

90
→ 801/4D
75

ASSESSMENT:
1986 FOOD NEEDS
FOR THE CONSORTIUM OF CRS, ECS, EECMY, LWF
FOOD DISTRIBUTION NETWORK
ETHIOPIA



PREPARED BY INTERTECT
DALLAS, TEXAS JANUARY 1986

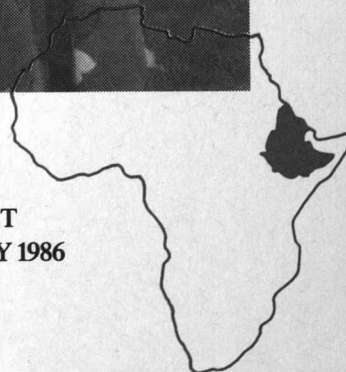


TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGEMENTS	i
EXECUTIVE SUMMARY	iii
ORGANIZATIONS INTERVIEWED	x
MAP OF ETHIOPIA	
I. INTRODUCTION	1
A. Terms of Reference	1
B. Definition of Famine	2
Figure 1-1 Linear Analysis of Subsistence Farming	
C. History of the Program	5
Figure 1-2 Ethiopian Resettlement Program	
Figure 1-3 Deforestation -- Past to Present	
Figure 1-4 Divisions of Responsibility	
D. Major Issues to be Evaluated	14
II. THE RELIEF SETTING	16
A. The Terrain	16
Figure 2-1 Altitudes	
B. The Agricultural Sector	16
Figure 2-2 Food Production Cropping Areas	
C. Population Distribution	17
Figure 2-3 Population Densities	
D. Logistical Problems	17
Figure 2-4 Schematic of Logistics System	
Figure 2-5 Distribution Centers	
E. Political Considerations	19
F. Baseline Standards for This Report	23
III. REVIEW OF PREVIOUS ASSESSMENTS	25
A. USAID	25
B. FAO	26
C. Central Statistics Office (CSO)	26
D. Early Warning System (EWS)	27
IV. ANALYSIS OF NUTRITIONAL DATA	28
A. Review of Existing Standards	28
B. Standards for This Assessment	29
C. Food Basket	30
D. Selecting Recipients	31
E. Data Collection	32
F. Nutrition Record-Keeping Methods	32
G. Correlating Nutritional Data	33
H. Impact of Food Aid on Nutrition	36
I. Regional Nutritional Data	43
V. ASSESSMENT OF THE NORTHERN INITIATIVE	52
A. Background	52
B. Food Distribution	52
C. Monitoring	53
D. Constraints	53
Figure 5-1 Northern Initiative Distribution Sites	

	<u>Page</u>
VI. FAMINE TRENDS	58
A. The Geography of Famine in Ethiopia	58
Figure 6-1 Spatial Extension of Famine	
B. Analysis of Present Trends	59
Table 6-A Awrajas Under Famine	60
C. Situation Forecast for 1986-87	61
D. Regional Trends	61
VII. EMERGENCY FOOD NEEDS FOR 1986	62
VIII. BUFFER STOCKS	66
A. Background	66
B. A Buffer Stock Strategy	67
C. Specific Contingencies for Which Buffers may be Needed	68
D. Recommended Food Levels for Buffer Stocks	69
E. Implementation Needs	69
IX. DEPENDENCY ISSUES AND ALTERNATIVE DISTRIBUTION METHODS	71
A. Defining Dependency	71
B. Problems of Concern to CRS	72
C. Approaches to Reduce Likelihood of Dependencies	73
D. Preserving the Victim's Dignity	73
E. Alternative Food Distribution Methods	74
F. Criteria for Selecting Programs and Projects	79
G. Phasing of Food Distribution Methods	81
Figure 9-1 Famine Cycle	
X. STRATEGIES FOR STRETCHING FOOD AID	82
APPENDICES:	
A. Establishing the Population Base	86
B. Establishing the Structural Food Deficit	88
C. Establishing Logistical Capacities	92
D. Regional Summaries	96
E. 1986 Emergency Food Needs	113
F. Caution Levels for Emergency Food Imports	118
G. Small Transportable Warehouses	120
H. Food-for-Work for Women	122

ACKNOWLEDGEMENTS

This report is the result of the efforts of many people in CRS and the agencies assisting in the famine relief operations in Ethiopia. The authors would like to acknowledge their assistance in helping to make this report possible.

Terry Kirch of the CRS office in New York went to Ethiopia several weeks prior to the arrival of the INTERTECT team and laid the groundwork for the assessment mission. He later accompanied the team on all of the field trips and actively participated in the interviews and data collection process. Without Terry's tireless devotion to the project, the final results could not have been achieved.

Francis X. Carlin, the CRS Director in Ethiopia, gave the team all the assistance that was requested and more. This enabled the team to move rapidly and made the job much easier.

Niels Nikolaisen and the staff of Lutheran World Federation, Aba Kadane and the staff of the Ethiopian Catholic Secretariat, and the staff of the EECMY, the major partners of CRS in the famine relief operations, also provided many helpful insights about the problems and realities of providing food in Ethiopia. It is a tribute to these organizations that the partnership has been so smooth, and the authors feel that the spirit of cooperation and assistance between these four organizations has set an example for other agencies in the Ethiopian operations.

Much of the information regarding the logistics situation in Ethiopia was gathered by Don Crosson of CRS. During his 3-week mission, he was able to visit the principal ports, and review the primary distribution system and its capacity. The information he gathered and his insights into the food logistics situation were extremely helpful.

Ann Houdacek, a CRS employee on loan to the consortium, was extremely helpful in providing nutrition information. Ann accompanied the team on one of the field trips and provided many useful insights about the situation and the problems encountered by the distribution agencies.

At every location, the staff of the Ethiopian Government's Relief and Rehabilitation Commission (RRC) were extremely helpful and cooperative. No request for information was ever denied, and the senior staff in each province helped facilitate our movements and provided access to information. Without their help this report would not have been possible.

A special thanks goes to Tom Franklin of the United Nations Office of Emergency Operations in Ethiopia (OEOE). Tom not only provided many useful reports, papers and studies of Ethiopia and its famine problems, he also provided many helpful contacts,

arranged meetings, and gave us many hours of his time helping to answer questions and direct us to resources that otherwise would have been unavailable to the team. His tireless assistance enabled many shortcuts to be made through the maze of information, and he helped us understand the problems confronting Ethiopia on a much more in-depth basis. For all that assistance, we offer a very special thanks indeed.

A final thanks goes to Major Lemma Gebre Tsadik of CRS, our guide and trip organizer. Through his efforts we were able to move around the country without undue delays. He was also very helpful in tracking down hard-to-get maps, charts and other information during our mission.

There were many others, simply too numerous to mention by name in this limited space. However, we want to express our appreciation to all of them for making our mission productive.

EXECUTIVE SUMMARY

In December 1985, a three-person team from INTERTECT conducted an assessment of the food situation in Ethiopia and of the famine relief operations of Catholic Relief Services and its principal operating partners in Ethiopia. The findings of this mission are as follows:

1. The CRS program is effectively reaching approximately 2 million people per month. Despite early problems, the program has made a substantial impact on improving the health and nutritional status of those persons enrolled in the program.
2. While it is difficult to extrapolate nutritional data for the population in general (due to imprecise population figures and a lack of information about the nutritional status of persons not enrolled in the program), it does appear that the program has had a significant impact on reducing mortality among the population in general and has contributed dramatically to reducing death rates throughout the areas served.
3. The famine conditions in the country have not substantially abated. In many cases, the zones of famine have shifted and new areas of need have developed. Despite one and a half years of intensive famine relief operations, substantial portions of the population of Ethiopia still remain at risk from famine, necessitating that extensive food relief operations continue for at least one more year. The reasons why food relief must be continued include:
 - a) geographic shifts in the zones of famine;
 - b) continued drought conditions in large areas of the country;
 - c) a failure of relief agencies and the Government of Ethiopia to distribute adequate seeds in those areas where rains and climatic conditions would have permitted modest recovery in the recent meher (summer rains) season;
 - d) continued fighting in the northern part of the country, principally Eritrea, Tigray and portions of Wello, which has continued to disrupt food production in those regions;
 - e) failure of relief agencies to provide adequate agricultural inputs such as tools, oxen, etc., that would have increased harvests in those areas with normal or near normal conditions;

- f) disruptive agricultural programs carried out in certain portions of the country by the Government of Ethiopia, principally resettlement and a lack of financial incentives for agricultural recovery.
4. Many areas of the country are experiencing a "green famine", i.e., in areas where food production appears to be normal from visual observation, substantial food shortages are expected to occur. This is because:
- a) the amount of seeds planted in these areas is 20-40% less than normal;
 - b) in some areas, seeds were planted late and were unable to take advantage of the full rainy season;
 - c) in many areas, the meher rains ended early; thus, full maturing of the crops was not possible;
 - d) in certain highland areas above 2,000 meters, frosts occurred which partially damaged some of the standing crops;
 - e) crop blights, insect infestations, grasshopper attacks, etc., have further reduced standing crops; and
 - f) larger-than-average-sized families and high population densities in several of the food-producing regions create higher demands on the food per hectare than in other regions.
5. Approximately 1.3 million tons of food will be required for calendar year 1986 if all the food needs are to be met and extensive hunger is to be averted. This figure is based on:
- a) a nutrition-centered needs assessment;
 - b) a structural deficit of approximately 700,000 tons of food;
 - c) an estimated adjusted population of 40.2 million people;
 - d) the capacity of the transport system and its ability to move the tonnages required.
6. While agreeing in principle with many of the assumptions of food needs assessments of both USAID and the Ethiopian Early Warning System, the INTERTECT team finds that food requirements are actually higher than both previous assessments. The tonnages are higher than the USAID assessment because:

- a) the rains, which were normal during the USAID assessment, ended shortly thereafter, reducing harvests throughout the meher regions;
- b) geographic shifts in the famine have threatened new segments of the population which were not counted in the USAID report;
- c) substantial populations, such as returnees from Somalia, were not included in USAID estimates.

Tonnages are higher than the Ethiopian EWS assessments because large segments of the population that should be eligible for food aid are omitted for "official" reasons; these populations include persons living in small towns, persons ineligible because of quota systems, and certain political populations such as the refugees returning from Somalia.

(The INTERTECT assessment does not include persons who are currently being resettled, either from their original homes or in their new settlements.)

- 7. Analysis of the nutritional data tends to indicate that persons receiving food from the CRS or counterpart programs are showing improvement in their nutritional status. Extensive mortality information, however, is not available on a region-by-region basis. Therefore, it is difficult to tell what impact the aid is having on the country as a whole. Data from other sources do indicate, however, that the programs have had a substantial impact on alleviating famine conditions throughout the regions in which the programs are operating.
- 8. After one year of famine relief operations, the implementing agencies have established a solid operational basis which should permit tightening the criteria under which persons or families are admitted to the food programs. By applying stricter criteria, and with closer monitoring, the food distribution programs can be "fine-tuned" and more accurate recipient targeting can take place. These adjustments will make it possible to enroll many persons who should qualify for food aid and discharge many of those families that have experienced agricultural, economic or nutritional recovery. Even with the fine-tuning, however, it is not foreseen that the tonnages of food required on a nation-wide basis will be greatly affected, for those who are phased out can easily be replaced in equal number by those who should qualify and are not now enrolled.
- 9. In many areas, persons who have recovered (and in some cases persons who should have been ineligible) appear to have been kept on the rolls much longer than is

necessary. It is felt that stricter admissions criteria can now be established and many recovered persons discharged so that others in need can be enrolled.

10. The Northern Initiative Program, while relatively new, does appear to be having the intended impact of providing food in the conflict areas. However, the program has proved difficult to monitor and the actual impact on reducing mortality cannot be evaluated at this time. The relative impact of the program can be seen by the fact that large numbers of people have not moved into towns seeking food. Conversely, many people who did move to relief centers in the towns have returned to their villages to receive food there. In addition, the numbers of people who were projected to flee to neighboring Sudan have been substantially downgraded and, at this writing, large numbers of those currently in Sudan appear ready to return to Ethiopia. It is felt that, in part, this is due to increased food availability, not only from agricultural recovery during the meher season, but also to availability of food from the Northern Initiative.
11. Closer monitoring of the Northern Initiative Program could be achieved by modeling the population, monitoring burials conducted by the priests currently monitoring the program, and extrapolating that information to the general population. Such modeling will be necessary to judge the effectiveness of the program and make adjustments in the coming year.
12. The nature of the relief operations has changed due, in part, to the efficiency of the food distribution program. However, the underlying conditions that cause famine have only changed slightly. In several areas, massive needs will be clearly discernible (especially in Harerge and Wello). However, in most cases, the famine will be characterized by "pockets of hunger" scattered throughout the country. These pockets will be more difficult to detect since they will occur in the villages and remote areas.
13. An analysis of the underlying causes of famine in Ethiopia shows that:
 - a) the conditions that cause famine are still present in large sections of the country;
 - b) famine interventions have thus far played only a minor part in alleviating the conditions that contribute to famine vulnerability; and
 - c) if food aid were to be discontinued or substantially reduced in the coming year,

widespread famine conditions could occur in a relatively short period of time.

Overall, the famine has tended to shift geographically, moving generally in a more southern and eastwardly direction. The same trend has been noted in past famines.

14. Approximately 1 million tons of food can be imported in 1986 to meet emergency food needs without having a negative impact on agricultural recovery. However, imports above this level mandate that much closer monitoring of food distribution take place at the local level to ensure that agricultural disincentives do not occur.
15. In 1985, food aid had the demonstrated effect of lowering food prices in most regions of the country, but prices were not lowered below a level at which they would have been a major disincentive to agricultural production. This was due, in part, to the fact that substantial areas of unmet needs existed prior to the time when large-scale food distribution was established on a continuous basis throughout the country. In 1986, it will be imperative to monitor food aid levels more closely since moderate agricultural recovery has occurred in many areas.
16. Food imports are reaching the level at which possible disincentives to agricultural production could happen if proper targeting of food distribution and close monitoring of real needs is not carried out.
17. Closer monitoring of food needs should permit agencies to adopt a variety of alternative food distribution strategies. These could include food-for-work, cash-for-work, grain-sharing, and food coupon programs.

Implementing agencies should consider using a mix of these projects to lessen the likelihood that food distribution could create disincentives to agricultural production or that long-term food distribution could create perceived dependencies among the population. It is especially important that food-for-work schemes be carefully planned not to coincide with food harvests, and that special attention be given to ensuring that food distributed in FFW projects reaches those most in need, especially women and small children.

18. Criteria for selecting alternative food distribution programs and projects must be developed and adjusted according to the situation in Ethiopia. Uniform criteria should be developed and observed by all agencies receiving food through the CRS food distribution network.

19. A food buffer stock strategy will be necessary in order to combat the changing nature of food needs for 1986. The recommended strategy is for the implementing agencies to develop small buffer stocks in the forward areas which could be reallocated to meet various contingencies if and when they arise. If the food is not needed, it can be distributed in the normal program the following year. Other buffer stock strategies do not appear to be feasible, given the current political climate.
20. Buffer stocks will be required to meet the following contingencies:
 - a) The potential return of many non-refugee Ethiopians currently being fed in Somalia.
 - b) Former refugees who have returned from Somalia, currently being fed under the auspices of the UNHCR.
 - c) Persons who have been resettled.
 - d) Pastoralists in various regions who may enter the food program unexpectedly due to shifts in the drought or famine.
21. It is estimated that the logistics system currently in operation has enough capacity to handle the necessary 1.38 million tons of food, if it arrives at an even pace throughout 1986. However, if food shipping delays occur or if purchasing is delayed, congestion could occur in the ports or in the primary distribution system. It should also be recognized that the conflict in the north could cause the GOE to temporarily reallocate government trucks or vehicles from the national fleet, which could reduce the total capacity available to the relief operations.
22. Some additional trucks are required to improve the distribution system at the local level. Trucks of 5-10 ton capacity are especially needed in the Northern Initiative Program.
23. While the chance of creating dependencies is a major concern to all operating agencies, the creation of real dependencies has not yet occurred.
24. In those areas where dry-ration food distribution will continue for another year, it is important to give long-term food recipients a chance to maintain a degree of dignity while receiving charity. It is recommended that the practice of voluntary contribution be reinstated as one means of supporting this dignity.

25. If emergency needs arise, the available food can be stretched by utilizing several strategies to extend food aid. These include:
- a) improving the targeting of recipients and recipient communities;
 - b) discharging healthy children from the food rolls after they have reached a normal weight-for-height range for 3 months;
 - c) instituting a sliding scale for food distribution based on nutritional ratios for each individual case;
 - d) reducing rations in areas showing major improvements in food production;
 - e) reducing or halting food distribution immediately after the harvest period;
 - f) reducing all rations by 5%;
 - g) eliminating food-for-work programs and returning to strict dry-ration distribution; and
 - h) gradually phasing down food in each individual area until a demonstrated impact on nutritional status is noted.
26. Increased attention should be given to small-scale, locally-based projects that can reduce famine vulnerability for the future.
27. A number of government policies and programs appear to have a disruptive effect on agricultural recovery. These include:
- a) restrictions on the movement of food from surplus areas to food-deficit areas (controlled in part by government regulation and government-controlled sales under the auspices of the Agricultural Marketing Corporation);
 - b) absence of food price supports for subsistence farmers; and
 - c) forced resettlement.

Villagization, the government program of requiring peasants to move into small villages, does not appear to have had a substantial disruptive effect on agricultural production, nor has it resulted in a noticeable increase in production.

ORGANIZATIONS INTERVIEWED

Staff from the following organizations were interviewed in Ethiopia to obtain information for this assessment.

1. CARE
2. Catholic Relief Services
3. CONCERN
4. Ethiopian Catholic Secretariat
5. Ethiopian Evangelical Church Mekane Yesus
6. European Economic Community
7. Food and Agricultural Organization (UN)
8. Food for the Hungry
9. International Committee of the Red Cross (ICRC)
10. International Livestock Center for Africa
11. Lutheran World Relief
12. National Institute of Nutrition - Ethiopia
13. Rada Barnen (Swedish Save the Children)
14. Redd Barna (Norwegian Save the Children)
15. Relief and Rehabilitation Commission (GOE)
16. Save the Children (U.K.)
17. Save the Children (U.S.)
18. UNICEF
19. United Nations High Commissioner for Refugees
20. United Nations Office of Emergency Operations for Ethiopia
21. USAID
22. US Embassy
23. World Food Program
24. World Vision

ETHIOPIA



I. INTRODUCTION

A. TERMS OF REFERENCE

In November 1985, INTERTECT was retained by Catholic Relief Services to undertake an assessment of the food situation and CRS famine relief operations in Ethiopia. Specifically, the assessment was to:

- determine the current food situation in Ethiopia, identifying food needs and determining food availability in the country, and
- review the CRS famine relief operations and those of the agencies participating in the food distribution network managed by CRS.

In order to accomplish these overall goals, it was necessary for the team to carry out several associated tasks. These included:

1. An evaluation of the current estimates of food needs. Several agencies have recently completed food assessments, including USAID, the World Food Program and the Early Warning System of the Relief and Rehabilitation Commission of the Ethiopian government. Each arrived at different estimates; therefore, a primary task of the team was to evaluate each assessment and recommend figures upon which CRS food procurement could be based.
2. An evaluation of the nutrition data obtained by CRS and its counterpart food distribution agencies to:
 - determine if current levels of assistance are adequate,
 - identify areas where supplemental food assistance will be necessary, and
 - determine the relative success of the program in reaching those most in need, especially vulnerable groups such as young children, and pregnant and lactating women.
3. A review of the food distribution strategies that could be used in the upcoming year. Widespread concern about the possibility that food distribution programs might be causing dependencies and having an adverse effect on agricultural production requires review to determine if alternative strategies (such as food-for-work) are practical and feasible and, if so, what programmatic criteria should be developed and applied.

4. An examination of the logistics situation to determine the capacities of the overall system, especially in relation to the other food distribution programs within the country.
5. A determination of what program shifts might be necessary due to the changing nature of the famine, in terms of both geographic areas and program emphasis. Of specific concern is the possible need to establish food buffer stocks in areas where the harvests may be marginal to guard against the possibility that sudden agricultural calamities (such as insect infestations, an early end to rains, frosts in the highland areas, or other events) could cause a major shortfall in the amount of food expected.

B. DEFINITION OF FAMINE

Famine is a set of conditions resulting in the non-availability of food for large numbers of people which causes widespread, acute malnutrition. (Acute malnutrition is a state where the lack of food causes the human body to consume whatever is stored in the body, and which, left unchecked, will result in death.) Famine is not merely a deficiency of food, but often an absolute lack of food.(1)

It is important to note that famine is a set of conditions. These can include drought, war, political policies, crop failures, market effects, and general chronic hunger. It is also important to understand that drought is a contributor to famine and not the absolute cause.

There is a difference between famine and chronic malnutrition and hunger. Unfortunately, many countries (Ethiopia among them) experience continuous food shortfalls, resulting in widespread hunger among significant numbers of the population. Chronic hunger is caused by deficiency of food or by the lack of resources to acquire food that is available. It can lead to stunting of growth, physical deficiencies and an increase in infant mortality rates. While chronic hunger is a problem of major concern, different long-term developmental approaches are required to overcome it, rather than the crisis intervention needed to avert and correct famine.

It is also important to note that famines are generally a rural phenomenon. It is a paradox that the persons who produce food are those most likely to be affected. Rarely does famine spread into urban areas. This, more than any other factor, is an indicator of the underlying social causes of famine, and points out the inequities in the social fabric of a country.

Results of Famine

The consequences of famine go far beyond acute malnutrition. The most serious result is death for large numbers of people. Those most likely to be affected are the "vulnerable groups": children between the ages of 9 months and 5 years of age, and women who are pregnant and lactating. In short, death affects those who are least able to care for themselves.

Famines also increase the risk of disease. As the human body deteriorates, it becomes more susceptible to the diseases and vitamin deficiencies prevalent in developing countries. Of special concern are measles, cholera, diarrhea, tuberculosis, and xerophthalmia (Vitamin A deficiency).

Famine conditions result in economic hardships for the rural poor. This can include loss of cash, loss of livestock and, most importantly, loss of opportunity. As conditions persist, there can be an economic regression or "setback" for an entire community or region.

At some point, persons will be forced to leave their land and go elsewhere in search of food. This can lead to mass migrations within a country and, in cases of conflict, can lead to migration from one country to another. In 1984-85, Ethiopia witnessed both phenomena. Large numbers of people migrated to relief centers such as Korem, Ibnath and Makele, while several hundred thousand Tigraians and Eritreans crossed the border into Sudan seeking food.

The sum total of these effects, if left unchecked, can set the stage for the next famine. In other words, if corrective measures are not taken, vulnerability to famine is likely to increase rather than decrease.

The primary counter-famine intervention is provision of food. If food is not available from internal sources, it must be imported. When this occurs, the burden of developing more than simple feeding strategies falls on the donor community as well as the national government. This shared responsibility is important because food aid can only relieve the food needs and not eliminate the causes, nor in itself promote recovery. Furthermore, unchecked food aid can have adverse consequences, delaying agricultural recovery and creating dependencies on food aid. It is therefore of utmost importance that a balanced famine-fighting strategy be developed which includes not only provision of food aid, but also agricultural recovery and development assistance.

Vulnerability to Famine

Vulnerability to famine is also defined by a set of conditions: subsistence agriculture, socio-economic forces, political constraints, and susceptibility to natural events.

"An agricultural population must first be made vulnerable to famine by the socio-economic and political forces before any adverse natural factor initiates the process of food shortage that leads to famine."(2)

Why is subsistence agriculture so vulnerable? Figure 1-1 shows the inputs and requirements that are needed from planting until the harvest is sold. The nature of farming is such that there is continued risk and exposure to risk from the time that seeds are planted until the crop is harvested and sold. If any of the factors shown in Figure 1-1 at any one stage become a problem, the result can be a major shortfall or even total failure of the farmer's crop. Therefore, risk is not simply a function of weather, but rather of two dozen different factors occurring at different times in the planting/harvesting cycle.

Subsistence agriculture has the following characteristics:

1. Small and often fragmented land.
2. Primitive tools and implements.
3. Production geared to personal needs rather than to market needs.
4. Lack of alternative or seasonal employment opportunities.
5. An almost total absence of reserves of either grain or cash.

Therefore, as an economic activity, subsistence production may be defined as: production = consumption.(3)

In this situation, there is no area-wide specialization of production. Each peasant attempts to produce almost all that he needs. Diversification is practiced by the farmers not only as insurance against risk, but also as a means of self-sufficiency. Therefore, lands which could produce more of another crop must be devoted to producing consumables for each peasant's family.

The combined effect of subsistence agriculture is that farmers have no reserves of grain or cash. "Subsistence production is an activity in which peasants are perennially engaged in the struggle for existence in the most basic sense, that of producing what will keep them alive until the next harvest. Very often they fail to achieve that objective, their produce lasting them for only from 6 to 9 months. The poorer subsistence producers occupy marginal areas... Poor peasants cultivate land that is not only too small and fragmented, but also rocky and impoverished by overuse and misuse. For the vast majority of peasants, therefore, output is so low that grain reserves are simply out of the question."(4)

Linear Analysis of Subsistence Farming
Any One Can Cause Major Problems for Farming

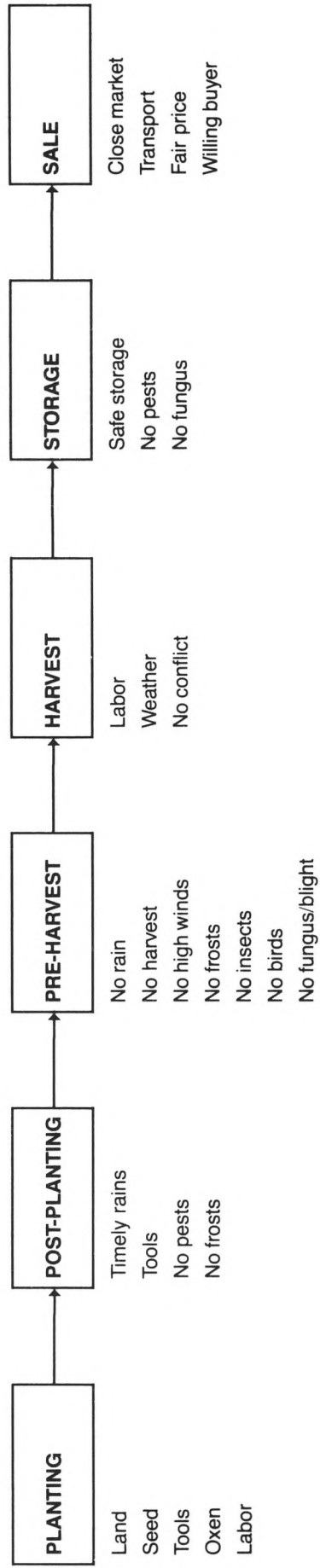


Figure 1-1

The fact that the farmers can produce no reserves for themselves means there are no reserves for rural communities. This in turn means that whole regions are perpetually vulnerable to famine without any corrective mechanism to release food into the rural areas when famine conditions begin to occur.

It is also important to note the role of agricultural policies in a subsistence production area. Any agricultural policy or program must have an incentive effect in order to increase production. The usual incentives used to begin the modernization of agriculture are:

- increasing the amount of money paid for crops produced (financial incentives), or
- increasing the amount of land that farmers can own (input incentives).

At present, however, there are many government programs which could have a disruptive effect. These include resettlement and villagization. In addition, some government activities or policies could have a disincentive effect on production. These include the famine taxes (farmers in producing areas are required to give a portion, which varies according to region, of their harvests to fight the famine), certain marketing controls that restrict the sale of food to the government-controlled Agricultural Marketing Board, and government-regulated sale prices which limit the amount of profit that the farmers can make for their produce. The last of these policies can also delay recovery by denying farmers the additional capital that is needed to invest in replacement seeds, draft animals and tools.

C. HISTORY OF THE PROGRAM

History of Famine in Ethiopia

Famine is not new to Ethiopia. While most outside observers focus their attention on the widespread national famines that occur with depressing regularity, studies have shown that famine conditions are almost always present somewhere in the country. Mesfin Wolde-Mariam, a noted Ethiopian geographer, has classified famines into three categories: local, regional, and national. In one twenty-year period (1958-1977), he noted that there were four national famines, twelve regional famines and four local famines.(5)

The first major famine which was systematically studied was the famine of 1882-92 caused by the spread of Rinderpest, a disease which affects cattle. By 1892, Rinderpest had killed approximately 90% of the Ethiopian cattle population. Without their cattle, especially oxen, the Ethiopian peasants could not carry on their normal farm operations. As a result, the famine swept the entire country. It is estimated that approximately 1/3 of the population died. The fact that the loss of only one

element of the agricultural inputs could induce such a tremendous loss of lives illustrates how precarious the Ethiopian subsistence farmer's situation had become by the beginning of the 20th century.

Famines continued throughout the early part of this century, yet attracted no major widespread concern on the part of outsiders. Famines came to the attention of the western world in 1958 and again in 1966, due in part to better communications and an increase in the number of persons from abroad living in Ethiopia. In 1973, a major famine struck Ethiopia which spurred a strong response from European and American donors; it also contributed to toppling the Haile Selassie regime and led to the installation of a revolutionary military government with a Marxist (pro-Soviet) orientation.

As a result of the 1973 famine, as well as increased international research and development in counter-famine activities, the Government of Ethiopia established an Early Warning System in 1974 to monitor drought and famine conditions and forecast when emergency interventions would be necessary.

During the period of 1976 to 1980, many changes to the basic agricultural production system were initiated by the Government of Ethiopia to increase agricultural production. Some of these measures included: establishing farmers associations (Kabeles) in every district of the country; establishing the beginnings of an agricultural extension service; and expanding the Relief and Rehabilitation Commission to each high risk area to detect food shortages and provide early warning as well as emergency relief measures.

At the same time that these positive measures were being taken, other more radical changes, which many feared would have a disruptive effect on agricultural production, were being introduced. These included: the establishment of government institutions to control food production and marketing; the establishment of price controls for basic commodities; and the restriction of sales of privately-sold foods to the awraja (administrative district) where they were produced.

Even more controversial were two additional actions that many outside observers felt would have a major disruptive effect on agricultural production: the nation-wide villagization schemes, and expansion of the government's resettlement program. Villagization is a scheme whereby persons living in the rural areas are moved into small clusters of between 20 and 40 families each to form small villages. The GOE has stated that the purpose of villagization is to bring the farmers together so that basic services such as water, sanitation and rural electrification can be provided. Villagization will also serve the purpose of freeing up for farming small amounts of land formerly occupied by the home site. In the larger settlements, it will also be easier to provide schooling and other general development services. Critics of villagization

point out that villagization may be disruptive, especially if it is carried out forcibly and if it is carried out during the planting or harvesting seasons. Hard data to support these claims is lacking, however. In most cases, people remain near their land and are able to work it even during the move. Others fear that villagization is the first step towards collectivization of farming, a step that many feel would be strongly contested by the farmers.

The resettlement program is far more controversial. Under this program, the Government proposes to reduce the density of the highly populated areas, especially those in the north, and resettle the populations to more fertile areas with higher annual rainfall. Resettlement plans call for moving approximately two million people over the next five-year period. Currently, certain highly populated zones in Tigray, Wello, Harerge and N. Sidamo are targeted for resettlement. (See Figure 1-2.)

The relocation program has recently come under much criticism over the manner in which it is being carried out. The program, which began under the Haile Selassie regime, gained major momentum as the famine spread in 1984-85. Many people point out that the program is disruptive, not only to the people being resettled, but also to the communities which they are leaving and to the new areas where they are being relocated. Some observers also point out that certain areas are agriculturally incapable of supporting the new settlements. During and after resettlement, these farmers are temporarily out of production and must depend on food donations in order to survive.

