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# **FAMINE AND COUNTER-FAMINE OPERATIONS**

By

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INTERTECT

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## Chapter 1

### FAMINE AND ITS CAUSES

#### INTRODUCTION

Famines are one of the great scourges of mankind. They kill large numbers of people, especially women and children; impoverish whole populations; encourage the spread of disease and malnutrition, dislocate families, villages, and even entire societies, and create or spread political instability. Famines and the conflicts that often create and spread them leave wounds in a society that may take generations to heal.

There are two types of famines: those that are a result of a lack of food and those that are a result of a lack of purchasing power among the poor.<sup>1</sup> Of the two, the latter is the most prevalent.

To combat famines, there are two general approaches: provision of food and provision of economic support. The relative effectiveness of each is determined by when the assistance is applied. In most cases, food relief alone has only a limited impact and is often counterproductive.

From the general approaches, two broad strategies to fight famine have developed. The first, which revolves around food aid, can be called "conventional relief." The second, which focuses on addressing the root causes of famine and which is designed to prevent, contain, and control famines with a range of economic and market interventions, may be called "counter-famine" assistance. If counter-famine measures are taken early, many famines can be prevented or quickly controlled.

#### DEFINING FAMINE

Developing a working definition of famine is an important starting point, for ~~many who work in famine relief have only a limited understanding of the mechanisms at play and the complexities of the problem they are encountering.~~ <sup>helping to</sup> Inaccurate perceptions can lead to the application of relief measures that do little to address the underlying problems and may even exacerbate them.

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<sup>1</sup> A lack of purchasing power is called an "entitlement problem."

Famine may be defined as a set of conditions that occur when large numbers of people in a region can't obtain sufficient food to eat, and widespread, acute malnutrition results. (Acute malnutrition occurs when a person eats so little food that his or her body's store of nutrients is depleted.) If the condition continues, the person could die.

The primary consequence of famine is a significant increase in the number of deaths (mortality) associated with inadequate food consumption. Note that *consumption* levels, not *food availability*, define a state of famine. Other consequences are a significant rise in rates of disease (morbidity) and massive dislocation of populations.

Famine is an *area-wide* phenomenon characterized by the inability of local markets to supply food at costs that a substantial number of the population can afford. Most people -- including some who work in famine relief -- believe famines occur when there isn't enough food in an area to feed people. That is rarely true, even in conflict zones. Instead, famines occur when the poor don't have enough *money* to buy food when it's scarce and prices rise. Some amounts of food can usually be found even in countries that are in the midst of civil wars and those that have perpetual food deficits. In those countries, for example, people who live in urban areas can usually afford to buy higher-priced, imported foods. There are only a few societies that cannot redistribute available food stocks to meet temporary needs -- if they want to. That means that famines are an economic and political problem more than a commodity deficit. The best historical example of this is the Irish Potato Famine of 1851: at the height of the famine when poor Irishmen were starving, Ireland was exporting wheat and other grains to England at above-normal levels.

#### **DIFFERENTIATING BETWEEN FAMINE AND CHRONIC NUTRITIONAL DEFICIENCIES**

Many countries experience perpetual food shortages and distribution problems. These result in chronic and often widespread hunger among significant numbers of the population. There is a difference between famine and chronic malnutrition. Chronic hunger occurs when a large percentage of the populace routinely lack the financial resources to acquire sufficient food from available stocks or the types of food they can obtain is nutritionally deficient, i.e., they have a poor diet. Chronic hunger can be found in rich countries like the U.S. as well as ~~the~~ poor nations such as India. Individually, chronic hunger leads to stunted growth and physical deficiencies; collectively it leads to higher infant and child mortality but at rates far less than in famines.

While chronic hunger is a major concern, the approaches used to eradicate it are different than those used to fight famine. They require long-term institutional and developmental approaches.

### **CONTEMPORARY FAMINES**

As recent as the 1970s, most famines were a result of a combination of economic and environmental factors. However, after the great Sahelian (Africa), Ethiopian and Bangladesh famines of that decade, the international community initiated a number of measures that were designed to increase food security at the international level; in other words to make it easier to send food from the more productive countries to the Third World and to increase food supplies in the most famine-prone countries. Significant strides were also made in developing systems to help warn of impending food shortages: satellites were able to detect drought conditions and economic indicators were identified that gave reasonably accurate signals that food shortages were becoming critical.

As a result of these advances, famines should not be a significant threat; yet they are. The reason: war and civil conflict. In every famine that has occurred in the 1980s and 90s, the country was at war, either with itself or with its neighbors. The Ethiopian famine of 1984-86 started in the war-torn provinces of Eritrea and Tigray; the Sudanese famine of the same period occurred as the civil war in the south assumed tragic proportions, and the Somali famine of 1992 was due almost entirely to factional fighting that disrupted the flow of food to the people in all parts of the country.

A look at any famine today will find a country in conflict. In most cases the famine will be in or adjacent to the war zone but famine conditions may also develop in areas far from the actual fighting. In 1990, severe food shortages developed in western Sudan largely because the government was spending all its efforts on fighting the war in the south and was diverting food and transport to that area. When a drought occurred in the west, there was insufficient food to reallocate to the region and the cost of hiring trucks to move what little was taken in made the market price prohibitive for the poor. Furthermore, the government was unwilling to admit that there was a problem; they feared that in an unstable political environment admitting that food problems existed would be seen as a failure of their administration or might further erode popular support for the war in the South.

Without conflict, there would be few famines today. Since war is the major cause of famines, it might seem that there is little reason to study their origins and roots. However, it is not that simple as famines often spread from conflict zones to other areas. And as in the example of Sudan cited above, food crises can break



out spontaneously in areas quite far from the fighting. In those areas other factors may cause the famine to develop and behave in a manner similar to classic, non-conflict induced famines. For that reason, it is important to develop an understanding of the classic famine -- its characteristics, how it develops and spreads and, most important, how it can be fought. When that has been mastered, famines in conflict, which are infinitely more complex and difficult to fight, can be tackled.

## **CAUSES OF FAMINE**

Famines are the result of an unusual event or set of events striking a community in which large numbers of people are already undernourished. They include:

- War, civil conflict, or social upheaval.
- The failure of a harvest due to climatical or other environmental conditions such as drought, flood, wind, or insect infestation.
- The disruption or collapse of the food distribution network and/or the marketing system affecting a significant percentage of the population. Political, environmental, or economic crises could cause these events.
- Lack or disruption of an emergency food support system that ensures that the rural poor have access to food during food shortages. This could include food banks, price supports, and transportation subsidies.

Famines may be triggered, or their onset accelerated, by natural phenomena such as drought, floods, or insect infestations (usually locusts), or by war or civil conflict. The two most common triggers are conflict and drought.

### **War and Civil Conflict**

Wars triggered most of the great famines of the late Twentieth Century. Recent examples include the Nigerian civil war (1968-1970), the Bangladesh civil war (1971); the armed insurrection in the northern Ethiopian provinces of Eritrea and Tigray (1984-1985), and widespread civil war in many parts of Mozambique after 1984. War not only contributes to the creation of famine, but it also disrupts famine relief operations.

Conflict can trigger famine in a number of ways. It can:

- Disrupt the agricultural cycle.
- Drive farmers from the land.

- Disrupt marketing processes.
- Destroy stores of harvested foods.
- Create food shortages that drive the prices above levels that low-income families can pay.

Not every war creates famine conditions. There are many cases where both government and rebel forces have ensured that food supplies were available throughout a conflict. Throughout the long troubles in Lebanon, for example, no major food shortage has occurred. In El Salvador, and during the Nicaraguan civil war in the late 1970s, insurgent forces took steps to ensure that food was provided to people in the rebel-held areas. As a general rule, however, the chances of the rebel forces being able to create an alternative distribution sources for the population under their control decreases as the area of conflict gets larger and the potential supply line gets longer.

Throughout history famine has been used as an instrument of war. In recent years there have been disturbing instances where governments have tried to use the denial of food as a deliberate weapon to try to control populations in rebel areas. However, a famine created or prolonged for military purposes is an ultimately ineffective weapon. That is because it is indiscriminate and only attacks the people who are least likely to be combatants -- children, pregnant and nursing women, and the elderly. They are the ones who die first and in the largest numbers.

The proponents of total war argue that famines undermine the morale of the fighters, increasing desertion and weakening their will to struggle. There is no evidence to support this contention. In fact, waging war against civil populations usually solidifies support for the resident combatants. The Nigerians used starvation as a weapon against Biafra but the country held out despite almost a million and a half deaths -- mainly to women and children. The rebel army never ran out of food and resisted until the last small enclave in the country was defeated.<sup>2</sup> The point is this: combatants are always given priority for food. Those with guns never starve.

### **Drought**

A drought is any unusual, prolonged dry period. While droughts are usually associated with semi-arid or desert climates, they can occur in areas that usually have adequate rainfall. Technically, a drought is a condition of climatic dryness that is severe enough to

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<sup>2</sup> Mayer, Jean. Preface to *Famine: Its Effects and Management*. John R.K. Robson, Editor. Gordon and Breach Science Publishers, N.Y. 1981.

reduce the soil moisture content and water supplies below the minimums necessary for sustaining plant, animal, and human life. They are usually accompanied by dry, hot winds, and may be terminated by violent storms.

Figure 1-1 (Map of drought prone areas)

*From CAW  
Natural  
Hazards*

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The secondary effects of drought follow. As water supplies dwindle and crops and fodder are depleted, families leave their homes to look for better grazing lands for their herds. Some of the families may migrate to the cities, seeking jobs or alternative sources of income. If dwindling food supplies are not replaced, famine can occur, accelerating migration. The migration may contribute to the spread of the disaster, especially if grazing animals are moved with the people.

If the drought is long term, it may result in permanent changes in settlement patterns and in social and living patterns. For example, before the 1968 drought in Mauritania, 65 percent of the people were nomads. By 1976, that figure had dropped to 36 percent. The town of Nouakchott grew from 12,300 in 1964 to approximately 135,000 ten years later.

### **Complex Famines**

Complex famines are those triggered by multiple factors -- usually war and drought. Such situations complicate relief operations. Complex famines usually occur only in Africa. Recent examples include Northern Ethiopia (1977-1978) and (1984-1985), Mozambique (1984-1988), and Somalia (1991-92).

### **FAMINE VULNERABILITY**

Societies that are vulnerable to famine have several characteristics: the people are usually subsistence farmers or pastoralists (dependent on livestock), they are poor and underemployed, the number of landless people is high, and the debt (of both individuals and the country as a whole) is great.

Famine usually occurs in rural areas and only rarely spreads into urban zones. This means that the people who produce food are the ones most likely to starve. Why are poor farmers and herdsmen so vulnerable? Farmers face continual risks from the time they plant their seeds until they harvest their crops and sell them. Figure 1-2 shows those factors. If any of problems occur, the harvest could be marginal or even a total failure.

Subsistence agriculture has the following characteristics:

1. Farmers' plots are small and often fragmented.
2. Tools and implements are primitive.
3. Production is geared to feeding families, not to selling crops.
4. Few alternative or seasonal employment opportunities exist.
5. The people have little surplus grain or cash reserves.

Subsistence farmers rarely grow only one crop -- even though the land might produce more that way. Instead, each family attempts to grow almost all it needs for the entire year. Often they fail to achieve their objective, their produce lasting them for only six to nine months. For the vast majority of the peasants, output is so low that the possibility of establishing grain reserves is simply out of the question. At the village and regional level too, subsistence farming communities rarely have reserves of food available. Whole regions are perpetually vulnerable to famine if there is no means for releasing food into those areas when famine conditions begin to occur.

Figure 1-2

Subsistence agriculture often produces the kind of food that makes it difficult for the human body to survive famines. Many food-scarce societies depend on manioc, maize, and other carbohydrate-rich, protein-poor foods. These foods provide necessary calories, but they inhibit the body's ability to draw proteins from other parts of the body that the brain needs to perform adequately and for the body to survive. In other words, societies that depend on those foods are nutritionally vulnerable from the outset.

Subsistence farmers normally have two ways of ensuring that they will have enough food (i.e., food security) -- growing grain

and growing livestock. When a harvest fails, they start trading their livestock for grain. Normally one sheep or goat can be sold for the money to buy two sacks of grain. When grain prices increase, more animals have to be sold to obtain the same amount of grain. As more and more animals are sold, the market becomes saturated and the value of livestock declines. When the number of animals per sack doubles, it usually triggers panic sales of livestock, decreasing the price of livestock even more.

When people can no longer afford a whole sack of grain, they buy in smaller quantities. To sustain their income on the lower volume of sales, merchants increase prices.

Eventually, the livestock market may collapse and grain prices throughout the affected region may increase so that the ratio of small animals to one sack of grain may be 10-1. When that happens, the purchasing power of subsistence farmers is ravaged since few are likely to have had more than a couple dozen goats or sheep to begin with (some of those may have been lost to drought or conflict).

Pastoralists are also vulnerable to famine. Few nomads for example, raise animals to eat -- they are a trading commodity and are exchanged for grain and other foods. When the livestock market collapses, they have ~~no~~ <sup>poor</sup> other resources for food.

### **Environmental Factors**

Frequent crop failures in Ethiopia, Somalia, and the Sahel in recent years have been attributed, in part, to progressive deterioration of the land. Deforestation, poor agricultural practices, and over-grazing have produced rapid desertification and extensive soil erosion.

As vegetation is stripped from the land, the surface dries out and reflects more of the sun's heat. This can alter the thermal dynamics of the atmosphere and suppress rainfall. More land then dries out. Removing grasses by overgrazing or slash and burn agricultural practices also erodes the land, and cutting trees increases the rate of wind and water erosion especially in hilly areas.

### **POVERTY AND FAMINE VULNERABILITY**

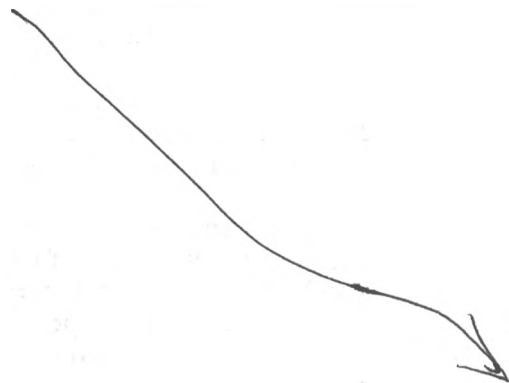
The poor suffer most in a famine; they are vulnerable because they are poor.<sup>3</sup> Recognizing poverty as the root of vulnerability

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<sup>3</sup> Cuny, Frederick C. *Disasters and Development*, Oxford University Press, 1983.

① Primary Victims of Terrorism

the those groups that are hardest hit by terrorism are the families of subsistence farmers, pastoralists, ~~herders~~ and ~~other~~ displaced people living in urban areas.



to famine is the first step in creating a more rational and developmental approach to famine assistance.

Those aspects of poverty that contribute to famine vulnerability include inequitable land tenure patterns, inequitable farming practices (especially sharecropping), tribal or racial discrimination that prevents adequate resources from reaching large groups of subsistence farmers, exploitative merchants and land owners who keep the poor under control by keeping them in debt, and production practices (such as cheap labor and lower costs for big suppliers) that keep the poor in marginal circumstances.

There is also a relationship between poverty, family size and famine vulnerability. Generally, poorly paid workers tend to have large families since more family workers are needed for the family to survive. However, children rarely earn enough to pay for their cost of living so the earnings of the adults must support more people, leading to a smaller per capita income. When that income is tied to subsistence agriculture, shortfalls affect more people.

① → **The Most Affected Groups**

Among ~~the rural poor~~, <sup>families,</sup> <sup>ones</sup> the people most at risk ~~in a famine~~ are children between 9 months and 5 years; women, pregnant and lactating mothers; and the elderly. Deaths and illness affect these groups first, so their health and nutritional status is considered a reliable indicator and an "early warning" of problems affecting the overall population. These groups are the most vulnerable because:

1. Their nutrition needs are higher.
2. They are less able to provide for themselves: young children depend on their mothers for survival, and women with dependent children often have a difficult time leaving home to work.
3. Parents often must make cruel decisions concerning who will get enough food to live and who will die. In these cases, working-age males are usually the most likely to receive food. Children who have reached five years -- when their chances of survival are statistically greater and they can begin to earn income or share in routine family chores -- tend to receive preference over younger children.<sup>4</sup> Often some family members must be sacrificed if others are to live. The first to be abandoned may be

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<sup>4</sup> Mayer, Jean. Preface to *Famine: Its Effects and Management*. John R.K. Robson, Editor. Gordon and Breach Science Publishers, N.Y. 1981.

- (+) Primary Famine Victims  
↓  
General Food  
1. Sub-Farmers  
2. Proletarians  
3. Urban Displaced

Some ...





the elderly or the infirm, then gradually and subconsciously, infant children are "factored out" of the family's food distribution.

Among children, the most vulnerable are those who have been recently weaned because another child has been born who must be nursed. In many parts of the developing world, especially Africa, children at this age receive little protein-rich food, even when it is available.

Visitors to famine areas often don't see many people in the risk groups; they usually are secluded, especially if they are weak or ill.

### **POLITICAL ASPECTS OF VULNERABILITY**

Amartya Sen, a renowned famine researcher, noted, "There is no such thing as an apolitical food problem."<sup>5</sup> The distribution of food within a country is a political issue. Governments in most countries give priority to the urban areas since that is where the most influential and powerful families and enterprises are located. Subsistence farmers (and rural areas in general) are often neglected by the government. The more remote and underdeveloped the area, the less likely the government will be effectively meeting its needs. If the people in the area have any political differences with the government, neglect may be intentional.

Many agrarian policies, especially the pricing of agricultural commodities, discriminate against rural areas. Governments often keep prices for basic grains at such artificially low levels that subsistence producers cannot accumulate enough capital to make investments to improve their production. Thus, they are effectively prevented from getting out of their precarious situation.

Comprehensive agricultural policies and commodity pricing standards that permit subsistence farmers to accumulate capital must be developed if an effective strategy to counter famine is to be created.

Famine is often the result of drastic political or economic changes brought on by governments adopting new economic systems. The most extreme example is the Khmer Rouge regime of Kampuchea (Cambodia), where millions of people may have died because the government has attempted to harshly enforce its vision of a new society. However, less dramatic political or economic changes can also lead to famine conditions. These changes can include:

- New land use policies.

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<sup>5</sup> Sen, Amartya. *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Clarendon Press, 1981.

- Villagization. (The formation of new villages to provide infrastructure and services. It is often the forerunner of forced collectivization of agricultural land.)
- Forced relocation/resettlement.
- Changes in agricultural commodity price structures.
- Collectivization.
- Changes in cropping patterns.
- Changes in the cost of such agricultural items as seeds and tools.

### ECONOMIC FACTORS

Markets can create or contribute to the conditions for famine. A situation called "demand failure" develops when the poor don't have enough money to buy the food that is available; in other words, there is no demand. Merchants then move food stocks to areas where people do have money. A second problem occurs when the market cannot provide enough food even though the people have money to buy it. This is known as a "supply failure."

The extent to which regional food shortages are translated into regional food price rises depends on the degree to which markets are integrated.<sup>6</sup> In an integrated market, supply and demand can be coordinated. When the two aren't coordinated, the market is called fragmented. Fragmented markets can occur, for example, when food can't be moved because guerrillas control the countryside and restricts the government to urban areas. Dramatic rises in local food prices (which reflect market fragmentation), are symptomatic of food shortages.

If markets are integrated and function reasonably well according to supply and demand, regional food shortages rarely lead to famine since shortfalls of supplies can be replaced from other markets with little effect on prices or consumption in the affected region.

