MINCH
GODE
KELAFO
NEGHELLE
MEGA
MOYALE
ALL BOUNDARIES ARE UNOFFICIAL AND APPROXIMATE
GRAPHIC BY WFP VAM UNIT (4/96)
KM
0 50 100 150 200 250

SETTLEMENT LOCATIO



ALL BOUNDARIES ARE UNOFFICIAL AND APPROXIMATE

Distribution of People Needing Food Aid in 1996 due to Natural Factors



Data Source: CDPP

Graphic by FEWS & WFP VAM UNIT 1/96