Other long-term developments have occurred which affect the overall food situation in Ethiopia. The most important of these is deforestation. Figure 1-3 shows the extent of deforestation in this century. The loss of this ground cover may be having a major effect on the hydrologic cycle (the process of water transpiration, evaporation and rainfall). Ethiopia historically has been blessed by high rainfalls, because the highlands deflect the air moving across the continent upward, and moisture, which has accumulated from the green mountain slopes, rises. When the air cools, the moisture condenses and falls back to earth as rain. However, as forests and other ground cover are depleted, there is less vegetation to accumulate the moisture and the rain that does fall quickly drains into the rivers which flow out of the country. Thus, each year there is less moisture to be lifted into the atmosphere and, therefore, less rain.

Deforestation has been compounded by ecological changes taking place in neighboring Sudan. Large-scale farming schemes along Sudan's eastern border have been initiated during the past few years. These have entailed massive deforestation in the zone between Khartoum and Kassala, south to the Blue Nile (see Figure 1-3). The result is that Sudan itself has been faced

with rapid desertification at a scale never anticipated by proponents of mechanized farming, and is now desperately seeking to reverse the process of desertification by reforesting large areas between Shouak and Wad Medani. While the exact impact of Sudan's deforestation and desertification are debated among experts, all agree that the impact of such rapid deforestation, if left unchecked, will be felt region-wide.

Another major contributor to the famine conditions has been the continuing warfare in the north. Eritrea (which is seeking independence), Tigrai (which is seeking greater autonomy), and various other liberation groups in Wello and periodically Gonder, have had a continuing disruptive effect on agricultural production. In many of the contested areas, the government controls only the larger cities and towns and their immediate environs. Many of the principal farm-to-market roads are periodically cut off by fighting, and principal arteries are occasionally mined, reducing the willingness of civilian truckers to routinely transit these roads. In the contested areas, the distribution of seed and fertilizers (such as they are) and efforts to increase agricultural production are all problematic. Once a famine starts, distribution of food to counter the famine is extremely difficult, especially if the food is being provided from the government side of the lines.

All of these conditions combined to set the stage for the famine which began in 1981.

Some relief agency personnel fear that the number of famines in Ethiopia has been gradually increasing. While it is probably too early to tell whether this is the case, it is clear that the number of people vulnerable to famine is increasing, as is the likelihood that regional famines could become national ones. Thus, the relative severity of famine is greater now than in the past. This is due primarily to an increasing population of vulnerable people, resulting in the further marginalization of agricultural production, and secondly to human-induced environmental factors, especially deforestation, that contribute to vulnerability.

Background of the Current Famine

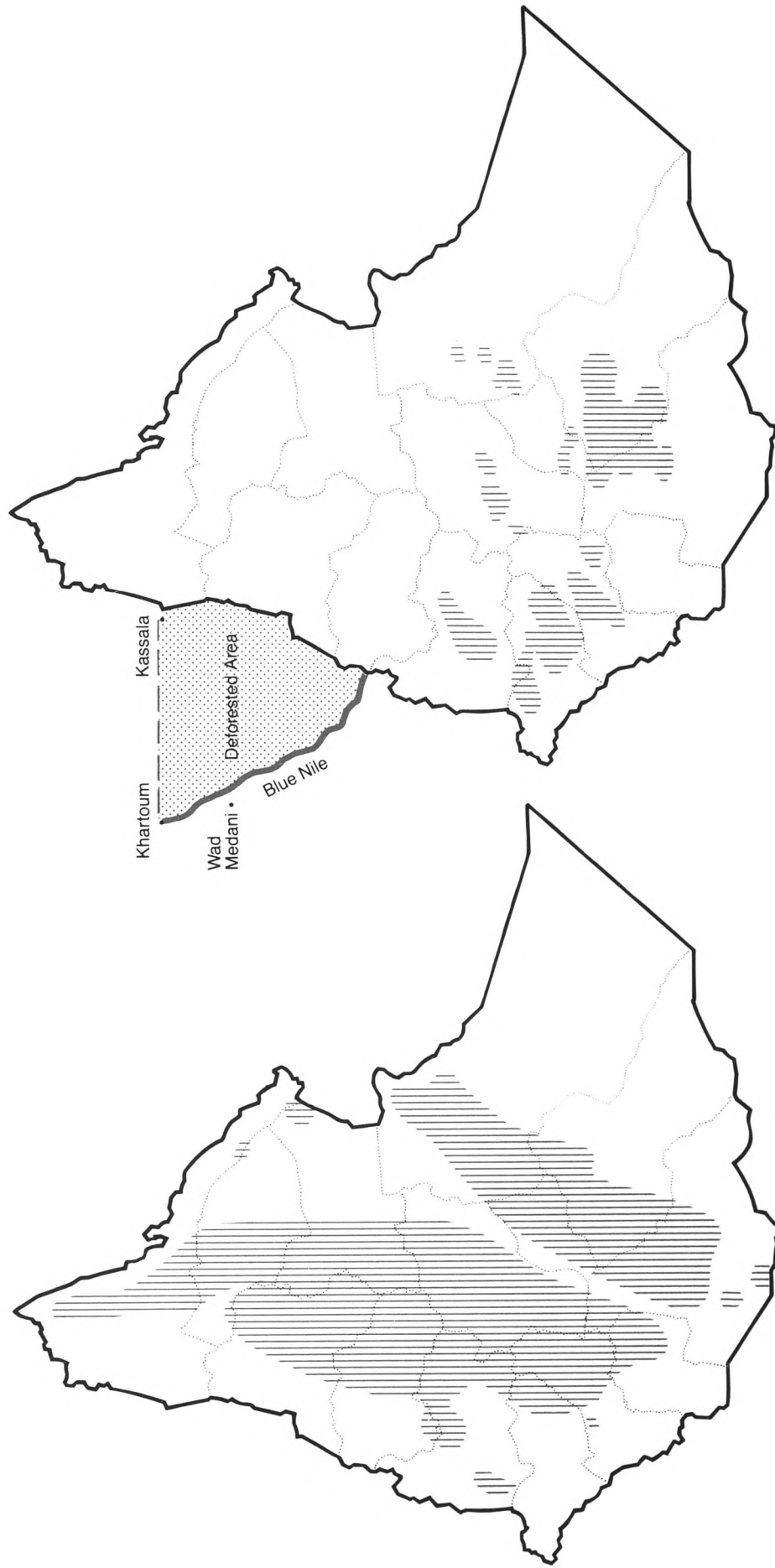
The current crisis has many parallels to the 1973 drought and famine, although the seriousness of current conditions in Ethiopia far surpasses that of prior situations. It is estimated that 7.9 million Ethiopians have been affected by the drought, with 5.5 million of these located in the northern provinces of Eritrea, Tigrai and Wello. This complicates the situation since, for many years, the northern provinces of Eritrea and Tigrai have been in revolt against the Ethiopian government and, at present, insurgent forces control a large portion of these areas. In Eritrea, insurgents currently control most of the province with government control limited to major towns and roads. In Tigrai, the insurgents control about 85% of the countryside. Prior to the buildup of famine

Ethiopian Resettlement Program



Figure 1-2

Deforestation — Past to Present



Forest Areas — Past

Forest Areas — Present

Figure 1-3

operations, international relief workers and other observers were able to obtain only limited access to the provinces in these regions.

The international relief community has been aware of growing food problems in Ethiopia since 1982. By the spring of 1983, over 3 million people in the four northern provinces (Eritrea, Tigray, Gonder and Wello) were suffering from large shortfalls of food. The Ethiopian Government's Relief and Rehabilitation Commission (RRC) reported in late 1982 that there was a major drought in northern Ethiopia and, during the same period, large numbers of people began to seek assistance in neighboring Sudan. However, some confusion between the RRC and the Ethiopian Department of Agriculture resulted in the delay of official requests for aid. In April 1983, the United Nations Disaster Relief Office (UNDRO) issued an appeal for 100,000 tons of food for 1 million people, and the League of Red Cross Societies appealed for 2.9 million U.S. dollars for supplementary food and other relief supplies for areas of Wello and Gonder.

Despite continued warnings and appeals throughout 1983 and into 1984, the official situation was confusing. The Ethiopian Government did not provide data to confirm the extent of food needs, and many agencies were convinced that ample food was either pledged by external donors or could be found from in-country stocks. Even the failure of rains in the spring of 1983, which led to a disastrous harvest in northern Ethiopia, failed to arouse much interest from major donors.

In December 1982, CRS requested 838 metric tons of food from USAID to initiate an emergency feeding program in Makele, the capital of Tigray. Six months later, in May 1983, the U.S. Embassy determined that the food shortage conditions constituted a disaster situation and made available \$25,000 in disaster assistance funds to enable CRS to start its emergency feeding program in Makele. In November 1983, CRS requested an additional 16,000 MT of food to maintain the Makele program and to expand into the neighboring province of Eritrea. Despite optimistic reports that the main fall (meher season) harvest of 1983 would be substantially better than previous years and would alleviate in-country shortages, the situation continued to deteriorate. In March 1984, U.N. officials indicated that existing food would last only through the end of May and estimated that Ethiopia would require an additional 125,000 MT of food for the year. In the meantime, the RRC indicated in March that an additional 400,000 MT were needed.

Throughout this period, USAID was cautious about committing large amounts of food assistance. The reasons were:

1. reservations about feeding people in the conflict areas where monitoring of the food aid program would not be accurate;

2. concerns about giving food assistance to a Marxist country, often at odds with the U.S. government;
3. concerns about committing large amounts of food where detailed and accurate assessment and verification of real food needs could not be accomplished and where the possibility of large-scale food diversions existed.

The third concern raised the most political problems for USAID. The GOE priorities were to feed the army, then the capital and other major urban areas. In addition, the GOE made no secret of its desire to use food aid to help feed persons who were being resettled through a program which is vigorously opposed for humanitarian reasons by the U.S. Government. For this reason, USAID often considered Ethiopian food aid requests for much longer periods than normal. These delays may have allowed famine conditions to spread much more rapidly than if large-scale food aid had been provided at an earlier date. Thus, by the fall of 1984, several hundred thousand Ethiopians in the northern provinces alone had already died and the food relief agencies operating in the country found it impossible to meet all the needs in their project areas.

The relief situation was not to change substantially until mid-September of 1984. At that time, senior voluntary agency officials informed USAID that they could not increase food aid without additional major assistance, and recommended that the U.S. begin channeling food aid through the Ethiopian Government. At the same time, other officials were reporting that the situation had reached crisis proportions and that hundreds of thousands of Ethiopians were at risk and likely to die even before food aid could arrive. At about the same time, the BBC aired a television documentary on the situation. This stirred world-wide concern and initiated the massive relief donations that propelled the donors and relief system into action.

Since Catholic Relief Services was already in the country and operating a food aid program, it was logical that CRS be one of the major consignees for all U.S. food aid. As more agencies responded to public pressure to become involved in Ethiopia, it became mandatory that some form of organization be developed through which CRS could supply these agencies with the food they required. For this reason, CRS and three other agencies (Lutheran World Federation, the Ethiopian Catholic Secretariat, and the Ethiopian Evangelical Church Mekane Yesus) formed a working group which was referred to as Churches Drought Action Africa. (The term CDAA is no longer used due to objections by the Ethiopian Government that it represented a new organization which was not officially recognized by the GOE. In this report the agencies working with CRS will be referred to as the "consortium" or as participating agencies.) The consortium divided responsibilities for managing the food relief operations throughout the country (see Figure 1-4) and began supplying food to smaller voluntary organizations in the provinces.

Divisions of Responsibility

Catholic Relief Services
Ethiopian Catholic Secretariat
Lutheran World Federation
Ethiopian Evangelical Church of Mekane Yesus

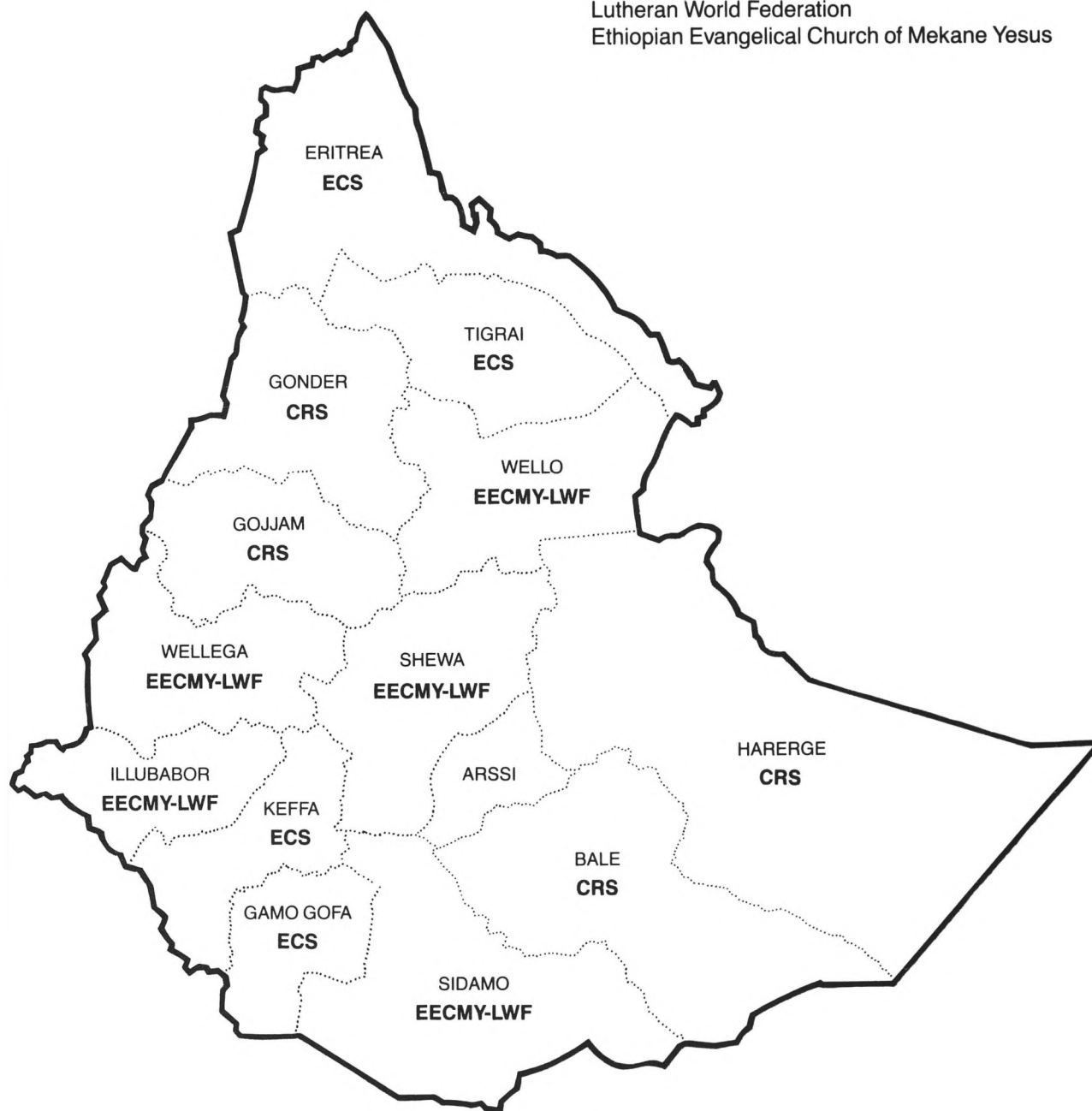


Figure 1-4

At present, twenty-nine agencies participate in the food distribution network managed by the consortium. CRS also operates feeding programs while serving as the consignee for, and distributor of food to, the other agencies. The consortium works in all the provinces except Arssi. The programs carried out by the consortium are in the government-controlled areas and are designed to provide food to persons or families where food monitoring can take place. In this report, this will be referred to as the "emergency program" to distinguish it from CRS's pre-emergency normal feeding program operating prior to May 1983, and from the special program for feeding famine victims in the nongovernment-controlled areas in the north, referred to as the "Northern Initiative".

How the Consortium's Program Works.

The following is a basic description of the way in which the agencies working in the CRS consortium receive and distribute their food.

The RRC's Early Warning System monitors food production levels in different areas. If food production drops, if agricultural prices increase above a certain point, or if livestock sales reach a certain level, the local staff is instructed to carry out a nutrition survey with help from the kabeles (local farmers' associations). The surveys, which use the middle upper arm circumference measuring method (MUAC), evaluate children under 5; if a significant portion of the children are found to have arm circumferences of less than 12.5 centimeters, a famine area is designated.

The RRC then invites relief agencies to start a program in the affected area. Agency representatives visit the area, calculate needs based on the numbers of children identified by the RRC survey, and apply to CRS for food to meet the demands.

CRS then submits a request to USAID for food. When USAID approves the food, the total tonnage available is reviewed and CRS makes an allocations list for the different agencies.

Food shipments arrive at one of three ports: Massawa and Assab in Ethiopia, and the port of Djibouti. The food is cleared from the ports by Maritime Transit Services Corporation, then sent to the primary distribution centers located at Nazareth, Asmara, Dessi, Addis, and Dira Dawa (by rail from Djibouti).

From the primary warehouses, food is sent by CRS-contracted lorries to secondary distribution centers run by agencies in the consortium. The food is then distributed directly from these centers or sent to tertiary warehouses for distribution in the villages.

To speed monitoring at the centers, only one child from each family is monitored. Families designated by the kabeles are instructed to bring their thinnest child to the distribution center when food allocations are made. The children are weighed and measured monthly and records of their progress are maintained.

The overall nutrition program is closely monitored not only by the staff of the implementing agency, but also by the nutrition staff of the consortium. (However, some of the agencies are slow in providing the needed data, so that regional and national trends are difficult to monitor.)

In those cases where families do not have children or where individuals are in need, they are grouped together in artificial families referred to as "destitutes". This classification is for administrative purposes only and, while the term is seen by many to be paternalistic, administratively the system works.

Assessment Concerns

In assessing the emergency program, there are several questions of concern:

1. Is food reaching the people most in need?
2. Could food be better targeted?
3. What appropriate alternative food distribution methods might be employed, such as food-for-work or cash-for-work, and what criteria should be used for admission to those programs?
4. What will be the level of need for the next calendar year?
5. Which areas will require food aid for the next year?
6. What trends can be seen from evaluating the program, especially nutritional trends, needs and geographic shifts of the program?
7. Is the existing logistics system adequate, especially the trucking fleet and warehouses?
8. Are the foods being provided appropriate and culturally acceptable?
9. What efficiencies or economies in the program could be made without an adverse effect on the food distribution program?

The Northern Initiative

The Northern Initiative is a special program established in mid-1985 to feed famine victims in the conflict areas of Tigray, Eritrea and parts of Wello. CRS is responsible for the Eritrean portion of the program. In 1983, the U.S. initiated support for a cross-border feeding program to supply food from Sudan to rebel-held areas in northern Ethiopia. The overall success of this program was limited, however, due to logistics problems and the tonnages that were available. By late 1984, the famine situation had reached such proportions that hundreds of thousands of persons were streaming into Sudan, and millions were estimated to be in a food crisis situation in the rebel-held areas. The Ethiopian Government made it clear that attempts to increase the amount of food coming in from Sudan were not acceptable. Thus, the U.S. sought permission to initiate feeding programs from bases in the GOE-controlled areas. After much negotiation, the Ethiopian Government agreed to a program whereby food could be placed at the forward edge of the government lines; local villagers would be allowed to pass through the lines to collect food and return it to their communities. It was hoped that this program would feed the famine victims and keep people from becoming refugees or displaced persons.

The program works as follows: CRS delivers food to remote sites in the government-held areas and works through local churches to handle and monitor distribution. Village elders identify people in the villages that are in need of food and prepare lists of the affected families. These are submitted to church food aid officials who then prepare estimates of the monthly tonnages required. On appointed dates, villagers come through the lines to collect the food and return to their villages.

Priests cross the lines and monitor the village distribution, although the monitoring is problematic (see Section V). By December 1985, approximately 3,000 MT of food per month were being distributed by CRS in Eritrea for a target population of 200,000 people.

Food aid has reached towns that have been completely cut off by the insurgents. Towns with airstrips, such as Barentu, have been supplied by C-130s. To some extent this may be more a result of availability of aircraft than of the government's inability to control the roads. The government claims that, if necessary, it can open the major roads to the feeding centers. The ICRC has had experience of delivering food to the isolated areas, using their own convoys, without undue incident.

Questions of concern in the monitoring of the Northern Initiative Program are:

1. Does the food actually reach the people most in need?

2. How is nutritional status being affected?
3. What is the real level of need, and can all those in need be reached?
4. Are the distribution sites well-situated?
5. Can food be supplied to the remote, encircled sites after the airlift is terminated?
6. Do protection problems exist, i.e., are people who are crossing the lines harassed by either government or rebel forces?

D. MAJOR ISSUES TO BE EVALUATED

The following is a summary of the major issues that confront the overall relief effort and affect the CRS program for 1986.

1. Why is food aid still needed? Donors are aware of reports that many aid programs are winding down. News media have reported that many people have left the major feeding centers that made headlines only six months ago. Yet total food aid requests remain high. In this environment, many donors are asking why food aid is still needed.
2. How much food aid is required? Donors, especially those that are showing signs of fatigue with the entire situation, are asking how much food is absolutely necessary for 1986. They argue that fine-tuning the program should result in a reduction of food aid requests.
3. How long will food aid be needed? Donors are concerned that food aid not continue indefinitely. Some are concerned about the government's capacity to monitor and handle distribution; others are concerned about possible dependencies; while others are simply ready to pull out if short-term needs can be met. All hope to see a situation where food aid can be phased out or substantially reduced in the short term.
4. Where in the country will food aid be most needed? Recognizing that food aid requirements may be shifting, donors and operational agencies alike are concerned about where the primary needs will be for 1986. Is the famine shifting and, if so, which new areas will need massive assistance in the next year?
5. Where will the food come from? Operational agencies are understandably concerned that pledges of food aid are running below the forecast needs. The U.S. Government has pledged to meet 1/3 of the total food aid requirement but, for political as well as

administrative reasons, has declined to promise more than that target. The other donors (including Canada, Australia and the EEC) have not announced their commitments as of this writing, but indications are that the tonnages they can or are willing to provide will not total the additional 2/3 required.

(1) Mesfin Wolde-Mariam, Rural Vulnerability to Famine in Ethiopia (New Delhi, Vrikas Press), p. 8.

(2) Ibid., p. 14-15.

(3) Ibid., p. 23

(4) Ibid., p. 24

(5) Ibid., p. 154.

II. THE RELIEF SETTING

A. THE TERRAIN

Ethiopia comprises approximately 1.2 million square kilometers of diverse terrain, consisting of forests, tropical woodlands, grasslands, savannas, swamps and semi-desert areas. The country's elevation varies from 120 meters below sea level in the Danakil Depression in the northeast, to about 4,620 meters above sea level at Mount Ros Dejen in the north central part of the country.

This broad range in elevation forms three distinct environmental zones: the cool highlands, the temperate midlands, and the hot lowlands.

The highlands consist largely of severely dissected plains and precipitous hills and mountains, as well as high plateaus extending almost continuously over central Ethiopia in a north to southwesterly direction. Elevations range from 2400 meters to 4620 meters.

The midlands consist of rugged terrain and plateaus surrounding the highland mass. Elevations range from 1800 to 2400 meters.

The lowlands consist generally of rugged but less abrupt land forms. They include the coastal lands in the northeast and land along the periphery of the country bordering Djibouti and Somalia in the east, Kenya in the south, and Sudan in the west. Elevations range from sea level to 1800 meters.

Figure 2-1 illustrates these general areas.

B. THE AGRICULTURAL SECTOR

The bulk of Ethiopia's food production comes from small subsistence farms located in the highlands, the midlands and the upper lowlands. Farmers in the highlands and parts of the upper midlands produce mainly teff, wheat and barley. Farmers in the midlands and upper lowlands produce mainly maize, sorghum and millet. Enset or false banana, a root crop, is another staple important to people in the southwest. Both highland and midland areas also have grasslands to carry livestock.

The lowlands are largely grasslands, unfit for most crop production activities, and are used primarily for grazing the livestock of migrating pastoralists.

All of the cropping areas depend on timely, adequate rainfall. (There is little or no irrigation in Ethiopia.) For most parts of the country, this rainfall occurs between February and May (the "belg" rains), and again between June and December

(the "meher", or main rains). The belg rains are inconsistent and generally unpredictable throughout most of the country. However, in some parts of the country, they are more consistent and are responsible for the belg cropping season where shorter maturation crops such as wheat, barley, some varieties of teff and vegetables are grown. This belg season can produce up to 280,000 metric tons of food during normal years.

The meher, or main season, rains are responsible for producing the bulk of the food crops in Ethiopia. Teff, wheat and barley are grown during this season, as well as maize and sorghum (longer-maturing crops) that are planted towards the end of the belg rains. This main cropping season accounts for 6 to 7 million metric tons of food during normal years. (See Figure 2-2.)

C. POPULATION DISTRIBUTION

Of the 40.2 million people making up the population of Ethiopia, approximately 87% (35.0 million) live in a rural setting, while the remaining 13% (5.2 million) live in urban areas. The rural population consists of farmers and pastoralists, the latter comprising approximately 10-12% of the rural population, or 3.5 to 4.2 million people. Most of the pastoralists live and migrate with their livestock in the lowland areas, while the remainder of the population lives scattered throughout the rugged, mountainous terrain of the cool highlands and temperate midland areas.

Figure 2-3 indicates the approximate densities of the population. By comparing this map with Figure 2-1, it is clear that the majority of the population lives within the highland and midland areas.




D. LOGISTICAL PROBLEMS

Figure 2-4 is a schematic illustrating common problems and where they might occur in a typical logistics system. The diverse, rugged terrain and wide dispersion of the population in Ethiopia pose additional logistical problems for relief operations.

Food enters Ethiopia via one of three ports: Massawa, Assab, or Djibouti. Food arriving at Djibouti enters Ethiopia via rail from Djibouti to Dira Dawa in Harerge. The food is then taken overland via the road system.

Ethiopia's road system consists of approximately 12,300 km. of main, all-weather roads (i.e., paved or gravel roads) and approximately 24,000 km. of secondary feeder roads and trails, which are generally usable in dry weather only.

Altitudes

-  Lowlands (less than 1800 meters)
-  Midlands (1800-2400 meters)
-  Highlands (+ 2400 meters)

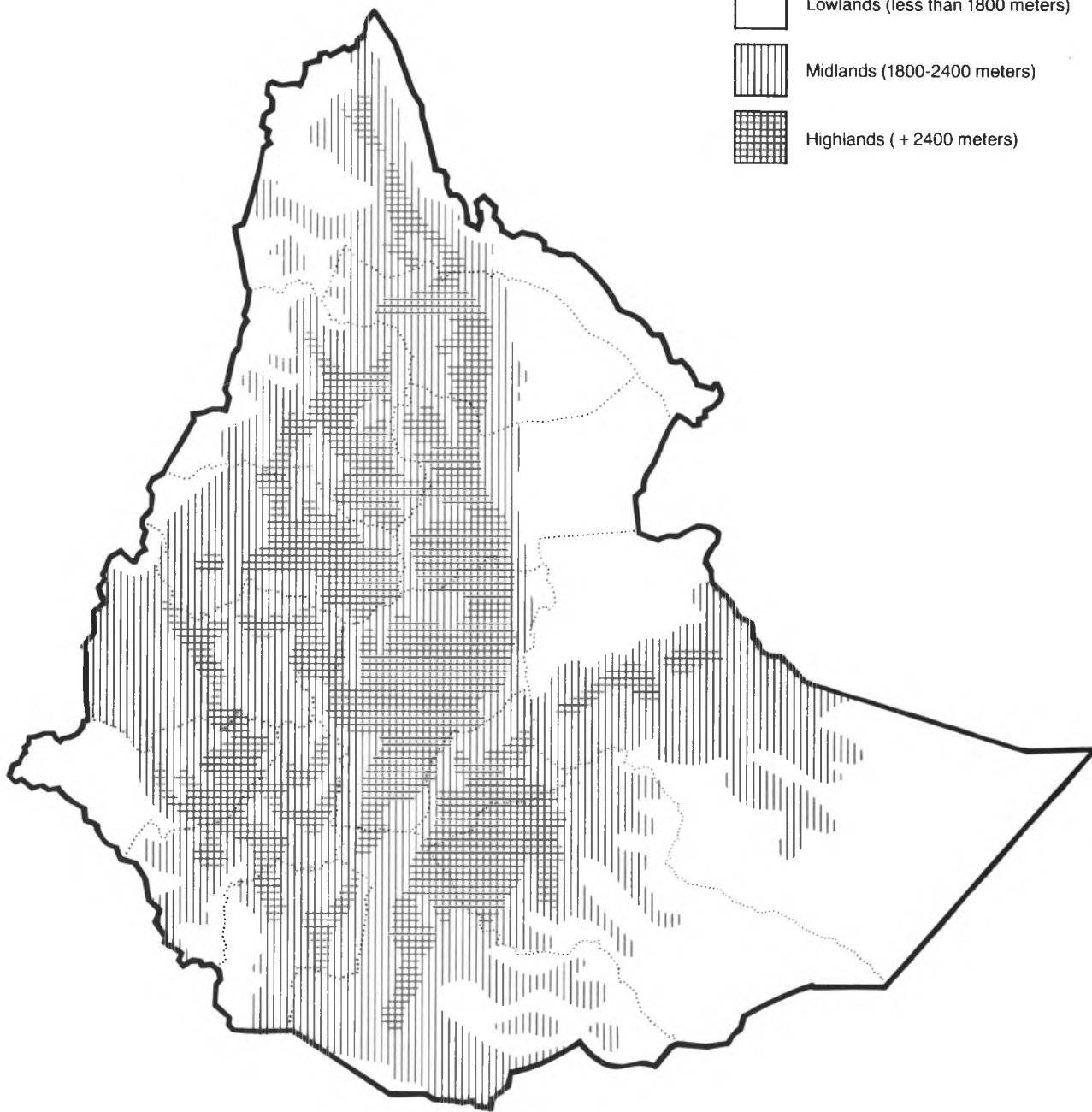


Figure 2-1

**Food Production
Cropping Areas**





-  Non-cropping areas; pastureland
-  Maize, sorghum, millet
-  Teff, barley, wheat
-  Enset