As Frances Stewart points out, famines can also be caused by lags in price adjustment. For example, if prices rise dramatically and agricultural wages do not follow immediately, low income people

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<sup>6</sup> Devereux, Stephen, and Roger Hay. *Origins of Famine: A Review of the Literature*, Volumes I and II. Paper prepared for Food Studies Group, Queen Elizabeth House. University of Oxford 1986.

starve. These critical time-lags would not cause starvation if people could use savings to live on in the meantime, or borrow. But because they are poor they have no savings and little access to loans. This is another illustration of how poverty and famine vulnerability are related.<sup>7</sup>

Rising inflation and/or rising unemployment leave the poor with little or no money to buy goods and may lead to the collapse of the market system. In these cases, the government must act quickly to ensure that food can be distributed from relief sources on an equitable basis. Otherwise, imagined scarcity, hoarding, and price manipulation may fuel the onset of famine conditions.

#### **TRANSPORTATION**

Inadequate transportation systems or disruption of transport often influence price increases during food crises. Rural areas need cheap and constant access to transport (especially lorries) to ship food out when prices are favorable and to import food at reasonable prices when shortages exist. (In the Tigray area of Ethiopia, for example, transportation costs accounted for two-thirds of the price of food during shortages in 1990.) The disruption of transportation systems is more significant during conflicts than in normal times.

#### **A GENERAL FAMINE MODEL**

In 1985, Peter Cutler of the Relief and Development Institute produced a ~~model~~ (Figure 1-4) that approximates the sequence of events leading to a major famine. The major problem with this model is that it does not account for war -- though many of the disruptions that are shown could occur as a result of conflict. Another problem is that it gives little indication of the timing of these events. For example, in Asia, which has a high percentage and density of landless peasants, the sequence could occur in several months. In an African country, where people tend to have larger herds of livestock that they can sell and where there is more of a tradition of migrating in search of alternative work when food shortages or conflicts occur, it may take several years of poor harvests or war before famine conditions are established.

This model is a general one and cannot be applied to every country. However, detailed studies in famine-prone countries, especially from the point of view of the small farmer, can lead to

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<sup>7</sup> Stewart, Frances. "Poverty and Famines: Book Review." *Disasters* 6(2). 1982.

the development of models for specific areas that could help forecast famines and pinpoint counter-famine interventions.

Figure 1-4

### Famine "Phases"

Cutler's model can be divided into three phases based on the types of coping strategies people use. During the first phase, families remain at home and convert their assets, such as livestock, to buy grain; during the second period, they sell critical assets such as tools and draught animals and may send some family members out of the community to seek work. In the third phase, whole families migrate in search of work or food.

For emergency relief managers, these phases provide a key for planning counter-famine and relief strategies. As long as families remain intact, the famine is in the developing stages and relief agencies should focus their efforts on providing opportunities for families to earn cash to increase their economic security. The second phase marks the borderline between hunger and disaster -- economic interventions should continue, but some forms of food aid will be required. The third phase is a full-scale emergency; lifesaving interventions focusing on food and nutrition, public health, and disease control predominate. While economic assistance is still possible, and indeed vital, agencies will be so involved in emergency food aid that few will have the time, resources, or inclination to tackle the wider problems.

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## Causes and Effects of Drought

Human activities also contribute to the development of droughts. Overgrazing, poor cropping methods, and improper soil conservation techniques often help create droughts. (See Figure 1-3) Drought feeds upon itself: vegetation is stripped from the land, and the surface dries out and reflects more of the sun's heat. This would alter the thermal dynamics of the atmosphere and suppress rainfall, which in turn would dry out more land.

The effects of drought can be divided according to the primary, or immediate, effects and the secondary, or resulting, effects.

Lack of water produces the primary effects of a drought. As a dry period progresses, existing water supplies are overtaxed and eventually dry up. Crops, livestock, and other animals are lost. Finally, there is no water for washing, bathing, or drinking.

The secondary effects of drought follow. As water supplies dwindle and crops and fodder are depleted, families leave their homes to look for better grazing lands for their herds. Some of the families may migrate to the cities, seeking jobs or alternative sources of income. If dwindling food supplies are not replaced, famine can occur, accelerating migration. The migration may contribute to the spread of the disaster, especially if grazing animals are moved with the people.

If the drought is long term, it may result in permanent changes in settlement patterns and in social and living patterns. For example, before the 1968 drought in Mauritania, 65 percent of the people were nomads. By 1976, that figure had dropped to 36 percent. The town of Nouakchott grew from 12,300 in 1964 to approximately 135,000 ten years later.

Cuny, D & D  
Figure 1-3

Other secondary effects of drought include major ecological changes: increased desertification, scrub growth, likelihood of flash flooding, and erosion of soils by wind. Of these, desertification is the most serious problem. Technically, desertification occurs when soil reaches a certain level of dryness and the land takes on characteristics of a desert. In its most dramatic form, sand dunes encroach and most of the vegetation dies or is replaced by scrub bushes and other desert plants. The land becomes useless without large-scale and expensive reclamation measures.

Box

### PEOPLE'S DEFINITIONS OF FAMINE

Most definitions of famine come from social scientists or relief workers. They are often different from the definitions of those affected by famine. Two examples:

From Sudan: The people of Darfur often divide famines into famines (*maja'a*) and famines that kill (*maja'al katale*). Ordinary famines might be better translated as "periods of want or dearth" when people are forced to do unpleasant thing to survive and "famines that kill" are equated with starvation. (de Waal).

From Bangladesh: The culture defines three types of famine: scarcity is *akal* (when times are bad), *durvickha* (when alms are scarce) and nationwide famine is *mananthor* (when the epoch changes). (Curry)





## Chapter 2

### CONSEQUENCES OF FAMINE

The consequences of famine go far beyond acute malnutrition: large numbers of people die.

Famines increase the risk of disease. As the human body deteriorates, it becomes more susceptible to disease and vitamin deficiencies. Measles, cholera, diarrhea, tuberculosis, and xerophthalmia (Vitamin A deficiency) are of special concern.

In addition, famines create economic hardship for the rural poor. They can lose cash, livestock, and the assets needed for future production such as seeds, draught animals, and breeding livestock. As conditions persist, an economic regression may occur for the entire community or region.

At some point, people may have to leave their land to search for food. This can lead to mass migrations within a country, and in conflicts, can lead to migration from one country to another. For example, in 1984-1985, Ethiopia witnessed both phenomena. Large numbers of people migrated to relief centers within the country, while several hundred thousand people from the provinces of Tigray and Eritrea crossed the border into Sudan seeking food.

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 will probably increase.

#### **Affect on the Human Body**

During the history of mankind, food shortages have been frequent, and the human body has developed the capacity for resisting food shortages.

Under normal conditions, the human body requires an estimated 400 to 600 calories (usually described as *kcal*s) of energy daily. As food deprivation occurs, the body tries to maintain an adequate supply of energy in the brain and central nervous system by taking protein from tissues and fat reserves in the body.

Death from starvation occurs when about one-third of the body weight has been lost. Weight loss of a lesser degree can result in disturbances of the body's water balance leading to famine *oedema* and diarrhea caused by atrophy and ulceration of the intestines.<sup>1</sup>

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<sup>1</sup> Den Hartog, Adel P. "Adjustment of Food Behavior during Famine" In *Famine: Its Causes, Effects and Management*. John R.K. Robson, Editor. Gordon and Breach Science Publishers, N.Y., 1981.

Carbohydrate-rich, protein-poor food, which is the mainstay of the diet in many subsistence societies, can complicate the nutritional situation of famine victims and is an important consideration when providing food relief. This is because those foods can complicate recovery and may lead to side effects in patients who are severely malnourished. This, combined with the inadequacy of protein in the food, may lead to severe physiological imbalance and to the protein deficiency malnutrition. Young children, whose normal protein demands are high, are susceptible to this pattern.<sup>2</sup>

Protein deficiency in infancy may lead to irreversible brain damage. In older children and adults, the effects of protein deficiency may be reversible to some extent.

Starvation affects several basic mechanisms of disease resistance. It reduces the body's capacity to produce antibodies and reduces its ability to heal wounds.

### **Disease**

Disease often accompanies famine. Infectious diseases are more likely to be transmitted during famines because of unusual population movements and the increased susceptibility of people to disease. Diseases are more severe when they attack malnourished people. In addition, unclean water and food and poor sanitation can compound the situation. As people move about in search of food, sanitary conditions in the camps and temporary settlements deteriorate quickly.

In general, the diseases that become epidemic during famines are already present in the population. The most serious infectious disease is measles.

### **Famine and Endemic Disease**

Famine affects the susceptibility of individuals to a particular disease by changing the epidemiologic characteristics of a community. The more social disruption occurs, the more disease there is. Epidemic disease develops when both individual and community resistance to infectious disease are lost. As people who are wandering in search of food are crowded into camps where sanitation is poor, each person is exposed to increasingly large doses of infectious agents. Some infectious diseases that are endemic (i.e., commonly found) in an area may not cause significant

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<sup>2</sup> Cox, G. "The Ecology of Famine: An Overview." In *Famine: Its Causes, Effects and Management*. John R.K. Robson, Editor. Gordon and Breach Science Publishers. N.Y., 1981.

disease because most of the people have already been exposed to them and have acquired a degree of natural immunization. However, some endemic diseases are poor natural immunizers, such as bacillary dysentery, and they can become major causes of death.

Measles is an acute viral disease of children. It is normally lethal only to children under 5 years of age. It is the scourge of malnourished populations; it killed as many as 50 percent of the Ethiopian children who died in refugee camps in Sudan during the famine of 1984-1985.<sup>3</sup> However, the severity of measles may vary depending on the type of malnutrition -- calorie or protein deficiency -- that the population is experiencing. For example, studies of measles in the refugee camps of East Bengal, India, (1971) and famine camps in Bangladesh during the 1974 famine, indicated that only a small percentage of children in those communities died from the disease, leading many medical personnel to conclude that measles is less a threat in Asia than other continents. Nonetheless, immunization against measles should always be carried out as a precaution, especially in Africa, where the disease among the malnourished is often fatal.

Preventive measures against diseases must be considered within the context of each area. Anti-malarial medicines are important only if malaria is not common in the area where the people originated but prevalent in the areas where they are taking temporary refuge. (This is especially important when non-immunized populations migrate to hyper-endemic<sup>4</sup> areas.) Supplementing food rations with Vitamin A and C is essential in most countries where the population subsists largely on grain.

Other diseases of concern are tuberculosis and various louse-borne diseases such as typhus. This is because their transmission is increased in overcrowded areas.

### **Diarrheal Diseases**

Diarrheal diseases, primarily bacillary dysentery, quickly become widespread in famine. Dysentery or severe diarrhea is readily recognized by a bloody stool. Natural immunization of the intestinal tract is usually inadequate to protect the person, so one attack is quickly followed by another.

Diarrheal disease has been common to famines as long as records have been available. Effective controls for dysentery are clean water, sanitation and improved personal hygiene practices.

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<sup>3</sup> Toole, Michael J., Richard W. Steketee, Ronald J. Waldman, and Phillip Nieburg. "Measles Prevention and Control in Emergency Settings." *World Health Organization Bulletin*, 1989. (In Press.)

<sup>4</sup> Areas where high rates of a disease are found.

② Migration

Oral rehydration therapy (ORT) will effectively reduce the number of deaths from diarrhea. Unfortunately, sanitation and good hygiene are usually the first casualties in a starving community or in a famine camp.

The key fact to remember is this: diarrhea kills through dehydration. Although a great array of bacteria, viruses, and parasites can cause diarrhea, it is usually the loss of water and salt from the body that brings about death. That means that diarrhea therapy does not require laborious and costly lab searches for the pathogens. Nor are drugs necessary. Normal body mechanisms will fight off the pathogens within two to five days; and in any case, there is no known drug treatment for most diarrheal pathogens.

In the past, fluid replacement was considered a clinical problem. Intravenous infusions in expensive rehydration units saved the majority of those few who were within reach of such treatment. However the same results can be accomplished using a mixture of ordinary sugar, salt, water and soda, costing only a few cents, and administered orally. (~~See Chapter~~.)

Disease control in times of famine must compete with overwhelming needs for food, water and shelter. Thus, measures must be inexpensive, culturally acceptable, highly effective, and easy to administer.

## PSYCHOLOGICAL CHANGES

Psychological changes may occur in famines along with physiological changes. Many of the patterns of behavior noted during famines are caused by the unusual conditions. People in areas affected by famine are often depressed and apathetic. In densely populated or confined situations, such as those occurring in a displaced persons or refugee camp, these changes often compound the relief problem.

Starvation conditions direct people's thoughts and activities toward food; most other activities are inhibited. Frequently, food-seeking activities are directed toward the principal staple that the population has normally depended on, often at the expense of other potential sources. Usually, however, the range of foods sought and eaten is broadened to include many foods not normally considered edible. Ultimately, breeding livestock and seed grain may be consumed, compounding future food-supply problems.

## SOCIAL IMPACT:

② migration

### Impact on Family Units

② <sup>mass</sup> migration is a major sign that famine conditions are developing  
and a famine usually not over until a majority of those  
who kept have been returned or ~~resettled~~ permanently  
resettled.

When family members are forced to leave home in search of food ties with homes, farms and ultimately, even some family members, are weakened. Eventually wandering bands of individuals seeking food begin to appear. (2)

Thus, When family members are sent to seek food, some families may lose their breadwinners. Relief workers often find a large percentage of families headed by women.

### Impact on the Community

As famines progress, normal social behavior is increasingly affected. Initially there will be mutual help between family or families, but in a later stage, many tend to care only for themselves. In the worst cases, social cohesion begins to fail. Traditional leaders who are unable to effectively redistribute food in the community may find their leadership challenged or ignored.

Food distribution may cause serious social and economic side effects. Food distribution is often handled in a way that circumvents traditional local leaders. When this occurs, it threatens to destroy traditional leadership and can effect the bonds of society. Too much free food over a long period can be a disincentive to the people to return to work, especially agricultural production. Numerous writers have pointed out the danger of creating relief dependency.<sup>5</sup>

### ~~NEEDS SUMMARY AND FOOTNOTES~~

These consequences are not ~~among~~ <sup>among</sup> the most distinct factors defining a famine. Were it not for widespread death and disease, famines could be treated with less urgency. Of all the consequences, it is migration that is most problematic for when people flood into other communities they can spread disease, disrupt markets, affect wage scales, <sup>and</sup> spoil local crops. Furthermore, once they have left their homes, it is harder and more costly to provide relief; not only does food and economic assistance need to be supplied but also shelter, water and sanitation and a host of other services.

<sup>5</sup> Jackson, Tony with Deborah Eade. *Against the Grain: The Dilemma of Project Food Aid*. Oxford: OXFAM, 1982.



(BOX 4)

### THE MADRAS FAMINE OF 1876-1878

One of the first systematic studies linking famine and disease was carried out by a surgeon in the British Indian army during the Madras famine of 1876-1878. Alexander Porter studied the diseases that occurred in the relief camps attached to his hospital. He used his spare time to perform 459 consecutive autopsies on those who died of starvation and its complications. The study remains useful and thought-provoking a century later.

#### Origins of the Famine

The trouble in Madras began in 1875 after the successive failure of the southwest monsoon for two years. Famine conditions developed in a large area containing a population of 1.4 million. The natural calamity was exacerbated by merchants and speculators who were hoarding food. The prices were far beyond what poor people could pay. Famine followed.

Porter noted that diarrhea and dysentery were the most prevalent of the many diseases that occurred in the relief camps. Within the sheds where Porter worked, 34 percent of the patients who were admitted died. Dysentery and diarrhea were responsible for 77 percent of the deaths and were equally important in adults and children.

Porter published his findings in 1889, establishing a link between famine and dysentery as one of the principal causes of death. It still provides us with one of the major keys to understanding the interventions required.

From *FAMINE: Its Causes, Effects and Management*, John R. K. Robson, Editor. Gordon & Breach Science Publishers, N.Y., 1981, p. 62).

### SERIOUSNESS OF DYSENTERY IN FAMINES

Dysentery was one of the two largest causes of death during the Bangladesh famine of 1974. These are shown in the following table.

TABLE 1-3

Cause of death by sex and disease in Dacca between October 1974 and January 1975 (percentages are of all diseases).

Cause	Male	Female	Total	Percent
Dysentery	335	393	728	36.0
Diarrhea	4	7	11	0.5
Malnutrition	172	142	314	15.0
Measles	-	2	2	0.1
Exposure	14	8	22	1.1
Fever	369	466	835	41.0
Smallpox	-	1	1	0.1
Other ind.	16	19	35	1.7
Others	51	31	82	4.3
Total	961	1069	2030	

From: Rahaman, M.M. "The Causes and Effects of Famine in the Rural Population: A Report from Bangladesh." In Robson (Ed.), *Famine: Its Causes, Effects and Management*, 1981, p. 138.



## Chapter 3

### THE GEOGRAPHY OF FAMINE

#### GEOGRAPHIC DISTRIBUTION OF FAMINES

While famines can occur anywhere there is a war, they are most likely to develop in areas that have long dry periods each year followed by short rainy seasons, possibly only a couple of months long. If the rains are delayed or don't come, farmers can lose everything they've planted. Subsistence farmers don't have adequate resources to outlast frequent failures.

Two "famine belts" exist in the world. (See Figure 3-1.) The first extends from Europe into Central Asia and across to northern China. Food production failures can occur in this region because it is damp and cold and has shortened growing seasons. The second runs from Africa around the Mediterranean eastward through the dry and monsoon lands of southern Asia to China. In this belt, droughts may trigger famines though today war is the primary cause.

The modernization of Europe, the former Soviet Union, and, more recently, China has almost eliminated the threat of natural famine in the northern belt. When crops do fail, the governments provide assistance, sometimes buying food in massive quantities on the world market. These assistance programs -- aided by good transportation systems -- buffer the year-to-year variability in food production and prevent local crop failures from causing local famine.<sup>1</sup>

This kind of development, however, has not occurred as extensively in the African and Asian drought belt. Transportation and communication in some areas are so poor that famine conditions may go unrecognized. Even when they become known, the mechanics of distributing aid during conflicts over large areas with primitive road networks can prove almost insurmountable.

There is nothing in North or South America comparable to the famine belt of Africa and Asia. Nevertheless, arid environments as well as those with variable year-to-year rainfall exist, most notably in northeast Brazil. The apparent absence of famines in North and South America, however, may be the result of poor

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<sup>1</sup> Although the threat of famine in the northern belt has been largely eliminated, crop failures in those regions can affect the availability of food in other parts of the world. The Soviet Union's large grain purchases in the 1970s, for example, drove the worldwide price of food so high that many food-short countries began exporting food, a situation that led to famine conditions in large areas of Sahelian Africa.

record keeping and the failure of governments to recognize when famine conditions exist. But, more importantly, highly marginal subsistence agriculture prevails throughout most of Latin America and the Caribbean. The failure of these countries to diversify their agricultural systems -- coupled with high unemployment and political unrest -- leave them vulnerable to famines. An outbreak of violence or a natural disaster could trigger widespread food shortages.

Another concern in the Americas is environmental degradation. As it becomes more widespread, the risk of famine will increase in many countries. For example, massive deforestation in Haiti -- and the resulting loss of topsoil -- has placed that country at the top of the list of places in the Western Hemisphere with a high potential for famine.

A 1984 study of displaced persons in El Salvador indicated pockets of high malnutrition and infant mortality that, in other circumstances, would indicate famine or near-famine conditions. A study of one San Salvador barrio showed a higher annual death rate than that experienced in Biafra in 1969 at the height of the Nigerian civil war.<sup>2</sup> ~~Several Latin American countries, such as Peru and Haiti, are only an incident away from a war-induced famine.~~

#### FAMINE SHIFT

The most important things to understand about famine is how it shifts inside a country or region. One region may be recovering while another is declining. Grasping how and why famines move can provide planners insights on to use their resources to counter and prevent the spread of the famine.

Why do famines shift? Shifting occurs when food from areas of marginal production is drawn into areas of severe shortage because prices are higher. The movement of food out of an area causes prices to rise there, making it difficult for poor people in the area to buy food. When that happens, the nutritional status of people in the marginal areas begins to decline.

Ethiopia is an example. The Ethiopian geographer Mesfin Wolde-Mariam has mapped famines in Ethiopia dating back to the late 1800s. He notes that famines move in a "tightening circle" around Ethiopia. The country is perpetually in a famine situation, he points out. The conditions simply shift from region to region. Wolde-Mariam illustrates the effect of this phenomenon, which he calls "spatial extension," in Figure 3-2.<sup>3</sup>

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<sup>2</sup> Bureau for Refugee Programs, "Assessment of Displaced Persons Assistance Programs in El Salvador, *Washington* 1984.

<sup>3</sup> Wolde-Mariam, Mesfin ....

The importance of the famine shift in Ethiopia can be seen when the relative extent of the famine is compared to the number of *awrajas* (sub-districts) that are experiencing famine conditions in any one year. In the 20-year period that Wolde-Mariam examined (1958-1977), only seven *awrajas* out of the 102 in the country did not experience famine. Table 3-A shows the number of *awrajas* experiencing famine in each year from 1958-1977.<sup>4</sup> In 1958, the number of *awrajas* experiencing famine was twelve. In most of the subsequent nineteen years, one or more new *awrajas* had famines. There were only three years -- 1967, 1968 and 1971 -- in which no new areas experienced famine. On the average, four new *awrajas* each year had famines. By the end of 1966, eighty-one of the 102 *awrajas* had experienced famine. This means that in the following twelve years, famine conditions revisited areas that had already had famines in the previous decade.<sup>5</sup>

The larger the contiguous area experiencing famine, the greater the destructive capacity and the greater the likelihood that the conditions that fuel the famine will become perpetual.

*Importance for Relief Management*

An understanding of famine shift can help relief officials *in several ways* determine which areas need to be monitored and assessed. <sup>(3)</sup> For example, a good strategy to use at the edge of a famine zone is increasing the amount of food available to the poor through food-for-work or cash-for-work programs. (See Chapter 9) Relief officials failed to increase the availability of food in the markets outside the original famine zone in Ethiopia after the 1984-1985 famine and that contributed to the continuation of major food shortages for the poor in adjoining areas in 1987-1988.

*It is first, <sup>the</sup> step in <sup>the</sup> ~~development~~ <sup>development</sup> of a ~~contingency~~ <sup>famine containment</sup> strategy; and it points ~~to~~ <sup>to</sup> the areas that require immediate aid as well as those that will need attention next. Knowing how a famine is likely to shift can help planners.*

*(3) And it can provide guidance for the types of assistance needed in different <sup>areas</sup>.*

<sup>4</sup> Wolde-Mariam, *Op. Cit.*

<sup>5</sup> Wolde-Mariam, *Op. Cit.*

Figure 3-1  
Famine Belts of Africa and Asia

Figure 3-2  
Spatial Extention of Famine



Table 3-A  
Awrajas Experiencing Famine 1958-1977



## Chapter 4

### SOCIETAL RESPONSES TO FAMINE

#### INTRODUCTION

Communities that have frequent food shortages often have developed family and community mechanisms for coping with famine. It is vital to understand these strategies. They are a factor in supplying the amount of food available in a famine zone; they can also indicate what stage a famine is in. Famine relief should be provided in such a way that the traditional means of coping are not disrupted.

Pastoralists and subsistence farmers store excess production from a good season to meet food needs during a bad one. For pastoral or semi-pastoral peoples, this storage is usually in natural form: their animals, the grasses and other forage on rangelands, the supplementary plant and animal foods collected, and the fat reserves on their own bodies.

In subsistence crop production, some food is stored in artificial form, such as silos and bins. Some foods may be dried while others are buried.<sup>1</sup>

#### AGRICULTURAL ADJUSTMENTS

The subsistence food production systems of people in famine zones show many adaptations. The diversified and mobile systems of pastoralism practiced in Africa, the Middle East, and Central Asia provide clear examples. In the Cunene and Cuanhama regions of Angola, for example, pastoral people carry on a combination of cattle herding, farming, gathering, and fishing activities. Herds are moved seasonally in response to range conditions. The Karamajong people of northeastern Uganda show a similar pattern. Here the women cultivate sorghum, maize, and millet near permanent villages, while the men and boys herd cattle, sheep, and goats. Diversification has advantages. The people do not depend completely on crops, which could fail in any given year because of inadequate rainfall, or on animal herds, which could be destroyed by disease or poor range conditions.

Similar arguments may be made for many subsistence systems of farming. Mixed cropping -- planting several crops together -- is common in areas where rainfall is seasonal. Such practices maximize both production and economic benefit while minimizing the risk of complete crop failure.

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<sup>1</sup> Cox, G. "The ecology of Famine: an Overview." In *Famine: Its Causes, Effects, and Management*. John R.K. Robson, Editor. Gordon and Breach Science Publishers. N.Y., 1981.

Table 4-A shows the responses of farmers interviewed in Tanzania in 1971 which indicated they practiced a wide variety of adjustments during drought situations. The survey showed that famine-threatened communities often have attempted to adjust their agricultural and animal husbandry patterns by planting reserve famine crops and resowing cereals and other food plants. These actions may be repeated many times before they are abandoned. Alternatively, people may decide to search for more suitable agricultural lands and pastures.

### **Survival Strategies of Subsistence Farmers**

Most subsistence farmers try to ensure enough grain for their households before they plant cash crops. And they try to plant sufficient grain to feed their families even if the rains are poor. If the rains are good, they can store or sell the extra grain. Some grains can be stored safely for several years in any one of several storage methods used in traditional societies, such as burying it in sealed jars. Households can also invest in animals, which can be sold in times of hardship. Others will trade their excess grain for cash or gold and hide it.

Planting decisions also show the farmers' concern for food security. Where possible, they plant drought-resistant strains of grain. If land is readily available, farmers may plant larger areas than they can maintain; only those fields receiving adequate rainfall will be weeded and cultivated. In some societies, farmers may have widely dispersed fields. That way, they can take advantage of scattered rainfalls.<sup>2</sup>

### **Adjustments by Pastoralists**

Pastoralists usually use a variety of risk-reduction strategies. Herders, who are faced with the double threats of drought and disease, are more vulnerable to famine than farmers. They don't grow food staples; instead, they usually buy them in the market. If a pastoralist tries to grow crops to reduce his dependence on the market, his herding becomes less efficient. The herder tries to pass his farm at least twice a year on his migrations to leave or pick up the farming members of his household. The herder's most effective anti-drought strategy is the flexibility of his migration routes; farming clearly interferes or limits this flexibility. But increasing pressure on land has restricted this flexibility anyway, and more and more pastoralists now have farms.

Somali pastoralists of the drought-stricken Hararghe province of Ethiopia have developed ways of dealing with famine.

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<sup>2</sup> de Waal, Alex. *Famine that Kills*. Darfur 1984-85. Save the Children Fund. 1988.

Among the methods they use include dividing their herds; redistribution between kin of animals, cash or grain; loaning of cash or animals; increasing livestock sales. Under extreme conditions, other measures can include temporary redistribution of children amongst relatives and lastly, the use of force against groups competing for the same scarce resources.<sup>3</sup>

A common strategy of pastoralists is building large herds. Herders believe the larger the herd, the less likely the chances that drought or disease will reduce it below the critical subsistence threshold. Pastoralists are often criticized for having too many animals in normal times. But their behavior reflects their fear of losing animals to drought at a time when they have to sell animals to buy grain as the price of grain rises and that of animals falls. A household that can sustain itself on five goats in normal times, needs more than forty goats to see it through a year when the livestock death rate is 50 percent and the price of grain has increased five times.

Herders also diversify their herds -- usually a combination of sheep and goats. This diversification makes it less likely that disease will affect the entire herd. Since different animals require different forage, a mixture is safer in an unpredictable climate. Small stock are also useful because they are less valuable and can be sold to meet small cash needs. Lending -- or even stealing -- animals prevents excessive inbreeding and leads to hardier herds.<sup>4</sup>

#### ADJUSTING PATTERNS OF FOOD CONSUMPTION

When faced with a food shortage, most households ration food. Household rationing doesn't usually lead to increased food prices, but hoarding by traders and shopkeepers hoping for a rise in prices is a widespread phenomenon with dangerous consequences.

Families confronted with famine are forced to restrict the amount of food they consume, in part by cutting back on the number of meals they eat a day. For example, a three-meals-a-day pattern may be reduced to two meals a day or one. In some circumstances, people may eat one meal every other day. These strategies will not relieve the situation much, especially for families that are already malnourished, but they are an indication of food shortage.

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<sup>3</sup> Seaman, J., Holt, J.F.J. and Rivers, J.P.W. *Hararghe Under Drought, a Survey of the Effects of Drought Upon Human Nutrition in Hararghe Province*. Addis Ababa, Ethiopian Government Relief and Rehabilitation Commission. 1974.

<sup>4</sup> de Waal, Alex. 1988 *Op. Cit.*

People may also dilute meals, such as stew or gruel, with more water. Food may also be mixed with unusual substances such as bark. In some Asian countries cereal may be mixed with grass seeds.

#### Use of Famine Foods

Many societies in famine areas have identified alternative foods to eat during times of scarcity. These include wild plants and animals. A study of the plants and animals consumed during food crises in India's Rajasthan Desert identified twenty-five plant species ranging from trees and shrubs to grasses and annual herbs.<sup>5</sup> In Ethiopia, people eat parts of cactus. In addition, some people grow hardy, less tasteful perennials on lands suitable only for their growth or on sections reserved for hard times.

Many communities may be forced to subsist on non-conventional foods. In India, for example, people in the drier regions of the country may, during scarce times, eat plants that contain woody tissue and substances that are neither digestible nor nutritive. These plants can make people listless or ill, but people eat them because they temporarily appease hunger.

In the savannah zones of West Africa a grasslike millet with tiny seeds called "hungry rice" (*digitaria exilis*) is often consumed during food shortages. To overcome food shortage problems, many countries have encouraged the cultivation of famine reserve crops.<sup>6</sup>

When people have to eat the seeds and tubers intended for the next planting season, the famine can be prolonged. Famine recurred quickly in Ethiopia after the great famine of 1984-85 in part because many people had to eat their seed reserves. Most of the food aid imported to Ethiopia in that period was sorghum and wheat from hybrid varieties that cannot regenerate. Since much of the aid arrived after the seed stocks had been eaten, the government had to provide the farmers with the seeds for their next crops.

#### FAMILY SIZE AS A FAMINE ADJUSTMENT

Some populations adjust to famine by having more children. Since most famine-vulnerable societies experience high infant

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<sup>5</sup> Bhandari, M.M. (1974). "Famine foods in the Rajasthan Desert." *Economic Botany*, 28, No.1, p. 73-81.

<sup>6</sup> There have been some problems associated with famine foods. For example, in Mozambique some strains of cassava proved to have levels of arsenic that were dangerous when only cassava was eaten.

mortality rates, they may have large families and high reproductive rates. This information is significant: societies that have made major advances in reducing infant mortality are likely to have rapid increases in their populations in a short period. Such increases will strain already over-stretched food production systems.





## Chapter 5

### EARLY WARNING AND MONITORING SYSTEMS

#### INTRODUCTION

Early warning is the identification and interpretation of events that indicate a famine may be developing. Data can be collected from many sources and then used to identify patterns that warn of an impending crisis. Planners can forecast possible scenarios in the affected areas, the access vulnerable groups will have to food supplies, and the extent to which famine conditions may spread.

In reviewing the repetitive crises in Africa in the 1980s, it is clear that early signs of a developing famine were recognized by most of the relief agencies and formal warnings were provided through official channels to the international donor community. Yet, despite these warnings, reaction was slow. It took major news coverage with pictures of mass starvation before international assistance was mobilized. The international community's slow reaction was caused not by lack of information but by its scepticism of the validity of information provided<sup>1</sup>, by political considerations and by budgetary and administrative constraints.

The biggest limitation on the use of early warning systems is the fact that most famines occur as a result of war and it is difficult to both collect the necessary information and to forecast how conflicts will unfold. Most of the theoretical base that led to the development of warning systems arose out of work that was carried out in the famines of the 1970s in areas where there was no fighting. However, it is still possible to apply the early warning techniques to conflict areas, especially if agencies are working in areas that are effectively controlled by one side or the other. There are also a variety of techniques that enable agencies to detect what is happening inside an area by gathering data from refugees or displaced persons and comparing it to information obtained from satellites. Famine warning systems can also be used to monitor ongoing food emergencies. For this reason, it is important to grasp the fundamentals of the warning systems, how they work, their capabilities and their limitations.

#### PURPOSES

Early warning has two aspects:

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<sup>1</sup>The government of Ethiopia was then a radical socialist government distrusted by the West.

- (1) Assessment of vulnerability.
- (2) Prediction or early recognition of the triggering events.

### **Identification of Vulnerable Areas**

To determine where early warning systems should be established, identify areas that have a history of famines. If famines have occurred recently, the underlying causes of them are likely to remain.

The conditions that lead to famines are also easy to identify. These conditions include a high percentage of subsistence farming; extreme ecological changes, such as increased desertification or extensive deforestation; economic indicators such as declining household income and increasing household debt; and high incidence of infant mortality and morbidity.

While one of these conditions alone is not serious enough to make an area vulnerable to famine, the presence of several of them is.

Famine monitoring systems should be established in all areas where the most common famine triggers -- drought and widespread civil conflict -- are occurring.

Regions where other famine triggers exist should also be automatically monitored. These include areas of widespread insect infestation, especially locusts; areas where agriculture is dependent on rain-fed irrigation and seasonal rainfall is subject to extreme variations; and areas bordering on economic collapse (such as Haiti).

The areas where vulnerable conditions are prevalent should be delineated and mapped. This process is known as "vulnerability mapping." If a famine were to occur, these maps would be used to plan programs and plot the geographic extent and shift of the famine. The maps can be important in planning logistical support; they can also be used to help determine the measures to be taken in adjoining areas to contain the spread of the famine. (See Box 1).

### **Famine Indicators**

Until recently famines were assessed in terms of medical cases, rates or degrees of malnutrition and/or numbers of deaths from malnutrition and disease. Such indicators quantify the suffering that has already taken place and thus are called "trailing indicators." They are of only limited use in predicting and preventing famine.

Unfortunately, most famine warning systems today rely more heavily on trailing indicators than data or indicators that precede, or lead, a famine. This happens, in part, because trailing indicators are easier to detect and monitor than leading ones. In addition, monitoring leading indicators requires a sophisticated system of data collection and analysis. Factors such as political instability, economic crisis, and income decline require advanced analytical tools.

Table 5-A  
Indicators for Action

**Indicators of Vulnerability:**

Subsistence cultivation  
Recurring rainfall shortages  
Heavy debt burden among farmers  
Low food reserves  
Political instability  
Farmers required to work part-time off their lands  
Increasing desertification, soil erosion or  
deforestation  
Increasing salinity of soils

**Indicators of Imminent Crisis:**

Prolonged drought  
Onset of a natural disaster (floods, insect infestation,  
etc.)  
Crop failure  
Increased price of staples  
Rise in price ratio of staple grain  
to prevailing wages  
Increase in lending rates in the informal  
lending sector  
Increase in sales of livestock (and decrease in  
average sale price  
Increase in deaths among livestock  
Unusual sales of possessions (jewelry, ornaments, etc.)  
Seed shortage or increased cost of seeds  
Widespread sales of land at abnormally low price  
Increased hoarding of grains by dealers  
Consumption of animals by pastoralists  
Consumption of famine foods

**Indicators of Famine (trailing indicators):**

Increased rates of death  
Migration  
Families sending some members to urban areas to work  
Increased rates of low or abnormal growth in children  
Increased rates of famine-related disease (e.g. measles)  
Edema in young children  
Increased rates of vitamin deficiencies  
Increased rates of nutritional disorders  
Sale of traction animals (e.g. oxen)  
Consumption of seeds

## **FAMINE EARLY WARNING SYSTEMS (FEWS)**

In recent years there has been a proliferation of famine early warning systems. On an international level, the two most important are the Famine Early Warning System (FEWS) sponsored by U.S. Agency for International Development (USAID) and the Global Information and Early Warning System of the United Nations' Food and Agricultural Organization (FAO). Several countries have established their own famine early warning systems and a number of private voluntary organizations have also set up systems at various times. Each varies according to the factors monitored and the responses they trigger.

Each system is unique; the differences reflect the requirements of the country that is being monitored. In some cases they differ in the approaches used to link the warning indicators with specific responses. Box 2 describes three systems in use in Africa and describes how they differ.

### **Types of Warning Systems**

Most famine early warning systems focus on trigger mechanisms, using food supply and food demand models as predictors. This is logical: accurate predictions of the timing of a famine can't be made until the trigger event occurs. Only the increasing possibility of famine is evident.

Food supply models use national harvest predictions and measurements of stored food and food imports, balanced against expected national food consumption, to assess whether sufficient food will be available in a country. This approach, known as the food balance sheet, is often too simplistic to be applied universally. Too many factors intervene between the existence of food in a country and its consumption by those who need it. Such models cannot, for example, take into account food stored in private rather than public hands or the role played by food merchants.

Food demand models recognize these intervening factors. They don't try to measure how much food is available; instead, they attempt to find out whether people have reasonable access to that food. For most people access to food is the ability to buy it. Access is measured by the market price and whether people have the money to buy it or something to barter for it. A rapid increase in food prices and/or a drop in family income may indicate the onset of famine. This approach does not necessarily contradict the availability approach, but provides a framework for understanding famines caused by food production failure and those caused by other economic or political factors. This model can be applied to more areas since it is not tied to one trigger mechanism. It has the potential to locate both the geographical area of famine and those social groups that will suffer most.

Food demand systems have limitations. Market data is not often

subjective. For example, livestock can be sold and resold in a village market a number of times in one day. Therefore, figures for livestock sales and prices may not reflect the income that the original seller got for his animals. Equally, grain prices are usually recorded by the sack, but the famine victim buys food by the cupful at a unit price that may be many times higher than the quoted market price.<sup>2</sup>

A number of observers argue that most famine warning systems are mechanisms that allow people outside a society to look inside. They point out the systems are structured to gather information that will improve the efficiency of externally derived and controlled relief measures. These critics contend that neither approach helps prevent the famine or suggests effective forms of relief that will decrease the vulnerability of the society to famine in the future.<sup>3</sup>

To achieve these broader aims, a FEWS must look at what causes a community and its members to be vulnerable to famine, how the coping mechanisms that have evolved can be strengthened, and what alternative strategies based on that community's point of view can be adopted.<sup>4</sup>

FEWS should aim to do three things:

1. Define the most effective counterfamine interventions and identify the locations where they should be applied.
2. Put the relief structures in a country on alert so they are able to cope with the relief needs if they are necessary.
3. Provide the information needed to effectively lobby donors so that the required assistance arrives in time.<sup>5</sup>

"The issue is not early warning; it's early response."  
(Don Krumm, 1983)

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<sup>2</sup> Walker, Peter. *Famines: Family Warning and Preventative Action - The Need to Listen to the Victims*. IIED London 1987.