Figure 2-2

Population Densities

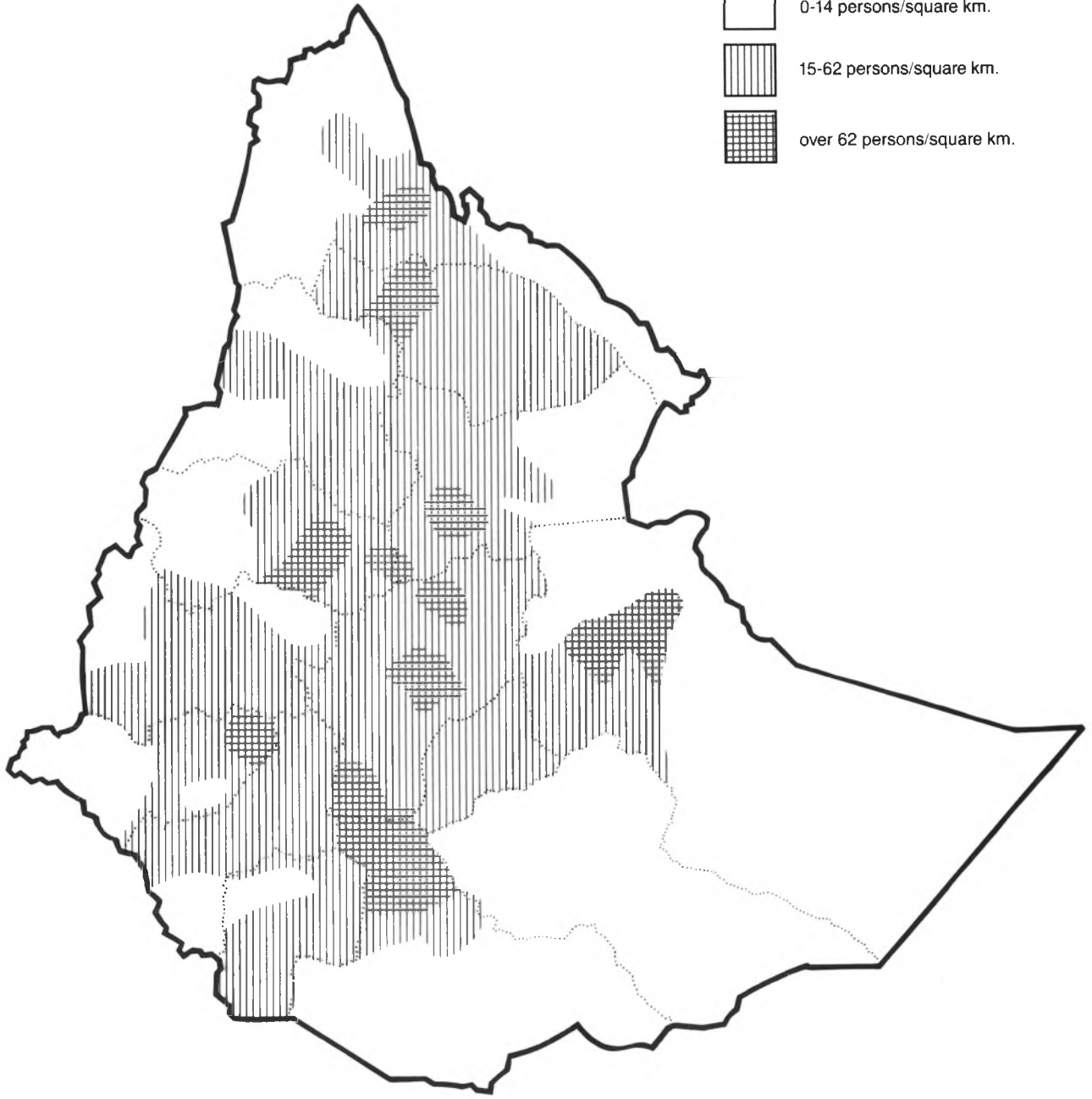
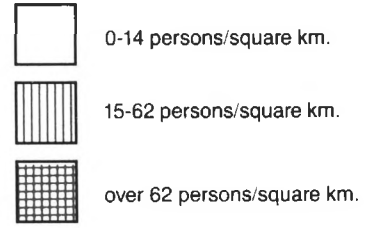


Figure 2-3

SCHEMATIC OF LOGISTICS SYSTEM AND EXPECTED DELAYS

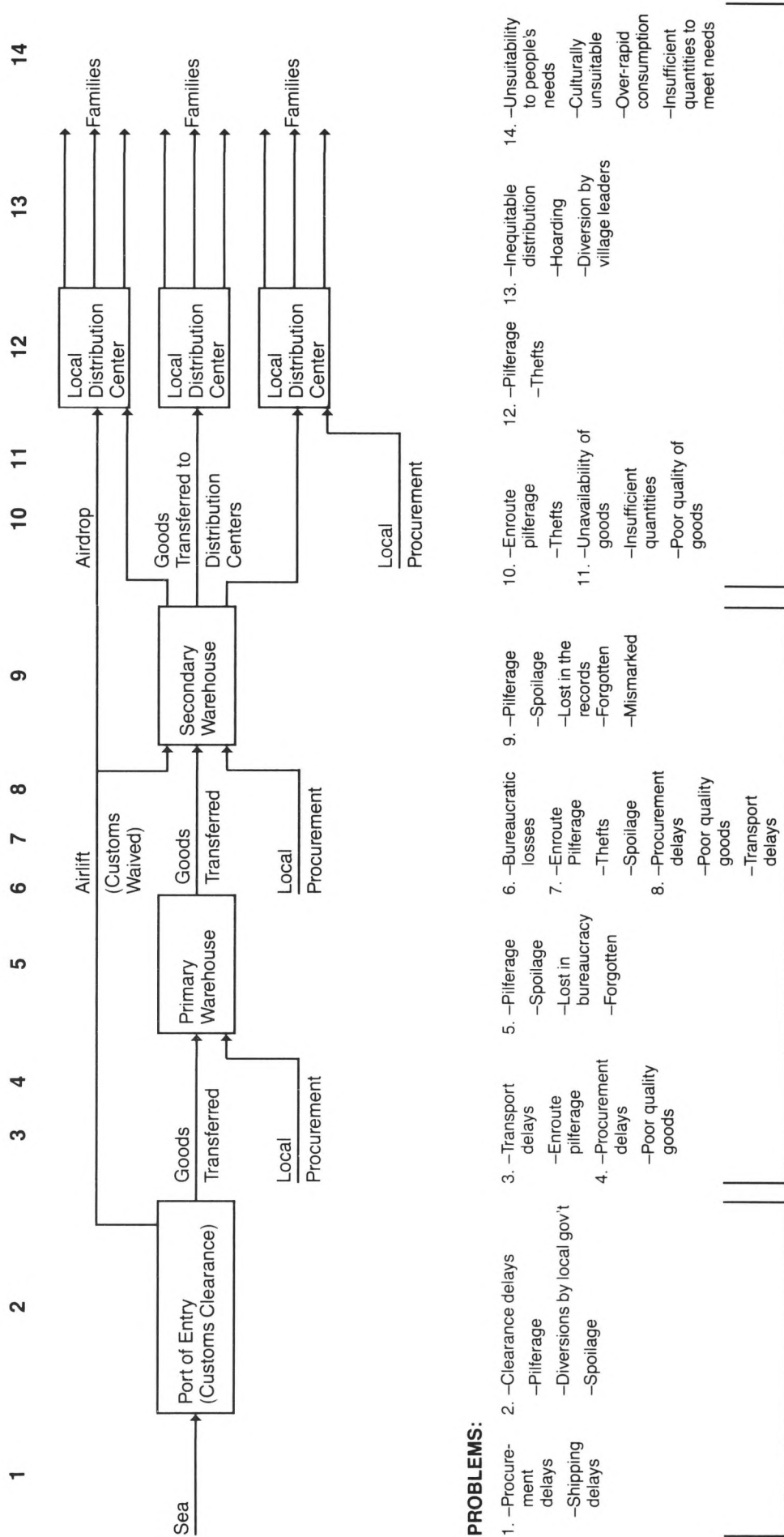


Figure 2-4

Distribution Centers

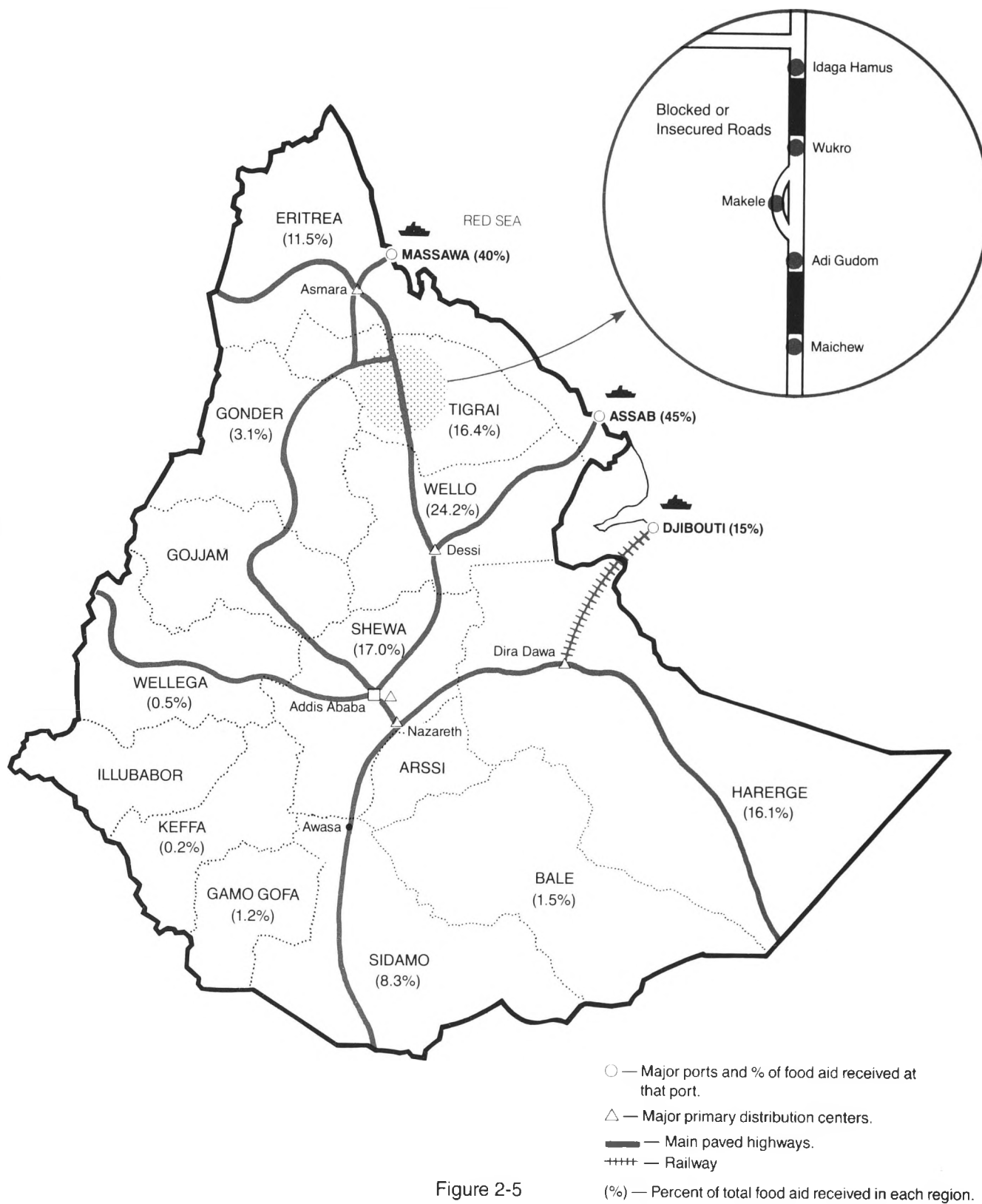


Figure 2-5

○ — Major ports and % of food aid received at that port.

△ — Major primary distribution centers.

— — Main paved highways.

++++ — Railway

(%) — Percent of total food aid received in each region.

There are two main paved highway systems. The first runs from the port of Massawa in the north, to Asmara, and then south through Dessi, Addis Ababa, Awasa, and finally to the Kenyan border. (Currently, the portions of this road from Idaga Hamus to Wikro and from Adi Gudom to Maichew in Tigray region are cut off due to civil conflict in the area. Much of the food aid going into this area has been delivered by air.) The second main highway runs from the port of Assab, southwest to Dessi, then south to Addis Ababa. (See Figure 2-5.)

Most sections of these main highways are in fair to good condition. Conditions of other paved roads are poor to fair. All-weather gravel roads are generally in poor to fair condition.

The bulk of the food aid (approximately 85%) coming into the country is transported on these two main highways by truck to the primary storage warehouses. These warehouses are located at Dessi, Addis Ababa, Nazareth and Asmara.

The remaining food aid (approximately 15%) enters the country via a port in Djibouti, and is delivered to a primary warehouse at Dira Dawa by approximately 780 km. of railway. The supplies are then delivered by truck from the primary warehouse to secondary warehouses and food distribution centers.

Four to five months will have elapsed from the time a food order is requested from a donor country until that food arrives in the secondary distribution centers. Three to four months are required for the donor country to process the request and deliver the food to one of the three ports. Food is then offloaded at an estimated maximum rate of 150,000 MT/month (see Appendix C) and delivered by truck or rail to the primary warehouse centers, the secondary warehouse centers, and the food distribution centers throughout the country. Then food is distributed to the recipients. (It is estimated that 3/4 of all farms are more than 1/2 day's walking distance to the nearest road or distribution center. This puts an increased burden on the people when collecting food aid.)

This process of food delivery, from port to distribution center, takes approximately one month. Although port off-take rates, port take-away rates, warehousing capacities and trucking fleets have been insufficient in the past, they are now considered adequate to meet these needs.

Approximately 1.25 million MT of foreign food aid entered Ethiopia during 1985. Figure 2-5 also indicates the approximate percentages of tonnages delivered at each port, and the approximate percentages of tonnages distributed to each region during 1985.

E. POLITICAL CONSIDERATIONS

All counter-famine operations are carried out in a complex political environment. Since 1974, Ethiopia has chosen to embark on a course designed to move the country from an inefficient feudal society to a centrally-governed Marxist state. This choice on the part of Ethiopia's revolutionary leadership has led to a decline in development assistance, declining foreign investment, and more difficulty in obtaining the necessary loans needed for industrialization and modernization of the agricultural sector. Relations between the GOE and the western countries that supply most of the food aid have been rocky since the 1974 revolution.

Relations with the United States have been particularly troublesome (the United States has had only a Charge d'Affaires there since 1979) and have not only affected development assistance but also accounted in part for the delay in initial famine response. A particular obstacle to diversification of assistance until recently was the fact that Ethiopia had not paid compensation to American interests which were expropriated in the wake of the 1974 revolution. The Hickenlooper Amendment, which states that development assistance cannot be provided to any country which fails to compensate American firms for expropriation, has been cited as the primary reason why more sophisticated rehabilitation and longer-term agricultural recovery programs have not been supported with financial assistance from the U.S. In December 1985, the U.S. and the Ethiopian Government reached an accord whereby Ethiopia agreed to pay compensation, although at this writing it is not clear if this will have the immediate effect of making more development and agricultural recovery assistance available.

As an offshoot of fundamental differences in approaches to development, other political considerations abound. The following are some of the more important that affect overall famine relief operations.

1. Western opposition to the Marxist government has had two major effects on the relief environment. First, it has meant that foreign assistance has been channeled primarily through foreign voluntary agencies rather than through the Government of Ethiopia. While the voluntary agencies have done a commendable job in the famine, their own resources are limited and many operations were conducted on an ad hoc basis. Normally, in a situation of this magnitude, the host government would be the primary channel for relief aid, and the tremendous duplication of administrative services, personnel, etc., (and administrative costs) would be substantially reduced; furthermore, internal communications and the ability to transfer resources to meet various contingencies would be facilitated.

Second, reliance on voluntary agencies instead of the GOE means that long-term experience in famine operations management cannot be achieved. This is unfortunate because Ethiopia is likely to continue to experience drought and famine conditions for the foreseeable future. Development of stronger institutions could play a major part in lessening the effects of famine in coming decades.

2. Western, and especially U.S., opposition to resettlement has had several effects on relief operations. First, in order to reduce attention to the resettlement program, the Government of Ethiopia has administratively decided to exclude persons targeted for resettlement from immediate food assistance. This means that substantial numbers of people in Tigray, Wello and Harerge (three of the most affected areas), as well as Keffa, Wellega and N. Sidamo, are excluded from the food rolls. In many cases, this has resulted in hunger for those who are targeted.

Second, people who have been resettled are not eligible for food assistance with food supplied by the U.S. Government. The unavailability of American food has had no visible effect on the GOE's plans to continue resettlement. Some critics claim that, for those being resettled, the burden is even greater, since food is often not available when they arrive at relocation sites. The few foreign agencies working at relocation sites have tended to be smaller agencies with far more limited resources and are incapable of providing the levels of food needed to prevent hunger in the relocation settlements.

3. The Ethiopian Government's food allocation priorities during times of shortage have been: (1) the military, (2) the urban populations, (3) resettlement, and (4) those in government-controlled rural areas. Most western countries, especially the United States, have criticized these priorities since the massive famine has principally struck the rural areas, many of which are not controlled by the government. The government has demonstrated its priorities by confiscating food from several of the regional warehouses where it is held in reserve for the rural areas, and diverting it to the military and to urban areas. As a result, the United States ceased to support the concept of regional buffer stocks (the "strategic reserve") which is an important famine-fighting measure, particularly at this stage of the famine.

The inability of the RRC to maintain control over food stocks and prevent them from being confiscated or diverted by the GOE has also resulted in a further decline of U.S. Government support for the RRC. In

fiscal year 1986, no food allocations have been made to the RRC. At a time when many of the smaller agencies are unable to continue their programs due to a lack of resources, it would be advantageous if the RRC could move into these areas and continue food relief.

4. American opposition to forced villagization has been felt in several ways. First, major donor assistance is unavailable to people who have been forcibly moved to villages. Second, longer-term economic assistance, which could help the villagers to recover and to adjust to their new way of life, cannot be approved if the source of funds is the U.S. Government. Again, the lack of aid to these programs has not had a discernible braking effect on villagization plans. And some critics have stated that the policy of non-support of persons who have already been moved into the villages is "punishing the victims". In areas such as Harerge, where 98% of all rural people are now living in the new villages, the policy appears to be especially limiting, and several organizations have mentioned that the major donors could have far more leverage with the GOE if they were providing limited development assistance for the new settlements.
5. The numerous restraints on recovery and development assistance are the most constraining to overall recovery. Agencies are forced to remain in a relief mode beyond the normal period. At this stage of a famine, relief agencies should be shifting the majority of their efforts to long-term, structural changes that will increase food production, reduce future food deficits, and provide means for responding to future food crises. Interventions to achieve these objectives are both costly and long-term, and must be initiated at this stage. Without whole-hearted U.S. participation, it is unlikely that much progress can be made in the near term to solve many of the root causes of continuing food shortages, for the U.S. not only has the resources, it also has the technology and know-how.
6. The most important political consideration by far is a decision by the U.S. to support only one-third of the total food requirement for 1986. Officially, the reasons stated for the American decision is that other donors can and should meet the other two-thirds requirement. It is pointed out that the U.S. is currently supporting many other countries in Africa, especially Sudan, and that the burden should be more equally distributed among donor nations. Privately, many top USG officials have stated that the U.S. wants to reduce its exposure in Ethiopia and, by limiting the percentage of food aid, to underscore American dissatisfaction with overall Ethiopian agricultural policies and national priorities. These

officials point out that, while the U.S. has assumed and will continue to assume a humanitarian burden, it is not prepared to further support a government whose basic policies are diametrically opposed to or at variance with U.S. government policies and practices.

The overall result of the "one-third decision" remains to be seen. Several of last year's major donors (including the EEC, Canada and Australia) have indicated that they are either unwilling or unable to supply the amount necessary to equal the other two-thirds of the food. The principal donors have been meeting to determine the level of food required and to allocate donations. However, if these matters are not handled quickly, serious shortfalls could occur by mid-April 1986. The lag-time from approval of the food request to the time when it is delivered to the distribution centers is four to six months for American food, seven to eight for Canadian and Australian food, and up to one year for EEC food.

Political constraints imposed from the Ethiopian side have been just as problematic. In the north, the major priority for the GOE is the war, and government attention to famine operations has taken a lower priority. This has been felt in the logistics system. During 1984 and 1985, government trucks were often unavailable for relief supplies because they were being used for military cargoes or because government authorities were reluctant to allow them to travel along routes that might be mined. This resulted in large areas receiving minimal food until adequate trucks could be provided by relief agencies or until airlifts (and in some cases airdrops) could be arranged. The air supply operations in the north became quite extensive during the last six months of 1985, with over a dozen large aircraft (predominately C-130s) participating at one time. Later, the GOE permitted food to be flown into sites such as Barentu and Mekele for distribution by the Northern Initiative program. However, in some areas the extremely formidable terrain prevented large amounts of food from reaching isolated pockets. Requests by several agencies to airdrop food to those settlements were rejected by the GOE on military and political grounds. (Extensive airdrop operations were permitted, however, in government-controlled areas, and many remote villages which otherwise would not have received food were able to receive much-needed supplies.)

A major set of constraints to famine recovery has been the GOE's unwillingness to even temporarily terminate many of its restrictive agricultural policies. Two major constraints are the government policy requiring farmers to sell the major portion of their crop surplus to the government (often according to a quota system), and restricting farmers from selling the remainder of their crops in areas outside the awraja where they were produced. The first policy is considered to have had a

disincentive effect on production; by having to sell the majority of their crop surplus to the government at reduced prices, farmers have not been able to acquire the capital needed to purchase seeds, draught animals or farm implements lost during the drought. Therefore, full agricultural recovery will be more difficult in the most severely affected regions.

The restrictions on free-market sales of the remaining food have had the effect of lessening the flow of food from areas where moderate surpluses were produced into areas where deficits exist. In some areas, the combination of policies has resulted in farmers hoarding surpluses or secretly channeling them into areas where they can be sold on the black market.

F. BASELINE STANDARDS FOR THIS REPORT

The findings of this report are the result of numerous interviews; the review of literature, reports and previous assessments; site visits; and the establishing of baseline standards. The baseline standards were established using available information that the team believed best reflected the situation in Ethiopia. The following is a summary of the baseline standards used in this report.

1) Nutritional Standard

An average per capita daily caloric intake of 2100 kcal is recognized as the minimum required for long-term nutritional maintenance and stability.

An average per capita daily caloric intake of 1500 kcal is recognized as the minimum required for short-term emergency sustenance of life.

(See Section IV for details.)

2) Population Base. For the purpose of this report, the following populations are recognized:

rural population = 34,952,776
urban population = 5,282,688
total population = 40,235,464

(See Appendix A for details.)

3) Structural Deficit. Based on the nutritional standard and the population base above, the structural deficit is determined to be 704,925 MT.

(See Appendix B for details.)

4) Logistics Standard. Based on various information sources, the following logistics standards are recognized:

- a) Maximum average take-away capacity for all 3 ports is 150,000 MT per month.
- b) Available CRS secondary warehouse storage capacity is 88,250 MT.
- c) CRS 1986 haulage capacity is 21,673 MT per month.

(See Appendix C for details.)

III. REVIEW OF PREVIOUS ASSESSMENTS

In an attempt to preview and facilitate planning for anticipated food needs in 1986, USAID, FAO, CSO and RRC have all issued food needs estimates based on recent studies. A brief review of each assessment follows.

A. USAID

David Atwood issued a report to USAID in September 1985 estimating Ethiopia's anticipated 1986 emergency food requirements. His report was based on 3 weeks of preparation and interviews in Washington and 7 weeks of field work in Ethiopia during August - September.

The report is an extremely well-written and well-organized account of the possible food shortages likely in Ethiopia in 1986. (Much of the information used in this report is based on his findings.) The report's methodology is appropriate for estimating the overall national food needs of Ethiopia. It bases its food consumption estimates on past actual consumption estimates during periods of relatively normal food production, and its crop production estimates are based on past production estimates (a "normal" production year being the average production of the 1979/80 - 1983/84 period) and a regional percentage upgrading or downgrading depending on field observation. Information is taken from CSO/EWS reports, FAO reports, interviews and field observations. Given the assumptions that he chose to use, his methodology is clear, logical and appropriate for arriving at a good indication of food requirements.

However, several issues have been incorporated into his methodology which may create a less-than-accurate picture of 1986 food needs, and Mr. Atwood is the first to point these out. First, the fact that his assessment was based on field observations carried out in August and early September allows the possibility of huge discrepancies in estimated and actual crop production during the 1985 meher harvest. Mr. Atwood's estimated 1985 crop productions were based on continued favorable climatic conditions, which in fact did not take place in many areas.

Second, he points out that the methodology incorporated into his report was an attempt to determine an estimate of total national food needs, and not necessarily to point out specific food need issues on a regional or sub-regional basis. His report therefore assumes food flows from surplus areas into deficit areas, which may or may not be the case, depending on the areas and their political and logistical frameworks. (We have used the Early Warning System estimates of needy populations as an indicator of food flow.)

Third, estimates of basic per capita food requirements assume normal average per capita daily consumption of main foods to be 1561 kcal (446 gms). Allowing for an additional per capita daily consumption of 207 kcal from foods other than main foods (as he has estimated), then the total normal average per capita daily consumption of all foods is 1767 kcal. If we assume that our normal long-term maintenance caloric intake requirement of 2100 kcal is appropriate, and that our emergency caloric intake requirement of 1500 kcal is appropriate (both were defined as baselines in Section II-F of this report), then the 1767 kcal normal average daily per capita intake suggests:

$$(x)(2100 \text{ kcal}) + (1-x)(1500 \text{ kcal}) = 1767 \text{ kcal}$$

$$x = 44.5\%$$

or that only an average of 44.5% of the population are getting the minimal long-term maintenance caloric intake (2100 kcal), and an average of 55.5% of the population is getting only the minimal emergency caloric intake (1500 kcal) (see Appendix B for explanation of similar argument). We hope that this is not the case, and believe that it is likely not true. This would suggest that either the population figures used in the report are probably too large, or that food availability is actually greater, or a combination of the two.

B. FAO

FAO attempts to estimate crop production only, and does not attempt to analyze the food requirements of the Ethiopian population. The methodology is based on field measurements and observations of critical and representative farming areas of Ethiopia, as well as interviews with farmers and key personnel, and a review of CSO/EWS statistics. This information is then "weighed", and estimates representative of the areas are made and compared to a "base" or "normal" period. (FAO uses an average of the 1980-81 and 1982-83 crop production statistics as its "average normal" year.) A national crop production forecast is then estimated.

The FAO mission has made two previous crop assessments in Ethiopia in recent times, the last being in October 1984. On both accounts, their assessments proved to be "on target", i.e., actual past harvest findings supported the Mission's previous crop assessment. It therefore appears as though the FAO crop assessment teams have a good understanding of the Ethiopian agricultural sector and that their methodologies are appropriate for determining accurate crop production estimates.

C. Central Statistics Office (CSO)

The CSO puts out good information annually on crop forecasts and crop estimates for each region, based on quantitative estimates of area planted, yield and production. Their staff is stationed throughout each region to carry out extensive programs

of data collection. This information appears to be a very good representation of overall crop production, based on samples taken from thousands of farms.

Interviews with many government and non-government professionals in the field support the CSO statistics as being reasonably accurate, fair and dependable.

The only drawback to its reporting system is its timeliness. Production estimates are usually not available until six months after the harvest. Therefore, the production information can be considered to be accurate, but not useful in regard to anticipating major crop production shortfalls. It is very useful information, however, when used to establish trends, and when used in conjunction with the Early Warning Service (EWS) information, as EWS makes crop production estimates based on a percentage of the previous year's harvest.

D. The Early Warning System (EWS) of the Relief and Rehabilitation Commission

The EWS provides monthly reports that indicate general information of crop production estimates, market trends and potential areas of need, by monitoring drought-affected areas and estimating the number of people seriously affected by drought within the area. EWS utilizes information from the National Meteorological Service Agency, the Central Statistics Office, the International Livestock Center for Africa, market conditions, their own field staff, and other agencies to get qualitative impressions of what is happening in the field. Although very little of their information is quantitatively based, EWS appears to make very reasonable estimates of crop production.

EWS's estimates of needy people, however, can be misleading (although we have used their needy people estimates in Appendix E to get relative impressions of the locations of food need). EWS surveys an area to determine whether or not that area is "drought-affected". If an area receives "drought affected" status, then peasant associations within that area are eligible for food aid. Peasant associations outside the "drought-affected" areas are not eligible for food aid.

Although this is probably the best method at present to get an idea of the magnitude of needy people in a given area, it does not allow for the fact that there may be peasant associations outside a designated "drought-affected" area that include many needy people.

IV. ANALYSIS OF NUTRITIONAL DATA

A. REVIEW OF EXISTING STANDARDS

Previous nutrition assessments for Ethiopia were frequently based on weight-for-age vs. weight-for-height. Weight-for-age can result in higher percentages of malnutrition as it more accurately reflects chronic undernutrition (resulting in "stunting") rather than the acute malnutrition of famine. The nutritional standard used in this report is weight-for-height.

Weight-for-height (amount of muscle mass on the body frame) is the best indicator for the assessment of nutritional status in emergencies. It is a sensitive indicator of acute malnutrition, and is independent of sex, race and age (up to puberty). A child's weight is compared with the expected weight of a "reference" (well-nourished) child of the same height. Results are expressed as a "percentage of median reference weight-for-height", or "percent weight-for-height". Eighty percent of median reference weight-for-height is often selected as a cut-off point, above which a child's nutritional status is considered adequate, and below which it is considered inadequate. Eighty percent weight-for-height roughly corresponds to two standard deviations below population median, into which about 2% of any normally-distributed population should be expected to fall.

Under most circumstances, the nutritional status of children under five can be taken to reflect the nutritional status of the whole community. However, adults also suffer from food shortages and, in areas where the feeding of children has precedence over that of the parents, it may be the adults who are most affected by starvation.

Even during normal times, malnutrition due to protein-energy deficiencies is the second major health problem in Ethiopia, next to communicable diseases. The figures on percentage of the population suffering from malnourishment during normal times vary from source to source, according to the method of assessment used (wt/ht, wt/age, etc.) and the regions from which the information is taken. It is generally found that persons in food-producing areas will have lower levels of malnutrition than those in areas where a combination of food and cash crops are grown, as well as those in cash-crop-producing areas. Persons in urban or market centers will also show better nutritional status than those in rural areas or those located away from main roads.

PREVALENCE OF MALNUTRITION BY CROP ZONE

<u>Crop zone</u>	<u>Nutritional Indicator</u> (% below med.)		<u>No.</u>
	<u>Wt/Ht</u>	<u>Wt/Age</u>	
Cash crop	45.9	38.2	259
Food + Cash	42.5	39.0	1812
Food Crop	39.5	31.1	1994
<hr/>			
All Zones	41.3	36.1	4065

Source: JNSP Baseline Survey (Rural) Preliminary Report,
ENI, 1985.

A WHO report states that in Ethiopia, up to 30-40% of the children are believed to be malnourished during normal times, and that 10% of the population suffers from extreme malnourishment (or < 70% wt./ht.). According to another study by FAO, from 1969-1971 (a normal period), 26% of the population was estimated to be receiving the Basic Minimum Caloric Requirement (or less than 1,512 calories per person); whereas from 1972-1974 (a famine period), 38% were receiving the Basic Minimum Requirement to sustain life.

B. STANDARDS FOR THIS ASSESSMENT

Based upon a pre-drought five-year average of food availability in all regions and an average caloric intake of 2100 kcal per person per day, the assessment team calculates the percentage of malnourished to be about 28%. This means that 28% is receiving an average of 1500 kcal per day, the minimum amount of energy required to sustain life. This is considered the emergency subsistence level, below which large-scale starvation and death is expected if the population is of normal body size and is required to expend energy or perform work. People can survive on 1500 kcal per day for only 1 or 2 months before deteriorating. Persons who are already nutritionally deficient will deteriorate more rapidly.

The team calculates the balance of the population, 72%, to be receiving an average of 2100 kcal per person per day. This is based on accountable food sources and does not take into consideration traditional "famine foods" often eaten during the "hunger season", such as berries, roots and small fruits. The 2100 kcal average is low compared to the needs of moderately-active adults and pregnant and lactating women. From age 4+, the minimum calories per day necessary to maintain a basic level of health is 1800-2000. A person doing heavy labor would suffer nutritionally from this ration. The WHO daily energy intake average of all groups for developing countries

(see table below) is 2195 kcals. The slightly lower average of 2100 kcal is used for this report for the purpose of establishing the food deficit, considering that unaccountable food sources could contribute an additional 100-200 kcal per person per day.

RECOMMENDED DAILY ENERGY INTAKES
FOR HEALTHY INDIVIDUALS

GROUP	ENERGY MJ (kcal th)
0-1 year	3.4 (820)
1-3 years	5.7 (1360)
4-6 years	7.7 (1830)
7-9 years	9.2 (2190)
10-14 years:	
males	11.7 (2800)
females	10.3 (2450)
Male adult	
(moderately active)	12.6 (3000)
Female adult	
(moderately active)	9.2 (2200)
Pregnancy (latter half)	10.7 (2550)
Lactation	11.5 (2750)
Average	
	9.2 (2195)

Adapted from WHO, Handbook on Human Nutritional Requirements, 1974.