<sup>3</sup> Devereux, Stephen, and Roger Hay. *Origins of Famine: A Review of the Literature*, Volumes I and II. Paper prepared for Food Studies Group, Queen Elizabeth House. University of Oxford 1986.

<sup>4</sup> Walker, Peter. *Op.Cit.*

<sup>5</sup> Walker, Peter. *Op.Cit.*

HOLD on these.

BOX 2

## SOME EXAMPLES OF EARLY WARNING SYSTEMS

### The Sudan Early Warning System:

The Sudan EWS is a national system utilizing secondary data, i.e., it does not collect its own information. To identify areas facing food crises, it collects data that affect food and markets: meteorological, nutritional, and agricultural progress data. First, historical and current information are examined to establish the context within which change is occurring. When areas of stress are detected, the staff conducts surveys in those areas to verify that a problem exists. If the surveys indicate that food or market problem, further studies are taken to quantify assistance requirements. The initial data is provided by governmental and non-governmental groups within Sudan. The main problem with this system has been that it is not effective in identifying pockets of need.

### Botswana Early Warning and Response System:

The EWRS of Botswana is designed to initiate relief programs as soon as stress is detected in pre-identified vulnerable areas. Operations are triggered on the basis of rainfall/agro-meteorological data and crop forecasts/grazing conditions. The program begins promptly, at the time a failed harvest would be gathered. Nutritional surveillance is used as a monitoring and targeting tool; not an early warning indicator. NGOs provide little if any data to the EWS since their presence in Botswana is limited.

### Kenyan Plan Against Drought and Famine in Turkana:

As a result of a severe drought and food shortages in Kenya's Turkana district, the government and OXFAM developed a drought contingency plan modeled on the Indian famine codes of the 1900s. It consists of a district drought policy, a set of advanced preparations, and sets up a rudimentary EWS. The plan lays out actions to be taken by government authorities during a drought to ensure food availability, guarantee employment for destitute people via public works, and to buy animals from herders at reasonable prices (to help maintain their purchasing power). It also specifies rural reconstruction measures for use after the drought. The measures are coordinated by a District Drought Contingency Officer. Other strategies are suggested to reinforce the regional plan, including: advanced negotiation of commitments from donors; construction of infrastructure such as stores, roads, etc.; technical training seminars for district and governmental staff; and standardization of nutritional surveillance techniques.

The systems in Botswana and N. Kenya are geared to activate counter-famine programs and create barriers against famine with

employment- guarantee schemes and other food aid programs. Systems that focus on social security rather than solely on food relief require different organization and information from those systems designed to guide traditional relief efforts.

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Box 2

### **Systeme d'Alerte Precoce (SAP)**

Since 1984 MSF Belgium has worked on information systems based on their rapid nutritional assessment system (the "score system"). Their EWS efforts are designed to develop data that can help governments to prevent food crises. MSF and AEDS have been involved in providing technical assistance to the national authorities in Mali and Chad to establish national EWS.

The EWS is organized within the national governments and their regional offices. The system is complementary to existing systems used to develop national food balance estimates by comparing the total food available with the food needs of the population.

The project focuses on the traditional "at risk" zones in the two countries. In Mali it covers the northern and the northwestern parts of the country; approximately 4.000,000 people.

The main objectives of the EWS are to:

1. detect and predict food shortages and affected populations, the number at risk,
2. to inform national authorities and international organizations of a developing crisis, when a response should be made, what actions are necessary and possible in order to prevent or solve the problem.

Save the Children Fund (U.K.) funded Sahel NGO information network.

As already indicated this system is based on work carried out with the NGO committee in Bamako to build an NGO network of information which would fill the perceived information gap.

This networking of information is being carried out through the collection of regular data for the regions of Gao and Mopt by participating NGOs on basic data covering the following six areas:

1. Qualitative state of agriculture and pasture.
2. Principal sources of food for the local population, i.e. family stocks, harvest stocks, exchange, market, food aid or wild foods.
3. Price of cereals on the local market.
- 4 Price of animals on the local market.

5. Daily labor prices, changes in casual labor employment.
6. Unusual migrations.

All the data is qualitative except for prices and should be easily available. The aim is that regular information will flow from the field centers to Bamako. Therefore the questionnaires are kept short and should take as little time as possible to complete.

The project is now also interested in other questions relating to food security. This relates to the general trend away from interest in purely early warning as has already been remarked on. Several areas of interest are:

1. "Pockets of distress" is a concept that has been talked about frequently. What does this mean? Is it literally pockets of a few people; certain types of people; or is it a permanent situation? Since the early 1970s there have been permanently displaced people - who are these people? What is the prognosis for the future?
2. In terms of food availability, how are they surviving, what are they depending on, is the situation changing? What options are groups of people following? Is it, in fact, necessary to define the different economic groups in each locality?
3. What is the effect of food aid? It was pointed out that there appears to be a great anti-food aid drive in many quarters in Mali this year. Government stocks are full and many peasant stocks are full. The Government cannot sell at its bottom price to farmers, but a lot of farmers (at a guess) are not eating well because they cannot buy.
4. The notion of "purchasing power." What is it and how does it affect the current situation in Mali?

The SCF-funded information network will now focus its attentions on these types of questions about food security, which can only be viewed over time. One constructive step is to define some of these population groups and their positions and make that an important part of the network system.

### 3. OXFAM - Early Warning System (EWS)

The OXFAM EWS is, like many of the other systems, at an early stage of development. It differs from the other systems in Mali in that it is not a national system (although linked into the national system) and it aims at a much smaller

population area. Its aims are to "try to develop a famine monitoring response strategy for a cercle (subdistrict administrative unit)." An emphasis is put on the development of the capacity of the local community to respond to and control what happens in their locality. This approach looks towards an alternative way of responding to a crisis than the usual process of providing emergency aid at a late stage. It is an example of a "local participation" focused program which would take into account the indigenous view of the situation and what was needed in response to a local crisis.

The OXFAM EWS is based on the four premises that:

1. Famine develops over several years and therefore it should be possible to identify early signs of food crisis at the local level well before emergency aid is needed.
2. Early warning information and response should be integrated so that the agency collecting data should be able to act on it.
3. The response should aim to reinforce the population's ability to face a crisis, rather than providing purely emergency aid.
4. Local populations should play a role in the collection of data.

The OXFAM EWS is therefore based on its project partners, i.e. cereal banks, cooperatives, associations. Groups are being asked to collect rainfall and market data four times a year. OXFAM personnel then collect this data when they visit the groups and discuss the current situation. This would be the moment to propose interventions if necessary. The OXFAM EWS project has recently been started in the 4th region of Mali with ten cereal banks. At the time of the workshop, had not yet been collected.

Another aspect of this project is to further research the local level "dynamics" of early warning indicators. Currently work is being carried out on livestock prices.

Several limitations of this approach were identified by the project staff. A project covers a small geographical area and thus a limited number of people. There is always the risk of local populations distorting data to gain assistance. After the project ends, or when there is a series of good years, can a continuation of data collection be ensured. The local institutions are not yet collecting data, so it is difficult to judge their capabilities





## Chapter 6

### APPROACHES TO FAMINE RELIEF

#### INTRODUCTION

Famine interventions fall into two categories:

- 1) Conventional relief, which primarily provides food directly to famine victims.
- 2) Counter-famine efforts, which are a variety of economic actions taken to stabilize local markets and to increase poor people's ability to buy the food they need or to obtain it through alternative methods. Counter-famine efforts usually rely on existing market systems.

#### CONVENTIONAL RELIEF

Conventional famine relief usually consists of three elements:

- 1) Dietary supplements in the form of food or vitamins.
- 2) A variety of health care and public health assistance programs.
- 3) Where migration has occurred, such support as temporary shelter, water, and sanitation facilities to new settlements and camps.

Food aid programs usually provide rations to families. When conditions are severe, supplementary foods are also distributed to vulnerable groups. Relief agencies often use special foods such as blended grains, vitamin-reinforced flours, and high-protein products.

Famines caused by war or civil conflict almost always require conventional relief strategies in their early stages -- especially for refugees and displaced persons who have fled to relief camps or temporary settlements and are unable or not permitted to find jobs. Conventional strategies are also frequently used in the advanced stages of famine.

Overall, conventional relief is not successful in controlling high mortality (deaths) unless there are ample food supplies to buy or use in the country at the start of the operation. Most food aid is imported from the major grain-producing countries, and it can take as long as six months to ship the food and set up a distribution system. Studies have shown that the chances of saving lives at the outset of an operation are greatly reduced when food is imported. By the time it arrives in the country and gets to the people, many of them will have died.

A successful conventional relief program requires:

- a nearby and available source of food;
- the capability to transport and distribute the food; and,
- most importantly, an early decision to use this strategy instead of others.

#### COUNTER-FAMINE INTERVENTIONS

Counter-famine actions are designed to prevent the famine from developing into a full-scale disaster and to limit its geographical spread. Such measures attempt to do this by increasing income and food for the poorest people and by attacking the underlying causes of the people's poverty. These interventions are aimed at keeping the local market system from collapsing, preventing people from having to sell their assets, stopping migration, and maintaining the family.

The actions, which should start in the early stages of the famine, include:

- Income transfer programs.
- Support for existing market systems.
- Interventions to maintain transportation systems.
- Interventions to maintain rural trade patterns.
- Investments in increasing household economic assets.
- Investments in community infrastructure that will support agricultural production.

Until recently it was believed that counter-famine interventions like these would work only in famines outside of conflict zones and especially those that take a long time to develop, such as drought triggered famines. However, a number of measures associated with this approach were used successfully in northwestern Somalia in 1989 and the liberated areas of the northern Ethiopian war zones in 1990. In 1992, the US government made market interventions its primary relief strategy for the famine sparked by the Somali civil war.

The sole prerequisite for using counter-famine interventions is a ready supply of cash and food aid that can be used in unconventional ways, such as direct sales to the victims or to food traders and merchants. A well organized information collection system with the capabilities of a famine early warning system (see Chapter 5) also helps in targeting the specific interventions.

## CONVENTIONAL RELIEF VS. COUNTER-FAMINE INTERVENTIONS

Which strategy is the more effective? There is growing confidence that the counter-famine approach is more effective than conventional relief. But full-scale counter-famine operations have not been widely used, because most relief agencies and the public have not understood the underlying causes of famine, the reasons why people are vulnerable, and the alternate opportunities available.

There is another reason counter-famine efforts are not widespread. Major donor countries have an excess of food, not cash, and their food aid policies are designed, in part, to support their own agricultural production.

Consider the position of a typical relief agency official in a country where famine conditions have developed. If he chooses to use counter-famine measures, he probably will have to raise the money through his agency. This usually means soliciting donations from the public and requesting grants from major donor governments. Public appeals can take months, and they often don't work until the agency can show photographs of severely malnourished people -- people near death. If the relief official requests money from donor governments, the amount of cash available is usually small, rarely more than a million dollars.

However, if the relief official approaches a major grain exporting country, he might get millions of dollars worth of food, as well as the money to administer and monitor its distribution and to buy trucks and fuel for distributing it.

The choice is usually an easy one. The average relief official will choose the latter course. For this reason, today's famine relief strategies are said to be "food driven" as opposed to "need driven."

However, counter-famine strategies are becoming more acceptable because of the large number of local currency reserves now held jointly by the donor country and the host country. These reserves have been accumulated from the sale of food and other commodities under aid agreements. These monies, known as counterpart funds, can often be used in emergencies. Furthermore, it is increasingly possible to obtain permission to sell donated foods that are inappropriate for use in the famine to raise cash to buy foods that can be monetized (sold to local merchants).

## CONCLUSION

Recognizing the limits of food aid is the most important prerequisite for understanding how to improve famine response. If food is available, or can be made available, through market interventions, most conventional food aid approaches are



unnecessary. More important, food aid usually arrives too late to make a significant difference. There is evidence to suggest for example, that the massive food shipments sent to Ethiopia in 1985 had very little impact on the outcome of the famine. It took 4-6 months to ship the food to the country and by the time that it arrived in sufficient, steady quantities in the rural areas, the death rates had peaked and were already declining -- evidence that those who were most at risk of dying had already perished. For this reason, many relief specialists believe continued emphasis on procuring, shipping and distributing food from surplus-producing nations as the primary famine intervention is not only unwarranted but possibly risky.



## Chapter 7

### COUNTER-FAMINE OPERATIONS: PREEMPTIVE AND CONTAINMENT STRATEGIES

#### INTRODUCTION

The purpose of counter-famine measures is to prevent or stop famines from spreading. They can be applied as soon as it is evident that a situation is deteriorating. If actions can be initiated before events get out of hand, a range of strategies is available that can not only preempt the famine but assist the affected communities and families with developmental (vs. relief) aid. These measures will have more impact than the crisis interventions that may be required once a famine becomes pronounced.

Counter-famine strategies work best in the early stages; once things get out of hand, interventions that rely heavily on food relief will predominate. In the normal realm of famine relief operations, developmental assistance is usually given lower priority than food relief, especially during conflicts. Therefore, it is important that counter-famine operations begin as soon as a problem is detected.

Counter-famine interventions are based on the premise that employment and income are the central issues that must be addressed in a famine. If sufficient income can be provided to families, they will not need to liquidate family assets and the people's ability to purchase food can be restored. If sufficient cash is provided - - for example, through cash-for-work projects -- and the people's purchasing power is maintained, the market will respond and food will be brought into the area. Assistance should be directed toward those activities that will lead to a sustained rise in rural income as well as encourage people to use their earnings to continue their farming or other productive enterprises.

A multitude of diverse, small-scale activities should be spread throughout the vulnerable areas. Usually, the number of projects and the rapidity with which they must be implemented is beyond the capacity of any government or relief agency to execute through the normal project planning and implementation process. The best alternative is to place as much of the responsibility for planning and the resources for carrying out the projects in the hands of the communities and affected families <sup>(1)</sup>

*change to footnote*

#### THE ELEMENTS OF A COUNTER-FAMINE STRATEGY

A counter-famine strategy should address the causes as well as the effects of famine. Families who have lost their income require

alternative earnings. Thus, agencies should undertake projects designed to:

- Create alternative sources of income and promote a sustained increase in average family earnings.
- Prevent a decrease in the value of a family's assets, especially livestock.
- Rehabilitate local markets and fill them with food that is affordable to the majority of the poor.

They should also promote investments by the people in activities such as gardening or milk production that will make it possible for the most vulnerable families to expand the range of foods they consume, develop skills that will enable them to diversify their sources of income, and, where possible, reduce the vulnerability of their cultivation and livestock practices.

Counter-famine activities should be designed to achieve multiple objectives. They utilize the principal resource -- labor -- that is most abundant during a famine. They address the most immediate effect of famine, an overwhelming increase in the number of unemployed people. They provide income by paying, preferably in cash, for work. And they prevent the development of full-blown famine conditions if put in place in time and in the areas where the people live.

When properly planned, counter-famine measures can prevent the social and economic disintegration that accompanies mass migrations of people searching for food and the pattern of dependency that often develops when free food aid is handed out.

Counter-famine actions are divided into two sets of economic interventions: Income support projects and market interventions.

#### **INCOME SUPPORT PROJECTS**

A number of projects should be set up in the famine zone to provide the poor with cash to help restore their purchasing power. Wages should be paid principally in cash. Cash and in-kind grants, and where possible, loans may also be used to inject resources into the community. These are known as "income support" projects.

Although the counter-famine strategy depends on employment generation and cash-for-work projects, it differs in a number of significant respects from conventional public works schemes. The majority of the projects should focus on improving the productivity of the lands, crops, or livestock herds and rehabilitating the market and food distribution system. Priority should be given to paying people to improve their own assets, particularly land. While a road building project may help the community, and can certainly

create income for workers, it will not do much toward reducing the vulnerability of area farms to drought, crop failures, etc. The projects should also develop means for communities to decrease their collective vulnerability to famines, e.g., the establishment of community-based food banks.

The projects must be designed to yield rapid returns. This is essential if the projects are to result in immediate protection for the poor and reduce their vulnerability to the famine.

An important aspect of the projects is the mobilization of community labor. They should use traditional labor organization techniques or institute cooperative labor schemes that the villagers can continue after the crisis. The people should be involved in organizing and structuring the labor force and the normal lines of authority should be respected.

It is critical that the projects not divert labor from essential agricultural activities. If projects must be carried out during times when people are fully occupied with their usual work, the activities should be organized so that they can be interrupted to allow people to work their land or to work on a part-time basis.

#### **The Role of Food Aid**

The counter-famine approach does not exclude the need for food aid. Some households will probably require supplementary food, especially families living at the margins of the famine zones. Strategies that employ alternative food-for-work schemes may be required to increase food supplies in some areas. (See Chapter \_\_\_).

Some families may need to receive free food supplements, but these should be limited to people who are most in need. The mere perception that free food is available can create expectations that can undermine other intervention strategies. Furthermore, if the food aid is not targeted properly, large portions may end up being sold on the market and could contribute to food price fluctuations that could have a negative impact. situation in the community.

Generally, food aid serves two purposes. First, it can be used as the equivalent of income to give to families who have lost their normal source of income. Second, it can be used to finance, or partly finance, relief or rehabilitation activities. Food aid should be limited so that supply doesn't exceed demand -- otherwise it will push prices too low for food producers to make a profit and thereby retard agricultural recovery. In general this means that food aid should only be used if it is clear that the local market can't meet the demand for food -- in other words, that famine is developing as a result of food, not income, deficiencies.

When the food is being supplied from abroad, it is usually preferable to exchange the imported food for locally purchased

food, if it is available. This helps to maintain demand for locally produced food (and can result in major savings in transport costs).

It is important to understand food aid from the point of view of the beneficiary. Most relief personnel see food aid as an alternate source of food for starving families. The recipients however, view it in a broader way. They see it as income and a transfer of assets. Since the majority of the people are farmers who normally sell food for income, receiving food from a relief agency is like receiving cash. Even in the most extreme circumstances, people will barter relief food for other commodities or needed services. It is not unusual, for example, to find people selling food for water; household items such as soap; other foods, such as spices or salt; and for essential services such as grain milling.

For these reasons, food aid distributed to meet a *nutritional* target, rather than *income security*, is likely to fail. (When viewed in this context, measuring food aid in caloric standards is generally meaningless.)

#### **MARKET INTERVENTIONS**

Many agencies view the selling of emergency food aid with alarm. This tends to restrict the use of food as a general resource with broad applications, and it limits support for the kinds of activities central to a counter-famine and containment strategy.

There are many situations where the sale of food is desirable. This is the case when food supply is inadequate to meet demands. When supplies are scarce, there is a corresponding increase in food prices that erodes the purchasing power of the poorest families. Giving food away will not reduce the food crisis unless the people sell the food, creating a surplus that will bring market prices down.

The distribution of free food rations requires that a major logistical supply system must be developed at great cost. Such systems can rarely be put in place rapidly, and lives are endangered while they are being set up. In such cases, it would be simpler to sell food aid using the normal markets as the distribution system. There is no reason why food aid should not be sold to local traders, especially the micro-entrepreneurs such as women vendors, who usually sell their own produce in the markets. These local traders will resell the food aid at prices affordable to the poor. The sales generate funds that can be used to help finance cash-for-work projects. Thus, sales achieve multiple objectives -- cash for the counter-famine projects and support for the small traders.

An example of how this can work is the program initiated by

CARE in western Sudan in 1990. The program consisted of the following activities:

1. Market interventions: The primary action was to revitalize village markets. Supplies of grain were procured and delivered to village councils, where they were sold at subsidized prices to the small retail vendors in the market. The selling price was initially equivalent to the previous year's highest wholesale price. Sales were limited and purchasers were asked to agree to sell their grains within a certain price range, roughly equivalent to the previous year's retail sales price, adjusted for inflation (approximately LS200 - LS250 or \$5 per sack). The amount sold to each vendor was limited, and the retail market monitored to ensure that vendors sold the grain within the agreed limits. Any vendor selling above that level or selling to wholesale merchants was disqualified from subsequent sales.

Proceeds from the sales were assigned to village councils to organize cash-for-work projects. Families that could not afford to buy grain even at the depressed price were given priority for employment in the cash-for-work projects. Projects were selected by the village council and monitored by NGOs assigned to the area.

2. Food Loans: In the initial stages of the program, it was difficult to organize sufficient cash-for-work projects to meet the needs of all families whose convertible assets had been sold. Rather than giving food away, families were loaned the food with an obligation to repay it into a village food bank in increments during the next good harvest.
3. Food-for-Work: Food-for-work programs were initiated in the towns and areas where large numbers of migrants accumulated. They were also carried out in the peripheral areas of the food-deficit zone, i.e., in those communities where harvests were reduced, but no more than 50% of normal. (If losses were more than 50%, more direct aid programs were used)
4. Price Supports for Livestock: A program of interventions designed to push up prices of livestock was carried out using local currency accounts from the major donor nations. Interventions included buying livestock at fair prices, redirecting livestock away from the towns and urban centers (using the long-haul food lorries that brought the food to the area to take sheep and goats back to Port Sudan for export, bypassing the Khartoum market),

and in certain cases purchasing goats and redistributing them among the rural poor whose herds had been depleted.

5. **Food Supplements:** A program for identifying people or groups who required emergency nutritional support such as the elderly, lactating women, and children under 5 who are immediately threatened was instituted by NGOs.

As a result of these interventions, famine conditions were contained and the markets functioned normally until the end of the drought.

Market interventions can also work in conflict zones. An example is the program launched by USAID in Somalia in 1992. Food was given by donors to the World Food Programme which then transferred it to CARE. CARE representatives in Kenya sold and delivered it to Somali traders who then took it to the famine zone and resold it to the small retail vendors. By traveling at night and using pack animals or armed convoys, the traders were able to pass through contested areas to reach villages that were largely inaccessible to relief agencies. The proceeds of the sales were transferred to NGOs working in the area for use in a variety of income generating projects as well as agricultural rehabilitation.

#### **Uses of Food Aid To Support Market Interventions**

Food aid can be used in other ways to support local trade patterns. Three innovative methods are the payment in kind (PiK) program, animal-grain exchanges for pastoralists, and barter schemes.

1. **The PiK Program --** PiK programs are designed to help support local farmers and to maintain the normal marketing system. Farmers are paid in grains to improve their land with counter-drought or counter-desertification methods such as contouring, terracing, or planting wind breaks and for participating in community development projects such as developing water harvesting measures, etc. Instead of receiving wages, farmers receive payment in grain equivalent to the amount they would have produced under normal conditions. If their harvest has totally failed, they receive the full amount. If they harvest a percentage of their normal yield, they receive the balance.

The grains they receive are un-milled. The farmers can sell the grain at whatever price they can negotiate with their usual buyers. In this way, all persons and institutions usually engaged in the marketing system can carry on as if the drought had not occurred. Thus, the negative impact of drought on the market system can be substantially reduced.



The PiK program provides an excellent way of informally controlling prices in local markets. This is done by adjusting the percentages of food provided according to the normal yield. By providing a greater percentage, prices should move downward; by providing less, prices move upward. PIK programs can be adjusted to permit farmers to retain any grains they have produced to use as seeds the following season. This reduces the amount of seeds that relief agencies or the government would need supply later.

The management requirements for PiK programs are substantially less than for other food distribution programs since the food is being handled through the normal market system and not by artificial distribution. Usually the grain is not delivered to the individual farmers but to granaries, where it is allocated to the farmers at the time their normal harvest would have been brought in for sale. In some cases, the grain is not delivered; it is simply a paper transaction with the price cooperatively negotiated and the proceeds going to the farmer in cash.

While PiK programs can be used throughout a famine zone, they are most effective in stabilizing grain markets on the periphery of drought-affected areas and for countering the development of famine conditions in isolated food-deficit areas. They are especially useful in areas where only small farmers are experiencing shortages.

As a famine control measure, PiK programs are effective in countering famine shift (See Chapter \_ ).

2. Grain for animal exchanges -- The provision of relief grain in exchange for animals at fair prices achieves two objectives:
  - a) It preserves the value of animals and thus the pastoralist's income.
  - b) If the animals can be slaughtered and the meat preserved, the project transforms deteriorating food stocks into food reserves.
3. Barter -- Grain can often be used to barter for other commodities such as more appropriate foods or seeds and agricultural inputs. For example, wheat which has a relatively high value in many countries may be bartered for sorghum or other lower value grains at exchange ratios that increase the amount of food available for use in the relief program.

## **OTHER STRATEGIES FOR INCREASING ACCESS TO FOOD**

### **Releasing Government-held Food Stocks**

One strategy that governments use to increase food supplies and to decrease prices is the release of government-held food into the private market.

### **Sales at Controlled Prices**

Governments often establish outlets for selling food at regulated prices to the poor. An example is the "fair price" shops in India during the Bihar drought of 1966-1967. The government set up over twenty thousand stores.<sup>1</sup> Such approaches guarantee supplies to those with limited income.

Related to this option is the free or subsidized distribution of a special ration to specific classes of people -- women with dependent children, the sick and the elderly -- who cannot otherwise obtain food.

### **Food Subsidies**

In the 1960s, Sri Lanka implemented a guaranteed food subsidy program for its entire population. Under this scheme, each low-income family receives food stamps that can be redeemed for free weekly rice rations. The rations provide slightly less than the minimum requirements for a complete balanced diet so the program is considered a supplement to what a family can buy. Such a program has its costs -- both fiscally and socially. But the subsidy program has improved food security for the poor. Food stamps are credited with substantially reducing the risk of famine among displaced populations during the long civil war in that country.

Countries with long term food subsidy and distribution schemes are better prepared to face major food shortages than others. Clearly, design of a subsidy program is a complex task, but overall, it is a good strategy to consider.

### **Price Controls**

Price controls are often proposed as a means of ensuring the poor's access to food. In most cases, however, controls have been

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<sup>1</sup> Berg, A. "Famine contained: Notes and lessons from the Bihar experience," in Blix, G. Y. Hofvander, and B. Vahlquist (Eds.), *Famine. A Symposium Dealing With Nutrition and Relief Operations in Time of Disaster*, Swedish Nutrition Foundation, Symposium No. IX, Almquist and Wiksell, Uppsala, 1971.

a failure, and in many cases it creates a black market or, worse, results in food being hoarded or smuggled to other areas.

#### TARGETING COUNTER-FAMINE MEASURES

Commonly, three situations are encountered in the early stages of famine:

1. The loss of agricultural incomes in areas where it is possible to increase or at least resume normal production by making land improvements and introducing improved farming or animal husbandry techniques. In these cases, the priorities are mobilizing labor for land improvements, construction or rehabilitation of irrigation systems, improving drainage and reducing erosion, etc.
2. The loss of agricultural incomes in areas where land is scarce and it is unlikely that all the people will be able to resume production at the previous level. This situation may have developed as the result of poor land management, increasing population pressure, desertification, or increasing salinity of soils. The priority in this case is to identify families that require alternative sources of income. Alternative work can be developed by providing start-up capital for new enterprises and extensive training in new skills.
3. A situation where large population migrations have occurred and agriculture cannot provide a stable source of income for the majority of the people. In this situation, emphasis should be placed on providing long-term alternative sources of income. (In some cases, government may propose resettling people to more productive areas. The measure is disruptive, has no impact on the immediate food needs, and ultimately adds to the relief burden.)

Tables 7-A and 7-B summarize some of the types of projects that can be used to counter the development and spread of famine conditions.

Proper targeting of counter-famine aid is critical to a successful program. Often relief agencies fail to select the correct beneficiaries for projects or overlook key aspects of a society that play a factor in the outcome of the project. A common example of poor targeting occurs in the projects that use food- or cash-for-work. Often the projects simply build public infrastructures rather than focusing on improving the farmers' lands or increasing output on subsistence plots. As a result, the impact is limited to the provision of income or food support.

Food-for-work programs have a checkered history in targeting beneficiaries. Great care must be exercised to ensure that the people working are from the families most in need and that the food reaches family members with the greatest need.

Some counter-famine technical assistance programs have failed because the intended recipients of assistance were incorrectly identified. This often occurs when relief agencies focus their attention exclusively on men. They assume that as the heads of households, men usually make all the critical decisions about food production. In many societies, however, it is the women who decide questions concerning the growing of subsistence foods. This is especially true where food and cash crops are grown simultaneously. Women tend to manage their own fields, where they grow subsistence foods, while the men manage fields for cash crops. De Waal reported that in western Sudan "even on farms which are jointly managed by husband and wife, the man is usually solely responsible for major cash crops such as ground nuts and sesame, while the woman spends most of her time in the fields working on the grain crop."<sup>2</sup>

## **ISSUES IN COUNTER-FAMINE OPERATIONS**

### **Political Obstacles to Counter-Famine Approaches**

Perhaps the most difficult obstacles to overcome when planning a counter-famine program are political ones. Political constraints are usually obvious: they come in the form of government policies, inflexible program guidelines that seem etched in stone, and bureaucratic procedures that make innovation all but impossible. If the famine is in a conflict zone, political obstacles may prove formidable.

There are many hidden political agendas that make it difficult to work. These usually occur at the international level and involve relations between donors and the affected country. A good example happened during the famine in Ethiopia in 1986. The primary food aid donor was the U.S. government. Due to political hostilities between Ethiopia and the United States, American assistance was limited to humanitarian aid; a Congressional ban prohibited "developmental" assistance. The U.S. mission in Addis Ababa interpreted this ban to mean that assistance was limited to providing food directly to the famine victims -- approaches such as cash-for-work were strictly prohibited. Such political obstacles only penalize the poor and are shortsighted.

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<sup>2</sup> Roger W. Hay, "Food Aid and Relief/Development Strategies", a paper presented at the WFP-ADB seminar "Food Aid for Development in Sub-Saharan Africa", Abidjan, 1986.

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*TABLE 7-A*  
**INTERVENTIONS TO COUNTER THE DEVELOPMENT  
AND SPREAD OF FAMINE CONDITIONS**

<u>Type of Intervention</u>	<u>Methods (in order of Priority)</u>
Income Support	Cash-for-work Temporary jobs PiK Food for work (Coupon store approach) Food-for-work Cash grants Direct food aid
Price Supports for Cultivators and Pastoralists	Animal - grain exchanges Subsidized purchases
Market Support	Subsidized sales of food (through micro-vendors) in local markets Subsidized sales of food in national markets

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*TABLE 7-B*  
**INCOME SUPPORT PROJECTS**

**Direct Investments:**

- Land Improvements (contouring, terracing, soil improvements)
- Erosion Control (planting trees for windbreaks, erecting sand fences, etc.)
- Irrigation Improvements
- Alternative Crops (distribution of seeds)
- Crop Salvaging (alternative uses of stunted crops; e.g. fodder)
- Construction of On-Farm Grain Storage Facilities
- Distribution of Replacement Seeds, Fertilizers, Pesticides

**Indirect Investments:**

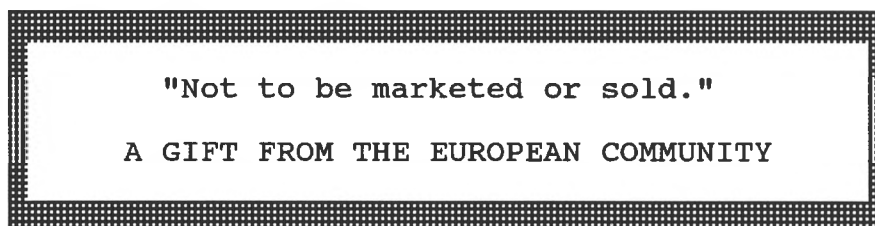
- Farm-to-Market Road Construction
- Construction of Cooperative Grain Storage Facilities
- Construction or Improvement of Public Water Systems

**Lower Priority Projects:**

- Construction of Schools, Market Facilities, Health Facilities
-

## Doctrinal Obstacles to Counter-Famine Approaches

Some formidable obstacles are doctrinal: policies set up with good intentions that in practice are counterproductive. Relief agencies abound in them. For example, food given by donors is usually restricted to free distribution.



(A typical label on donated food.)

Other donors have established artificial classifications for their assistance, dividing aid into "relief" and "development." Unfortunately, many of the more important counter-famine approaches have been classified as development aid, making them unavailable for use in emergencies.

The biggest doctrinal obstacles, however, stem from the limited understanding people have about the processes at play in famines. For example, a common attitude is that people who are in distress should not have to pay for food. Thus, many agencies are unwilling to use cash-for-work approaches.

Doctrines spring out of "conventional wisdom" or long held beliefs about famines. If people are starving, it is assumed their is a food shortage so food is imported. Few look for food in the famine zone and thus miss the opportunity buy food locally and speed the famine relief process.

Until the origins of famine faced for what they are, and the cause and effect relationships are more clearly understood, relief agencies will continue to bind themselves to inappropriate, expensive, and largely ineffective responses.

### SUMMARY

Counter-famine strategies are based on the understanding that famines are principally a problem of income and employment; interventions should be concerned with short and long-term solutions to low and unstable incomes and declining job prospects. The principal approaches required are economic interventions, rather than food aid. The process begins by determining to what extent family income has collapsed and where the appropriate

interventions can be made. Interventions that focus on increasing food security at the household level by replacing lost income are the best means of countering the most prevalent forms of famine.

If food aid is required, it must be approached with caution and targeted effectively. The arbitrary restrictions on sales of food aid are often counterproductive and deny relief agencies a vast array of counter-famine measures. If donor rules do not permit considerable flexibility, counter-famine strategies will be difficult to implement.





## Chapter 8

### EMERGENCY RESPONSE

#### INTRODUCTION

Emergency response is the term used to describe the steps that need to be taken to respond to a fully developed famine. The initial response is similar to the opening moves of a chess game. It is dictated as much as by what is unknown about the situation as by what is known. In a chess game, no matter what the players' eventual strategy, pawns must be moved to create openings and flexibility for the capital pieces. Likewise, in an emergency, certain moves must be made and certain systems must be established before other options can be brought into play -- lives cannot be saved unless certain interrelated measures are taken immediately. For example, diseases cannot be controlled unless there is an adequate food supply. Provision of food will have a reduced effect unless diarrhea is controlled. Diarrhea cannot be prevented unless there is an adequate supply of clean water. Clean water depends on adequate sanitation and good hygiene practices.

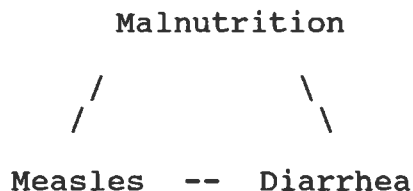
Emergency response should begin as soon as it is clear that counter-famine measures cannot prevent or contain the continued decline in people's nutritional status. At the same time, an assessment of the situation should be conducted. The information developed by the assessment is then used to further elaborate the plans. Initial response should follow a prescribed pattern and continue until on-site assessments prove beyond a doubt that a specific set of interventions is not required. These actions should always be taken until accurate information is developed that indicates other measures should be employed.

Each of the main actions is complementary to and supports the others. One strategy alone usually won't solve a particular problem; a concerted attack involving several approaches is usually necessary. Furthermore, one program can rarely accomplish its goals unless it is supported by programs in other sectors. For example, death rates from diarrhea cannot be brought under control solely by providing clean water; oral rehydration therapy (ORT) plus sanitation and good personal hygiene practices will also be important.

#### Epidemiological Considerations

Research has shown that the primary causes of death in a famine are malnutrition, measles, and diarrhea. Each affects the others. A severely malnourished child will not be able to survive a case of measles. Severe diarrhea can quickly dehydrate and kill a malnourished person or someone with measles. To save lives, these three killers must be brought under control.

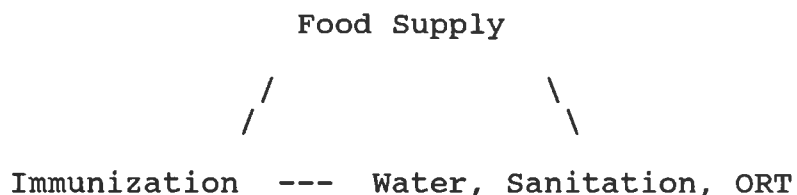
The interrelationship of the three causes of mortality are depicted theoretically in Figure 8-1.



*Figure 8-1*

#### PRIMARY RESPONSES

The priorities in the initial phase of the emergency are those that address the major killers. These actions include the provision of food, immunization and diarrhea control through the provision of clean water, sanitation, hygiene and oral rehydration. The relationship of these actions to the primary causes of mortality are depicted in Figure 8-2 below.



*Figure 8-2*

These responses are the foundations of an initial response doctrine. Each of these responses -- food, immunization, and diarrhea control -- requires a distinct set of activities.

#### Food Supply

Adequate supplies of food are required to ensure that famine victims recover and maintain a good nutritional condition. This includes providing a general ration and, in some situations, supplementary food for special groups.

1. **General Ration.** This is the ration designed to provide families with their basic food needs. Of all the food supplied in emergencies, the general ration is the most important. If it is possible to supply enough food so that

the general ration can be maintained without interruption, the vast majority of families can recover and survive on this food alone.

The general ration is composed of a mix of foods -- known as the "food basket" -- designed to provide sufficient calories as well as protein, vitamins and minerals. The primary requirements are:

- A basic grain, oil, and minimum caloric content of 2250 to 2500 calories per day.<sup>1</sup>
- A source of protein.
- A mix of vitamins (especially A), minerals and other nutrients to ensure healthy development of children.

The key to a successful general ration during the initial emergency is supplying enough food for people to survive without relying on supplementary sources. Usually, a general ration is based on giving every member of the family, even children, enough food to meet the needs of an adult. This permits families to apportion the food according to nutritional needs and provides a small buffer against shortages and spoilage within the family's supply.

The amount of food provided is determined by its caloric content -- the lower the number of calories in a food, the more food required. Most relief agencies calculate the amount needed on the basis of an average worker's nutrition requirements and adjust for inter-family distributions.

Rations should be distributed at regular intervals to build confidence in the food supply and reduce hoarding. If relief camps have been set up, distributions should be made approximately every 10 days. This reduces the likelihood that malnourished people who over-consume will not have enough food between the time they run out and the next distribution. Longer intervals will result in higher mortality.

Unless an adequate registration program is developed and instituted immediately, major problems in food distribution will occur quickly.

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<sup>1</sup> In most guides to relief operations, the recommended average emergency ration is 1900 calories. However, food is more than a dietary need; the poor also see it as a source of income. If the basis for planning the ration does not consider that people will sell a portion of the food and adjust the allocation upward, ultimately, some members of the family will not have enough to survive.

2. *Supplementary Feeding.* Supplementary feeding is a food distribution program targeted for those who are malnourished or have special nutritional needs. A supplementary feeding program should be carried out:

- When malnutrition is high (over 10 percent of those under 5 years).
- When there is evidence that families are not distributing the food equitably among all family members and the problem cannot be corrected by other means (such as changing the mix of foods distributed).
- When the general ration is less than 1900 calories for any reason.

There are two ways to carry out supplementary feeding programs. One is to supply special supplementary foods to the target populations (usually women and children under 5). The other is to set up feeding centers where the people come daily to receive prepared meals and consume them on the spot. Of the two programs, the latter is usually the most effective in the advanced stages of an emergency. However, it is only as effective as the efforts made by the staff to identify those most in need and to enroll them in the program and monitor attendance.