C. FOOD BASKET

The basic ration provided through the CRS consortium was designed as a supplement to some other food source. The ration provides 1400 kcal per person/day. This amount is near the survival level for adults under resting conditions and without illness. It cannot sustain an individual over an extended period of time without increased risk of disease and death. The general take-home dry ration consists of 45.36 kg. of grain (bulgar wheat or soy-fortified sorghum grits), 3.6 kg. of soybean vegetable oil, and 4 kg. of non-fat dried skim milk. This ration is distributed once a month to families (based on an average size of five persons, with at least one child less than five years old) and destitutes (families without children under five years old, and all others showing need). Rations are divided among five persons who are classified as destitutes. Priority is given to those with children under five, as these are considered among the most vulnerable to food shortages. For

those belonging to farmers associations located at great distances from distribution centers, it is sometimes too difficult and hazardous for the mother to walk the distance carrying a child. In such cases, the risks to the child outweigh the benefits of the growth monitoring process and these recipients would be registered as destitutes.

The following is a breakdown of caloric values for rations distributed by the consortium. Persons receiving food aid presumably have limited access to other foods which are supplemented by the rations distributed through the food programs. However, in certain instances where availability of rations is limited or other foods are available in the area, reduced rations of 840 calories are distributed. If no other food sources are available and people are relying totally on rations (as in shelters), up to 1950-calorie rations have been distributed in certain regions.

CRS, ECS, LWF, EECMY

Monthly ration per family of 5:

	<u>Ration</u>	<u>Caloric Value</u>	<u>Total Calories</u>
Grain:	45.36kg.	3.6/gm.	163,296 kcal
NFDM	4.00kg.	3.6/gm.	14,400 kcal
Oil:	<u>3.60kg.</u>	9/gm.	<u>32,400 kcal</u>
	52.96kg.		210,096 kcal

Daily Calories per capita:

assuming food sharing;

using 5 persons/family;

calculating 30 days/month;

Total monthly calories per ration = 210,096 kcal

Calories per day/family (210,096 ÷ 30) = 7,003 kcal

Average Daily Calories Per Person = 1,400 kcal

D. SELECTING RECIPIENTS

Recipients should be selected from needy families. The standards for determining need are:

1. Poverty.
2. Lack of food - as evidenced by thinness.
3. Families with persons at high risk of death due to lack of food, especially:
 - a. children under 5 years; by measure, the child should be <105 cm. 60% of the children registered in food programs should be <80% weight/height if the area is truly needy;
 - b. elderly plus weak persons;
 - c. disabled or sick;

- d. pregnant or lactating women (they, as well as the nursing children, have special needs).
4. Families with large numbers of children.

E. DATA COLLECTION

Nutritional data is collected monthly at each center. Mothers bring the thinnest child under 5 years old to the distribution center where they are weighed and measured and a percentage of weight-for-height is calculated. Each child has a growth surveillance chart on which the percentage weight-for-height is plotted. Growth patterns are monitored for weight gains and losses. If weight has stabilized at normal levels for several months, the family should be discharged from the feeding program.

F. NUTRITION RECORD-KEEPING METHODS

Different record-keeping methods for nutritional levels can create difficulties in assessing trends. Because most of the distribution centers visited were the cooperating agencies' centers, the data collected is very thorough and record-keeping methods are generally similar throughout the system. Means of recording the data may vary from region to region; however, the standards used are the same, allowing the cooperating agencies to correlate information to determine trends. In addition, nutrition program guidelines were established in early 1985 which define everything from determining priority areas, to screening, feeding, monitoring and record-keeping.

The following are guidelines used by the cooperating agencies for recording and reporting data at each distribution site.

1. Reporting/monitoring the effectiveness of the program - Dry Rations
 - a) Keep monthly checklist of families receiving ration with amount of ration indicated. Also keep monthly comparison of the child's weight.
 - b) Use mastercard and individual weight cards as per CRS.
 - c) Keep daily tally of children referred to medical care, supplemental feeding, receiving vitamin A; admissions; deaths; children with weight increased, decreased, staying the same; as well as the % weight/height for the children measured.
 - d) Submit a monthly report with daily summaries for the above information.
 - e) Keep current stock cards reporting all incoming and outgoing stock. Submit a monthly summary.

2. Reporting/monitoring the effectiveness of the program - Premix

- a) A registration list of children receiving the premix, with weekly weights recorded, must be kept.
- b) Numbers of children receiving the premix, discharged, admitted, gaining weight, losing weight, remaining the same, must be reported monthly.

3. Reporting requirements

- a) Keep monthly checklist of families receiving ration, with amount of ration distributed daily. Ration different than that agreed upon should be explained on the checklist (i.e., grain shipment did not arrive, etc.).
- b) Keep stockcards or received/distributed/balance for each commodity received.
- c) Submit monthly a daily tally of numbers of families receiving ration.
- d) Submit monthly a summary of goods received/distributed/balance, by commodity.
- e) Submit monthly onsite evaluation form by regional supervisor.

G. CORRELATING NUTRITIONAL DATA

Need for a Standardized Reporting System

A real need is apparent for a standardized reporting system to correlate data between NGOs. Certain operating agencies use different nutritional standards, which will affect the numbers of children assessed to be malnourished. This is especially obvious when one agency moves into an area and opens a program where recipients had been on another program. For example, many of the recipients of newly-opened shelters in Tigray had been on ICRC programs which assess nutritional levels according to a different standard (arm circumference) from that used by the cooperating agencies. A change in standards can result in variations of percentages of malnourished and can create appearances of a sudden drop or rise in malnourished.

Other groups may use the weight/age vs. weight/height standard, or base reports on percentages of children less than 85% or less than 75%, causing discrepancies. Criteria used to assess those eligible for food aid may also vary from program to program, causing difficulties in correlating data, especially when comparing trends in different regions.

Certain problems are unavoidable when dealing with such large populations and shifting areas of need. Availability or lack of commodities within and outside distribution centers, and erratic shipments, may affect the rate of nutritional improvement. Changes in scale, large numbers of new arrivals, and accessibility of the center will also make trends difficult to assess. In certain areas where the consortium's programs replace other programs, the rations distributed may be different and the change may be reflected in short increases or drops in nutritional levels, depending on the caloric intakes. It should also be assumed that, because of lack of comparative data (local mortality rates and causes, population statistics), the data from the individual center reports reflect what is happening with the program and should not be viewed as general population surveys. Hence, it is possible to evaluate trends within the relief system but not necessarily to correlate the data with trends occurring outside, unless more thorough assessments are made.

Lack of Comparative Data

An analysis of nutritional trends should be placed within the context of what is considered normal for Ethiopia in order to measure the effectiveness of food programs and assess future needs.

Yet "normal" is somewhat difficult to define, as most comparative data on malnutrition in Ethiopia focuses on urban populations and is measured in terms which reflect chronic malnutrition rather than the acute malnutrition of famine. Different sources will give different percentages of malnutrition within the general population, and standards used will vary. Part of the problem is reflective of the wide range of figures on population estimates for Ethiopia. In any case, without an awareness of what is normal, there is the risk of creating dependencies on food aid and disrupting local economies. Adversely, there is the risk of relapse and rapid nutritional deterioration if food programs are stopped too early.

This problem of lack of comparative data is being addressed by the Ethiopian Nutrition Institute in conjunction with the Central Statistics Office. A first-round Nutrition Situation Surveillance published in October 1980 outlines the intentions of the surveillance, which includes regular assessments of food stocks, dietary intakes, and nutritional status of population groups. The project was designed to enable ENI to give predictive information and comprehensive data by which distress situations could be more easily recognized. Unfortunately, the only data covered in the first surveillance is on urban centers, which is not reflective of the status of those most affected by the famine - the rural peasantry.

Due to the time limitations of the assessment team's stay in Ethiopia, some of the background data has been taken from previous studies. This information is to be used as comparative data for evaluating current nutritional trends. Information on current trends is based on monthly reports from the co-operating agencies, CRS distribution centers, interviews with health and administrative personnel from NGOs and emergency relief agencies, and discussions with representatives from the GOE, RRC, peasants' associations, farmers, and local clergy.

Lack of Standards for Establishing Need

Criteria for judging the neediness of an area as a means of increasing agencies' capacities for immediate and appropriate response to new crisis areas is a priority of the CSO and RRC. However, ambivalent standards are often used to assess the effects of the drought on developing famine pockets. Terms such as "needy", "drought-affected", "in need of immediate assistance", are frequently used in general nutritional surveys carried out by the RRC and can be broadly interpreted. This necessitates a duplication of effort by agencies to more accurately qualify the degree of need. The RRC regularly carries out its surveys in conjunction with local officials from the awrajas (districts), the woredas (sub-districts), and the kabeles (peasants' associations). Standards set by one group may be higher or lower than those set by another, although the terms used will be the same. Those using more stringent standards may assess a village as having a much lower percentage of need than those using less rigid standards. In one awraja, for example, it was decided that "in need of immediate assistance" meant a family who had lost everything; or who had no tools, oxen, or seed; or no food in their stores. Unfortunately, even if there have been indications of food shortages for months, it is often not until the situation has become critical and people are dying that assistance is brought in. Situations like this continue to occur as new "pockets of need" develop. Those areas currently not within the vicinity of established feeding centers, or in difficult-to-access areas, can frequently reach critical levels before agencies are alerted to their needs.

As explained in a U.N. monthly report, "It seems necessary, if we are going to respond in a timely manner to crisis needs as they develop in new areas, for us to try and reach agreement both with the RRC and with the NGOs on a set of indicators that all our Field Monitors would collect in the areas they visit, and that interested agencies, with far greater field coverage than we, would also monitor".

As sensible as this is, a resolution to the problem is impossible without an agreement between donor agencies and local authorities on appropriate responses to specific need indicators.

As a result, those who have reached "normal" status continue to receive food, while other areas are experiencing high rates of malnutrition or are moving in directions which indicate deteriorating states and potential need for emergency food and medical aid.

Reporting and Monitoring

The time in which a survey is conducted will also affect the outcome. If taken during or after the harvest period, the quality of the harvest must be assessed in order to determine potential shortages. Several areas surveyed appeared to have good harvests, but upon closer inspection and interviews, it was discovered that the crop was seedless, or affected by frost, blight or army worm infestations. Under normal circumstances, farmers are accustomed to these problems, and have the storage or traditional back-up mechanisms which would sustain them through poor harvests. However, loss of these back-ups, and lack of seeds, lack of plow oxen, and inability to plant due to weakness or displacement have caused much land to be left unplowed. Hence, an area that appears to have food may, in reality, have critically low yields incapable of supporting its population.

On the other hand, if the survey is conducted during the pre-harvest months, the area may require emergency food stocks on a short-term basis. For these reasons, a regular monitoring system and means of reporting is important in order to address needs without exaggerating or underestimating what each region is capable of sustaining.

H. IMPACT OF FOOD AID ON NUTRITION

In a famine situation, the most vulnerable groups are children under five years old, pregnant and lactating mothers, the elderly, weak, disabled and sickly. Individuals in these groups are at the greatest risk because they are physically less capable of enduring long periods without sustenance and are consequently more vulnerable to disease and rapid deterioration.

Young children have less fat and body mass from which the body can draw energy when food is unavailable, and are incapable of foraging for themselves. In most communities in Ethiopia, adults will feed their children what little food they may have before feeding themselves; thus if the children appear malnourished, the rest of the family is probably also malnourished. Pregnant and lactating mothers are more vulnerable because of the extra energy needed to supply themselves and the growing fetus or nursing infant. The elderly, the weak and disabled not only suffer from physical frailties, but may be incapable of travelling to areas where food is available. And frequently, when choices within a family are made as to who should survive if only small amounts of food are available, it is this last group which is least likely to

receive anything. Hence, agencies survey the nutritional status of the vulnerable groups because they are the first to reflect food shortages within a community.

Children are the easiest to monitor, as standard anthropometric (body) measurements enable agencies to fairly accurately determine degrees of malnutrition. Families with children under 5 years are required to bring at least one of these children to the distribution center in order to receive their monthly dry ration and premix supplement (for each child) if needed. The child is weighed and measured at the center, and growth patterns are monitored for weight gain or loss. If a child's weight reaches normal status and stabilizes over a three-month period, it is assumed that the family has reached "normal" status and can be discharged from the feeding program.

Issues

There are certain problems inherent in this system (although no real alternative currently exists):

1. Unless surveys are made in the villages and residences are inspected, the elderly, weak, sickly or disabled may be left to die out of sight of relief workers. Since no reliable death records are available in most areas, it is difficult to determine whether deaths of these individuals are due to malnutrition, malnutrition-related diseases or some other cause.
2. If recipients must travel long distances to collect dry rations, it is impossible for a mother to carry a child to the center for monitoring. This makes it difficult to judge the impact of food aid in a family since there is no means of measuring nutritional status. In such cases, the basis used is the nutritional status of the children in the woreda. If stable, low levels of malnutrition are reached by the children in the woreda, it is assumed that the community is capable of sustaining itself and food aid is no longer needed. Again, only on-site surveillance in the villages can determine the impact of food aid and whether those most in need are indeed receiving it.
3. If the criterion for receiving dry rations is a malnourished child, it is possible that a family will starve a child in order to stay in the program. Instances of this have occurred but can generally be spotted if the child's growth records do not show improvement over a period of time. Other factors, such as diarrhea or tuberculosis may also prevent weight gain and medical attention will determine this. If no other cause is found, the mother may be improperly preparing the premix, or the family may be too large to be sustained by the allotted ration.

4. Numbers of deaths within a community can be misleading. If initially large numbers of people are dying regularly, reduced death rates in later months may not indicate that the situation is improving. It could mean that the weakest have died, and only the stronger individuals are left.

All of these issues affect a food program and indicate the need for surveillance within the community to accurately judge the effectiveness of a program. Records may show nutritional improvement of those within the food aid system, but may not be reflective of its impact on the general population. This leads to several questions regarding the impact of food aid on nutritional status in Ethiopia.

1. Is food relief reaching the most vulnerable groups?

Among those registered within the distribution centers, yes. Programs all over the country show tremendous reductions of levels of malnutrition (see Regional Summaries, at the end of this section) among young children. Most groups (including adults) surveyed by the assessment team at the distribution centers appeared healthy. However, weaned children appeared more malnourished than the younger group and, in general population surveys, have higher mortality rates than the younger children. Some deaths may not be directly attributable to malnutrition, but malnutrition does play a large part in a child's ability to fend off disease and develop immunities.

As few elderly, weak or disabled are able to travel to the distribution centers or carry the monthly ration, it is difficult to say whether or not they are being reached. This can only be determined through door-to-door assessment by the implementing agencies or local administrators. In many communities where pockets of famine are being discovered and which are not receiving food aid, it has been found that those with food share it with those who are destitute, begging, or incapable of feeding themselves. From this it appears there is a further allocation of food aid within the village.

2. Is food relief reaching those most in need?

In food programs where large percentages of the population are being reached, figures indicate greatly reduced levels of malnutrition among the most vulnerable groups.

Outside the programs, certain groups of people are less affected than others - families of government workers, townspeople, those provided with food in resettlement camps, and farmers' cooperative members. It is the

responsibility of the RRC and local administrators to determine those families most in need who in turn are screened by the agencies for eligibility for food aid. Generally, the RRC and administrators have been very cooperative in this process and will select those in the rural peasantry who are the most needy, as confirmed by local surveys conducted by the cooperating agencies.

More controversial is the question of whether or not the areas of greatest need are selected for the establishment of food aid programs. Several people interviewed in relief agencies had indicated that certain populous areas had not been designated by the RRC as needing food aid. Contradictory reports such as these again reflect the need for standard surveillance measures in order that political or non-objective motives are eliminated from the issue of saving lives.

3. Is food aid arriving when it is needed?

This depends on the location of the center, availability of transport, and conditions and security of the roads. Food distributed at the Northern Initiative sites is often erratic due to transport problems, unavailability of trucks, and security problems. Within the general distribution system, many of the logistics and storage problems have been eliminated, and capabilities to expand programs into developing famine areas have improved. Certain areas will remain problematic due to rugged terrain, long distances and fighting. Airdrops have been used recently in such places as Sekota, Debat, Debark, and Gonder, but are expensive and inconsistent. This may become a major issue in 1986 for several reasons. New famine pockets are being found in areas that are remote and can only be reached by mule or on foot. Many of these woredas may have been neglected in 1985, due to the relief efforts' focus on areas where large populations were in need, or where roads afforded access, or simply due to the resources and extension capabilities of the agencies working in the country. Now, however, agencies are in a better position to monitor famine trends and watch for problems in more remote areas. Unfortunately, many of these areas are being found after the situation has reached extremely critical levels. Large percentages of malnourished populations continue to come to the attention of relief workers, and the ability to respond quickly depends greatly on the availability of trucks and emergency buffer stocks.

4. Is the food ration adequate and appropriate?

Based upon reports from the cooperating agencies and the sites surveyed by the assessment team, the current food ration of 1400 kcal per person per day is adequate. This ration is intended only as a supplement to other foods available in the community, and not as the sole food source. The adequacy of this ration is reflected in the steadily lowering rates of malnutrition of those within the food programs. When on-site feeding is not possible, a premix supplement consisting of 1.5 liters of milk powder, oil and sugar is distributed weekly along with the dry ration for families with children less than 80% weight-for-height. This supplement is provided to increase the child's weight as quickly as possible during an emergency. Most centers visited by the team by this time did not distribute premix, or have on-site supplemental feeding programs. This is another indicator that general nutritional status has improved, as most young children and babies appeared active and healthy. Because the situation has largely improved for those receiving dry rations, mothers are better able to provide the added nourishment of their own milk to their very young children. However, those children not receiving mother's milk do show a greater degree of malnutrition and should be monitored through village surveys to ascertain that their condition does not deteriorate.

5. Is the food basket appropriate?

According to villagers queried by the team, the current food basket is appropriate to Ethiopian tastes. Bulgar wheat is the primary grain distributed, but in some areas soy-fortified sorghum grits are provided (and are more popular). Along with the grain ration, soy vegetable oil and non-fat dry milk are distributed in the dry ration program. Premix consists of dry milk powder, oil, and sugar; faffa porridge is served by some agencies to smaller children or the severely malnourished. Since the traditional Ethiopian diet consists largely of cereals, these foods have been very acceptable to the population.

6. Is the premix being properly administered by the mothers to the children?

Because premix is designed as a take-home supplement for the malnourished child, mothers must be instructed about how it should be prepared and served. Premix will spoil after one week. By most accounts, lactating mothers are not using the premix as a substitute for their own milk, and are following instructions correctly.

The premix is a supplement provided in addition to the dry ration distribution to families with children 70-80% weight/height and under 5 years old. 1.5 liters of the mixture are distributed in a plastic bag, providing a one-week supply. Most CRS programs use a mix which contains, by dry measure, 6 parts dry skim milk (DSM), 2 parts oil, and 1 part sugar. Other programs use different ingredients, sometimes containing faffa or corn soy milk (CSM).

It has been found that CSM is not as easily absorbed by malnourished children as DSM. Because of this, children on a CSM supplement gain weight less rapidly than those on DSM. Part of the reason is that malnourished children lack the enzymes needed to break down the large cornstarch molecules, thus less is absorbed and the nutritional value is reduced.

It is recommended by the Centers for Disease Control in Atlanta that the use of CSM in a premix or supplemental feeding program be replaced by DSM or instant CSM. Instant CSM has been put through a high temperature process which breaks down the carbohydrates (cornstarch molecules), making it much easier for the child to absorb and thus gain weight. Instant CSM costs and weighs the same as regular CSM but, given the choice, is much more nutritionally effective and less difficult for the child to digest.

Further information on instant CSM can be found in The American Journal of Clinical Nutrition, 1) 1971, Vol. 24, p. 416-422, George G. Graham, et. al.; 2) 1973, Vol. 26, p. 491-496, George G. Graham, et. al.

7. Where are nutritional problems still occurring?

Problems are still occurring in areas where food distribution has not taken place or where only limited rations are available. Recent surveys have revealed high levels of malnutrition among the rural peasantry in parts of northern Keffa, in the Rift Lakes area of Shewa; in northern Sidamo; in inaccessible areas of Gonder; in Wag awraja in Wello; in southeastern areas of Tigrai, central Inderta, and parts of Axum and Adwa; in southern Eritrea and Senafe environs; and throughout Harerge, especially in lowland areas, the western highlands, and parts of the Ogaden.

It is difficult to assess the nutritional status of populations in contested areas around Northern

Initiative sites. Monitoring is impossible due to logistics and security problems, and the fact that usually only the head of a household picks up the food without bringing a child for monitoring purposes. Local priests are often aware of problems in their communities, as they work closely with the villagers and help supervise the distributions. Priests in several areas report food shortages, increasing numbers of malnourished, and lack of medical facilities. Another problem they anticipate is a shortage of food after the current harvest is consumed. They foresee problems in the very near future as traditional back-up mechanisms continue to fail, e.g., no surplus, no stocks, few if any animals for milk, and few available commodities left for trading. There is concern in certain areas that limited local storage prevents a build-up of food aid reserves for future needs.

In conjunction with this is a fear that stores might be confiscated by the GOE. Means of reducing the possibility of confiscation are discussed in Section VIII, "Buffer Stocks". Whatever means is used, it is certain that growing numbers of the population will experience tremendous increases in malnutrition if the stocks are not readily available as local sources are depleted.

8. Is the food aid reducing morbidity and mortality levels?

In every area visited by the assessment team where food had been distributed for 5 months to a year, death rates decreased substantially. This data was available from records maintained at the distribution centers.

Health records are maintained at the distribution centers or shelters, indicating nutrition-related problems and other diseases. Some of the most prevalent problems are diarrhea, measles, anemia, tuberculosis, malaria, Vitamin A deficiency, cholera and protein-energy malnutrition (kwashiorkor, marasmus, oedema). Recovery can be complicated by these problems, so medical aid and immunizations are jointly administered to those coming into the centers or shelters. In most programs, Vitamin A tablets are distributed with the dry ration or mixed with the milk powder to combat such problems as xerophthalmia which can cause blindness. Children in some programs still show Vitamin A deficiency and scabies; very few children (of sites surveyed) showed signs of protein-energy malnutrition. However, outside the feeding programs, uncontrolled measles and cholera epidemics had been reported in certain areas, and greater percentages of children show anemia, Vitamin A deficiencies, pedal oedema (swelling of the feet), and

kwashiorkor. These are all strong indications of a malnourished population; without the food and medical attention provided by relief agencies, levels of disease and death are likely to increase.

9. When should the food program be phased out?

Opinions on this vary from agency to agency, but specific criteria should be established by agency personnel to determine when bulk rations should be stopped. It is not unusual for host governments and organizations to justify continued food aid beyond the end of an emergency. Therefore, it is important that the donors, and especially the UN system, help force the hard decisions to end the emergency assistance when it is no longer warranted. If data show that numbers of malnourished children have decreased and that levels of malnutrition have stabilized in the low percentiles for several consecutive feedings, the need for the program should be re-examined. A random sample of children under 5 years might be taken to determine the percentage (or "x") measuring less than 80% wt/ht for "y" consecutive surveys. "x" would have to be based on normal levels of malnutrition for the area, although this in itself is difficult to assess. However, if malnutrition levels have stabilized to where 10% or fewer of the children are less than 80% for "y" surveys, and other indicators show that the population has some resources to rely on, then the program can be stopped, or alternative methods of distribution might be examined as a means of monitoring status.

I. REGIONAL NUTRITIONAL DATA

REGION Eritrea
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
12	84	2917	14	89	6.4
1	85	2164	13	90	8.9
2	85	3078	14	89	8.9
3	85	4040	16	89	9.4
4	85	4033	17	88	9.8
5	85	3899	16	89	9.2
6	85	3802	14	90	9.3
7	85	3443	13	90	9.2
8	85	3366	12	90	10.4

REGION Sidamo
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
1	85	1444	11	90	8.9
2	85	3320	16	88	8.7
3	85	4702	19	88	8.8
4	85	6995	24	86	9.0
5	85	7811	19	88	9.4
6	85	6296	23	87	9.6
7	85	9204	19	88	9.6
8	85	5928	14	89	10.5
9	85	4968	11	90	9.7

REGION Tigrai
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
1	85	2640	8	92	9.3
2	85	2152	8	93	9.3
3	85	2708	9	92	9.0
4	85	3016	10	91	9.4
5	85	5882	12	90	9.2
6	85	4605	10	91	9.0
7	85	3698	10	91	8.8
8	85	3968	9	91	8.9
9	85	4509	9	91	8.8

REGION Gamo Gofa
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
4	85	400	11	92	9.4
5	85	2031	49	80	7.0
6	85	1329	17	89	9.4
7	85	597	11	89	8.3
8	85	545	7	92	7.7
9	85	492	4	93	8.0

REGION North Shewa
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
3	85	516	32	84	8.9
4	85	2474	32	84	8.4
5	85	3399	27	85	8.0
6	85	2264	26	85	8.3
7	85	1776	19	87	8.5
8	85	1069	15	88	8.1
9	85	1247	13	89	8.3

REGION South Shewa
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
2	85	54	11	89	8.1
3	85	847	30	85	9.6
4	85	815	31	85	9.7
5	85	1700	36	84	9.6
6	85	3555	32	85	12.6
7	85	1737	28	85	9.8
8	85	964	28	86	10.3
9	85	1793	18	90	11.7

REGION Wello
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
12	84	3223	25	86	9.8
1	85	5242	20	87	9.4
2	85	6377	16	88	8.3
3	85	8993	17	88	9.2
4	85	8511	15	89	9.1
5	85	8014	13	90	8.9
6	85	6858	13	89	8.8
7	85	4508	11	90	8.7
8	85	9139	13	90	6.7
9	85	5506	10	90	9.1

REGION Bale
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
6	85	489	23	87	9.4
7	85	428	11	91	8.9
8	85	81	3	95	8.0
9	85	65	2	96	7.7

REGION Wellega
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
5	85	481	92	73	6.7
6	85	1172	76	75	7.9
7	85	749	62	78	8.0
8	85	1392	45	81	8.1
9	85	1464	43	81	8.8

REGION Gonder
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
3	85	474	34	81	8.3
4	85	1481	20	87	9.3
5	85	1295	16	88	8.7
6	85	637	18	87	9.1
7	85	970	18	88	9.3
8	85	1298	27	85	8.7
9	85	1271	26	85	9.3

REGION Harerge
REGIONAL SUMMARY REPORT

<u>Month</u>	<u>Year</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
1	85	423	27	85	9.9
2	85	587	27	86	9.6
3	85	986	32	84	10.2
4	85	1816	30	85	10.1
5	85	1572	37	83	9.8
6	85	2249	30	85	9.7
7	85	3591	31	84	10.0
8	85	3070	22	87	9.5
9	85	2182	15	89	9.3

For all eleven regions, total average %<80 wt./ht. = 14.81%. This is based upon most recently available figures from the cooperating agencies' reports.

Countrywide nutritional trends are reflected in the following cooperating agencies' reports showing regions listed in increasing order of percentages less than 80% wt./ht.

SEPTEMBER 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Bale	3339	65	2	96	7.7
Gamo Gofa	11609	492	4	93	8.0
Tigrai	48399	4509	9	91	8.8
Wello	55771	5506	10	90	9.1
Sidamo	46441	4968	11	90	9.7
North Shewa	9264	1247	13	89	8.3
Harerge	14694	2182	15	89	9.3
South Shewa	10036	1793	18	90	11.7
Gonder	4894	1271	26	85	9.3
Wellega	3436	1464	43	81	8.8

AUGUST 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Bale	2469	81	3	95	8.0
Gamo Gofa	8129	545	7	92	7.7
Tigrai	45023	3968	9	91	8.9
Eritrea	29087	3386	12	90	10.4
Wello	70092	9139	13	90	6.7
Sidamo	43047	5928	14	89	10.5
North Shewa	7227	1069	15	88	8.1
Harerge	13964	3070	22	87	9.5
Gonder	4781	1298	27	85	8.7
South Shewa	3497	964	28	86	10.3
Wellega	3103	1392	45	81	8.1

JULY 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	37614	3698	10	91	8.8
Wello	42719	4508	11	90	8.7
Gamo Gofa	5392	597	11	89	8.3
Bale	3898	428	11	91	8.9
Eritrea	26819	3443	13	90	9.2
Gonder	5276	970	18	88	9.3
North Shewa	9233	1776	19	87	8.5
Sidamo	47337	9204	19	88	9.6
South Shewa	6282	1737	28	85	9.8
Harerge	11613	3591	31	84	10.0
Wellega	1209	749	62	78	8.0

JUNE 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	45042	4605	10	91	9.0
Wello	51076	6858	13	89	8.8
Eritrea	26614	3802	14	90	9.3
Gamo Gofa	7802	1329	17	89	9.4
Gonder	3490	637	18	87	9.1
Bale	2144	489	23	87	9.4
Sidamo	27493	6296	23	87	9.6
North Shewa	8649	2264	26	85	8.3
Harerge	7445	2249	30	85	9.7
South Shewa	11218	3555	32	85	12.6
Wellega	1548	1172	76	75	7.9

MAY 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	47641	5882	12	90	9.2
Wello	63706	8014	13	90	8.9
Eritrea	24902	3899	16	89	9.2
Gonder	8146	1295	16	88	8.7
Sidamo	41741	7811	19	88	9.4
North Shewa	12379	3399	27	85	8.0
South Shewa	4664	1700	36	84	9.6
Harerge	4229	1572	37	83	9.8
Gamo Gofa	4132	2031	49	80	7.0
Wellega	523	481	92	73	6.7

APRIL 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	30184	3016	10	91	9.4
Gamo Gofa	3566	400	11	92	9.4
Wello	56799	8511	15	89	9.1
Eritrea	23908	4033	17	88	9.8
Gonder	7545	1481	20	87	9.3
Sidamo	28905	6995	24	86	9.0
Harerge	6145	1816	30	85	10.1
South Shewa	2631	815	31	85	9.7
North Shewa	7772	2474	32	64	8.4

MARCH 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	30172	2708	9	92	9.0
Eritrea	25124	4040	16	89	9.4
Wello	53859	8993	17	88	9.2
Sidamo	24957	4702	19	88	8.8
South Shewa	2811	847	30	85	9.6
North Shewa	1628	516	32	84	8.9
Harerge	3082	986	32	84	10.2
Gonder	1377	474	34	81	8.3

FEBRUARY 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	26121	2152	8	93	9.3
South Shewa	474	54	11	89	8.1
Eritrea	22134	3078	14	89	8.9
Wello	39409	6377	16	88	8.3
Sidamo	21322	3320	16	88	8.7
Harerge	2214	587	27	86	9.6

JANUARY 1985
REGIONS LISTED IN INCREASING ORDER OF %<80

<u>Region</u>	<u>Total</u>	<u><80%</u>	<u>%<80</u>	<u>Mean</u>	<u>Std. Dev.</u>
Tigrai	31141	2640	8	92	9.3
Sidamo	12844	1444	11	90	8.9
Eritrea	16498	2164	13	90	8.9
Wello	26255	5242	20	87	9.4
Harerge	1550	423	27	85	9.9

Notable are Southern Shewa -

Program opens: Feb. 1985 - 474 persons receiving food aid
with 11% < 80%

Sept. '85 - 10,036 persons receiving food aid
with 18% < 80%

Wellega -

Program opens: May '85 - 523 persons receiving food aid
with 92% < 80%

Sept. '85 - 3,436 persons receiving food aid
with 43% < 80%

Gonder -

Program opens: Mar. '85 - 1,377 persons receiving food aid
with 34% < 80%. This figure drops
to 16% < 80% by May 1985, and
jumps to 27% < 80% in August.

Sept. '85 - 4,894 persons receiving food aid
with 26% < 80%

Harerge -

Program opens: Jan. '85 - 1,550 persons receiving food aid
with 27% < 80%

Sept. '85 - 14,694 persons receiving food aid
with 15% < 80%

These areas continue to show indications of greater need in
1986 and should be monitored for shifting pockets of famine.

ANALYSIS OF DATA

Paper from workshop on "Chronic Dietary Energy Deficiency in Developing Country Populations", Oct. 30 - Nov. 1, 1985, Washington, D.C.

Weight-for-height expressed as % of median by age group and sex.