Weighing and measuring children to ensure they are gaining weight is important. Normally, middle upper arm circumference (MUAC) measurements are used for rapid community surveys to qualify children for supplementary feeding; once they are enrolled, the children are measured using weight-for-height standards.

If the program is being carried out via feeding centers, all children should be immunized against the primary childhood diseases (measles, DPT, etc.) when they are enrolled. (The minimum is measles.)

In the initial stages of an emergency, the routine monitoring that is carried on as a part of the program may be the best way to determine other health and nutritional problems in the population. By monitoring diarrhea in children and noting where the people live, it is usually possible to identify impure sources of water. By noting women or children who do not gain weight despite supplementary feeding, problems can often be detected within the general ration or in the way food is distributed within the family.

The key to a successful supplementary feeding program is outreach. Health workers must go into the community, identify women and children who require supplementary feeding, and

ensure that they are enrolled in, and regularly receive, the supplementary food. Without an outreach effort, supplementary feeding will have only minimal impact.

3. *Therapeutic (Intensive) Feeding.* Therapeutic feeding is an intensive, round-the-clock feeding program usually carried out under the supervision of health workers. In recent years, therapeutic feeding programs have attracted much criticism from epidemiologists who note that few children survive despite the best efforts of medical staff. Therapeutic feeding requires special facilities (normally attached to an outpatient dispensary or hospital) and a skilled staff to monitor the feeding effort.

As a general rule, therapeutic feeding programs should be given a low priority in relation to other food and nutrition efforts. They should be established only after supplementary feeding is under way. Remember, in an emergency the goal is to save as many people as possible, and efforts must be focused on keeping people from deteriorating to a point where only radical interventions such as therapeutic feeding are necessary.

4. *Indirect Food Supply.* Throughout the emergency, relief agencies should develop and expand indirect ways of increasing food supplies in, and adjacent to, the famine zone. These can include income support projects, cash-for-work, food-for-work, and other indirect approaches. After the emergency has abated, direct food aid programs should be phased out and indirect food programs should be expanded as a residual means of building food security. (Indirect food assistance is described in detail in Chapter \_\_.)

Remember, 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. Therefore, it is important that a balanced famine-fighting strategy be developed that includes not only provision of food aid, but also agricultural recovery and development assistance.

### Immunization

Vaccinations to prevent communicable diseases, especially measles, are the second component of emergency response. To be successful, a vaccination program requires:

- Surveillance and detection of communicable diseases.
- Vaccines.
- A cold chain to ensure that the vaccines are not damaged

or lose their strength from the point of origin to the time of injection.

- Effective promotion, mobilization, and coverage of the population.

In recent years, major efforts have been made to build adequate supplies of vaccines in all Third World countries. The Expanded Program of Immunization (EPI) spearheaded by UNICEF and the World Health Organization has resulted in the building of national stockpiles of many of the most important vaccines used in emergencies, and this has greatly reduced response times. By borrowing from EPI warehouses, there is no reason why effective immunization campaigns cannot be carried out from the start of most emergencies.

A vital component is maintaining a continuous cold chain from the EPI warehouse to the recipient's arm. A cold chain requires the use of specially designed cold boxes (dedicated exclusively for holding vaccines) for transferring vaccines, refrigeration equipment, and adequate stores of fuel for the refrigerators at the immunization centers.

#### Diarrhea Control

Diarrhea control consists of both preventative and curative activities. Preventative actions focus on the relationship between clean water, sanitation, and hygiene -- a relationship known as the "hygiene loop," illustrated below in Figure 8-3. Anywhere contamination occurs within this loop, diarrhea will result.

*Figure 8-3*

#### THE HYGIENE LOOP

Curative actions focus on oral rehydration therapy; a simple solution of sugar, salt, bicarbonate of soda, and water that helps restore the body's electrolyte balance and treats dehydration. In the long term, it is more effective than most costly anti-diarrheal medicines.

Use of oral rehydration solution (ORS) is becoming more widespread each year. (In some countries, the packets are so commonplace that they are used for curing hangovers.)

There are numerous sources for ORS packets. They are usually included in the standard medical kits provided by UNHCR, WHO, UNICEF and many private voluntary organizations. Large stores of

ORS packets are often on hand at the EPI warehouses, and they are commercially available in a growing number of countries. In a situation where supplies are inadequate, it is possible to make the solution from the basic ingredients. The formula is shown below.

*Figure 8-4*

**Oral Rehydration Solution**

Sodium Chloride (Table Salt)	3.5 Grams
Sodium Bicarbonate (Baking Soda)	2.5 Grams
Potassium Chloride	1.5 Grams
Glucose (sugar)	20.0 Grams

To be mixed with one liter of clean water

**LOGISTICS**

Now that the three primary sets of interrelated activities have been identified, it is time to link them with one final activity: logistics. The delivery of food, medicines, and materials are dependent upon logistics. Unless an effective logistics system is established from the outset, it will be impossible to implement other actions smoothly. Logistics systems entail the management of vehicles, fuel, parts, warehouses, cold storage facilities, and pharmacies.

**SUMMARY**

To successfully control an emergency, the initial response must move forward and in unison along set lines. All the activities mentioned above are interrelated and interdependent. If these programs are implemented swiftly and backed by a sound logistics system, lives can be saved and a base can be laid for a balanced and effective assistance program.





## Chapter 9

### FOOD RELIEF PROGRAMS

#### INTRODUCTION

There are many ways to ensure that people get the food they need during famines. They can generally be categorized as either direct and indirect methods. No one method will meet all the people's needs at the same time, thus, program planners should consider using a mix of programs in different phases of the famine. Figure 9-1 depicts a typical famine cycle and shows how different approaches might be applied at different phases to improve the targeting of food aid and, at the same time, promote agricultural recovery.

Figure 9-1

There are many alternatives to direct distribution of food during times of famine or conflict. They include:

- Market interventions such as
  - internal purchase programs,
  - direct sales of food to local vendors at subsidized rates (i.e., monetization of food aid), and
  - livestock interventions
- Income support programs such as cash-for-work;
- Food-for-work programs (FFW);
- Food stamp or food coupon programs; and
- Payment in Kind (PiK) programs.

The value of these programs is that if properly planned, they are less stressful to individual families than receiving handouts. Much of the food provided in food-for-work or food coupon programs will eventually be bartered and find its way into the marketplace thereby increasing the overall availability of food in the community. If proper allowances are made and if the beneficiaries are targeted properly, alternative distribution programs can often serve to help stabilize food prices.

#### Direct Monetization

Direct monetization is an approach that is used to revitalize

village grain markets. Supplies of grain are procured and delivered to the target villages where it is sold at subsidized prices directly to the small retail vendors in the market. The selling price should be an amount equivalent to the normal wholesale price. Sales to each vendor should be limited and purchasers should agree to sell their grains within a certain price range, roughly equivalent to the normal (or previous season's retail sales price, adjusted for inflation. The retail market should be monitored to ensure that vendors sell the grain within the agreed limits. Any vendor selling above that level or selling to wholesale merchants would be disqualified from subsequent sales.

Proceeds from the sale should go into a village fund to be used for cash-for-work projects. Families that cannot afford to buy grain even at the depressed price would be eligible to apply for employment in the cash-for-work projects. Projects would be selected by the village council or elders and monitored by NGOs working in the area.

### **Indirect Monetization**

In areas that are insecure, monetization can be used as a strategy to reach people in areas that are inaccessible to relief agencies. Merchants and others who remain in the areas are often willing to buy food and take it back to the area on their own. Many private merchants from Eritrea came to Sudan to buy grain and took it back into the besieged areas throughout the civil war. Sometimes they would carry the grain by lorry, but often they would take it in by camel or donkey. Other examples where merchants managed to get food into areas unreachable by relief agencies include Afghanistan, Sri Lanka, and the famous "land bridge" operation in Cambodia. The merchants are often able to negotiate deals with the warring parties that allow them to cross the lines and larger merchants can usually organize protection for the shipments. The smaller village traders who utilize pack animals can usually reach areas off the main roads and can travel at night so that they can avoid bandits and irregular forces.

Food sold in an indirect monetization program will cost more in the retail markets because of the wholesale traders added costs. However, merchants are mindful of what prices the market can bear and will usually recognize that there is more profit in volume sales than in limited, high price sales. What usually happens is that the prices for the first deliveries are relatively high, but as the wealthier people's food needs are satisfied and deliveries continue, the price begins to drop. Unfortunately, this means that those who need food most, i.e., the poorest and the people who are out of cash usually have to wait the longest for food. In Afghanistan, agencies tried to offset this by working with the merchants to get them to allocate a portion of the food to the poorest and low prices but this proved difficult to monitor.

Indirect monetization may not be the best approach but sometimes, its the only choice.

### **Internal Purchase**

In many situations, the purchase and distribution of

internally available food reserves is a viable alternative to imported food aid. In most conflicts and famines, the amount of food available is far more than outsiders realize. Often cereals, pulses and livestock may be available. Since famines are usually the result of market disturbances and conflicts have the effect of disrupting normal marketing, food is often trapped in pockets where it cannot be sold or transported as usual. In internal purchase program, a relief agency locates sources of supply, imports cash (local currency) to buy the food and then purchases and redistributes the food either by selling it at lower prices or giving it to relief agencies or committees in the famine or conflict zone to distribute through selective feeding or targeted food programs.

Internal purchase has many advantages. It is faster than importing food, is less costly, and can usually be managed by a few people working with local merchants and traders. Usually, once merchants start to release food that they are hoarding, others will also start to sell, especially if the agency is reselling the food to local vendors at low prices. Thus, the primary advantage is that it can help to reactivate the normal market system.

The food obtained through an internal purchase operation is often more compatible with local tastes than imported foods. When the food is sold, the proceeds can be used to buy more food or to support cash-for-work projects that give the poorest an chance to earn money to participate in the sales.

While the acquisition of internal food supplies is often more effective than external food aid, it is important to ensure that buying and distributing it does not significantly disrupt the local economy. Remembering that famines shift geographically, it is important to carefully analyze food availability before purchasing internally. For example, villages outside the famine zone may produce a surplus. However, if villages next to them are producing at a marginal or subsistence level, those villagers may depend on the surplus for their own protection. Thus, careful analysis is required before initiating an internal purchase program.

### **Cash-for-Work**

Cash-for-work, when properly organized is the easiest means of providing people with food on a widespread basis. Programs are relatively easy to plan and execute and monitoring is simple. The only major concern is the types of projects selected: they must not take people away from normal agricultural activities and should be designed to improve both near and long-term agricultural prospects.

In comparison to food-for-work programs which are generally more popular with relief agencies, cash-for-work is less disruptive of the local economy. The program is easier to administer -- there are no commodity logistics to manage -- and the projects are easier to terminate and to move from one area to another as needs dictate.

Cash-for-work also can 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.

Culturally, cash-for-work is not an alien concept, people normally work for wages. Therefore, the program is the best way to help maintain people's dignity for it removes the stigma of working on a relief program and gives people a choice about how they use the money. Since it is known that some of the food in food-for-work and other food distribution programs 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. However, studies of cash-for-work programs show that most money is spent for food; claims that people spend all their money on alcohol, tobacco and other nonessentials are exaggerated. Critics also point out that money can have the 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.

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

Projects may be carried out at any time in the planting cycle but if off-farm projects are planned during peak cultivation or harvest periods, allowances, such as part-time work, must be made so that people can work their lands at the critical times.

When the program is being used as a containment measure, it should be targeted for zones where crop yields will be at least 60% of normal.

Cash-for-work programs should be considered as an "exit" program in areas where food aid is being phased out. This will inject much-needed capital into the local economy and help continue both agricultural and economic recovery.

### **Food-for-Work**

Typically, FFW projects pay people with food for working on public works or community development projects. Ideally, food-for-work projects are 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 irrigation. On a larger basis, FFW may be used for community improvements such as building or upgrading farm-to-market roads.

Food-for-work proponents claim that food-for-work is less likely to create dependencies than direct food aid and is more developmental than direct handouts.

Food-for-work accomplishes multiple objectives: getting food

into the hands of those most in need, and carrying out projects and improvements that benefit everyone. Thus, both individuals and communities are served.

Projects are not difficult to organize, though paying in food means that a food logistics system must be set up to transport and store the food prior to distribution. The only difference logistically between FFW and direct distribution programs is that final distribution is easier and does not require the same degree of monitoring..

However, food-for-work has critics. They point out that, unless properly planned, FFW 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 the farmers can get for the food they have been able to produce -- thus that group is added to the overall caseload. 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.

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.

Food-for-work is normally used:

- as a counterfamine measure;
- as an complementary approach to increasing food in a community during a famine emergency;
- as a means of increasing food security at the periphery of the famine zone in order to contain the spread of famine conditions.

Food-for-work is most often compared to cash-for-work, with an increasing number of advocates for the latter. In reality, 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, thus, it is food that the agencies can obtain for distribution, not cash. Therefore, agencies are more likely to be carrying out food-for-work programs than cash-for-work, and NGOs, the primary consignees of food for this purpose, will be involved in numerous food-for-work projects. It is important for an 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 which could provide an alternative food

distribution mechanism.

Critics of both approaches 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.

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.

Projects 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.

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.

Payment for work should be according to production rather than a daily wage (i.e., piecework).

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.

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.

In order to ensure that the vulnerable groups receive food, food-for-work projects should be developed for women.

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.

### **Food Store and Coupon Approach**

A variation on food-for-work is the "food store and coupon" program. This program has been used with variations in several countries with quite a degree of success. A number of experts have suggested that this approach can help to remove many of the negative aspects of both food-for-work and cash-for-work programs.

Under the program, income generating 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.

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.

#### **Payment in-Kind (PiK)**

PiK programs 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 PiK 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 PiK 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 PiK claim that the program is 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 PiK 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, PiK 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. PiK could also be used in those areas where food is growing, but not in sufficient quantities.

The success of a PiK program in countries with tightly controlled state agricultural marketing 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.

PiK 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).

### Principles for Employing Indirect Food Aid Strategies

The following principles should guide agencies in determining when to use and how to target alternative food aid programs.

- a. Alternative food aid strategies may be used when nutrition-based distribution systems are being employed for the larger community.
- b. Alternative food programs should be used as the primary vehicle for transition from intensive to limited food aid.
- c. Food aid should not be used to employ people for work that they would normally do without pay, such as improvements to their own land, traditional community labor, etc.
- d. Food-for-work programs should be carefully monitored to ensure that people that need the food receive the first priority for jobs.
- e. The food-for-work programs should be monitored to ensure that the amount of food being provided does not have a disruptive effect on agricultural activities, such as terracing, building water catchments, erosion control measures, and improvement to farm-to-market roads.

### Fair Price Stores

The "fair price" store is a popular way of providing indirect controls over food market prices while making commodities available at reasonable prices to those most in need. This approach has been used in a number of countries, but it is most often associated with India, Bangladesh, and Sri Lanka. The concept grew out of the famine codes that were developed following the food crises in that region at mid-century.

Fair price stores are places where staples are sold at "normal" prices. The objective is to stabilize prices in the market during times of scarcity by providing a nearby distributor who sells at a fair price. By charging less, the fair price store forces others in the market to lower their prices or lose business.

The stores can operate in several ways. On the subcontinent, the governments ran the stores. In Haiti, similar stores have been run by cooperatives for their members. In Kenya, the government

sells grain at low prices to dealers in the village markets. The dealers, in turn, agree to resell the grain to the villagers at a fair price negotiated with the government. In several countries, NGOs have operated the stores, using grains they obtained as commodity aid from major donors.

In many cases, access to the fair price stores is limited to registered beneficiaries who must present a ration card or other form of identification to purchase food. In several countries that use food stamps, anyone who qualifies for the stamps can shop at the stores. Several programs allow anyone access to the stores but the amount they can purchase at one time is limited.

The primary advantage of the fair price store is that it uses a familiar mechanism, with minimum disruption of the normal markets, to ensure people access to food.

#### **DIRECT FOOD DISTRIBUTION SYSTEMS**

There are many ways to distribute food during a famine, and there are many models and programs that have developed over years of practice that can be adapted for specific situations.

The choice of approach is usually dictated by:

- The severity of the famine.
- The geographic location of the people.
- Whether people are living in their villages or have moved to relief camps in search of food.

Generally, direct programs distribute food directly to the famine victims, usually free of charge although sometimes a token payment or service may be encouraged.

Direct food distribution systems can be divided into two categories: village and camp systems. During widespread famine, relief agencies are often involved in both.

There are major differences in the approach to village and camp distributions. Village systems are designed to help people remain in their homes and to continue living as normally as possible. This assumes that people usually have access to other food sources; therefore, the system is *supplemental*. The agency attempts to put enough food into the community to meet all its nutritional needs and to allow natural adjustments to take place -- in other words, to provide enough food so that people can sell or barter food for other services. Under this approach, however, food distribution should not be so great that farmers slow or cease agricultural production; food distribution also should not adversely affect the prices that farmers can get for the food they manage to harvest. At the same time, it is important that those who need the food most get adequate amounts so that they will gradually improve nutritionally.

Village distribution systems are the more difficult logistically and administratively to carry out, but the advantages of this program over camp-based systems far outweigh the inconveniences. People who remain in their communities can continue

their lives. They will also be present when conditions in their area have improved enough to permit resumption of normal activities and food production can be restored to its normal levels. Village systems are therefore more "developmental" than camp systems, which are better described as "relief programs."

Camp systems are required when people leave their homes in search of food and congregate in relief camps or in highly dense settlements adjacent to cities. Because they have left their homes, the program must assume that the people do not have access to other food sources and that the relief agencies must meet the total food requirements of the victims. Even if the settlement or camp is adjacent to a major city, the program must assume, at least at first, that the displaced people do not have access to other food sources. Later, however, it may be possible to decrease the amount of relief if evidence indicates people are able to obtain other sources of food.

When providing food in camps, a balanced food basket needs to be provided. This means that the food that is distributed must meet all the basic requirements for nutrition including calories, protein, vitamins, and minerals for members of a typical family.

Other major concerns in camp systems are:

-- Providing food on a regular and timely basis. Generally the food distribution interval is about one distribution every ten days.

--Ensuring equitable inter-family distribution of the food.

Usually people living in camps are far more vulnerable than people who have been able to remain in their villages. Therefore, great caution must be exercised in carrying out a free distribution program to ensure equitable distribution.

#### **Village Distribution Systems:**

There are two general distribution models that can be used. These are *general distribution systems* and *nutrition-based distribution systems*.

##### *1. General Distribution Systems*

In the general system, a relief agency takes food in bulk to the villages and distributes it to everyone equally on a regular basis. The ration is usually based on a fixed allocation (determined by caloric content) times the number of family members.

This approach has several advantages. First, it is the easiest to plan. Simply multiply the number of people by the food ration to get the total tonnages required. Second, the program is fairly simple to manage; most of the emphasis is on logistics management rather than complicated nutrition monitoring. Third, since all the people are receiving food, a slight surplus will be developed in each community (because in planning, all recipients are counted as if they were adults in need of food). Also many people are likely to surreptitiously register more than once. This surplus will eventually be stockpiled for future needs or bartered by the

families for other needed goods and services. Since every member of the community is receiving food, questions of equity and intra-village distribution are minimized.

The disadvantages of the program, however, usually outweigh the advantages. First, the neediest people are not specifically targeted. Therefore, some of the most desperate may not receive as much food as they need because of diversions or inequitable inter-family distribution of the food. Second, it is the most expensive program. Since everyone is receiving food regardless of need, more food and transportation is required than if only the neediest were being fed.

The biggest disadvantage is the surplus of food in the community, which could slow agricultural recovery. The surplus could undercut prices that farmers and small merchants could get for the food that is produced. That could harm the farmers and merchants and delay recovery.

Phasing out such a program may also be difficult and is often disruptive. Since everyone in the community is getting food, it is more difficult to spot those who need additional nutritional support. Reducing the program without targeting specific people could mean that those not fully recovered would be harmed.

Finally, general food distribution programs are difficult to adjust to meet the needs of those groups with special nutritional requirements.

**REQUIREMENTS FOR ESTABLISHING  
A GENERAL VILLAGE DISTRIBUTION SYSTEM**

Carry out a nutritional assessment. Then:

1. Establish a logistics system and procure vehicles, fuel, and maintenance facilities.
2. Establish a registration system.
3. Designate distribution points in each community.
4. Establish a regular distribution schedule.
5. Establish a monitoring system with in-house spot checks (linked to specific addresses in each community).

*2. Nutrition-based Distribution Systems*

In nutrition-based systems, a parent, usually the mother, brings the thinnest child to a food distribution center and receives a food allocation based on the needs of that child. Initially, everyone in the family receives a general ration; then later, the program is adjusted to meet the needs of only the malnourished.

The middle upper arm circumference (MUAC) method of nutrition surveillance is usually the method used to determine whether a child should be enrolled in the program. This method tends to err on the side of caution; in other words, all those who are on the margins are likely to be qualified for at least one month's food support. Once the people are enrolled in the program, more accurate weight-for-height measurements will be used to monitor progress.

The advantages of the nutrition-based system clearly outweigh the disadvantages. First, it provides better targeting. Food gets directly to the people most in need in each community. Second, the programs are easy to adjust. Because regular nutritional monitoring is carried out, the people most in need receive the food and those who prove to be healthy can be quickly discharged. If food conditions in the community continue to deteriorate, more people can be easily enrolled and exact food needs can be calculated.

The *per capita* cost is less. Since food is targeted to actual needs, surpluses don't develop and transport can be tailored to meet those real needs.

Because food is going to those most in need, there is little adverse impact on the market. In most cases consumption will equal distribution and the normal system will not be affected either positively or negatively.

Nutrition-based systems provide a means of monitoring other factors or problems in the community, especially disease and in extreme situations, death rates. For example, if the distributing agency monitors such factors as diarrhea, disease, and attendance at the distribution center, and keeps records of participants by addresses or locations in the community, it is often possible to identify problems such as impure sources of water (detected by higher than normal diarrhea rates) and the prevalence of contagious disease, such as measles, and other diseases associated with malnutrition. It is also possible to monitor the geographic dimensions and spread of famine conditions.

Finally, it is easy to phase out the program when it is no longer needed. There is less impact on farmers because the food aid has been better fitted to actual needs.

The disadvantages of a nutrition-based system are few, but are important to recognize. Nutrition-based distribution systems are more difficult to administer, at least at first. However, monitoring permits administrators to discharge people when conditions have improved enough that they can take care of their own food requirements. Planning for food needs is more complicated because it has to be adjusted monthly. To receive the full benefits of the approach, more sophistication in operations is required. The distribution centers must be closely monitored and the data continually analyzed throughout the program. However, once the program is set up and in operation these functions become routine and are not difficult.

More staff is required. Nutrition-based programs are usually carried out by a voluntary agency with specialized health personnel. Sometimes UNICEF and sometimes government health

ministries may be involved, though this is rare.

Good record-keeping is required not only for the program but for each individual case. Without good records, it is impossible to make the adjustments that make this program cost-effective.

Many critics of this approach are concerned that families may withhold food from one child so that they can remain in the program longer than is actually necessary. This behavior, referred to as the "starve-a-child syndrome" is rare. If the agency does a series of spot checks to investigate intra-family distribution of food, this syndrome can usually be quickly detected. If the behavior is widespread, the syndrome can be overcome by distributing those kinds of food that only children have a taste for or that adults would not likely eat such as strained or blended foods like CSM<sup>1</sup> or bulgur wheat.

#### REQUIREMENTS FOR ESTABLISHING A NUTRITION-BASED DISTRIBUTION SYSTEM

First conduct a nutritional assessment. Then:

1. Establish a logistics system and procure vehicles, fuel, and maintenance facilities.
2. Establish a registration system based on:
  - a. Entry, using the middle upper-arm circumference measurement system
  - b. In-center monitoring using weight for height measurement systems.
3. Establish distribution points with in-house screening areas (with weighing scales, height-for-weight charts, registration cards, etc.)
4. Establish a distribution schedule that permits adequate time for each case.
5. Provide one nutritionist to monitor several distribution centers and to analyze the data being collected.

#### Common Problems in Village Distribution Systems

Experience has shown that there are certain problems that tend to occur in village distribution programs. These are:

1. *Multiple registration:* This usually occurs when agencies unfamiliar with the community begin distribution. People

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<sup>1</sup> Corn soya milk, a common relief food used in supplementary feeding programs for children. Other popular blended foods include wheat soya blend (WSB), corn soya blend (CSB) and UNIMIX.

quickly recognize that they can give bogus information and register more than once.

To combat multiple registration, families need to be "fixed" to a geographic location for their food distribution; spot checks should be carried out to be sure people are not cheating.

2. *Inflated numbers of family members:* People often try to exaggerate the number of children in their families if the agency does not enroll people after on-site inspections. This behavior can be corrected by doing spot checks after the families have been enrolled. But this is difficult unless the checks are conducted at a time when the entire family is likely to be together, such as at night or during meals. Using people from the village to help enroll beneficiaries may be another way to reduce cheating, but local staff members may also cheat because they are likely to be sympathetic to their neighbors
3. *Inflated numbers of people in a village:* This is often a problem when village leaders are put in charge of preparing the distribution lists for distributing food in their village. They may think it is their responsibility to inflate the number to ensure that the people get adequate amounts of food. If village leaders are providing the relief lists, spot checks should be carried out to verify the number of people in families and the number of families in clans or villages.
4. *Registration of people who are not eligible:* Often, people who are not eligible for food distribution will attempt to enroll to obtain food to sell or barter. To do this, they may "borrow" a child or other adults, and create a bogus family to qualify them for enrollment. Detecting non-eligibles is difficult, especially for an outside agency unfamiliar with the community. The best way to detect this behavior is through trusted local workers who verify the claims of each person or family.
5. *Failure to report deaths of family members:* It is common for families to hide the death of a family member so that they can continue to receive that person's ration. Many relief agencies find themselves caught in an adversarial situation with their clients over this issue. Since mortality is the major indicator of the performance of a program, it is important that this data be collected. As a general rule, agencies should make it clear to people that food rations will not be reduced simply because one or more children have died. The amount of oversupplied food in this case is minimal. Mortality information is far more valuable, and the additional food that a child would have brought in can be sold to help defray costs of burial, etc.

### **Camp Distribution Systems**

When large numbers of people have congregated in camps or at the edge of cities in spontaneous settlements, it is usually necessary to distribute food to them directly. Indirect food systems are usually not used except to pay workers for camp operations.



In-camp distribution systems are usually divided into "wet" feeding and "dry" feeding (or dry ration distribution). Wet feeding refers to the preparation of a cooked meal, while dry ration refers to the distribution the food in bulk to families, or groups of families, so that they can prepare the food themselves in their shelters.

Wet feeding is the least desirable food distribution method, though it is sometimes necessary. It is most often used to feed new arrivals, small populations or specific groups who have special nutritional needs.

Dry rations are the most common means of distributing food. It requires less staff, and it enables people to carry on life-styles as near to normal as possible.

In most cases, dry rations should be all the food aid required. Special feeding programs shouldn't be necessary if adequate supplies are available, if the basis for food distribution assumes adequate portions for all family members and provides enough food so the people may barter or exchange food. In most cases however, relief agencies cut the margins very close. Distributions, at least initially, may be haphazard and periodic shortages may occur. In these cases, inequities in the food distribution system may result as well as inequitable distributions among family members. When this happens, a supplementary food distribution may be necessary. This may be done by providing a supplementary dry ration for vulnerable groups, by providing special infant foods that are not likely to be consumed by adults or older children, or, in extreme cases, by conducting a supplementary feeding program where prepared meals are given to women and children who come to a special supplementary feeding center.

#### Dry ration distribution methods.

The two most common methods for distributing foods in a dry ration system are to individuals and to groups.

1. *Individual distributions:* In the individual system, each family is registered and issued a ration card. On specified days, one member of the family goes to the distribution point and, upon presentation of the ration card, collects the family's ration. Distributions are straightforward. As long as the distribution points are spread throughout the community, distribution can be done quickly and without too much trouble.

If registration is thorough and well monitored, each family is certain to get its full ration. That's the primary advantage of the system. But the system requires a lot of staff and there must be constant checking to make sure cheating is kept to a minimum. Furthermore, if the registration system is not adequate and is not address-based, multiple registration is easy and accurate targeting is almost impossible.

2. *Group distributions:* In a group distribution, food is delivered in bulk to a sector or community unit of a camp or to a section of a community. The food is distributed in bulk there to the group leaders from that area. The leaders then distribute the food to the people based on their own assessment of needs.

In recent years this has become a popular distribution method, especially where the recipients belong to the same village, tribe, clan, or extended family. Many sociologists argue that this method helps keep family and cultural units together and helps to reinforce the position of traditional leaders. Several critics, however, warn that traditional leaders may take an unfair portion for themselves as their "right" or "prerogative." And some studies have indicated that where group systems are used, nutritional recovery of the severely malnourished is often delayed and mortality rates take longer to decline, usually because inter-group distribution is not equitable. There are other examples, however, where the system has worked without major hitches. With proper organization and monitoring, problems in distribution can be detected quickly and corrected or alternative programs initiated.

From an administrative point of view, group distribution programs are fast and easy to monitor. Individual registration systems are not necessary, although it is important for the agency to do verifications and spot checks to ensure that the number of people claimed by the community leaders is accurate.

The primary disadvantage of group distributions is the difficulty in controlling the allocation of food. In addition, within the community, certain groups may not be receiving their fair share. As a general rule, group distributions should be avoided when:

- A strong caste system exists among the people, and the society and its caste relationships are generally intact.
- If the society has a practice of indentured servitude, slavery or holding captives as laborers (in these situations those groups will be denied food and high mortality will result).
- When hostile insurgent groups are in the camp and may use food as a means of controlling the population.
- When the system will make women vulnerable to sexual exploitation (when the system is controlled entirely by men, withholding of food for sexual favors is commonplace.)

## Chapter 10

### INCOME GENERATING PROJECTS

During counter-famine operations, it will be necessary to initiate projects designed to provide alternative sources of income to the most affected families. To have a long-term, developmental impact, projects should be designed to help the most vulnerable farmers. When planning projects, several principles should be followed:

- Priority should be given to projects that have a direct, immediate impact on improving agricultural production or reducing farmers' losses.
- Projects should be organized on a communal and cooperative basis.
- Projects should provide a sustained and fair, but not high, wage.
- Projects should be carried out in a way that will help preserve the peoples' dignity, confidence, and self-esteem.
- Projects should not compete with, or draw resources away from, normal agricultural production activities.

#### PROJECT CATEGORIES

Projects can be divided into three categories: individual projects on farms; mutual-help projects for small groups of farmers; and projects that benefit the community.

##### On-Farm Projects

Many projects can be designed as self-help activities, and relief agencies can encourage farmers to make improvements to their own land. To pay people to carry out these activities may seem counterproductive and may lead to concerns that they will create dependencies. However, the practice is common in developed countries -- for example, the U.S. government pays farmers to improve their lands by growing certain types of grasses. The PiK program (see Chapter \_\_) is an approach that can be used.

##### Small-Scale, Mutual-Help Projects

The best and most effective projects are small-scale, mutual-help ones. Organization and monitoring is easier, and people usually take greater pride in the work. Most importantly, they can provide the basis for broader community development efforts.

Normally, these activities are organized around small groups that live on adjacent sites. The type of activity usually determines the number of people who are mobilized. The only criteria is that everyone involved has to benefit directly from the project.

### **Community Projects**

Projects that benefit the community are easy to identify: schools, public health clinics, etc. easily come to mind. In a counter-famine program, however, it is important to remember that the activities selected should have an impact on food production -- projects of general or longer-term benefit can wait.

PROJECTS

### **Irrigation**

Irrigation is an important method for reducing the subsistence farmers' vulnerability to drought. Even minor amounts of irrigation can make a significant difference in the perennial viability of crops. Wherever feasible, irrigation works should receive the highest priority.

Labor is needed for digging wells, building water lifting devices, and digging irrigation canals and localized channels.

When organizing an irrigation project, the people to mobilize are those who will directly benefit.

### **Land Improvements**

*Erosion Control:* The most common form of erosion control is contouring. Simple technologies, such as "A-frames" for determining contours (see Figure 10-1), have been developed that can be easily taught. Other measures that could be considered are planting windbreaks, constructing devices to capture and retain soil moisture, terracing hillsides, installing wells or improving existing ones, and improving irrigation and drainage.

*Terraces:* Constructing terraces in mountainous areas serves several purposes. First, the terraces increase the amount of surface area available for farming. At the same time, the increased area provides a better surface for capturing and retaining rain without the erosion that usually accompanies cultivated hillsides. Terracing is labor intensive and therefore ideal for both local and area wide projects. The design of the terraces must be carefully evaluated, however. If they are too small, they will have little effect.

*Land Fertility Improvements:* A number of activities can be encouraged that will improve the fertility of the land. These include:

- Rotational grazing of cattle or sheep.

-- Growing vegetative cover on the land (grasses, vetch, etc.)

-- Alternative cropping.

In situations where there is not enough time to organize agricultural rehabilitation projects before the next planting season begins, it may be necessary to pay farmers some form of income even though they are not working the land. It may even be desirable to give the land a rest to improve productivity the following season. In this case, simply so what agricultural ministries do in the industrialized countries: pay the farmers leave the land fallow or to carry out land improvements. Payments should be proportionate to the amount of income they would normally earn from the amount of land they cultivate.

*On-Farm Grain Storage:* Projects that build better storage bins and silos can immediately reduce farmers' losses.

*Fodder Harvesting:* A serious effect of both droughts and floods is the loss of fodder available for large-scale animals. In cases where crops sprouted but failed to mature, it is often possible to salvage the emergent grains for the animals to eat. For example, following a flood in Bangladesh, one agency financed a program to buy the stalks from the farmers to donate or sell as low-cost fodder for livestock. By brokering the tailings, the program provided income for a large number of farmers and helped others maintain their animals. In areas where there was little immediate need for the fodder, the agency erected some mobile silos and stored it until there was a demand some months later.

*Counter-desertification Measures:* There are a number of actions that can be taken to counter drought conditions and, in some cases, the spread of desert environments. They include:

1. *Tree Planting:* One of the easiest ways to fight desertification is for farmers to plant trees around their fields and homes. Each tree encourages the growth of a related micro-ecosystem and provides a small deterrent to wind-driven dust, sand and water erosion.
2. *Construction of wind breaks:* Planting sturdy shrubs and trees as windbreaks between fields can help slow wind speeds. The windbreaks reduce erosion and preserve valuable topsoils. They also can help regenerate grass cover and ultimately increase soil moisture.
3. *Construction of earthen or stone wind barriers:* Wind barriers are small walls no more than a meter high that are placed at right angles to the prevailing wind. As wind blows against the barriers and is deflected upward, moisture is released, increasing the humidity around the barrier. Minute condensation forms and drops to the ground. Eventually small green patches will begin to take root. These can become quite

large. They can often help replenish ground water as well as provide small green spaces to protect against desert encroachment. (See Figure 10-2).

4. *Green basins*: Green belts can be created using "green basins," a technique developed in Australia. A series of closely spaced, circular basins are made by plowing slight depressions or making circular banks in fields. These basins trap wind blown seeds, which are nourished by moisture that is also trapped. When any amount of rain falls, small, temporary ponds form in the depression. The embankments or depressions also protect the seeds from dust storm. In Australia, green belts several kilometers wide and hundreds of kilometers long are often built as a line of defense, much like a fire break, to prevent further encroachment of the desert. (See Figure 10-3.)
5. *Sand fences*: In areas where desertification is pronounced, sand fences can help reduce losses from sandpiling. Eventually, however, the fences must be accompanied by larger, area-wide counter-desertification measures.

*Water supply projects*: Provision of drinking water for humans as well as livestock is an important activity during most famines. The most common projects are:

1. *Digging wells or improving existing ones*: Digging or improving shallow open wells is an ideal project if increasing the draw on the aquifer will not deplete it. Well projects can be designed to benefit both small and large communities and can employ large number of workers.
2. *Dams*: Even in the worst droughts, some amount of rain usually falls. Often the water is lost because it drains off before it can be trapped and stored. Therefore, an important water resource development strategy is the construction of *retention dams* at intervals across streambeds to trap flash floodwaters.

#### Figures 10-2 and 10-3

A variation of this approach is the *catchdam*, which directs the water into channels leading to nearby depressions that can store a larger amount of water than the riverbed itself (see Figure 10-4). It may be possible in some cases to divert flood waters directly into irrigation systems.

*Sub-surface dams* are used to trap water in the sandy riverbeds of a dry stream if the speed of the flash flood is likely to destroy a normal earthen retention dam. A trench is dug across the streambed down to a layer of impervious clay. The trench is then filled and packed with clay to form an underground dam. When flash floods occur, a portion of the

water will be trapped in the sand behind the dam. Because it is trapped in the sand, evaporation will be reduced. Small wells can then be dug by hand to reach the water (see Figure 10-5).

3. *Construction of haouris*: Haouris are man-made depressions dug in areas where soils contract and seal when they are dampened. This prevents seepage. Haouris are often made in the arid savanna lands of Africa and in various locations in the Asian Sub-Continent. They are an excellent project for areas with large numbers of pastoralists.

Haouris can be filled with sand to reduce evaporation. The haouri is first enlarged, then filled with sand or gravel. Since sand is porous, the amount of space it takes up is negligible compared to the water it saves from evaporation. In areas where desertification is advanced, the people use the sand that builds up as the desert encroaches.

4. *Recharging the aquifer*: In cases where shallow aquifers are depleted, catchments can be built that will trap surface water and permit it to seep quickly into the water carrying strata. A number of methods can be used. The appropriate approach depends on the soils and the depth of the aquifer.

FAMINE LOGISTICS

**INTRODUCTION**

All famine interventions require logistical support. Conventional food aid responses, many counter-famine programs, and all immunization efforts entail the movement of supplies and personnel from one point to another. Even market interventions require movement of food to a point where it can be sold to the merchants. Without an effective logistics system, no relief operation can achieve its objectives.

Logistics are not complicated, yet few organizations properly implement logistics operations. There are too few experienced or trained logisticians working in emergency operations. As a result, this key activity is often plagued with problems and costly delays.

Logistics for emergency relief operations are different from most other types. The need for speedy delivery of supplies is often complicated by ad hoc organization formed by drawing personnel and equipment from several non-professional organizations. Because the procedures of the group are not standard, there is often some initial confusion which complicates operations and creates logjams. Unless these problems are addressed at the beginning, they can quickly multiply and further delay deliveries.

**Definition**

A good working definition of emergency logistics is:

"The practical art of establishing lines of supply, providing commodities and the transport to move them."

The term "lines of supply" is important; logistics should be thought of as a *linear* system -- a flow of supplies from point to point along a linear route. Another way to view logistics is as a *system* of supply, where items flow through the system in one direction and documents describing that flow return in the other direction. For example, commodities such as food move down the system, while requisitions and reports flow back to the system's managers at each control point.

**The Importance of Logistics**

Logistics is the lifeline of a relief operation. People depend on the food and other supplies in the logistics system.