Age in months		JNSP		A.Ababa Survey		Vit.A Survey	
		>90%	<80%	>90%	<80%	>90%	<80%
12	M	37.4	11.8	15.6	3.3	27.1	7.8
	F	34.6	9.0	21.5	3.6		
12-23	M	45.1	11.0	23.4	2.5	46.0	11.9
	F	47.8	10.4	36.2	6.0		
24-35	M	40.7	7.4	23.7	3.0	40.4	6.3
	F	42.1	7.2	19.3	0.7		
36-47	M	38.7	9.5	16.7	1.8	36.2	5.9
	F	42.7	7.4	9.1	0.6		
48-60	M	42.3	5.4	22.8	2.1	39.2	4.4
	F	43.1	4.1	20.3	0.6		
All ages	M	40.7	9.3	20.4	2.5	-	-
	F	41.8	8.7	21.3	2.3	-	-
	M+F	41.3	9.1	20.8	2.4	38.1	7.0
Children measured (Total)		4065		1510		2863	

- Sources:
1. JNSP Baseline Survey (Rural Areas) Preliminary Report. ENI, 1985.
 2. Report on the Nutritional Status of Pre-school Children in Addis Ababa. ENI, 1985.
 3. Vitamin A Status of Pre-school Children (Semi-urban). ENI, 1985.

V. ASSESSMENT OF THE NORTHERN INITIATIVE

A. BACKGROUND

The Northern Initiative was established in mid-1985 as a program to feed people in the contested areas of Eritrea and Tigrai. The civil wars in those two regions had disrupted agriculture and these disruptions, coupled with extensive drought conditions, contributed to accelerating and intensifying the effects of the famine. While many famine victims left their villages and moved into camps in the larger government-controlled towns, fighting, terrain and logistical problems combined to make it difficult for many people to receive food. Some international relief agencies sent food from Sudan into the rebel held areas. However, logistical obstacles were enormous and relief convoys could only deliver limited, and often sporadic, supplies.

By the fall of 1984, drought victims were faced with two choices: moving into relief centers in the government-held areas, or moving westward and crossing into Sudan in search of food. Both options were seen as being disruptive, because as long as the refugees or displaced persons were being fed in relief centers, away from their villages, chances for agricultural recovery were minimal.

After much negotiation, the Ethiopian Government agreed to a program that would permit the famine victims in rebel-held territories to come into government-controlled areas to pick up food and carry it back to their villages. The primary objectives were:

- To feed the famine victims.
- To provide food in such a way that the people would remain in their villages and not move into the feeding centers or go to Sudan.

Eritrea and Tigrai were assigned to CRS and World Vision, respectively. CRS in turn established its programs through the Ethiopian Catholic Secretariat and the churches in the government-controlled towns and along government-controlled routes in Eritrea. (It should be remembered that CRS also has "regular" famine relief programs in many of these same areas for people in the government-controlled zones).

B. FOOD DISTRIBUTION

The CRS food logistics system delivers the food to secondary warehouses located in the frontline areas. From these centers, smaller trucks carry the food out to distribution points. Village leaders prepare lists of the number of families and "destitutes" that are in need of assistance and submit these to church authorities. Based on these lists, food supplies are calculated

and delivered. Persons from the villages come forth at regular intervals (usually monthly) to the distribution points and collect the food for the villages. Upon returning to the villages, the village elders are responsible for ensuring that the food reaches those persons most in need.

The basis for distribution is 12.5 kilos of grain and 2 kilos of DSM per person per month. This brings the average monthly total for distribution by CRS in Eritrea to 3,000 metric tons of food per month. A map of the distribution centers is shown on Figure 5-1.

C. MONITORING

Distribution in the villages is monitored by priests in the area. These priests have freedom to move across the lines and make spot-checks on distribution days and also talk to villagers to ensure that the food is being distributed equitably. Some of the priests have also made spot-checks of the nutritional status of people, although this has primarily been by observation and not by arm circumference, weight-for-height or other accepted measures.

Another rough means of monitoring distribution is by monitoring death rates. In those areas where the priests might be called upon to officiate at funerals, a rough indication of the progress of the food distribution can be estimated.

D. CONSTRAINTS

Distribution in remote forward areas is often difficult. Some sites are hard to supply due to rough terrain and poor roads. This necessitates the use of smaller trucks at many of the sites and means that an increased number of runs must be made to supply various distribution centers.

Some areas, such as Barentu, are isolated towns that are normally cutoff from the main government-controlled areas around Asmara. Periodically, these roads may be impassable due to nearby fighting, mining by insurgent forces, or simply an inability of the government to repair war damages to bridges and key portions of the road bed. In several towns, arrangements were made to airlift food. As the number of relief planes has dwindled, some observers question the likelihood that the more remote towns will continue to receive food on a regular basis.

The most serious constraint on the program, however, is the difficulty in monitoring food distribution. The priests who cross the lines have neither the time nor the resources to do more than interview a few selected families or observe the distributions as they occur. It would be difficult for them to detect abuses, food diversion, etc., unless the practices were widespread. The actual distribution at the village level,

Northern Initiative Distribution Sites

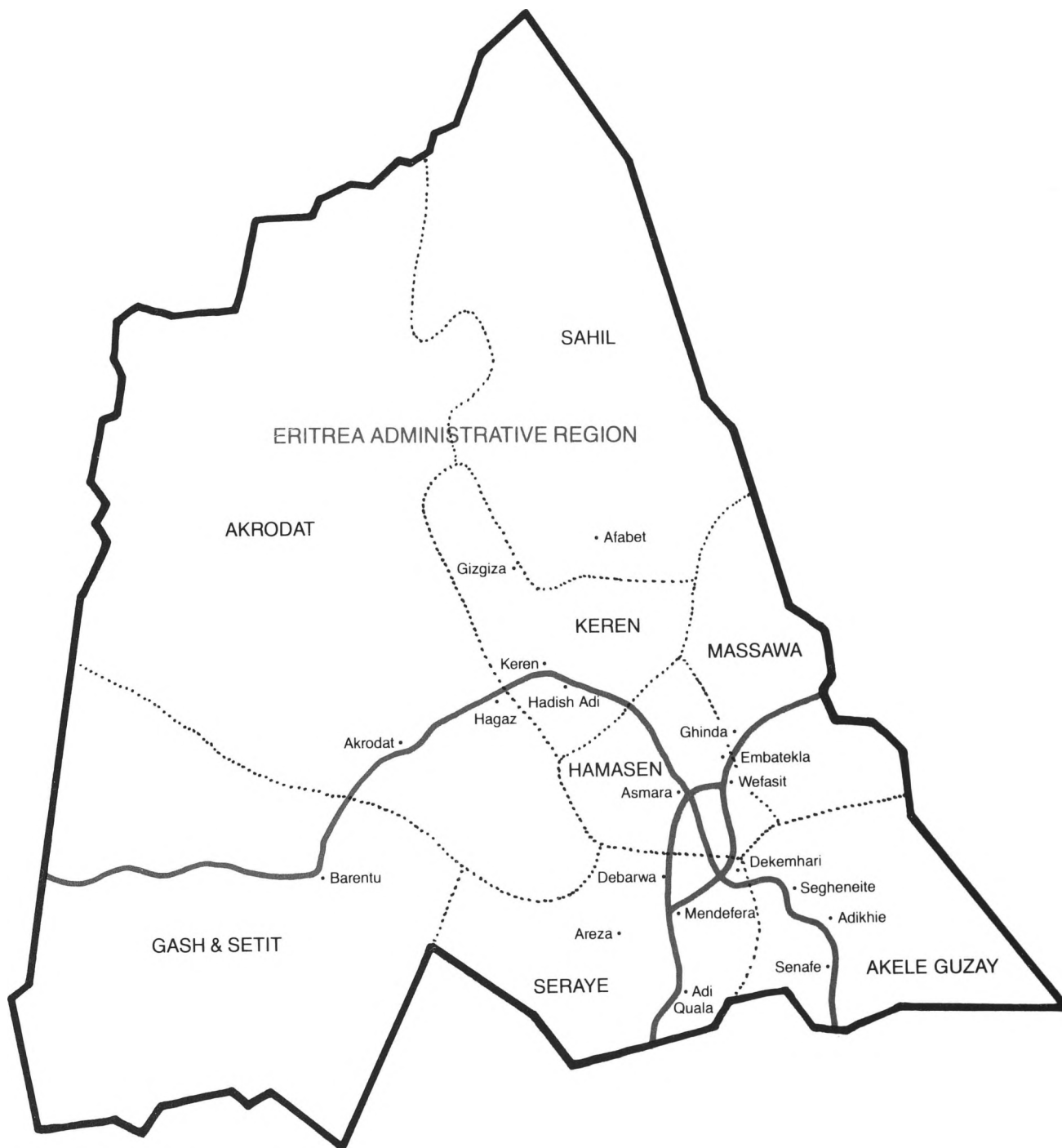


Figure 5-1

therefore, could be affected by intentional diversion, withholding of supplies, or outright thefts. Even more probable, unintentional inequitable distribution caused by a combination of inaccurate weighing or measuring of the food as it is distributed, and poor record-keeping on the part of those responsible for distributing the food, is likely to occur.

The final constraint is that the areas from which the food is distributed to the villages must be government-controlled. In more rugged terrain the maximum distance that people will be willing to go for the food is approximately a three-day journey. In areas where government control is linear, i.e., along the roads, there may be pockets where the people are not receiving food because the distances are too far.

Based on these constraints, a number of questions can be identified that must be answered. They include:

1. Is food reaching those most in need?
The answer is a qualified yes. According to the priests who regularly visit and monitor the program, the food is reaching the village level without undue irregularities. Of the distributions they have witnessed, there are no major problems observed in the village distribution systems.
2. Are the distribution sites well situated?
Food is reaching those villages in a limited radius of the distribution points. Some areas are simply unreachable and it is unlikely that populations from those areas are currently receiving any large amounts of food from the CRS program. Selection of the distribution sites is dictated by several factors. First, the government must approve the sites based on the security situation and they must be in government-controlled areas. Second, the sites must be along a road or in a town with a major airstrip (no airdrops are permitted in the contested areas). Thus, not all sites may be situated in the worst-affected areas and some badly affected areas may not be included. However, given the political constraints on the program and the logistics difficulties, the sites are, in the opinion of the assessment team, the best that could be arranged under the circumstances. The number of distribution sites and the proximity of one site to another has ensured that a substantial area beyond the government-controlled lines is being effectively reached.
3. What percentage of the people receive food?
The priests in the area report that approximately 65% of the people in need are receiving food. This is based on the tonnages delivered to the distribution sites and assumes that only minimal amounts of food are being diverted between the distribution center and the

in-village distribution. This 65% figure is also based on a rough estimate of village populations and the total population. Since the census in this area is old and outdated, and the population overall has likely increased above the last official estimated population, the figure may be off by 15-20%.

4. Are people receiving all the food to which they are entitled?

When the village distributions take place, a number of problems are likely to occur. The measuring devices used to distribute grains are usually tins that have been roughly cut and marked to use as scoops. As the villagers have no way of actually knowing how these scoops were constructed, in theory it is possible for a certain amount of food to be regularly skimmed at the village distribution point. In more remote villages, it would also be possible for the village distribution teams to charge the local people for delivering and distributing the food. Since the village elders are in charge of identifying who may receive the food, it is not unlikely that some of the village elders receive a kickback of food for identifying each family on the food rolls. And finally, in some villages food may simply be "taxed" by, or voluntarily diverted to, insurgents.

All of these potential diversions or inequities are possible, but the most likely problem is one of bogus recipients being put on the food rolls. In other words, the most likely inequity is that some persons or villages receive more food than the amount to which they are entitled by virtue of cheating the system, rather than cheating their fellow villagers.

At the present time, there are no reported major problems in the distribution system. However, this does not mean that they do not exist. A special area of concern is the program in Barentu. Due to fighting in the area and the presence of many government troops in and around the villages, it is likely that distribution inequities are greater here than in other areas. Where possible, program staff should attempt to maintain a close watch on the village distribution systems to ensure that the food is reaching those most in need in adequate quantities.

5. Is other food reaching the persons being served by the Northern Initiative?

In the N.I. areas, there are two additional sources of food. The International Committee of the Red Cross distributes food in villages that are within the same geographic areas, and some of their food may be "within reach" of persons receiving Northern Initiative food.

A second source is the food that is being brought in from Sudan by the cross-border operation there. Approximately 15,000 tons per year are brought into Eritrea and distributed at various sites in the rebel-held areas.

The ICRC distribution program, in theory, is designated for other areas. The cross-border distribution points are not publicly known. Some observers have reported food from Sudan in the villages being served by the Northern Initiative. However, it is not clear how this food got there, or even if it is food from the cross-border operation or simply food distributed by ICRC or bartered from other Northern Initiative recipients.

Assuming that 3,000 tons per month are supplied by CRS, 2,600 by ICRC and 15,000 tons per year by the cross-border operation, and assuming a 10% diversion loss or waste rate, the theoretical deficit in Eritrea would be 76,000 metric tons per year.

6. Is food taken by the government?

There are a few reports of food being taken from Northern Initiative stockpiles by government troops. CRS administrators are concerned about these reports, although at present no pattern exists in these confiscations.

A more widespread practice, and one of major concern, is that food is periodically taken from people returning to the villages by individual soldiers or small patrols. Again, there is no pattern in these thefts and they are more likely attributable to poor discipline and control of troops by local commanders than to a policy of disruption by the government.

7. Are villagers who receive food safe from government forces?

Protection of people who have received food and of family members left behind by the food transporters is a major concern. There were reports to members of the team of instances of government troops harassing food carriers as they passed through the lines. More serious were reported instances of soldiers molesting women engaged in food distribution and reports of soldiers molesting women while their husbands were away collecting the food.

8. Have villages receiving food been raided by government troops?

Troops are reported to have entered homes and taken food but there are no reports, at least to the assessment team, of villages being attacked and all the food in the village being taken.

9. Is the food ration adequate?

The assessment team considers that the food ration allocation basis (i.e., 1,500 calories per person per day) is not adequate for all families in the Northern Initiative area and feels that the persons most at risk in these areas (i.e., small children) may not be fully reached by the calculated level.* Due to a combination of fighting, a breakdown of the market structure and the fact that many of the milk animals have been sold in order to keep families alive, the primary food sources for small children have been radically depleted. It is the feeling of the assessment team that children in the Northern Initiative areas should be receiving premix, DSM and other specially-targeted foods. While the basic food ration provides an adequate amount of grain, without edible oils and without specially-fortified foods, children in these areas are likely to suffer more than those in other areas. Furthermore, there is no way to guarantee that food being distributed in bulk is reaching the vulnerables.

*A check of those agencies working with Eritrean refugees who have recently entered Sudan seems to bear out this problem. The children reaching the border suffer an extremely high percentage of malnutrition, and problems such as vitamin A deficiency (xerophthalmia) are very common.

VI. FAMINE TRENDS

In order to understand what the level of need will be for the next several years and where specific needs are likely to be, it is important to note the geographical trends of famine in the country. It has been pointed out that Ethiopia is extremely vulnerable to famines. At any time famine or near famine conditions exist in some part of the country, often with as many as 10% of the population classified as severely malnourished. Since the situation is always precarious, any number or combination of factors could easily create a multiplier effect that would push large regions of the country into a famine situation.

All famines are known to exhibit certain characteristics. The principal characteristics are:

1. Famines last until food supplies from normal sources can be provided in such quantity that the price is within reach of the rural poor.
2. Famines that are influenced by natural causes require several years for full recovery to take place. This is because seeds, draught animals, herds and natural resources such as soils, fodder, etc., cannot be restored over a short period of time. In other words, one good growing season is not enough, no matter how good the rains or the crops.
3. Famine conditions often shift their locality as a famine progresses. Thus, one region may be recovering from a famine while another is declining.

A. THE GEOGRAPHY OF FAMINE IN ETHIOPIA

Numerous observers have noted repetitive trends or shifts in famines in Ethiopia. The Ethiopian geographer, Mesfin Wolde-Mariam, has mapped famine conditions in Ethiopia dating back to the late 1800s. He notes that famines move in a "tightening circle" around Ethiopia. He points out that Ethiopia is perpetually in a famine situation and that the conditions simply shift from region to region. This shifting is driven by a flow of resources from the areas where marginal production exists into areas where severe deficits have developed. Since the regions sending food into the deficit areas are themselves in a precarious situation, the sending of too much food can create shortages and high prices in the originating area, and nutritional levels can rapidly deteriorate. Wolde-Mariam illustrates the effect of this phenomenon, which he calls "spatial extension", in Figure 6-1.
(1)

The importance of the spatial dimension of famine in Ethiopia can be seen when the relative extent of the famine is

compared to the number of awrajas that are experiencing famine conditions in any one year. In the 20-year period that Wolde-Mariam examined (1958-1977), out of 102 awrajas in the country, only seven did not experience any famine. Table 6-A shows the number of awrajas under famine in each year from 1958-1977. (2) The initial number of awrajas under famine in 1958 was 12. Then in each of the subsequent 19 years, one or more new awrajas fell under famine. There were only 3 years (1967, 1968 and 1971) during which famine did not conquer any new awrajas. On average, four new awrajas were falling under famine each year. It can also be seen that, by the end of 1966, already 81 of the 102 awrajas had come under the grip of famine. This means that, for the following 12 years, famine conditions were merely revisiting areas which had already experienced famine in the previous decade.

From this pattern it can be seen that the larger the contiguous area under famine, the greater the destructive capacity and the greater the likelihood that the conditions which fuel and drive the "famine machine" will become perpetual.

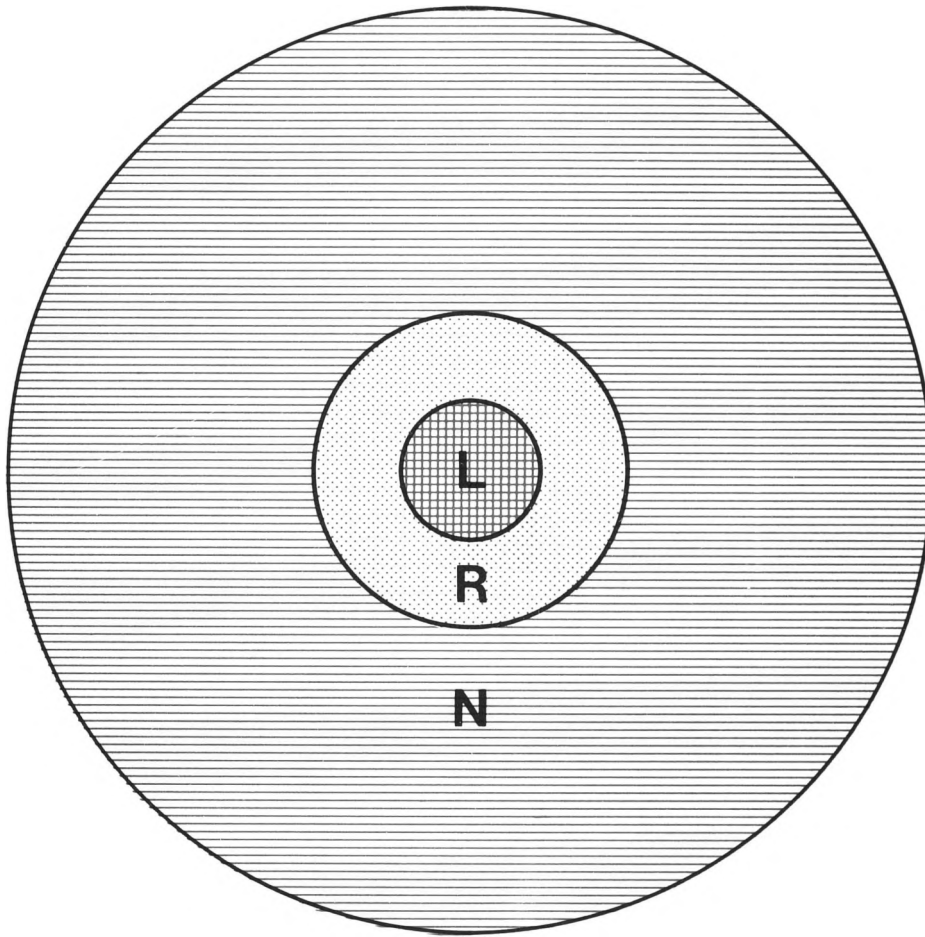
B. ANALYSIS OF PRESENT TRENDS

Analysis of the existing situation, especially crop production and nutritional levels, indicates that famine conditions are shifting, although the complete nationwide pattern is obscured to a large degree by the efficiency of the national relief effort and artificial constraints on the flow of food in the country. Analysis of food production levels would indicate that the famine is taking a generally southeasterly movement. Food production trends in Wello and Harerge also tend to confirm the shift in that area which is of direct concern to CRS. According to the RRC Early Warning System 1986 Food Supply Prospect Supplemental Report, the Harerge 1985 crop production will be 51% below normal and 5% below 1984 production levels. On the other hand, Wello's 1985 crop production will be 60% below normal but 35% above the 1984 production levels. This may indicate that the crop production situation in Wello is showing an improving trend, whereas the crop production situation in Harerge appears to be further deteriorating.

What this means to the overall relief effort is that, while the food situation has greatly improved due to a combination of massive international relief aid and marginal agricultural recovery in some areas, the primary conditions of famine vulnerability have not changed, need levels remain high, and the location of need has shifted from regions greatly affected last year into other areas. This indicates that large-scale food aid will still be needed for the foreseeable future.

In some areas of the country, such as Wollaita, observers have noted that agriculture appears normal and are often surprised to learn that food deficits are forecast. These areas, referred to as "green famine zones", are expected to produce deficits because seeds were either insufficient or late;

Spatial Extension of Famine



All other things remaining equal,
Potential supply area for L is $R + N$
Potential supply area for R is N
Potential supply area for N is external

As the famine area expands
the potential demand increases
while the potential supply area
diminishes.

Figure 6-1

TABLE 6-A

AWRAJAS UNDER FAMINE

NUMBER OF AWRAJAS UNDER FAMINE IN EACH YEAR, 1958-1977

Year: 19	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	TOTAL
Famine																					
Awrajas	12	21	14	11	12	10	5	25	60	10	15	4	28	12	13	56	61	53	21	26	469
% Total																					
Awrajas	11.8	20.6	13.7	10.8	11.8	9.8	4.9	24.5	58.8	9.8	14.7	3.9	27.4	11.8	12.7	54.7	59.8	52.0	20.6	25.5	
Kind of																					
Famine	R	R	R	R	R	R	L	R	N	R	R	L	R	L	L	N	N	N	R	R	R

L = Local; R = Regional; N = National

NUMBER OF AWRAJAS UNDER FAMINE IN EACH YEAR,

1958 - 1977

Year: 19	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	
Famine																					
Awrajas																					
Cumulative	12	23	29	31	41	45	46	63	81	81	81	82	87	87	88	89	90	91	94	95	
New Famine																					
Awrajas, No.	12	11	6	2	10	4	1	17	18	0	0	1	5	0	1	1	1	1	3	1	

FREQUENCY OF FAMINE,

1958 - 1977

	FAMINE YEARS																			TOTAL		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Frequency	0	1	2	3	4	5	6	7	8	9	10	11	12	13	91							
No. Awrajas	7	11	10	12	8	18	10	9	6	5	4	1	0	1	102							

rains stopped early, thereby preventing the standing crops from maturing; or in some cases hail, frosts, insects or other natural calamities diminished the expected yields. In the case of Wollaita, however, even in the best of years, high density populations serve to reduce the amount of food distributed among the population; were it not for production of coffee, a cash crop, the region would be in a perpetually famine-prone situation.

C. SITUATION FORECAST FOR 1986-87

For 1986 through 1987, the nature and primary operational areas of the relief effort are likely to change. In the most severely affected areas of the north and central portions of the country, there should be modest agricultural recovery that should lead to a gradual reduction of food aid needs. If properly phased out, food aid could be reduced in the non-conflict areas by as much as 25% by 1987.

In Wello and Harerge, relief needs are likely to remain high and to increase dramatically in Harerge during the next year.

Throughout the central and southern regions, isolated pockets of "local famine" will continue. These areas will be difficult to identify because the pockets will be small and present detection methods will not be able to monitor the deterioration of people until large numbers in a community are affected. Collectively, these scattered pockets will create a fairly substantial demand for food aid, probably offsetting food reductions made possible by the improving situation in the north.

In addition to the above, there are likely to be pockets of "artificial" need created by political events. Eritrea and Tigray will continue to be troublesome areas, and Harerge and Gambella could have pockets of need.

In summary, there will be a continuing need to maintain food aid levels at current or higher tonnages through 1986 and possibly well into 1987. Reduction of food aid at this time could result in severe hardships for some areas and a general backsliding into famine and hunger conditions in many areas.

D. REGIONAL TRENDS

The regional summaries shown in Appendix D provide an overall view of the current situation and present an estimate of the near-term food and nutrition prospects.

(1) Wolde-Mariam, p. 153.

(2) Wolde-Mariam, pp. 148-150.

VII. EMERGENCY FOOD NEEDS FOR 1986

The purpose of estimating the 1986 emergency food needs is to produce a rough idea of Ethiopia's food aid requirements for 1986, so that planning and procurement procedures for these foods can get underway. This is an attempt to arrive at an estimated national emergency food aid requirement and to apply this total food aid requirement to the apparent regional food aid needs (by weighing the EWS estimated 1986 needy population figures), so that the logistical framework for the distribution of these foods, should they arrive, can be reviewed and improved if necessary.

There are many assumptions used in this estimation that may not be accurate or appropriate, but every effort has been made by this team to utilize available information that appears to be representative of the situation of Ethiopia in 1986. Some of these assumptions are presented below:

1. The average daily consumption requirement of main foods for 1986 is assumed to be 1893 kcal per person (that is, the long-term nutritional standard caloric intake of 2100 kcal, less 207 kcal, the caloric intake from foods other than main foods referred to in Appendix B.).
2. The structural food deficit for 1986 is assumed to be 704,925 metric tons, as determined in Appendix B.
3. The 1986 population is assumed to be 40,235,464, as determined in Appendix A.
4. Vegetable production in the country is not considered. Although vegetable production and consumption play an important role in some areas of the country, they are considered zero for the purpose of this estimation.
5. On-farm reserves of food are considered to be zero. Although this is likely not the case nationwide, it is believed that on-farm stocks are generally low. In severe drought-stricken areas, on-farm reserves are likely to be zero.
6. Food exports are considered zero. Since exports are expected to be small in 1986, they are assumed to be zero.
7. It is not possible to determine the food movements from surplus-producing areas to deficit areas with the information available to the team. Therefore, it is assumed that food will flow in such a way so as to create the needy populations and their locations as indicated in the EWS report Food Supply Prospect, Supplement, reproduced in part in Table E-2 of Appendix E.

Using these assumptions and various sources of information, the team was able to make an estimate of Ethiopia's 1986 emergency food needs. Appendix E indicates the methodology and the calculations used to arrive at the 1986 estimated emergency food needs. It was determined that:

The 1986 emergency
food aid needs = 1,386,408 MT (or 115,534 MT/month)

The team believes that this estimated amount of needed emergency food aid is representative of the current situation in Ethiopia.

Given this total 1986 emergency food aid requirement and the estimated EWS 1986 needy people, a regional relative food needs estimate can be constructed as shown below:

Region	EWS 1986 Needy People Estimate	Estimated Regional Relative Food Needs (MT)
Arssi	10,000	2,383
Bale	60,000	14,299
Goma Gofa	113,000	26,929
Gojjam	0	0
Gonder	135,390	32,265
Eritrea	650,000	154,903
Harerge	1,200,340	286,055
Illubabor	25,000	5,958
Keffa	90,000	21,448
Shewa	632,800	150,804
Sidamo	446,300	106,359
Tigray	1,000,000	238,312
Wellega	0	0
Wello	1,454,790	346,694
TOTALS	5,817,620	1,386,408

As can be seen, very large amounts of food are expected to be needed in Eritrea, Harerge, Shewa, Sidamo, Tigray and Wello.

It was determined through interviews with relief staff and farmers that the 1985 meher harvest food would meet most drought-stricken families' food needs for a period of 2 to 6 months, depending on the specific area. If we assume an average of 4 months supply of food for most families, that means critical food shortages probably will not begin until May. Also assuming that the belg harvest in mid-1986 will have relatively small regional impacts, and that during the first 4 months of 1986 only 1/3 of the monthly emergency food requirements are needed (because of the availability of the 1985 meher harvest), a rough food needs calendar can be constructed as shown on next page:

ROUGH FOOD AID DISTRIBUTION SCHEDULE, 1986
(in metric tons)

REGION	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Arssi	70	70	70	70	260	260	260	260	260	260	260	260	2,360
Bale	400	400	400	400	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	14,320
Gamo Gofa	750	750	750	750	2,990	2,990	2,990	2,990	2,990	2,990	2,990	2,990	26,920
Gojjam	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Gonder	900	900	900	900	3,580	3,580	3,580	3,580	3,580	3,580	3,580	3,580	32,240
Eritrea	4,300	4,300	4,300	4,300	17,210	17,210	17,210	17,210	17,210	17,210	17,210	17,210	154,880
Harerge	7,950	7,950	7,950	7,950	31,780	31,780	31,780	31,780	31,780	31,780	31,780	31,780	286,040
Illubabor	170	170	170	170	660	660	660	660	660	660	660	660	5,960
Keffa	600	600	600	600	2,380	2,380	2,380	2,380	2,380	2,380	2,380	2,380	21,440
She'ra	4,190	4,190	4,190	4,190	16,760	16,760	16,760	16,760	16,760	16,760	16,760	16,760	150,840
Sidamo	2,950	2,950	2,950	2,950	11,820	11,820	11,820	11,820	11,820	11,820	11,820	11,820	106,360
Tigray	6,620	6,620	6,620	6,620	26,480	26,480	26,480	26,480	26,480	26,480	26,480	26,480	238,320
Wellega	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Wello	9,630	9,630	9,630	9,630	38,520	38,520	38,520	38,520	38,520	38,520	38,520	38,520	346,680
TOTAL	38,530	38,530	38,530	38,530	154,030	154,030	154,030	154,030	154,030	154,030	154,030	154,030	1,386,360

As can be seen, relatively small amounts of food will be required during the first 4 months of 1986. But, from May until the end of 1986, food aid will be required in amounts that will push the national logistical framework to its limits (in Appendix C, the maximum port take-away capacity was estimated to be 150,000 metric tons). During the last 8 months of 1986, 1,232,240 metric tons of food aid will be required to pass through the national logistics system. This is approximately 90% of the total food aid required for 1986.

If the total estimated food need tonnage (1,386,408 metric tons) does not begin arriving until June (as is likely), then a food distribution rate of 198,058 metric tons per month will be required to reach the total 1986 food aid level. This monthly distribution rate is approximately 50,000 metric tons per month more than the national logistical system is able to handle. It is therefore imperative to begin receiving this food aid now to avoid major port and other logistics backups.

Caution Levels for Emergency Food Imports

Emergency food aid can be considered a short-term "fix" that should be targeted to alleviate critical, acute food shortages beyond normal food shortages (or the structural deficit) to allow a reasonable period for recovery. However, emergency food aid should not be allowed to interfere with the local food pricing structures, or the local crop production incentives of farmers. If this occurs, then the aid becomes disruptive to the economic and social fabric of an area, and may even exacerbate further acute food shortages.

It is important to determine at what levels emergency food becomes disruptive and undercuts market conditions and agricultural prices. While this is difficult to determine, it is possible to establish a "warning line" whereby emergency food levels, exceeding certain pre-determined levels, must be monitored carefully in order to avoid potential disruptive effects.

With information already developed in this report, it is possible to make an estimate of the amount of food aid that can be imported without creating major disruptions to existing market conditions and/or agricultural incentive policies. This estimate is based on arbitrary assumptions; but it is carried out here in order to point out that a potential danger exists of creating major national economic disruptions, should food aid imports become excessive.

For 1986, it is estimated that 1,024,504 MT of emergency food aid can be imported into Ethiopia without potential disruptive effects to the market conditions or agricultural incentive policies. Any food aid imports above this amount, although necessary (as determined in this report), must be carefully monitored. Appendix F contains details of these conclusions.

VIII. BUFFER STOCKS

A. BACKGROUND

In past years the RRC has advocated, and in some years maintained, a small food reserve in order to provide buffer stocks against various unforeseen contingencies. In 1983, these buffer stocks were depleted as famine conditions spread. In 1984 and 1985, the RRC appealed to donors to help replenish the food reserve and, in 1985, the U.S. Government contributed to the reserve. USAID claims and has expressed its dismay, however, that in 1985 the entire strategic reserve was diverted to provide food for the capital and for the military. Thus, for 1986, USAID has not allocated any food for the reserve and has prohibited relief agencies receiving U.S. food from contributing to regional stockpiles.

Internationally, food reserves have proven to be one of the most effective famine-fighting methods. At the international level, regional "food banks" have been established as a means of placing large quantities of food near countries with chronic food deficits. In India, agricultural experts credit local and regional food reserves as one of the major reasons why widespread famines have been averted in that country in the last decade. In a USDA publication entitled The World Food Situation and Prospects to 1985, the establishment of in-country buffer stocks is highlighted as one of the most important measures in an overall famine-fighting strategy.(1)

Since 1974, many experts working on famine relief have recommended that international agencies help the government establish a dispersed buffer stock of food as a means of responding quickly to food shortages in various regions.(2)

The assessment team feels that failure to support development of buffer stocks may be a short-sighted policy. Buffer stocks are likely to be the most effective means of meeting unforeseen emergencies. Because the nature of the famine has shifted, it is likely that some large concentrations will occur in new areas and there will be many small, isolated, scattered sites that require food. Because food is now distributed not at centers but to the villages in place, it will be much harder to detect pockets of need and acute malnutrition when it occurs in new areas. Because detection will be slow, when a problem is detected, there will be a need to respond quickly. Given the existing lag-times from procurement to delivery in the distribution centers, large numbers of people could theoretically be hurt if buffer stocks were not available in the interim. In short, the situation is simply still too precarious not to have buffer stocks in place.

B. A BUFFER STOCK STRATEGY

Given the current political situation, an alternative to large regional buffer stocks could be sought. One approach must be the development of many dispersed, sub-regional stockpiles and the intentional overstocking of secondary distribution centers, especially those centers that are near areas predicted to be troublesome in the next calendar year.

Another strategy for holding food in reserve would be to continue to supply remote food centers where current or future needs are less than those of last year. In this way, large amounts of food could be quietly held without arousing undue attention from the Ethiopian Government and would be available on relatively short notice if a contingency occurred in a nearby area.

The rationale for widely-dispersed stocks is as follows:

1. Widely-dispersed stocks are needed to more rapidly respond to isolated needs. Because needs will be spotty and widely dispersed, it will be important for local program personnel to have the capability of responding quickly when the need first arises.
2. Widely-dispersed stockpiles would make it difficult and more costly for the government to confiscate. The food would be in the hands of relief agencies, and it would be problematic for the government to try to accumulate a large amount of food from many different groups and sites.
3. If the food is placed in or near centers where people receive food directly, confiscation would make the government vulnerable to unfavorable publicity (such as accusations of "taking food from lines of starving people").
4. If the government started to confiscate food, wide dispersement would give relief agencies and major donors time to organize a protest before large amounts of food could be taken.

The most important rationale, however, is that, if a massive new need were to arise, small amounts of food from many distribution centers throughout the less-affected areas could be sent to the crisis areas. These, collectively, could hold the line until food could be procured and delivered. If food buffer stocks in each area were not needed, they could be cycled out and eventually the total food kept on hand could be reduced.

C. SPECIFIC CONTINGENCIES FOR WHICH BUFFERS MAY BE NEEDED

Regional buffer stocks should be planned for the following contingencies:

1. Returnees from Somalia now re-integrating into the Ogaden. Relief agencies report that approximately 250,000 to 400,000 people have returned from Somalia and are now trying to re-integrate into Harerge. Most of these persons are pastoralists and traditionally maintain herds of animals as a source of milk and a show of wealth. For CRS, these people are of potential concern. During the winter months the pastoralists traditionally graze along the more grassy areas near the Wabi Shibebe River. As summer comes to the Ogaden, many move their herds from the Ogaden up into the valleys of the highlands to the west of the province, where they spend the rainy season fattening up their animals.

At the present time, many returnees are receiving rations from the World University Service of Canada (WUSC). However, due to a dispute between the UNHCR and the RRC regarding who should feed these groups, additional food has not been forthcoming and WUSC has been forced to substantially reduce the amount of rations provided. If more food is not allocated, existing stocks could run out sometime in the spring. Depending on where the people are when the food runs out and how much local food is available, large numbers of returnees could either re-enter Somalia in search of food or seek food from CRS food distribution centers located in the highlands. Therefore, a contingency food reserve for approximately 100,000-150,000 people should be considered for the Harerge area.

2. A second population of concern in Harerge are the approximately 100,000 Ethiopians who have sought food during the drought in Somalia but have neither requested nor received refugee status. CARE has been the primary agency operating in the area where the majority of these people originated (around Jijiga and the eastern highlands). CARE is contemplating opening a new distribution center near Jijiga and, if this center opens, it is possible that large numbers of the Ethiopians now being fed in Somalia could return to Ethiopia. An influx of 50,000 to 100,000 people is possible, according to representatives of UNHCR, and it is likely that CRS could be called upon to help supply a portion of the food if CARE does not have sufficient stockpiles to meet this influx.
3. Another population which could require a buffer stock are those people currently being resettled. It is already known that large percentages of those resettled

leave the new villages and migrate back to their original areas. Large numbers, however, remain; and recent reports indicate that conditions in these areas are often harsh and that many people do not receive adequate levels of food. It is not difficult to imagine a situation where a combination of factors could produce pockets of acute food need. In the event that this should occur, international public opinion could force a temporary change in policy and dictate that American foods be used as a lifesaving intervention. Therefore, in areas near the resettlement zones, it would not be unwise to stockpile minimal surpluses of food which, collectively, could be accumulated and diverted to meet such a crisis.

D. RECOMMENDED FOOD LEVELS FOR BUFFER STOCKS

Nationwide, it is recommended that a contingency of approximately 90,000 metric tons of food be kept on hand to meet emergency needs. This figure represents 20% of the total monthly need times 4 (which represents the optimum lag-time from procurement to delivery.)

For the CRS regular program, a food reserve of approximately 7,800 metric tons should be developed and sequestered at remote sites. (A stockpile of food for the Northern Initiative program is probably not needed since the level of need in these areas is not likely to change and, were it to do so, food could be taken from regular program stocks in those areas and loaned to the Northern Initiative program).

E. IMPLEMENTATION NEEDS

If a dispersed buffer stock is to be developed and maintained, additional warehouse capacities may be needed at various distribution centers. For the near term, one means of providing temporary storage space would be the procurement and erection of additional flexible warehouses such as those already in use in various areas. A buffer stock of 7,800 MT will require an additional 7-8,000 square meters of warehouse floor space. The portable warehouses currently used in some areas of the country are approximately 4.5 meters by 22 meters (100 sq. meters) and can store approximately 100 metric tons of bagged cereals or grains. (Another warehouse that could be used is described in Appendix G.) Not only are these warehouses capable of storing the buffer stocks, they can also be disassembled and moved to a crisis area. This would allow CRS to be more flexible in meeting contingencies.

No additional transport requirement should be necessary to move buffer stocks to new areas. Since trucks return from the warehouses empty, a portion of the fleet could be rerouted to move the stocks on their way back to the port or primary warehouses, and trucks from the secondary centers could be used on a temporary basis in rotation.

-
- (1) U.S. Dept. of Agriculture, Economic Research Service, The World Food Situation and Prospects to 1985, Foreign Agricultural Economic Report No. 98, December 1974.
 - (2) Hararghe Under Drought: A Survey of the Effects of Drought upon Human Nutrition in Hararghe Province, John Seaman & Julius Holt, Ethiopian RRC, Addis Ababa, 1971, p. 90.

IX. DEPENDENCY ISSUES AND ALTERNATIVE DISTRIBUTION METHODS

Throughout the relief system, there is growing concern about the possibility of long-term food aid creating dependencies which would ultimately lead to greater hardships for the famine victims. Many agencies feel that it is now appropriate to switch from dry ration distribution to food-for-work or other food distribution mechanisms as a means of reducing the likelihood that dependencies could be created. Other agencies, however, criticize all food distribution systems as anti-developmental and are examining means of closing out food distribution altogether and going directly to development assistance to promote agricultural recovery and stimulate food production.

A. DEFINING DEPENDENCY

It is appropriate at this time to examine more closely the types of dependencies associated with food aid. Several development specialists have pointed out that there are two types: perceived dependency and situational dependency.

Perceived dependency is a personal attitude. It can result from apathy, lethargy, frustration and, commonly, paternalism. The latter two are of the most concern to development agencies. They are often a result of long-duration programs that have little victim input and continuously provide free goods and services. As a result, victims often find it more convenient not to work and to receive food than to work to produce the food that would remove them from the distribution rolls. Thus, in food programs, perceived dependency is a feeling on the part of the recipients that it is easier to receive food than to work. This syndrome is exhibited when disaster victims refuse to participate in self-help activities, when they demand more be given to them, or when they refuse to participate in programs such as food-for-work.

While this type of behavior is depressing and frustrating for relief agency personnel, it is not too serious and may indicate that there is an excess of food aid going into the community or that some of the persons on the food rolls could be excluded. It is generally a sign of persons taking advantage of a program or the benevolence of the donors rather than a true dependency situation.

At the present time, there are reports that people in the southern part of Shewa and the northern part of Wolaita have exhibited this behavior.

The type of dependency that should be of far more concern to relief agencies is situational dependency. Situational dependency is an actual economic situation where forces created by the relief program have disrupted local economies and food

production cycles. Three types of dependencies can be created: individual dependency, local economic dependency and national agricultural dependency.

Individual dependencies are a result of situations that have developed where people can receive more food by not working at their normal endeavor. There are hidden disincentives that tend to discourage food production. Probably the best known example is a situation where food-for-work programs make it easier to work for food than to produce it in the fields. If a person can earn more food by working than by toiling in his fields, and if the work project requires that the majority of the farmer's time be spent on the project, it is likely that he will spend the time working for the project and not tilling his fields. If this occurs during the planting season, the person could be dependent on food aid for the remainder of the year.

Local economic dependency is a situation that is far more serious. It occurs when the agro-economy of an entire community is affected by food aid distributions. If food aid is maintained at a high level throughout the year, local farmers who produce only slightly more than subsistence needs may find that there is a depressed market after harvest. If they cannot sell enough food to recoup their investment or to buy seeds needed for the following year, they may be forced to seek work off their farms. This results in less production the following year and further lowering of the overall harvest level. When this occurs, more people can be forced onto the relief rolls and eventually a vicious dependency cycle can develop.

National food dependency occurs when levels of food being imported have the nationwide effect of undercutting food prices and creating disincentives to food production. As a general rule, this will occur when imported food exceeds the Maximum Feasible Production level and approaches or exceeds the structural deficit. As a general rule, national dependencies are not a result of famine assistance programs, but of normal food aid being imported without considering the amount of food that can be produced above the structural deficit. When this happens, there are no incentives for farmers to produce more.

B. PROBLEMS OF CONCERN TO CRS

For CRS, the two major problems of concern are individual situational dependencies and local economic dependencies. The overall food aid program is now entering those stages when such dependencies could be created if proper targeting, detailed program planning and impact monitoring are not carried out. It will require a great deal of sophistication on the part of all concerned to ensure that an appropriate mix of program approaches is used and that food aid reaches those most in need without creating disincentives to local agricultural production. Of special concern are food-for-work programs in areas where food yields are expected to be approaching normal in the coming harvests.

C. APPROACHES TO REDUCE LIKELIHOOD OF DEPENDENCIES

The following steps can help reduce the likelihood that dependencies will be inadvertently created by the food aid programs.

1. Careful targeting of food aid.
2. Using caution in establishing food-for-work programs.
3. Utilizing a food store/coupon approach in lieu of food-for-work.
4. Phasing out food aid as quickly as possible whenever feasible. Experimental reduction of food aid based on linkages to food production should be tried continually.

D. PRESERVING THE VICTIM'S DIGNITY

The problem of perceived dependency is a problem of the spirit more than anything else. Obtaining free food as a recipient for a long period of time can rob a person of his/her sense of personal worth, dignity and self-esteem. In order to avoid breaking people's spirits, several approaches should be considered.

The first approach is to provide work that can result in the attainment of either money, script, coupons or credit for the purchase of food. In these cases, food sales should be permitted.

A second way of permitting people to maintain their dignity in food aid programs of all types is to allow people to contribute cash or barterable materials in return for the food received. Until recently, a number of the agencies participating in the CRS consortium permitted cash contributions on a voluntary basis. Unfortunately, an unfavorable news article criticized this practice and, subsequently, CRS instructed all the food distribution centers to stop the practice. By the time of the assessment team's mission, all voluntary contributions had ceased.

In the opinion of the assessment team, CRS should consider seeking permission from AID to again permit voluntary contributions. It should be pointed out to critics of this practice that the contributions should not be considered a payment for food, or a hardship for those persons who can make the contributions. Rather, contributions should be seen as a means to help people preserve their dignity in the face of pressures which could very well create perceived dependencies.

E. ALTERNATIVE FOOD DISTRIBUTION METHODS

The purpose of the current dry ration distribution program is to provide food in sufficient quantities for people to take back to their villages. This allows them to remain where they can work their fields and live normally between distribution dates. As famine relief operations enter their second year, however, questions naturally arise as to whether more appropriate mechanisms for food distribution should be used. Throughout the country, there is a growing awareness that massive food distributions could have a negative effect on agricultural production. If food aid continues above levels that are absolutely necessary (making it easier for people to receive free food than to work for increased harvests), dependencies on the part of the villagers could be created.

For this reason, alternatives to the dry ration distribution approach now in use are being proposed by many agencies. The two alternatives mentioned most often are:

1. Food-for-Work

Typically, FFW projects pay people with food for working on public works or community development projects. In Ethiopia, food-for-work has primarily been used as a means of improving the land or making improvements that will aid agriculture, such as terracing, building water catchments, erosion control measures, and improvement of farm-to-market roads.

Food-for-work proponents claim:

- a) Food-for-work is less likely to create dependencies.
- b) Food-for-work accomplishes multiple objectives: getting food into the hands of those most in need, and carrying out projects and improvements that serve everyone. Thus, both individuals and communities are served.
- c) Projects are not difficult to organize. The RRC has compiled lists of potential projects that could be implemented with food-for-work.

Food-for-work critics, however, refer to the record. They point out that, unless properly planned, food-for-work often takes on a life of its own. As more food enters the community, some will inevitably be sold on the local market to buy things that people need other than food. The food is normally sold below the market price, which depresses the prices that farmers can get for their produce. As prices for agricultural products decline, it soon pays more to work for food than to grow crops. Gradually, production drops,

causing more hunger and forcing more people to go to work for food. More food is needed to meet the need, and soon a vicious cycle is established. Critics have noted that dry ration distribution is often easier to stop than food-for-work programs.

Critics also feel that food-for-work projects are often "make work" activities and, if they are not really needed, can consume valuable resources. Many projects require detailed study and planning, and food-for-work programs are often conceived and planned by persons without proper training and skill. Therefore, the programs may not be environmentally sound and can have an adverse affect on local ecologies and agriculture.

The objective of any feeding program is to feed those most at risk and, in famines, those most at risk are children. Critics of FFW point out that it is difficult to establish a correlation between food-for-work programs and nutritional improvement. Usually able-bodied men participate in the food-for-work programs and, because they are undertaking strenuous work, they take a larger portion of the food. To compensate, more food may have to be given out. This in turn means that more food will be necessary. In a situation where food resources are scarce, it may be more expeditious to continue dry ration distribution than to phase into a more resource-consuming program.

It should also be noted that food-for-work programs require the same logistics inputs as dry ration distribution. Usually, food-for-work programs are considered an adjunct program or expanded approach to providing food, rather than a replacement for dry ration distribution.

2. Cash-for-Work

The primary alternative to food-for-work is cash-for-work. Cash-for-work proponents believe that cash is less disruptive, and that cash payments for work are more compatible with the local economy. They point out that the program is easier to administer since there are no commodity logistics to manage. They also feel that the projects are easier to terminate and to move from one area to another if needs dictate.

Cash-for-work also is said to infuse much-needed cash into economies that have been depleted of cash resources by drought and famine conditions. In some cases, this can stimulate local economic recovery.

Finally, cash-for-work advocates point out that cash is the best way to help restore dignity, in that it gives

people a choice about how they use the money and it places the responsibility directly on them. Since it is known that some of the food in food-for-work and dry ration distributions is sold in order to buy household commodities such as soap, cooking fuel, etc., cash-for-work does away with the restrictions imposed by the other programs.

Critics of cash-for-work claim that the people do not spend all the money on food; the purpose of the program is basically to fight famine and food is what is needed. (Studies of cash-for-work show that most money is spent for food; claims that people spend all their money on alcohol, tobacco and other non-essentials are exaggerated.) Critics also point out that money can have the same effect of making it more profitable to work for cash than to work in the fields, if the projects pay more than farming. Also, in a country like Ethiopia where there are restrictions on the movement of food between agricultural areas, and where natural market forces that would move surpluses to food-deficit areas do not exist, there may not be enough food to buy in the food-deficit areas. This could have the effect of pushing up prices in local markets and lowering the buying power of the cash received.

In reality, the answer lies somewhere between the two opinions. Both types of projects can be appropriate under certain circumstances if properly planned and carried out. The reality for most agencies is that western countries produce surpluses of food, not cash, and it is this food that the agencies can obtain for distribution, not money. Therefore, agencies are more likely to be carrying out food-for-work programs than cash-for-work, and CRS, the primary consignee of U.S. Government food, will be involved in numerous food-for-work projects. Thus, it is important for the organization to establish criteria for the formulation of food-for-work projects that will make the program as non-disruptive as possible, and to explore options (such as those outlined below) which could provide an alternative food distribution mechanism for the next year.

3. Other Options

Two alternatives developed for agencies that normally distribute food from western surpluses, are the "coupon and food store" program and "grain-sharing". Both programs are new and do not yet have a proven track record. Yet, a number of experts have suggested that these approaches can help to remove many of the negative aspects of both food-for-work and cash-for-work programs.

- a) The Coupon and Food Store program. Works projects, similar to those established for

food-for-work programs, are identified and organized. However, the workers are paid in coupons which can be redeemed only at a special relief store set up in each community. These stores stock food, but also carry other supplies such as health care items, charcoal, household utensils, and personal articles that can contribute to health and hygiene (soap, toothpaste, etc.). In addition, a limited number of personal luxury items may also be sold at the store, for which cash or a combination of cash and coupons can be used.

The rationale for this approach is that people will buy only what they need. This serves as a natural "regulator" of the amount of food coming into the community. Also, people will have the ability to buy those things which they would otherwise obtain by selling food. Therefore, food provided by the relief program will not be as likely to end up in the local market competing with food produced by local farmers.

If the luxury items are procured from the local market by the participating agencies, local shopkeepers will also benefit. The amount of input from the agencies should be minimal and, by having a greater range of items available at the food store, the program should be popular and a greater incentive to work should be promoted. Finally, the range of foods provided at the coupon store can include those that are specially targeted for vulnerable groups, theoretically ensuring that a greater number of those most in need of calorie and nutritional inputs will receive them. With items in the store being controlled by the relief agencies, it will be possible to ensure that the workers principally take home food.

Proponents of the coupon store programs also point out that it is easy to establish nutrition monitoring activities in conjunction with, and physically adjacent to, the relief store. Open hours can be established and redemption days can be printed on the coupons.

- b) Grain-Sharing. Grain-sharing programs are similar to the American PIK (Payment-in-Kind) programs. They are designed to help support local farmers and to maintain or reconstruct the normal food marketing system. In this approach, farmers are paid in grains to improve their land with counter-drought or counter-desertification measures such as contouring, terracing, or

planting windbreaks, and for participating in community development projects such as developing water harvesting measures, etc., for a specified period of time. Instead of receiving wages, farmers receive an amount of food that is equivalent to the amount of grain they would have produced had conditions been normal. If their harvest has totally failed, they receive the full amount. If they harvest a percentage of their normal yield, they receive the balance.

Normally, the farmers are paid in un-milled grains. They can sell the grains at whatever price they can negotiate from their normal buyers. In this way, all persons and institutions normally engaged in the marketing system can carry on as if the drought had not occurred. The negative impact of drought on the normal market system can thus be substantially reduced.

The program should be closely monitored to ensure that farmers or merchants do not hoard the grains. If hoarding does take place, agencies can make free food distributions in the community to lower the cost to the poor and force the hoarders to release their reserves.

Advocates point out that grain-sharing provides an excellent means of informally controlling prices in local markets. This is done by adjusting the percentages of food provided according to the normal yields. By providing a greater percentage, prices should move downward; by providing less, prices would move upward.

A grain-sharing program is designed to be used in those areas that are beginning to experience drought conditions or where some agricultural recovery has been possible in the aftermath of widespread crop failures. It should not be used in an area where almost total crop failure is occurring beyond one year.

Proponents of grain-sharing claim that the program will be the least disruptive to the local market system. They also point out that having additional grains will enable farmers producing limited amounts of locally-acclimatized grains to reserve an adequate portion of their yield for seeds for the following season. This reduces the amount of seed to be supplied by relief agencies or the government.

Proponents also point out that, because the food system remains intact, the overall agro-economy

can benefit others, not just the farmers. Some proponents also estimate that management requirements for grain-sharing are less than for other programs since the food is being handled through the normal market system and not through an artificial distribution system. (Food does not need to be delivered to each farmer but could be delivered to the granaries and allocated to farmers when their harvest is brought for sale.) In Ethiopia, grain-sharing programs could have the effect of stabilizing grain markets in areas that are marginally affected by drought and countering famine conditions in isolated food-deficit areas. Grain-sharing could also be used in those areas where food is growing, but not in sufficient quantities, such as Wolaita and portions of Harerge.

As a famine control measure, grain-sharing would be most effective in countering the "bleed over" effect that famine geographer Wolde-Mariam cites as a major contribution to the movement of famines in Ethiopia (see Section VI).

The success of a grain-sharing program in Ethiopia, however, would be dependent upon the government's willingness to permit foods allocated to a region to remain in that region and not be transferred to the urban areas.

F. CRITERIA FOR SELECTING PROGRAMS AND PROJECTS

It is recommended that the following criteria be considered when planning alternative food distribution projects.

1. Criteria for Food-for-Work Programs

- a) Food-for-work programs should be designed to provide short-term work only. To ensure that this happens, projects should be small-scale activities that can be completed in a short period of time. Projects such as road construction that take many months or even years to complete, or that could be intentionally prolonged by workers or program administrators, should be avoided.
- b) Programs should be conducted between planting and harvest periods, or during the period beginning three months after the normal harvest until the next planting season begins. If projects are carried out during the planting season, they could conceivably reduce the amount of food being planted. If run during the harvest season or immediately thereafter, the food could have the effect of depressing local prices.

- c) Programs should be targeted for areas where food deficits are high.
- d) An appropriate mix of different types of projects should be planned for the same area. Not all projects should be targeted strictly to the agricultural sector but should also include works that will improve overall living conditions in the famine zones.
- e) Payment for work should be according to production rather than a daily wage (i.e., piecework).
- f) When farmers are the primary target group, the work should be on a part-time basis only (two or three days per week) in order to permit the farmers to work their fields.
- g) In areas where agricultural recovery is taking place, food-for-work should be seen as a preliminary step to phasing out all food aid. The criterion for determining when this should occur is when nutritional levels have stabilized and remained high for a period of 3 months or longer.
- h) In order to ensure that the vulnerable groups receive food, food-for-work projects should be developed for women. A list of potential food-for-work projects for women is attached as Appendix H.
- i) Effective screening procedures should be established to ensure that the men working in food-for-work programs represent the neediest households and those with a high percentage of vulnerable individuals.
- j) Premix can be distributed as part of the food-for-work payment, in the form of a bonus or through women's food-for-work projects.

2. Criteria for Cash-for-Work Projects*

The criteria for establishing cash-for-work projects are similar to those for food-for-work programs except that the projects can be carried out irrespective of season. Two additional requirements are that they should be in areas where agricultural recovery is

*UNICEF has carried out a number of cash-for-work programs in Ethiopia. Their experience, as well as experience gained by CRS in the OMNIBUS cash-for-work projects, should be reviewed as a means of further fine-tuning this approach.

occurring or where crop yields will be at least 60% of normal. In these areas, it is necessary to establish the cash-for-work programs near the markets where local harvests will be sold (within a 30-40 kilometer radius).

Cash-for-work projects should also: (a) be short-term; (b) be part-time work only; (c) be paid on a piecework basis; (d) include women as potential recipients, and (e) use a screening process to determine the persons eligible.

Cash-for-work programs should be considered as a final program in areas where food aid has been completely phased out. This will inject much-needed capital into the local economy and help continue both agricultural and economic recovery.

3. Criteria for Coupon and Food Store Programs

The criteria for the coupon food store program are the same as for establishing food-for-work projects. However, since the food store concept is less likely to put surplus food into the market, the program may be carried out on a year-round basis.

4. Criteria for Establishing a Grain-Sharing Program

Grain-sharing programs should be targeted for areas where:

- a) famine conditions do not currently exist but food availability is decreasing;
- b) famine conditions do exist but food deficits are decreasing (i.e., agricultural recovery is taking place);
- c) food deficits occur adjacent to acute famine areas; and
- d) isolated pockets of food deficit are surrounded by areas of food sufficiency (though not major surpluses).

G. PHASING OF FOOD DISTRIBUTION METHODS

Rather than considering the various distribution methods as "either/or" approaches, planners should consider using a mix of programs in different phases of the agricultural and famine recovery cycle. Figure 9-1 depicts a drought-induced famine continuum, and shows how different approaches might be applied at different phases of the famine to improve the targeting of food aid and, at the same time, promote agricultural recovery.

Famine Cycle

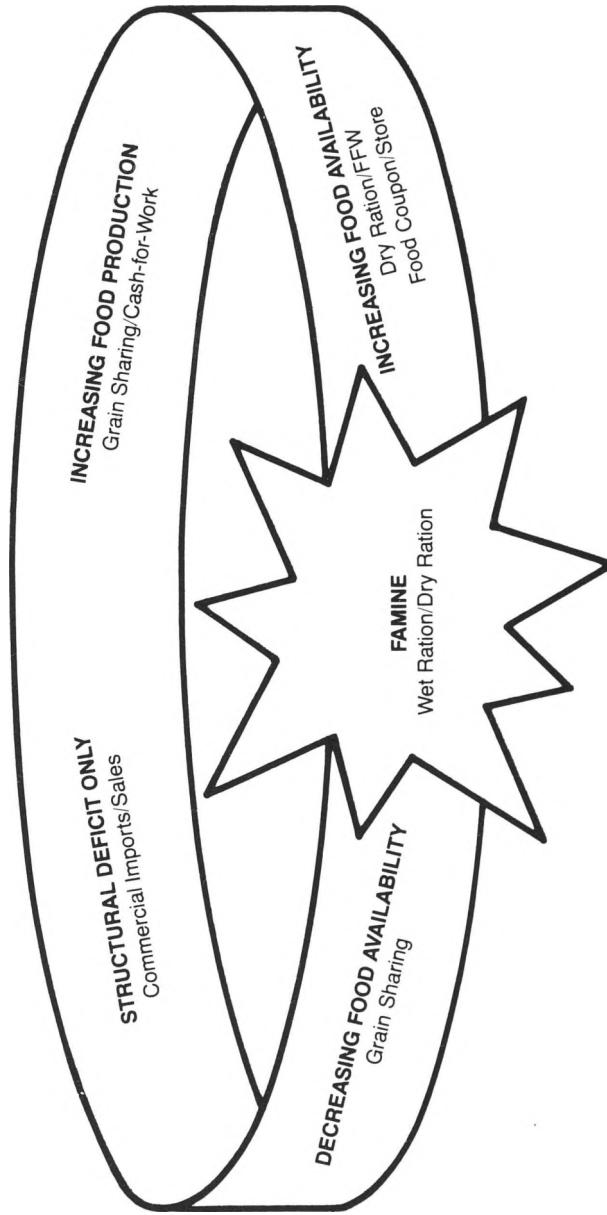


Figure 9-1

X. STRATEGIES FOR STRETCHING FOOD AID

In the eventuality that food aid allocations for 1986 are below those forecast in this report and the RRC projections, the amount of food imported by CRS can be "stretched" in various ways. (It should be pointed out, however, that stretching the available food does not imply that existing food levels are adequate or that there are major surpluses of relief food in any specific area. If all the persons in need of food in Ethiopia were to apply, the food needs could be as high as 1.6 million tons. In those areas where any additional food beyond real needs for the specific recipients has been provided, these amounts have probably found their way through barter and trade into the unseen market where a sizable portion has reached hungry families, although at a price. This "spillover" should be regarded as a positive aspect of the food program, given the fact that there are so many persons who should qualify for food but who for official reasons are not eligible.)

Strategies for extending the food aid include:

A. Better Targeting

This can be accomplished by utilizing more accurate recipient targeting methods (which would include using weight-for-height measurements) as the basis for selecting families. By getting more accurate individual family data regarding needs and by determining project areas on the basis of nutritional deficiencies as a percentage of the total population, some food requirements in some areas could be reduced by 10-20%.

B. Discharging Healthy Children from the Rolls

Current program criteria require that children who are held at a normal weight-for-height range for 3 months be phased out of the program. If this standard were to be enforced, approximately 25% of the children could be taken off the distribution lists. If this were to be done hastily and without continued monitoring of the children, many families could suffer. The assessment team estimates that with more precise admission criteria, replacement families for a large percentage of those currently on the rolls would be found. Therefore, the net reduction is likely to be at most 5-10% in those areas where the food deficit is still high.

C. Instituting a Sliding Scale for Food Rations

Currently the approach for feeding has been to provide a full ration to any family whose children are enrolled in the program. If food supplies were to dwindle, it might be more appropriate to develop a sliding scale based on nutritional status. The program would provide full rations

until children have reached 90-100% of the weight-for-height standards for a period of 3 months. At that point, rations could be reduced 10% per month until the ration allocation is 70% of the full ration. If at that time children show no further deterioration, rations could be reduced to 50% for an additional 3 months and, if no deterioration in nutritional status was found, they could then be phased out of the program. By stepping down the food rations, it is estimated that an additional 10% savings could be made (taking into account that, in the food deficit areas, replacement families would be found).

D. Reducing Rations in Areas Showing Major Improvements in Food Production or Only Marginal Deficits

In some areas (Gonder, Illubabor, Wellega and Gamo Gofa), it should be possible to gradually reduce rations to 70-75% of the normal ration. While it is recognized that a large portion of the food harvest will be collected by the Agricultural Marketing Corporation for distribution to other areas, the amount of food retained by farmers for their own needs, as well as for sale at local markets, should provide enough food so that the current ration could be substantially reduced. Coffee is produced in Illubabor and Wellega, so farmers in this area should also have some purchasing power. Since it is hoped that these areas will continue to be food surplus areas, providing continuous full food rations could have a negative effect on local market prices and be a disincentive to production. Therefore, food in these areas should be phased out anyway. By phasing out of these areas, it is estimated that 21,000 MTs of food could be reprogrammed to other areas.

E. Reducing or Halting Food Distribution Immediately After Harvests.

In most areas some amounts of food have been produced; in those areas food distribution could be drastically cut back or even temporarily halted for periods of one to three months, depending upon the amount of harvest. This would allow the normal market to function as usual and would have the added benefit of ensuring that food distribution would not have an adverse impact in those areas where limited recovery is taking place.

F. Reducing All Rations by 5%

A simple way of stretching the food would be to reduce all rations by 5%. That amount is not likely to have a noticeable effect on nutrition levels.

G. Restricting Food-for-Work Programs

Since food-for-work programs require approximately 38% more food*, a tightening of the criteria for food-for-work programs, aimed at reducing the total number, could be imposed. An alternative would be to stop food-for-work altogether and utilize the food coupon/food store approach. If drastic measures are needed to stretch available food to meet unseen contingencies or increased needs, the following measures could be taken:

1. Target food rations specifically at vulnerable groups and not to families in general. Heavier emphasis would be placed on providing supplemental-type foods such as DSM (dried skim milk), various premixes and other foods most likely to be consumed by children and pregnant and lactating women. The effect of this strategy, however, will depend on inter-family food allocations. If severe famine conditions continue it is likely that, even with the distribution of these types of food, small children would suffer.
2. Distribute a higher percentage of high calorie, low-bulk foods. Foods such as CSM generally provide more calories per kilo of food than do basic grains. If greater supplies of these foods are available, it might be possible to substitute them for bulgar wheat. Thus, while the same tonnage levels might be fixed, the amount of calories could be increased (although the cost to donors would increase since high protein foods cost more than basic grains).
3. Experiment with phase-outs. By increasing the nutrition surveillance capabilities and using more accurate measuring systems, it would be possible to experiment with gradual stepping down and phase-outs in many areas. This program (which should be considered only as a last resort) would begin with an initial 5% program-wide food reduction and, in subsequent months, additional cut-backs of 2-1/2% per month would be made until such time as there was a noted downward trend in the nutritional status of children being monitored in the program. If a decline were detected, rations would be increased 2-1/2% the next month and held at that level for a 3-month period. If at that time nutritional levels remained constant, the cutbacks could then be tried again.

*Based on a normal distribution of 52 kilos per month vs. a FFW allocation of 72 kilos per month.

In some areas the phase-down approach could result in a net food reduction of 25% or greater, at which point the entire area should be assessed and a determination made as to whether the program should be phased out altogether.

It should be pointed out that all of the above strategies for stretching food are dependent upon strict nutritional surveillance and increasing the total number of persons who are being monitored. They also require that all programs use the more accurate weight-for-height measuring standard and that total at-risk populations be enumerated at each woreda level. This will require more staff and statistical monitoring capacity on the part of all the agencies and thus will be more expensive in terms of personnel.

It is also important that the phenomenon of "rotating the victims" be detected early and prevented. This phenomenon occurs when persons who had been malnourished are brought back up to the basic standard as a result of the intervention of the food program and then phased out of the program without adequate means for maintaining their nutritional status. After leaving the program, they quickly deteriorate and several months later require readmission. This phasing in and out of a program will occur so long as major food deficits are present and the natural corrective forces of a food market are prevented.

APPENDIX A: ESTABLISHING THE POPULATION BASE

ISSUES

Determining representative population estimates for Ethiopia is extremely difficult, if not impossible. This is due to data collection difficulties created by the rugged terrain, the dispersion of the population and transportation difficulties. The disparity between the 1984 CSO population estimates and the 1984 Ethiopian Population and Housing Census Preliminary Report is therefore not surprising.

For the purpose of this report, an estimation of the population of Ethiopia was made by weighing the 1984 CSO population estimates and the 1984 Ethiopian Population and Housing Census Preliminary Report. Since the latter is a preliminary report reflecting data representing approximately 85% of the country, and CSO has carried out population estimates in the past, it appears reasonable to weigh each estimate equally.

Although it appears as though deaths due to the recent famine may be in the hundreds of thousands, no accurate information on this issue is available. Therefore, no adjustment to population figures is made for these famine-caused deaths.

It has been estimated that 500,000 people from Tigrai and Wello have been resettled during the past few years in the southwest, primarily in Illubabor and Wellega. However, it is reported that many of these people have returned to their homelands. Because of the lack of accurate information, no adjustments to population figures are made for population resettlement movements.

METHODOLOGY

The estimated total 1986 Ethiopian population was determined by averaging the 1984 CSO population estimate and the 1984 Population and Housing Census Preliminary Report estimates on a regional basis, adjusting for 1986 at an annual population growth rate of 2.76%, and adding the regional populations to arrive at a total. The population growth rate used (2.76%) is the average population growth from 1981 to 1984 using CSO population estimates.

$$1986 \text{ Population} = \frac{(1984 \text{ CSO estimate} + 1984 \text{ Housing Census Estimate})}{2} \times (1.0276)^2$$

ADJUSTED POPULATION OF ETHIOPIA FOR 1986

The chart below indicates the adjusted population estimates for 1986 using the methodology described above.

Adjustments made to these figures to reflect 1986 populations include specific modifications to the figures in:

1. Eritrea - In 1985, it is estimated that approximately 200,000 rural people migrated to Sudan. 50,000 people may return in 1986, resulting in a net reduction of the rural and total populations of 150,000.
2. Tigrai - In 1985, it is estimated that approximately 180,000 rural people migrated to Sudan. Approximately 50,000 people returned that same year, and 50,000 additional people may return in 1986, resulting in a net reduction of the rural and total populations of 80,000.

After taking into account these adjustments, the standard population figures used in this report for 1986 are:

	<u>POPULATION</u>		
<u>REGION</u>	<u>URBAN</u>	<u>RURAL</u>	<u>TOTAL</u>
Arssi	139,458	1,414,513	1,553,971
Bale	73,551	975,172	1,048,723
Gamo Gofa	69,510	1,179,869	1,249,379
Gojjam	264,089	2,648,297	2,912,386
Gonder	224,741	2,517,571	2,742,312
Eritrea	696,740	2,158,580	2,855,320
Harerge	345,300	3,685,679	4,030,979
Illubabor	70,523	915,176	985,699
Keffa	166,915	2,077,409	2,244,324
Shewa	2,321,763	6,439,468	8,761,231
Sidamo	271,582	3,382,299	3,653,881
Tigrai	231,802	2,312,749	2,544,551
Wellega	153,788	2,285,577	2,439,365
Wello	<u>252,926</u>	<u>3,190,417</u>	<u>3,443,343</u>
TOTALS	5,282,688	34,952,776	40,235,464

APPENDIX B: ESTABLISHING THE STRUCTURAL FOOD DEFICIT

DEFINITION

The structural food deficit, for the purpose of this report, is defined as a chronic food shortage in an agricultural system due to the system's inability to produce sufficient food to meet its consumption requirements. Inherent factors within the system cause this food production shortage, even in years of generally favorable production conditions (good and timely rainfall, sufficient and reasonable quality seeds, necessary land preparation/cultivation inputs, etc.). Factors that contribute towards this food shortage, i.e., factors that have chronic negative effects on the food production system, are:

1. Erratic climate conditions. Even though an area may receive generally favorable climatic conditions overall, there will be "pockets" that do not receive favorable conditions, resulting in food production below the system's requirements. (Because Ethiopia has almost no irrigation systems to provide supplemental water during crop "moisture stress" periods, overall crop production is largely dependent upon the timely distribution of adequate rainfall.)
2. Agricultural policies that do not encourage farmers to produce enough to meet normal consumption requirements, much less produce a surplus of food. For example, if farmers have difficulty obtaining production inputs (seeds, fertilizers, tools, draught oxen, etc.), if these inputs are exorbitantly expensive (if available), if they are required to contribute portions of their surplus harvest to the government (a tax), and if they do not receive an "encouraging" price from surplus crop sales, then the farmers probably will not produce surplus food. Rather, they will plan to produce only what they estimate to be their family's food consumption requirements, and then often fall short of that mark due to erratic climatic conditions.
3. Limited maximum potential productivity of land within the system. Even under "ideal" production conditions (favorable supplies of all production input requirements), an area of land is only able to produce a limited amount of food. If the consumption requirements of a group of people on an area of land exceed the production capabilities of that land, then a food shortage will exist.

Ethiopia suffers from a chronic food shortage, i.e., it consistently falls short of producing the food it requires. The following is an estimation of Ethiopia's "structural food deficit", based on a period of production and consumption (1979-83) that will be considered "normal" for this

report and based on the nutritional and population bases established in Section IV and Appendix A.

METHODOLOGY

The following assumptions are made:

1. A minimum average "normal" caloric intake requirement for long-term nutritional maintenance (C1) = 2100 kcal/person/day.
2. A minimum average caloric intake requirement for emergency subsistence (Ce) = 1500 kcal/person/day.
3. A "normal" national average main food annual consumption requirement (Fc), being defined as 6,527,000 MTs. The average annual consumption rate was taken from the USAID report, 1986 Emergency Food Need Assessment for Ethiopia by David Atwood. It reflects an average annual consumption of all main foods between the period of 1979/80 - 1983/84, a period defined here as a "normal" production period.
4. A per capita consumption of 207 kcal from foods other than main foods (Co). In addition to the per capita caloric intake of main foods, it is estimated that the average Ethiopian consumes approximately 207 additional calories from foods such as meat, fish, nuts, vegetables, eggs, oil, fat, honey, fruits, sugar, and seeds. This estimate is also taken from the USAID Atwood Report.
5. An estimated population during 1982 (Pop 82) based on this report's population estimate for 1986 (without the Eritrean and Trigrarian regional population adjustments) and adjusted for an average 2.76% population regression rate to 1982 (the middle year of the 1979/80 - 1983/84 period, of which Fc was estimated).

Based on these assumptions, we are able to estimate the following:

1. the "normal" daily per capita caloric intake of all foods (Cn) as:

$$C_n = \frac{(F_c)(K_c)}{(\text{Pop } 82)} + C_o$$

where Kc = unit conversion factor,
Co = per capita average daily
caloric intake from other
foods (USAID report)

2. percentages of the population receiving C1 and C2 during a "normal" period:

$$(x\%)(C1) + (1-x\%)(C2) = Cn$$

where x% = percent population at C1
 1-x% = percent population at C2

This is carried out just to get an idea of the possible percentage of the population that is consuming at least 2100 kcal per person per day and the possible percentage of the population consuming 1500 kcal per person per day.

3. the structural food deficit (SD) for Ethiopia in 1986:

$$SD = \left(\begin{array}{l} \text{"normal"} \\ \text{caloric} \\ \text{intake} \\ \text{required} \end{array} - \begin{array}{l} \text{actual} \\ \text{caloric} \\ \text{intake} \end{array} \right) \times 1986 \text{ Pop.} \times Kc$$

where Kc = unit conversion factor

CALCULATIONS

1. Determining Cn ("normal" daily per capita caloric intake of all foods):

$$Cn = \frac{(Fc)(Kc)}{(\text{Pop } 82)} + Co$$

If,

$$\begin{aligned} Fc &= 6,527,000 \text{ MT (From USAID report)} \\ Co &= 207 \text{ kcalories (From USAID report)} \\ \text{Pop } 82 &= (\text{Pop } 86) \left(\frac{1}{(1.0276)^4} \right) \end{aligned}$$

$$= 36,290,098$$

Kc = unit conversion factor, assuming 1 gm cereal equivalent = 3.5 kcalories

Then,

$$Cn = \frac{(6,527,000)}{(36,290,098)} (Kc) + 207$$

$$= 1,932 \text{ kcalories}$$

which is considered the "normal" average daily per capita caloric intake for this report.

2. Determining "normal" % population @ Cl, and
"normal" % population @ Ce.

$$(x\%)(Cl) + (1-x\%)(Ce) = Cn$$

$$(x)(2100) + (1-x)(1500) = 1932$$

$$x = \frac{(1932 - 1500)}{(2100 - 1500)}$$

$$= 0.72 \text{ or } 72\%$$

$$\text{and } 1-x = 0.28 \text{ or } 28\%$$

Therefore, 72% of the population of Ethiopia during a recent "normal" period consumed the minimum average daily consumption requirement to meet long-term nutritional maintenance standards, 2100 kcalories per person per day,

and

28% of the population consumed the minimum average daily consumption requirement to meet emergency subsistence standards of 1500 kcalories per person per day.

This is consistent with previous FAO estimates, such as:

- a) FAO 1969-71 estimate of 26% of population of Ethiopia receiving less than 1512 calories per capita (a period considered "normal" for that time).
- b) FAO statement that the average per capita consumption of people in Ethiopia is declining (2168 cal per capita in 1969-71 vs. this estimate of 1932 calories).

3. Estimating the structural food deficit for Ethiopia in 1986:

$$\begin{aligned} SD &= (Cl - \text{actual})(1986 \text{ Population})(Kc) \\ &= (2100 - 1932)(40,235,464)(Kc) \\ &= 704,925 \text{ MT} \end{aligned}$$

This "structural deficit" will be considered the base structural deficit in this report and will be utilized to determine the national estimated emergency food requirement for Ethiopia in 1986. This estimation is by no means a suggestion that Ethiopia or donor agencies should not address issues to help reduce this structural deficit. Rather, it is an estimation of the current "normal" (non-drought-affected) food shortages in Ethiopia, beyond the emergency food shortages (drought-affected) existing in Ethiopia now.

APPENDIX C: ESTABLISHING LOGISTICAL CAPACITIES

Although it was beyond the scope of this assessment to carry out a detailed analysis of the expected monthly logistical capabilities of the overall Ethiopian relief system, broad capacities have been estimated here based on information about logistical capabilities supplied by CRS.

The majority of food aid commodities enter Ethiopia at three ports: Massawa, Assab and Djibouti (see Figure 2-5). All incoming commodities are cleared by the Maritime Transit Service Corp., an Ethiopian quasi-governmental organization. Food aid commodities are then off-loaded at the respective ports and transported to the various primary storage centers by truck (and a limited amount by air) from Massawa and Assab and by rail from Djibouti. The RRC is responsible for coordinating all food aid distributions. The major primary storage and distribution centers are located at Nazareth, Addis Ababa, Dessi/Kumbolche, Asmara and Dira Dawa. From the primary centers, food is delivered to secondary distribution centers, the bulk by truck and some by air to critical areas cut off by conflict. Figure 2-5 indicates the major distribution centers, main paved highways, and sections of the main roads cut off by conflict.

Various reports provided by CRS, as well as data compiled from interviews, were reviewed to estimate the logistical capacities of systems that can be expected to be reliable in 1986. The following tables indicate these capacities, and form the logistical bases for this report.

PORT CONDITIONS

a. Offtake capacities (in metric tons per month)

<u>Port</u>	<u>Total maximum offtake capacity</u>	<u>Adjusted Total Maximum Offtake Capacity*</u>
Massawa	45,000 MT/Mo.	33,750 MT/Mo.
Assab	135,000 MT/Mo.**	101,250 MT/Mo.
Djibouti	<u>30,000 MT/Mo.</u>	<u>22,500 MT/Mo.</u>
Total	210,000 MT/Mo.	157,500 MT/Mo.

*It is arbitrarily assumed that the maximum offtake capacities at each port could be maintained on an average of 9 out of 12 months of the year during emergency situations.

**CRS estimates current post off-take capacity at Assab to be 75,000 MT/Mo. However, anticipated upgrading of the port facilities is expected to permit an off-take capacity of 135,000 MT/Mo. by early 1986.

b. Storage Capacities (average maximum storage capacity):

<u>Port</u>	<u>Covered Storage</u>	<u>Open Storage</u>	<u>Storage Under Const.</u>	<u>Total Covered Storage Expected for 1986</u>
Massawa	30,000 MT	10,000 MT	-	30,000 MT
Assab	30,000 MT	Unlimited	50,000 MT	80,000 MT
Djibouti	300 MT	15,000 MT	-	<u>300 MT</u>
			Total	110,300 MT

The additional storage facility under construction at Assab should help maintain steady off-loading at that port and allow a desired one month "buffer" stock capability should truck haulage drastically decrease. However, the port at Djibouti remains severely curtailed, due not only to the limited discharge capacity by rail, but also to the limited covered storage facilities, which hamper steady off-take potential.

Take-Away Capabilities from Port to Primary/Secondary Distribution Centers

The bulk of the food at the ports is taken away by trucks and by rail at Djibouti. Although some air services are utilized on a limited scale to serve "restricted" areas, this service was expected to cease for the most part by the end of 1985. The total trucks available in the country is a combination of GOE trucks from the National Transportation Corporation (NATRACOR), private trucks operating under NATRACOR (Ketena), RRC trucks, and trucks supplied by various NGOs. It was reported that approximately 80% of the Ketena trucks can be assumed to be used in relief operations. (See chart on next page.)

AVAILABLE TRUCKS

<u>Agency</u>	<u># of Vehicles or Trucks</u>	<u>Haulage Capacity of Trucks (MT)</u>
NATROCOR	1,000	Various
KETENA	5,000	Various
RRC	170 230 80	22 5-8 40
CRS	12 12 55 (Just arrived)	22 7 32
ECS	8 6	8 12
LWF	19 2 10 2 dump	6 11 22 Various
CRDA	22 4 19	32 22 7

In addition, a UN trucking fleet should be operational in 1986, consisting of 270 vehicles that are estimated to be able to transport up to 36,000 MT per month from Assab to N. Shewa, Wello and South Tigrai.

The maximum take-away capacities indicated below reflect actual take-away capabilities of the existing trucking fleet (and a small percentage of air take-away) and the existing rail take-away capabilities at Djibouti. Assuming that these capabilities will exist in 1986 (a reasonable assumption with the addition of fifty-five 32MT trucks for CRS and the UN trucking fleets), the total net expected take-away capabilities of the system are indicated below:

TOTAL NET TAKE-AWAY CAPACITY

<u>Port/Primary Warehouse Centers</u>	<u>Take-away Capacity</u>	<u>Adj. Tot. Take-away Cap. (Reflecting Adj. Avg. Port Capacity)</u>
Massawa/Asmara (by road)	45,000 MT/Mo.	33,750 MT/Mo.
Assab/Naz, Addis, Dessi (by road)	120,000 MT/Mo.	101,250 MT/Mo.
Djibouti/Dira Dawa (by rail)	15,000 MT/Mo.	15,000 MT/Mo.
	<u>Total</u>	<u>150,000 MT/Mo.</u>

Reports from CRS and other NGOs indicate that the trucking fleets available in Ethiopia now (and the additional trucks anticipated for 1986) are adequate to meet the port-to-primary warehouse distribution tasks.

The primary distribution warehouse capacities for CRS programs (as reported by CRS) are shown below:

PRIMARY DISTRIBUTION WAREHOUSE CAPACITIES

<u>Region</u>	<u>Primary Dist. Center</u>	<u>Warehouse Storage Capacity (MT)</u>
Eritrea	Asmana	10,000
Tigray	Mekele	10,000
	Other	10,000
Shewa	Nazareth	13,000
	Addis Ababa	11,400
Sidamo	Various	17,000
Wello	Dessi/Kumbolche	6,900
	Various	1,450
Gonder	Gonder	1,500
Harerge	Dira Dawa	<u>7,000</u>
TOTAL		88,250

CRS reports that they, along with their operational counterparts, currently have the trucking fleets and warehouse capacities to generally meet their 1986 expected monthly tonnage distribution levels. Combined, CRS and their respective operational partners currently have the warehousing and transportation necessary for the delivery of 21,673 MTs of food aid per month in 1986.

In summary, the logistical assumptions for this report are:

1. Maximum average expected take-away capacity from all three ports: 150,000 MT per month.
2. CRS current available secondary warehouse storage capacities: 88,250 MT.
3. CRS current and expected transport capabilities: 21,673 MT per month.

(CRS has indicated that, if additional secondary warehouse space is needed, the means are available for securing the facilities.)

APPENDIX D: REGIONAL SUMMARIES

REGION - ERITREA



Awrajas - 8
Woredas - 39

The majority of the awrajas are primarily cropping areas. Most pastoralists are in the eastern and southeast regions.

RRC Nov. 1985 Report:

Estimate of affected population: Dec. 1984 - 827,000
Oct. 1985 - 650,000

Awrajas showing greatest need: Hamassien (186,000)
Akale Guzay (120,000)

CDA Regional Summary Reports (from distribution centers):

Generally downward and stabilizing trends of percentages of children <80% wt/ht.

Dec. 1984 - 14% <80% of 20,221 children

Aug. 1985 - 12% <80% of 29,087 children

Grain Price Indices (RRC Nov. 1985 report):

Not enough price information is available from this region to make a detailed analysis. But special assessments show prices to be among the highest in the country with no signs of decrease. Teff is presently 350-380 birr per quintal in Asmara, compared to 200 birr in Addis Ababa. Other grains vary from 200-240 birr per quintal.

General Comments (from Dec. FAO and ECS Nov. reports):

Rainfall in 1985 was not good but better than the last five years. Cropped areas were significantly reduced due to lack of seed, oxen, late planting, lack of off-season rain, locusts, and displacement. Hail storms seriously affected crops in Serai and Akele Guzay awrajas. Eritrea has always been a deficit area; farmers can produce only 20-30% of the food needed to feed the population. Livestock in most pastoral areas have been diminished due to drought. Livestock in the pastoral areas were either sold or died. ICRC claims there is a shift of trends towards the areas south of Asmara (Senafe and surroundings) where needs have increased and high levels of malnutrition have been noted. In the southeast pastoral area, Akale Guzay region, the rains also failed. North of Asmara (Agordat and surroundings), the situation has largely improved.

Problem Areas (information taken from field reports, interviews with RRC, farmers, local clergy, etc.):

Hamassien (central region):

This is the most populated area. Large numbers of the population are expected to continue to be affected in 1986. Rains were poor in the area.

Areza (Northern Initiative site approximately 40 kilometers from Mandeferra and 70 kilometers from Tigrai border): Harvests were generally poor and yields were low although better than in 1984. 250,000 people live around Areza which includes a displaced population of 50,000. Of these, 40,000 are from the area, while 10,000 are from Tigrai. The GOE administrator claimed these were equally displaced by famine and war, and create a major drain on food supplies. Area harvest is expected to last only through February. Harvests in good areas are expected to last through March. Because cattle were affected by drought, little milk is available. Many pastoralists migrated to Tigrai in search of grass. Much land from Mandeferra to Areza was non-productive due to the "dry wind" which takes and disperses newly-sown seed. Critical needs are water and medical facilities. Food stocks are critically low; the water reservoir had very little water left. In this area there is no small harvest due to belg rains; only one belg rain had fallen in the past ten years.

Barentu (Northern Initiative site):

Rains have been poor, although better than past years. Yet 90% of the farmers were unable to sow their fields due to the conflict.

Keren & Sahil:

Harvests in these areas haven't been normal for ten years. Due to conflict, farmers have left fields unplowed for ten years. Harvest is expected to last 5-6 months but needs are expected to be great, especially in NI areas and regions of conflict. In Sahil, crop is expected to last only 4 months and possibly less due to lack of livestock.

REGION - WELLO



Awrajas - 12
Woredas - 37

All awrajas are cropping areas except for Awssa (pastoral) and Kalu (mixed cropping and pastoral).

RRC Nov. 85 Report:

Estimate of affected population: Dec. 1984 - 2,587,420
Oct. 1985 - 1,454,790

Awrajas showing greatest need: Dessi, Wag (Wafila & Sekota areas), Ambassel, Yeju, Kalu

CDAA Regional Summary Reports (from distribution centers):

Generally downward trends in percentages of children <80% wt/ht, stabilizing at low levels of malnutrition.

December 1984 - 25% <80% of 12,718
Sept. 1984 - 10% <80% of 55,771

Grain Price Indices (RRC Nov. 1985 Report):

Over 260% above normal. Prices remain at high levels due to lack of grain on stock and low expectations from this year's crop.
Desse Zuria - 376% above normal
Borena - 495% above normal

General Comments (from FAO Dec. assessment):

Belg rains were short and late. Cropped area was significantly reduced due to lack of seed and draft animals and displacement in certain areas. The meher rains stopped short at critical stages of growth. Army worm outbreaks affected the quality of some harvests.

Problem Areas (information taken from field trip interviews with SCF, RRC, farmers, and other reports):

SEKOTA:

This area had no rain for four years and only a 3-5 day rain in July 1985. Most animals have died; only about 5% of the animals are still alive, therefore very little milk is available. Army worm and other insect infestations damaged most crops in Sekota, especially in the lowland areas. Displacement of farmers due to food needs drastically reduced areas planted. Some peasants from Sekota have been in camps for over two years, so have not planted and have nothing to return to. The area is densely populated with the average

farm being 1/2 - 1 hectare. Great needs for seed, oxen and agricultural inputs exist. Returnees from the camps received no seed. In December, 14,000 returned to Sekota from the RRC camp at Korem; 6000 were sent back from the SCF Korem camp. Currently, ICRC distributes to 15,000, World Vision to 25,000, and RRC up to 60,000 persons in the Sekota area. ICRC is using air drops due to inaccessibility of roads and security problems. One of the main problems in reaching this area is road security; the road is often closed and convoys are vulnerable to guerilla attacks. A major concern expressed is that, if there are no regular distributions here, the people will return to the camps around Korem.

Wafla - woreda:

Many farmers from this area left their lands unplowed to migrate for food. Harvests are better than in 1984, but still low due to seed and oxen shortages. In 1985, the highlands areas had two harvests, while there was only one harvest in the lowlands. Of the twelve farmers' associations in the area, seven had poor production, and five had better production but expect it to last only 2-4 months (depending on with whom we talked). Lentil and bean seeds are needed in this area.

REGION - TIGRAI



Awrajas - 8

Woredas - 58

4 of the awrajas are primarily cropping (Axum, Adwa, Shire, Tembien); the other 4 (Enderta, Rayana Azebo, Agame and Kilte) are mixed cropping and pastoral.

RRC Nov. 1985 Report:

Awrajas showing greatest need: Kilte, Adwa, Agame, Rayana Azebo.

CDA Regional Summary Reports:

Most reports show decreasing levels of malnutrition or stabilization at low levels due to food aid.

January 1985 - 8% <80% of 31,141 children

September 1985 - 9% <80% of 48,399 children

Price Indices (RRC November 1985 report):

Not enough price information to make a detailed analysis. Special assessments show prices to be among the highest in the country with no sign of decrease observable.

General Comments:

In Tigray, rainfall was not good but better than last year. However, the crop is expected to be as bad as in 1984 due to shortages of seed and oxen, late planting, and the lack of off-season rain. Cropped area was significantly reduced and was damaged in some areas by hail and insect infestations. 50-60,000 left the camp at Mekele too late to plant. Livestock was greatly reduced in most areas due to drought. East Tigray had poor rains; other regions around Zalambesa had no rain. Rains were also poor in the lowlands of Maichow, in Rayana Azebo, east of Wukro and Tambien, and failed in September in central Inderta. Most crop reports point out that harvests will have low yields due to insufficient rainfall. Apparently, some areas had adequate seed. Shortage of oxen caused land to be tilled late, decreasing the chances of a good harvest. In the Zalambesa area, many oxen had died or were sold; those that had been left were taken to the lowlands of Eritrea or towards the Danakil. Because of irregularities of rainfall, specific areas will have to be watched for signs of need in 1986.

Problem Areas:

Areas of concern will be those in which there was lack of seed, oxen, poor rainfall, and damages by hail or insect infestations. In field interviews, problems are expected around Idaga Hamus where it was claimed there was no rain,

no harvest and no seed. In areas around Wukro, it was reported that the rain stopped prematurely in August and that the shortage of seeds and oxen compounded the shortfall. Poor harvests are expected around Mekele; yields are expected to be low primarily due to insufficient rainfall in some areas, and severe hailstorm and crop infestations. Short, interrupted rains affected crop maturity, and insect infestations in certain areas around Zalambesa, are expected to reduce yields.

REGION - SIDAMO



Awrajas - 6
Woredas - 35

RRC November 1985 Report:

Estimate of affected population: Dec. 1984 - 698,410
Sep. 1985 - 300,000
Oct. 1985 - 446,300

Awrajas showing greatest need:
Wolaita - all cropping areas
Arero - primarily pastoral

CDA Regional Summary Reports:

Most areas show stabilization, but increasing malnutrition is expected in the northern areas.

Jan. 1985 - 11% <80% of 12,844 children
Sep. 1985 - 11% <80% of 46,441 children

Price Indices (RRC Nov. 1985 report):

In most areas, the price of maize (primary crop) started to decline in September, and was nearly half the previous month's price in Gedio and Jemjem awrajas. However, prices were increasing in Wolaita to 201% as a result of poor production prospects. Prices were also abnormal in other markets with the indices between 130% and 178%.

General Comments:

Problems in Sidamo will be focused on the northern areas for 1986. According to the USAID report, the drought reduced production in Sidamo by 30%, with 14% of the region designated as drought-affected. Inadequate rains will likely reduce corn yields by 40% on 40% of cropped areas in Wolaita and Sidamo awrajas. Coffee and teff are also grown as cash crops; the coffee was affected by blight, as was the enset (false banana) crop. No surplus is expected from the recent harvest which is expected to last only through March 1986. Rapid population increases (400% since 1960) and heavy population densities are causing strains on the area. The average farm is 1/2 hectare - too small to support the average family, which could possibly create dependencies on food aid out of no other alternative. Because of drought, seed was poor and scarce in 1985, contributing to reduced yields and even greater shortages of seed for 1986. Agency reports on distributions for woredas below Soto show high levels of malnutrition, ranging from 24-49% in November. This area is designated for resettlement out of which 50,000 families are expected to be moved.

REGION - SHEWA



Awrajas - 11
Woredas - 104

Majority of the awrajas are cropping, with mixed pastoral/cropping in Yifatna Timuga, and pastoral in Yererna Kereyu.

RRC November 1985 report:

Estimate of affected population: Dec. 1984 - 779,820
Oct. 1985 - 632,800

Awrajas showing greatest need:

Menzna Gishe
Haykochna (Zewai, Dalocha)
Yifatna

CDA Regional Summary reports:

Generally upward trends in percents of malnourished and numbers of recipients in Southern Shewa. Programs in North Shewa show stabilization of malnutrition levels at 9-12%.

North Shewa - Mar. 1985 - 32% <80% of 1,628 children
Sep. 1985 - 13% <80% of 9,264 children

South Shewa - Feb. 1985 - 11% <80% of 474 children
Sep. 1985 - 18% <80% of 10,036 children

Grain Price Indices (RRC Nov. 1985 report):

Prices remained high in most markets in September, ranging from 232% to 378%. Lower prices observed only in Merehabete, parts of Yererna Keryu and Chebona Gurage.

General Comments:

Inadequate rains severely affected crops at critical stages of growth in the Rift Lakes area of Southern Shewa and in the lowlands adjoining Wello in Northwest Shewa (FAO). According to the USAID report, the drought had a devastating effect on the southern corn and sorghum areas in 1984, but in 1985 the area planted and yields are considered normal. However, recent assessments and FAO reports show increasing problems due to poor rains, shortages of seed, a mediocre teff harvest, and maize harvests 60% below what is needed. Rain in the Rift Lakes area is said to be decreasing every year. In northern Shewa, the first crops failed.

Problem Areas:

Recent surveys show areas of great need and rapidly increasing levels of malnutrition in Southern Shewa. UNOEOE Sept. 1985 report indicates problems around Meki, Dugda, Wareda, Dalocha, Haykochna, and Butajira awrajas. These are all in the Rift Lakes area of Shewa. Deaths are increasing due to malnutrition around Dalocha; in September at least 2,360 families departed to other awrajas in search of food. 1984 maize production was low in the Rift Valley, affecting the populations in these areas which depend mainly on the maize crop. This resulted in seed shortages for 1985, so areas planted were reduced. Meher harvest was estimated to be 60-70% below normal by local officials. Certain areas were affected by grasshopper infestations and army worm outbreaks.

REGION - GONDER



Awrajas - 7
Woredas - 29

RRC Nov. 1985 Report:

Estimate of affected population: Oct. 1984 - 376,500
Oct. 1985 - 135,390
Area of greatest need: Gayint awraja - all cropping.

CDA Regional Summary Reports:

Reports show decreases, then moderate increases in levels of malnutrition in August and September.

March 1985 - 34% <80% wt/ht of 1,377 children
Sept. 1985 - 26% <80% wt/ht of 4,894 children

Grain Price Indices (RRC Nov. 1985 report):

Prices started to decline in September. Trend is expected to continue in view of better production in the region. However, the level was still high and up to 393% in Gayint awraja.

General Comments:

ICRC has been airlifting food into Gonder directly from Massawa. Distribution is low in this area due to a shortage of stocks and security problems preventing movements towards Debat and Debark. Access by road is continually interrupted, hampering transport to distribution points in areas of need.

REGION - HARERGE



Awrajas - 13
Woredas - 61

Areas which are primarily pastoral: Gode, Kelato, Degahabor, Warder and Kebri Dehar. Awrajas which are primarily cropping: Habro, Harar Zuria and Wobera. Those which are mixed cropping and pastoral are Jijiga, Chercher, Gursum and Dira Dawa.

RRC Nov. 1985 Report:

Estimates of affected population: Oct. 1984 - 419,120
Oct. 1985 - 1,200,340

Areas of greatest need: Harar, Chercher, Jijiga.

CDA Regional Summary Reports:

Reports show general reductions in levels of malnutrition among recipients in food programs, but increasing numbers of newly registered and high rates of malnutrition among those currently not receiving food aid.

January 1985 - 27% <80% wt/ht of 1,550 children
Sept. 1985 - 15% <80% wt/ht of 14,694 children

Grain Price Indices (RRC Nov. 1985 report):

Prices continued to increase through September, indicating poor production prospects and indices as high as 314% in Garamuleta awraja.

General Comments:

Greatly increased needs for food aid are expected for 1986 although the crop was slightly better in 1985 than in the previous year. Harerge's harvest was much worse than anticipated; as a result, people have depleted reserves. The meher rains stopped short in September, also affecting the quality of the harvest. Cropped area was significantly reduced. Highland areas had poor belg rains and experienced unusual freezing rains, "Amedya", from the end of September to December. This affected both crops and animals. Most agriculture is limited to the eight highland awrajas where the majority of the population lives (3.2 million). 89% of the lowlands areas are used by pastoralists or nomads; highlands consist of settled peasants. Major factors affecting 1986 status: lack of and unevenly-distributed rains; short meher rain; shortages of plow oxen, seeds and agricultural inputs; due to short rains, good crops didn't reach maturation or produce seed, dying in late September

and early October; frost damage in highlands; army worm infestations especially bad after short rains.

Problem Areas:

Western lowlands are experiencing problems due primarily to poor rains. Areas of the western highlands had poor harvests due to frost damage and army worm infestations. Harvests around the Chelenko distribution center (visited by the assessment team) are expected to last only 1-2 months (through February). Children entering the supplemental feeding program in the lowland center at Error are all listed as below 80% wt/ht. The greatest problem in the Ogaden affecting pastoralists is lack of water. Food aid is difficult to set up in the area due to registration and monitoring problems, roving populations, logistics problems and lack of security. Other strains in the Ogaden include approximately 400,000 persons returning from Somalia.

Areas experiencing large or total crop failures were Habro with 25-30% failure, Jijiga with 100% failure, and Chercher where 75% failure is expected.

REGION - KEFFA



Awrajas - 6
Woredas - 38

RRC Nov. 1985 report:

Estimate of affected population: Oct. 1984 - 1,500
Jan. 1985 - 0
Oct. 1985 - 90,000

All needs are focused in Limu and Jimma awrajas, both cropping areas.

CDA Regional Summary Reports:

No centers had been established in Keffa until recently. Those newly opened show high rates of malnutrition in the population.

General Survey date: Sept. 1985 - Limu awraja (pre-harvest):
63% <80% wt/ht, 25% <70% wt/ht, out of 396 children surveyed.

Date Program Opened: end of Oct. 1985 - 47% <80% wt/ht, 15% <70% wt/ht, out of 300 children enrolled. Most had been receiving food for one month at this point.

Price Indices (RRC Nov. 1985 report):

Introduction of price controls earlier in the year created monitoring problems. But levels in August were very high and increasing in September. September indices ranged from 128% in Keffa to 269% in Jimma awrajas.

General Comments:

Little or no food aid was sent to Keffa in 1985; however, current surveys show that areas of great need have already developed. Local surveys conducted through EECMY show improvements in areas reached by food aid and small harvests. EECMY and UNEOE surveys have found harvests less than 1/4 normal in certain areas surveyed. Earlier FAO and USAID assessments claim the harvest will be normal for Keffa, yet current findings point to remote areas possibly overlooked by these reports.

Problem Areas: Limu Kosa and Limu Saka

Large numbers of deaths due to hunger occurred between March and date of EECMY survey in September. Families have migrated out of the areas in search of food. Almost all livestock have died over the past four years due to the disease trypanosomiasis. Land cultivated was low and

harvests small due to drought, lack of seed and lack of plow oxen. Peasants had been suffering from food shortages since last April.

OTHER REGIONS



The following regions have estimates of affected populations ranging from 0 in Gojjam and Wellega, to 113,000 in Gamo Gofa, according to the November RRC report. Little information was collected by the assessment team on conditions in these regions because areas visited were primarily those with consortium food programs. However, pockets of need continue to become apparent, as relief agencies and the RRC survey areas potentially affected by short or inadequate rains, notably in Gamo Gofa and some parts of Arssi. Although the RRC report shows Wellega as having no shortages in 1986, other reports have pointed out problem areas here with high percentages of malnourished. Another issue creating problems of its own is the resettlement of groups of people into areas of Illubabor which are not supportable by agriculture.

RRC Nov. 1985 Report - Estimates of affected populations:

Bale - Oct. 1984 - 188,200
Oct. 1985 - 60,000

Elkere awraja shows greatest need; primarily pastoral area.

Price Indices: Decreasing trends but still above normal. 249% in Genale.

CDA Regional Summary Report: Those on food programs show greatly reduced percentages of malnourished.

June 1985 - 23% <80% wt/ht of 2,144 children
Sept. 1985 - 2% <80% wt/ht of 3,339 children

Gamo Gofa - Oct. 1984 - 187,000
Oct. 1985 - 113,000

Gelebna Hamero awraja shows greatest need; primarily pastoral.

Price Indices: Prices declining but still far above normal ranging from 140% to 175%.

CDA Regional Summary Report:

April 1985 - 11% <80% wt/ht of 3,566 children
Sept. 1985 - 4% <80% wt/ht of 11,609 children

Arssi - Oct. 1984 - 33,077

Oct. 1985 - 10,000

Only area showing need is one woreda in Chilado; all cropping.

Price Indices: Starting to decline but still high, up to 308% in Assela (regional capital).

Illubabor - Oct. 1984 - 33,077

Oct. 1985 - 25,000

Buno Bedelle awraja shows greatest need; all cropping.

Price Indices: Not enough information available, but stable to declining. Still generally high.

Gojjam & Wellega - show no food shortages in 1986, according to RRC November 1985 report.

Price Indices: Gojjam - despite better production prospects, prices were increasing except for barley. Indices range from 217% in Kola to 328% in Bichena.

Wellega - Declining prices in many areas; prices for most crops low. Arjo awraja still shows 276%.

CDA reports for Wellega (General population survey):

Program opened: May 1985: Wamo Hagalo
(this was the 2nd month 31% <80% wt/ht of 1,945
for half of these children.
children)

Program opened: May-June 1985: Nekemte area
26% <80% wt/ht of 1,925 children.

General population survey - Sept. 1985 - Nunokumba
41% <80% wt/ht of 273 children surveyed.

CDA Food Program regional summary (Wellega):

May 1985 - 92% <80% wt/ht of 523 children
Sept. 1985 - 43% <80% wt/ht of 3,436 children

APPENDIX E: 1986 EMERGENCY FOOD NEEDS

METHODOLOGY

To estimate the 1986 emergency food needs of Ethiopia, information was utilized from previous reports and assessments, specifically:

1. The Central Statistics Office (CSO) Agricultural Sample Survey 1984/85, Results of Area and Production (referred to here as "CSO Report").
2. Early Warning System (EWS) 1986 Food Supply Prospect, (Supplement) (referred to here as "EWS Report").
3. USAID 1986 Emergency Food Need Assessment for Ethiopia by David Atwood (referred to here as "Atwood Report").
4. Other EWS and CSO reports, as well as information from the recent FAO Crop Assessment Mission preliminary report.
5. Other information developed in this report.

Utilizing information from these sources, as well as the assumptions presented earlier in this report, a national emergency food requirement estimation can be made by considering the following equation:

Emergency food needs equals total main food consumption requirements minus structural deficit minus total main food availability.

The 1986 structural deficit is calculated in Appendix B of this report. The 1986 total food consumption requirements and the 1986 total foods expected to be available must then be estimated to determine the 1986 emergency food needs.

FINDINGS

1. Estimating the 1986 total main food consumption requirement:

If the average daily normal per capita caloric requirement of main foods (Cal. Avg.) is 1893 kcal (that is, 2100 - 207 kcal, as explained in Appendix B), and if the 1986 Ethiopian population (Pop) is 40,235,464, then the total main food consumption requirement for 1986 (CONS. REQ.) can be calculated:

$$\text{CONS. REQ.} = (\text{Cal. Avg.}) \times (\text{Pop}) \times (\text{Kc})$$

where Kc = unit conversion factor

or,

$$\begin{aligned}\text{CONS. REQ.} &= (1893) \times (40,235,464) \times (\text{Kc}) \\ &= 7,942,998 \text{ metric tons}\end{aligned}$$

2. Estimating the 1986 total main foods available:

Main foods in 1986 will come from 2 sources: locally-produced peasant farm foods and foods not locally-produced by peasant farms.

- a) Locally-produced peasant farm foods: these include meher crop productions, belg crop production, enset or false banana production, and milk production.

Table E-1 below estimates the 1985 peasant main crop production, by region.

TABLE E-1

Region	Meher 1985 Peasant Prod. Cereal/Pulses (MT)	Net Meher Peasant Prod. Cereal/Pulses (MT)
Arssi	474,825	384,842
Bale	78,420	58,856
Gamo Gofa	57,738	43,847
Gojjam	850,029	679,584
Gonder	527,068	413,348
Eritrea	225,860	191,981
Harerge	182,600	141,543
Illubabor	124,144	99,499
Keffa	260,398	207,475
Shewa	1,486,481	1,188,187
Sidamo	163,932	132,068
Tigray	274,670	233,470
Wellega	368,843	290,821
Wello	202,528	149,895
Totals	5,272,536	4,215,415

The gross meher crop production was estimated by taking the 1984/85 main crop production estimates of the CSO report and increasing or decreasing that amount by the estimated percentages given in the EWS report. For example, the CSO report estimated the main crop production in Arssi in 1984/85 to be 365,250 metric tons. The EWS report estimates that the main crop production in Arssi is expected to be 30% above the 1984/85 levels. Therefore, the 1985 main crop production for Arssi is estimated to be:

$$\begin{aligned} \text{Arssi main crop production} &= (365,250) \times (1.30) \\ &= 474,825 \text{ metric tons} \end{aligned}$$

and so on for each region.

The figures for Eritrea and Tigray are those used in the CSO 1977/78 crop production estimates, as no other information was available.

[Note: The total gross 1985 meher crop production estimate of 5,272,536 metric tons is in line with FAO's preliminary report for the 1985 meher peasant crop production of 5.3 to 5.4 million metric tons.]

The net meher crop production for each region is determined by deducting 15% from the gross crop for harvest and other losses, and deducting amounts for seeds at the rate of 58 kg per hectare of area planted in crops. The area under crops is also taken from the CSO report and assumed to be approximately the same for 1985/86.

As indicated, the total 1985 meher net crop production is estimated to be approximately 4,215,415 metric tons.

The gross belg production is assumed to be 265,000 metric tons of cereals and pulses. This figure reflects the FAO Mission estimate that belg production can be expected to be 250,000-280,000 metric tons. This figure also falls in line with previous normal belg harvests of around 250,000 metric tons.

The net belg harvest is arrived at by deducting 15% for losses (no deduction for seeds), or

$$\begin{aligned} \text{net belg} &= (0.85) \times (265,000) \\ &= 225,250 \text{ metric tons} \end{aligned}$$

The net production of enset is estimated to be 525,000 metric tons in cereal equivalent. This is taken from estimates of the Atwood report, and is also in line with the FAO preliminary report that indicates enset production should fall within the range of 500,000-600,000 MT of cereal equivalent.

The cereal equivalent of milk production is estimated to be 207,000 metric tons, also taken from estimates of the Atwood report.

The total locally-produced peasant foods estimated to be available in 1986 can then be arrived at by totalling the net meher and belg crops, the enset production, and the milk off-take or:

Total locally produced peasant main foods = (4,215,415)+(255,250)+(525,000)+(207,000)
= 5,172,665 metric tons

- b) Foods not locally-produced by peasant farms: These are foods from sources other than local production. (These food sources and estimates are taken directly from the Atwood report, estimates from FAO and of this team.) They consist of foods from state farms, 1985 food carry-overs, commercial imports, and other food sources.

The following is a list of these food estimates and their respective information sources.

State Farms	250,000 MT	(estimate from FAO & CSO reports)
Carry-over	218,000 MT	(from Atwood Report)
Commerical Imports	79,000 MT	(from Atwood Report)
<u>Other Food Sources</u>	<u>132,000 MT</u>	(see * below)

TOTAL 679,000 MT

[*It is estimated by this team that approximately 100,000 metric tons of food aid is currently available in storage. Also, it is reported from unconfirmed but reliable sources that food aid is entering Eritrea and Tigrai from Sudan at the rate of 15,000 and 17,000 metric tons respectively, per year.]

Therefore, a total of 679,000 metric tons is estimated to be available from sources other than locally-produced peasant farm foods.

The total main food available can now be determined by adding the locally-produced peasant foods (peasant foods) with the foods other than peasant foods (other foods):

Total main foods available	=	(peasant foods) + (other foods)
	=	(5,172,665) + (679,000)
	=	5,851,665 metric tons.

We can now estimate the total emergency food needs for Ethiopia in 1986 as:

$$\begin{aligned}
 \text{Emergency food needs} &= \text{Total main food consumption requirements} - \text{Structural deficit} - \text{Total main food available} \\
 &= 7,942,998 - 704,925 - 5,851,665 \\
 &= 1,386,408 \text{ metric tons per year} \\
 &= 115,534 \text{ metric tons per month, average}
 \end{aligned}$$

(This monthly average falls within the logistical limits of 150,000 metric tons per month as set forth in Appendix C.)

If we assume that the estimated numbers and locations of people depending totally on food aid in 1986 are accurate as described in the EWS report, we can then estimate the relative needs of each region, based on these population figures and the emergency food needs figure determined above.

For example, in Arssi, EWS estimated that there will be 10,000 people requiring emergency food aid out of a total national needy population of 5,817,620. Then, a rough estimate of the amount of emergency food that is needed in Arssi is:

$$\begin{aligned}
 \text{Food needed in Arssi} &= \frac{10,000}{5,817,620} \times 1,386,408 \text{ metric tons} \\
 &= 2,383 \text{ metric tons.}
 \end{aligned}$$

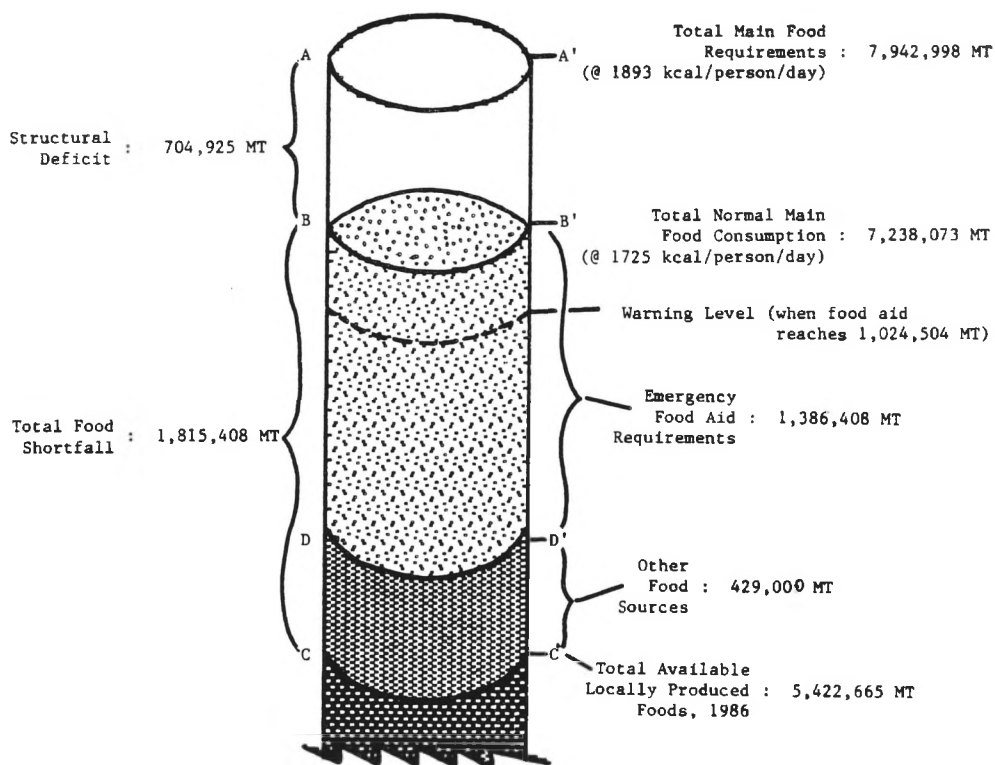
and so on for each region. See Table E-2 below.

TABLE E-2

Region	EWS 1986 Needy People Estimate	Estimated Regional Relative Food Needs (MT)
Arssi	10,000	2,383
Bale	60,000	14,299
Goma Gofa	113,000	26,929
Gojjam	0	0
Gonder	135,390	32,265
Eritrea	650,000	154,903
Harerge	1,200,340	286,055
Illubabor	25,000	5,958
Keffa	90,000	21,448
Shewa	632,800	150,804
Sidamo	446,300	106,359
Tigray	1,000,000	238,312
Wellega	0	0
Wello	1,454,790	346,694
TOTALS	5,817,620	1,386,408

APPENDIX F: CAUTION LEVELS FOR EMERGENCY FOOD IMPORTS

The illustration below depicts the 1986 food requirements and availability levels for Ethiopia:



Line A-A' represents the national main food requirements for the 1986 Ethiopian population (as determined in Appendix E). Line B-B' represents the estimated actual average consumption of main foods for 1986 (with caloric intake of 1932 - 207 kcal, as determined in Appendix B). The gap between lines A-A' and B-B' represents the structural food deficit for 1986: 704,925 metric tons.

Line C-C' represents the total locally produced foods available for consumption in Ethiopia in 1986, determined in Appendix E to be 5,422,665 metric tons. The gap between lines B-B' and C-C' represents the total food shortfall, that being the difference of normal average consumption of main foods and the total locally produced available foods, equal to 1,815,408 metric tons.

The gap between lines B-B' and C-C' will be partially filled by food carry-over (218,000 metric tons), expected commercial imports (79,000 metric tons), and other food sources (132,000 metric tons), all totalling 429,000 metric tons. These food sources are represented by the gap between lines C-C' and D-D'.

The remaining gap between lines B-B' and D-D' represents the 1986 emergency food estimate of 1,386,408 metric tons.

It is important that emergency food aid levels never exceed the normal, average consumption rate of main foods when added to the total local food available for consumption and the other foods and imports. That is, the total locally produced food plus food aid, plus other imports should not be greater than the total average consumption.

If food aid levels cause total foods available nationally to exceed normal average consumption levels, there is a great danger of disrupting market conditions and creating disincentives to agricultural production.

If we define the "warning line" as that level of total national food availability that reaches 95% of the normal average food consumption of main foods, then for 1986,

$$\begin{aligned} \text{warning level of} \\ \text{total foods available} &= (0.95) (7,238,073 \text{ metric tons}) \\ &= 6,876,169 \text{ metric tons.} \end{aligned}$$

In other words, when the total national food available (which is equal to total local foods produced + food aid + other imports) reaches 95% of the normal average consumption of main foods, it becomes extremely important to monitor markets carefully to ensure that any additional food does not undermine market conditions and agricultural prices.

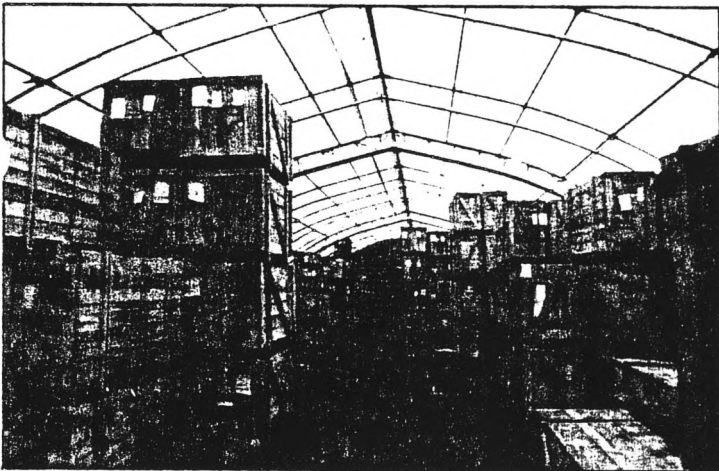
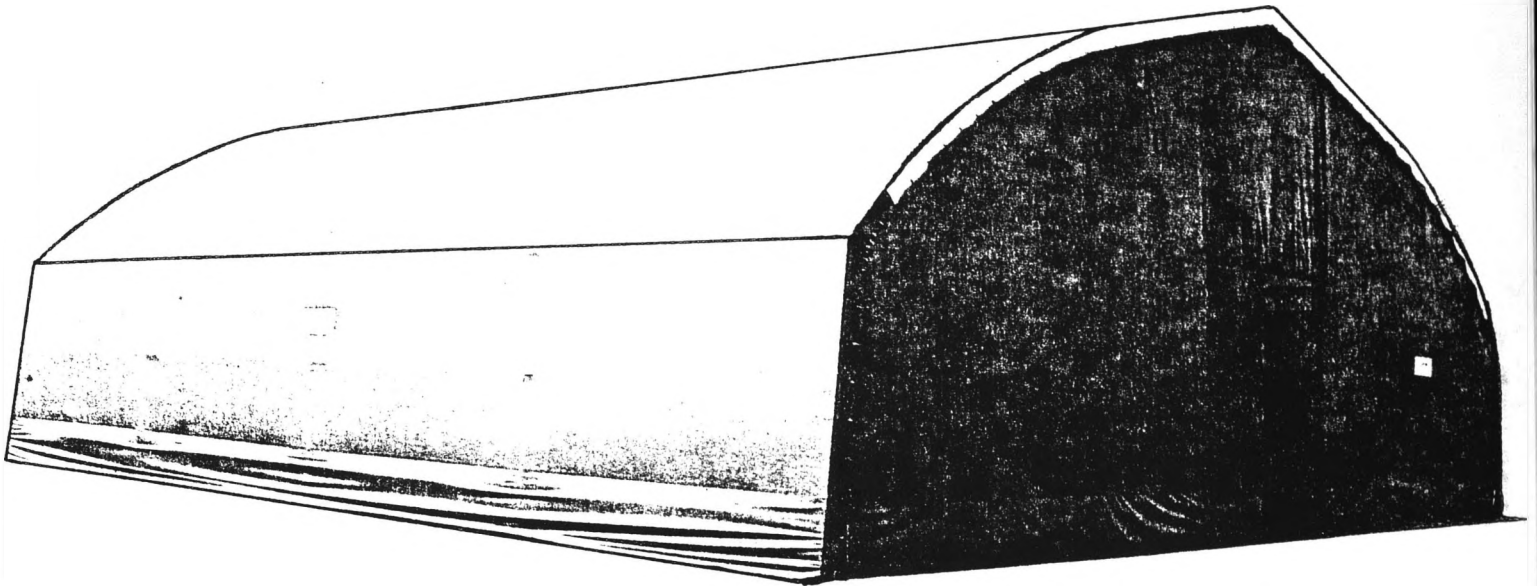
For 1986 the warning level for total available food is 6,876,169 metric tons. Assuming "other imports" (429,000 metric tons) and "locally produced foods" (5,422,665 metric tons) are constant, then acceptable levels of food aid that can enter the system without possible adverse disruptive effects would be:

$$\begin{aligned} \text{Acceptable Levels} &= (6,876,169 \text{ MT}) - (\text{local foods}) - (\text{other foods}) \\ &= (6,876,169 \text{ MT}) - (5,422,665 \text{ MT}) - (429,000 \text{ MT}) \\ &= 1,024,504 \text{ MT} \end{aligned}$$

In other words, 1,024,504 metric tons of food aid can enter Ethiopia during 1986 without great concern of disrupting market conditions.

Since the 1986 total emergency food needs estimate is 1,386,408 metric tons, it is suggested that when total food aid imports reach about 75% of the total required, or 1 million metric tons, then extra monitoring should take place in order to ensure that no major disruptions take place. The Early Warning System does an excellent job of monitoring market conditions. This information should be utilized to act as a warning indicator of the potential effects of excessive food aid.

APPENDIX G: SMALL TRANSPORTABLE WAREHOUSES



Information about this warehouse
can be obtained from:

Disaster Supply Specialists
P.O. Box 130667
Tyler, Texas 75713
Tel: (214) 561-9315
Attn: R. Fred Epperson

These steel framed, fabric covered structures are quickly and easily erected for storage, sports and exhibition facilities etc. They may be located on almost any type of surface keeping groundwork to a minimum.

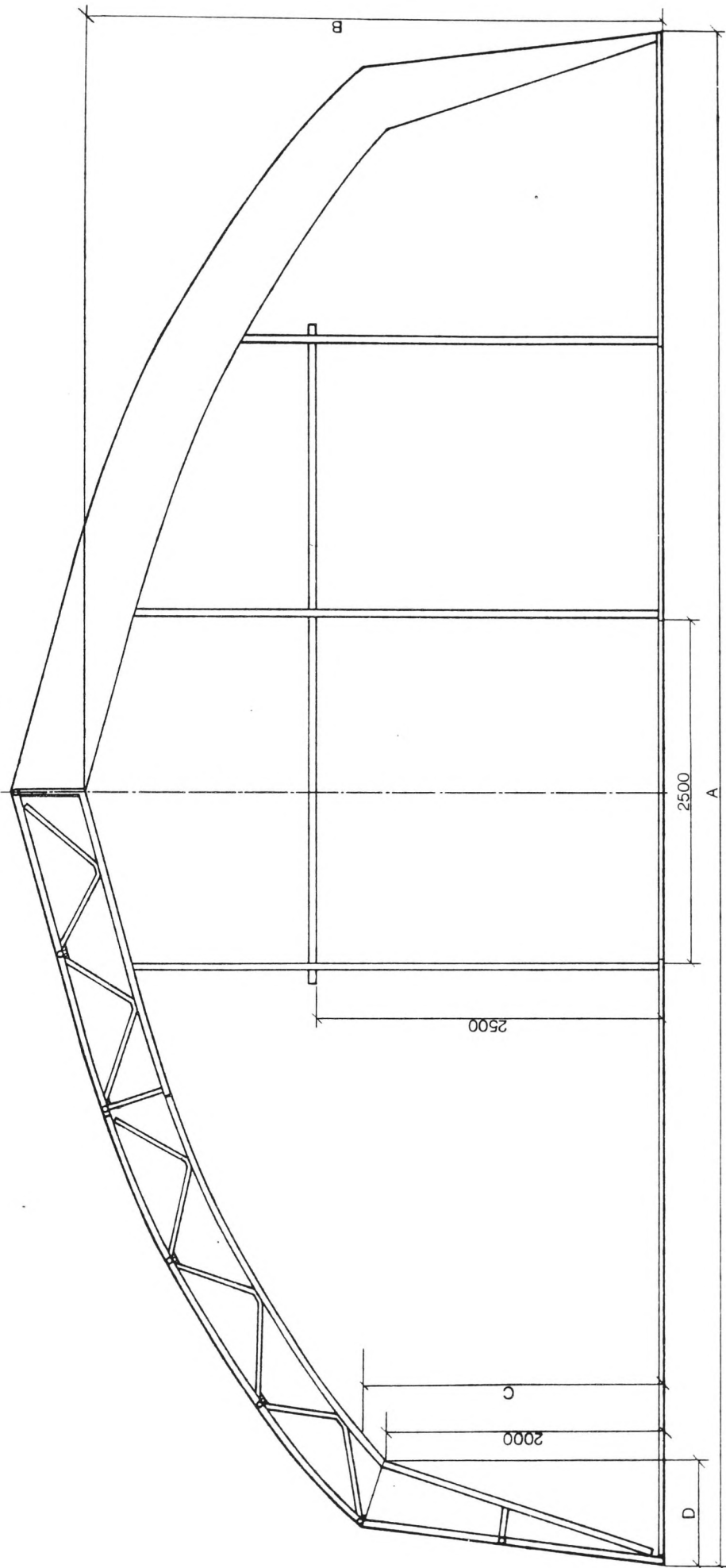
All steel-work is hot dipped galvanised. The tailor-made covers are of a tough durable PVC coated reinforced fabric with a life expectancy of between 10 and 15 years. After this period the cover may be simply replaced.

A special white fabric is available for use in hot climates.

Manually operated sliding doors are available in standard sizes 2.5x2.5 m (or as required).

Translucent roof but lighting may be installed where a power supply is available.

Dismantled and relocated when required.



Specifications: (mm)		
A	B	C
11000	4670	2150
13000	5150	2200

Available in 2 widths – 11 or 13 m

Standard length – 12 m
(extended as required by 12 m increments)

Reinforced PVC coated fabric weighing 800 gm per sq. m.

 **PMH INTERNATIONAL AB**

APPENDIX H: FOOD-FOR-WORK FOR WOMEN

Women comprise 50% of the rural work force and are directly and indirectly involved in most agricultural activities. More and more women are becoming involved in activities and leadership roles in the peasant associations, service cooperatives, and producers cooperatives. Their working hours tend to be much longer than those of their male counterparts, as women are responsible for taking care of the family, working in the fields, collecting firewood and water, maintaining the home and helping with the cattle. In addition, they also are frequently involved in sharing the responsibility of bringing in an income.* Because of the lack of technology, even the simplest tasks can be burdensome and time-consuming, requiring great physical labor and limiting the woman's ability to participate in social and economic development. This results in an under-utilization of a very productive sector of the population.

In the planning of FFW programs for women, utilizing basic technologies based on traditional and natural resources could benefit women both physically and economically. Projects should be designed to allow women to continue to engage in the necessary daily activities of maintaining the home. They should take place close to the home or village and should only involve a few hours a day so as not to interfere with other responsibilities. Projects should also be designed to introduce new technologies to women in order to help reduce their daily burden. For example, rural women are traditionally responsible for fetching water for household consumption and for watering the animals. This can consume 3-5 hours of each day, especially when water resources are limited and often at great distances. This is estimated to take one-sixth of the energy expended by rural women. The installation of hand water pumps and training in their operation and maintenance can save women tremendous amounts of energy and time. This would also enable women to cultivate small vegetable gardens and benefit from small-produce sales.

Women can participate in anything the men can do so long as their tasks do not involve heavy labor. FFW projects for women which require organized labor should include the following conditions:

1. they should be close-to-home activities;
2. they should be in accessible areas;
3. they should require only a few hours a day;
4. they should not involve unusual and heavy labor; and

*"Women in Agricultural Development". Paper by Semaneh Tamrat, Working Papers: National Workshop on Women in Agricultural Development.

5. some sort of child-care program should be established to enable mothers to leave their infants and young children in proper care.

Types of projects appropriate for women include:

1. Earth-moving projects that require the carrying away of dirt and gravel. This includes terracing, road building, and the clearing of sites for construction projects, and diversions.
2. Tree planting in reforestation projects.
3. Clearing of light brush for farmland or reforestation projects.
4. Maintenance of windbreaks.
5. All aspects of small building projects including clinics, outpatients facilities, MCH (Mother-Child Health) centers, schools and community centers. Women can be involved in everything from ground-clearing to roofing, so long as heavy labor is not involved.
6. In the preparation of cooperatively-produced or marketed crops such as coffee, women can help roast and turn the beans. Women can also be involved in the winnowing of the wheat and thrashing on a cooperative level.
7. Operating and maintenance of day-care centers and involvement in food-distribution center activities.