Logistics is often the most expensive part of an operation. For example, a truck that can move across unpaved roads costs approximately \$50,000 U.S. dollars; its trailer may cost \$10,000 to \$15,000 or more. A 100-truck fleet with spare parts costs approximately \$10 million (not including fuel, maintenance or insurance).

Because it is so expensive, logistics is the most problematic aspect of a relief operation. It is the activity most subject to corruption, especially when the goods involved are in short supply. Whenever there are competing demands for food, fuel and other relief supplies, then thefts, pilferage and diversions can be expected.

Logistics operations may cost more than expected because agencies are inexperienced in handling commodities or they are not familiar with the limitations of transportation or the complexities of the stages of a logistics system. In logistics, time equals money -- when a procured commodity sits in a warehouse or on a ship, it costs the agency even though the commodity is not in motion. During the Ethiopian famine of 1985, the final cost of imported food doubled because of the long delays in the ports and attempts to transport it inland.

As vital as logistics activities are in an emergency relief operation, there are few trained emergency logisticians; most of the people handling logistics have gained their knowledge by trial-and-error, and many consistently make the same mistakes. There is no central coordinating body at the international level to try to relieve competition in procurement or transportation. And in the countries where aid is to be distributed, there is rarely a group set up to schedule arrivals of ships or planes.

### **The Scope of Logistics**

Logistics covers the movement of many items, but in famine operations, movement of food is its primary and most important function. The movement of medical supplies, especially vaccines, is also important, but such shipments are usually much smaller and require specialized equipment and arrangements. Additional logistics activities include the movement of such items as tents, household supplies, fuel, and equipment. People are also moved from one site to another.

### **The Element of Time**

An important objective of a logistics operation is to reduce transit time, especially in the early stages of an emergency. Decisions are often made on the basis of time rather than cost. Time becomes the criterion against which all decisions are measured. In this sense, the time element is unique to emergency relief

logistics and makes it distinct from other forms of logistics operations.

## CONCEPTUALIZING LOGISTICS

### Components of a Logistics System

Logistics is a set of interrelated components. The primary components are the physical elements of the system or the *hardware*; the secondary components are the control system, sometimes called the *software*.

*Primary components* include warehouses and other storage facilities; transport such as trucks, planes, ships and/or other carriers; and special facilities such as fuel depots, garages, milling facilities, and cold storage facilities for perishables and medicines.

*Secondary components* include:

1. A *control system* consisting of:
  - a. Procurement.
  - b. A monitoring system (waybills, call forwards, requisitions, etc. that are used to track the operation).
  - c. The people who coordinate the shipments and carry out checks and audits of the supplies in the system.
2. A *distribution system* that controls distribution of commodities to the settlements.

### Model of a Typical Logistics System

The following is a conceptual model of a typical logistics system. The objective is to move supplies from their source (the supplier) to their destination (the beneficiaries (B)):

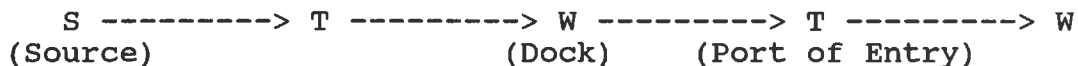
	Source	
Destination	S	B
	(Supplier)	(Famine Victims)

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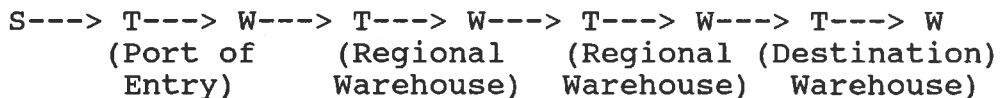
The movement of supplies is carried out through a series of movements (transport) from one depot or warehouse to another, represented diagrammatically in the drawing below:



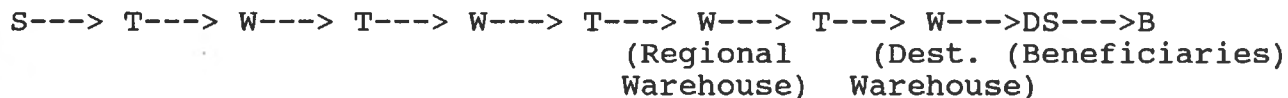
When supplies are procured internationally, they are shipped from the supplier by truck or rail to a warehouse at the port of shipment, then transported by ship (or in some cases by plane) to another warehouse at the port of entry in the affected country:



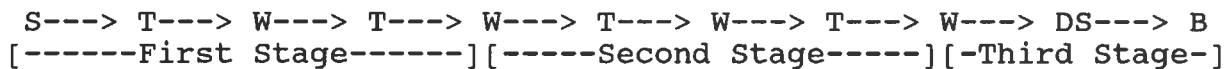
At the port of entry, the commodities are cleared and then transported to another (regional) warehouse and from there to a warehouse at a distribution point in the famine zone:



From the warehouse in the refugee camp, the commodities enter the distribution system and move directly to the beneficiaries:



The overall system can be divided into three stages. The first stage is from supplier to port of entry; the second stage is from the port (after clearance) to the final warehouses (in most cases, through an intermediate warehouse in the vicinity or region of the famine zone); the third stage is from the camp warehouse through the distribution system to the beneficiaries.



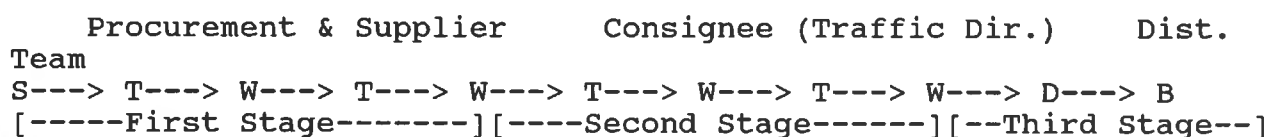
**Control Responsibilities**

Responsibility for controlling logistics in the first stage lies with the procurement office. Control begins with the specifications of the order. The supplier is responsible for meeting the specifications, shipping the commodity, and delivering it in good shape to the port of entry. (Note: insurance does not usually extend beyond the port of entry. For this reason, in most cases the supplier will not accept responsibility for the cargo after it has been accepted by a relief agency or its agents in the port of entry.)

Once the shipment has been cleared, a relief agency is usually the consignee and takes responsibility for shipping it onward; thus, the agency is responsible for control in the second stage. Most of the effort (and problems) occurs during the second stage, primarily because agencies are not adequately prepared for this task. Ideally, responsibility for control is vested in a person known as the "traffic director." The traffic director controls delivery schedules, assignment of supplies, and decisions regarding when to ship from the port of entry to intermediate warehouses. The traffic director is usually the chief logistician and, in some situations, may be the local procurement officer.

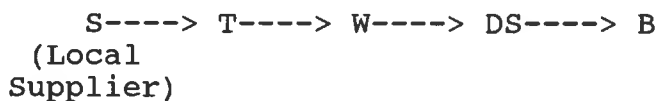
In the third stage -- distribution to the people -- local government officials or the relief agency field staff are responsible for control.

Conceptually, the control system looks like this:



### Local Procurement

The above descriptions cover a full-scale international logistics system. There is, however, a way to significantly reduce and simplify logistics: local procurement. With local procurement, it is possible to eliminate all of the first stage and most of the second as shown in the diagram below:



It is usually possible to contract with local suppliers to deliver needed commodities directly to the distribution points.

## **Logistics Coordination**

The most important person in a logistics operation is the traffic director, whose responsibilities include:

1. Controlling procurement and distribution.
2. Controlling transport, the allocation of trucks or other vehicles and where they go.
3. Monitoring the warehouses.
4. Directing allocations of supplies to the intermediate warehouses and from there to the camps.
5. Planning the overall distribution system in cooperation with the camp administrators.

The traffic director must be based in the field, have sufficient cars or aircraft to move up and down the system from the distribution points to the port of entry, and be able to control the fuel allocation for the vehicles. Ideally, the traffic director is an experienced logistician from an agency that has extensive experience in moving large quantities of supplies. In addition, he should be completely familiar with priorities in a relief operation. In summary, the traffic director should be the focal point for all coordination in a logistics system.

## **Decision-making**

The need to make early logistics decisions in an emergency cannot be overemphasized. Early decisions save money and lives. This is especially true for food and medical supplies. The longer basic decisions are delayed, the greater the cost. For instance, if it takes two months from the time food is ordered to the time it arrives at the distribution point, delaying a decision to procure and ship the food by even a week means that a portion of the food may have to be sent by air, increasing the cost perhaps tenfold. If the decision is delayed longer, it may not be possible to meet all the needs. As a result, lives may be in jeopardy (PEOPLE MAY DIE??) unless alternate sources of food can be found.

## **System Planning**

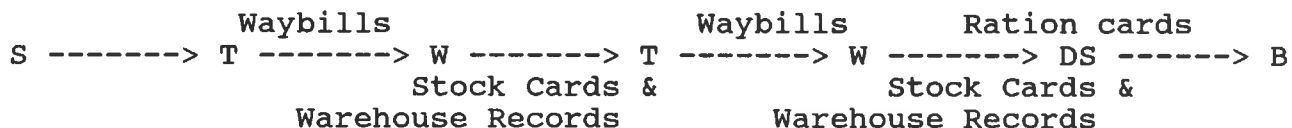
At the beginning of an emergency, planners should conceptualize and plan the entire logistics system. It is important to define the key roles and responsibilities of all personnel at each stage and to set up the records and controls to monitor the flow of supplies through the system. Too often, organizations attempt to set up the system in a piecemeal fashion, resulting in confusion, delays, and higher costs.

## LOGISTICS CONTROLS

Various types of documents are used to control commodities in the logistics system. As supplies go down the system from supplier to destination, the documents include:

- **Waybills** (or bills of lading). These shipping documents are used to control the shipment during transport.
- *Stock control cards* and warehouse records. These documents control the supplies while they are in a warehouse.
- *Ration cards*. These provide the primary commodity control within the distribution system.

This system can be diagrammed as follows:



The paperwork that controls the flow or rate of movement of supplies while they are in the system consists of:

- *Call forwards*. These documents are issued to summon supplies already in the system.
- *Requisitions*. These documents call for supplies that need to be ordered or sent from a buffer stock further up the system.
- *Purchase orders or contracts*. These are issued to suppliers by procurement officers to initiate the purchase of supplies not already in the system.

### The Primary Documents

The two documents that control Stage I and II logistics are the waybill and the stock card.

Waybills are used to record the cargos being shipped, to certify that they have been received by the transporter in good shape and to indicate that they are being delivered in the same shape and quantity as received.

Normally a waybill will have an original plus three or four copies. When a transporter delivers the supplies to a warehouse, the

waybill is signed and the transporter uses a copy as his invoice for payment. Other copies are kept by the shipper at the point of origin and the warehouseman at the destination. Additional copies are used to notify the traffic director that the goods have arrived at the specified location.

Stock cards are the primary way of controlling supplies in the warehouse. They provide not only a storage record but also a record of the when supplies were delivered and the frequency that each type of good is delivered and withdrawn. One card is usually kept for each type of item in the warehouse.

### **Accountability**

All parties should clearly understand the chain of accountability in a logistics system. In the warehouse, the accountable person is the *storekeeper*. During transport, accountability lies with the *driver* or person conveying the commodity.

Responsibility during shipment is transferred from the storekeeper to the driver by means of a waybill and from the driver to the next storekeeper with a receipted waybill.

Checkers should be used at each transfer point to check the goods loaded or discharged and certify that all are accounted for. Damages or losses should be recorded on the receipted waybill, indicating overage, shortage or damage. Again, the driver is responsible for shortages or damages in transit.

### **Role of Procurement in Logistics Control**

The role of procurement in logistics control is often not clearly understood, even by procurement officers. Control begins when technical specifications are established for the items to be purchased. These specifications establish the quality of the commodity.

Other decisions made at the time of procurement also affect quality and the likely condition of the supplies when they arrive at their destination. For example, specifications regarding packaging of foods can determine how well they travel, the percentage of loss that can be expected en route, and how long the commodity can be maintained in a destination warehouse. What may appear to be a minor decision about the type of bag to use for food -- cloth or polypropylene -- can have a major effect on shelf-life and transportation requirements.

In most international relief organizations, procurement offices are located in the organization's headquarters; procurement officers are often far removed and sometimes unacquainted with conditions in

the field. Unless the field staff provides clear, thorough specifications, complications are likely to develop. Therefore, it is extremely important for the procurement process to begin with requests from the field. Ideally, procurement officers or personnel thoroughly briefed in procurement procedures should be assigned to the logistics team in the field. They should be given the responsibility for preparing the procurement specifications; then the primary role of a procurement officer at headquarters would be to facilitate requests from the field. This is undoubtedly difficult, given donor pressures and the reality of donor constraints, but it is important for organizations to strive to focus their procurement activities at the field level.

## **STORAGE FACILITIES AND EQUIPMENT**

### **Warehousing**

Selection of warehousing is important since relief supplies are likely to spend a good deal of time in these facilities.

1. *Size.* The warehouse must be large enough to store the types and quantities of supplies that are being stockpiled. If a variety of goods is being stored in one place, the warehouse plan should be based on the most bulky commodity.

Food grains usually require more space than other relief commodities. As a rule of thumb, one ton of grain usually occupies a floor space of one square meter and a volumetric space of one cubic meter. Calculating the amount of storage space needed is easy; if 500 tons of grain is to be stored, for example, a warehouse of approximately 500 cubic meters of storage space is required.

2. *Permanent buildings.* When storing grain, it is usually best to select permanent buildings with hard-surfaced (preferably concrete) floors. Almost any type of building can be used for storage, but those with minimal windows and large access doors are usually best -- fewer windows reduces the likelihood of theft. Grains shouldn't be stored on the second floor since few structures have been designed to withstand the heavy weight.

In remote locations, or in relief camps or feeding centers, it may be necessary to construct temporary warehouses. In some situations, adequate supplies of local materials may be available for building warehouses. Wherever time and weather conditions permit, small-scale



warehouses can be built using local resources and employing the beneficiaries and/or local labor.

3. *Prefab structures.* Use of prefabricated flexible, plastic warehouses is increasing in emergencies; many models are now available. Primary criteria for selecting the warehouse should be its demonstrated wind resistance and climatic suitability. Before procuring a prefabricated warehouse, the method of anchoring the warehouse to the ground should be determined. In 1985, one-third of the warehouses procured for emergency relief operations in eastern Sudan were destroyed within a two-week period because they were insufficiently anchored and were unable to withstand high winds.
4. *Selection criteria.* Other than space, the main consideration for warehouses is the amount of protection they provide for the items stored. Within the storage enclosure, commodities must be protected from:
  - The climatic environment.
  - Theft.
  - Rodents and other pests.
5. *Organization.* Warehouses should be well-organized. Different commodities must be clearly identifiable, and all supplies must be within easy reach. Warehouses should be organized on a "first-in, first-out" basis so that food and medicines can be kept as fresh as possible.
6. *Controls.* Access to warehouses must be controlled. Ideally, controls begin outside the building with a fence, good lighting, and a controlled gate. Within the warehouse, controls include limiting visitor's access to the building, interior lighting and limited access to the supplies by persons entering the building. At a minimum, workers who are authorized to enter should have some means of identification.

Stock controls, stock cards and other key paperwork should be available from the beginning, and warehouse operators should be thoroughly familiar with proper use of the control documents.

### **Storage Equipment**

Plastic sheeting and canvas tarpaulins are the most common way to provide additional protection for the goods in storage. Both

provide only moderate protection against moisture and none against insects or rodents.

Two items are available to help store food grains in temperate or dry climates: *bulk-grain silos* and *storage cubes*. These containers are ideal for relief operations; they are light and easy to transport and move once they are on site. The containers are gas-tight and are made of a plastic sheet 0.83mm in thickness, and they can withstand solar ultraviolet (UV) irradiation for long periods. The storage containers are hermetically sealed, which gives them a major advantage over conventional plastic silos or other grain storage systems. When the hermetic containers are sealed, the oxygen concentration drops to between 6 percent and 8 percent, and carbon dioxide concentrations rise to approximately 11 percent. Insects and fungi cannot survive in the bag, and costly and potentially hazardous fumigation is unnecessary.

Rodents can gnaw through most synthetic materials, including PVC liners. However, the design of the containers and the way the material lies over the grain provide slippery surfaces that make it difficult for rodents to gnaw through with their teeth.

Two basic designs are available: a circular silo to store unbagged grains in bulk and a cubical container to store bagged grains. The silos are made in sizes from 50 to 1,000 metric tons, while the storage cubes are usually produced in sizes corresponding to truckbed cargo loads (10 to 50 tons).

The designs enable the containers to be used in various ways. Some common uses of the silos include:

- *Auxiliary dockside storage.* Large 500 to 1,000 ton silos can be used to provide temporary bulk storage at ports when inland transport cannot clear the food from the wharves promptly. With these units, costly port congestion can be relieved and spoilage of food on the wharves can be prevented.
- *Overflow storage* at regional logistics bases. Silos can be used to provide additional storage for unbagged grains at regional food storage depots or distribution centers. To relieve port congestion and bagging delays, bulk grains can be moved inland on lorries, transferred to storage silos, and then bagged at a regional depot or distribution center.
- *Storage of locally procured grains.* The silos can also be used to store or protect grain in camps or settlements where supplies are procured locally or where famine victims produce a portion of their food needs. (They were originally designed to improve village grain storage and

to reduce losses.) Since the silos are hermetically sealed, losses from moisture, insects, and rodents are minimized.

Storage cubes may be used for:

- *Temporary dockside storage* of bagged grains. Cubes can provide temporary, safe, weatherproof storage space for bagged grains at overcrowded wharves until the food can be transported inland. They can be obtained in sizes corresponding to the loads carried by lorries, to facilitate logistical scheduling and loading.
- *Temporary storage at forward warehouses* or at distribution centers. The cubes can provide additional safe storage for bagged grains until they can be distributed or placed in conventional warehouses.
- *Point storage for cross-line or cross-border logistics.* Cubes can be used at staging areas where food is sent into conflict areas where conventional storage facilities are not practical. Food can be off-loaded directly into the cubes, which remain sealed until it is needed.

### **Cold Storage and Cold Chain Facilities**

A cold chain must be established if vaccines are needed for an immunization program. Cold chain logistics is a special branch of emergency logistics and one that is almost always problematic. Some vaccines must be maintained within a specific temperature range from the time they are produced until the time they are injected into a patient. Anytime the temperature goes above or below that range, the vaccines can be damaged and lose their effectiveness. To establish a cold chain, certain types of equipment and facilities are required. These include:

- *Cold storage rooms* at national or regional warehouses.
- *Sealed cold boxes* for transporting the vaccines.
- *Self-powered refrigerators* or vaccine bins to store vaccines in the camps.

The most common break in a cold chain occurs when vaccines are shipped or stored in containers that are also used for food and beverages for relief workers. As people open and close the containers to get refreshments, temperatures inside drop below the critical levels and the vaccines are damaged. All vaccine storage facilities should be used only for that purpose. The World Health Organization will provide a current list of companies that supply

cold chain equipment and approved cold boxes for emergencies. These can be obtained from:

World Health Organization  
20 Avenue Appia  
1211 Geneva 27, Switzerland

or

Emergency Preparedness & Disaster Coordination Unit  
Pan American Health Organization  
525 Twenty-Third Street N.W.  
Washington, D.C. 20037

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*Figure 1\_-1*

**PLASTIC GRAIN STORAGE SILOS  
FOR EMERGENCY LOGISTICS**

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*Figure 1\_-2*

**PLASTIC STORAGE CUBES  
FOR EMERGENCY LOGISTICS**

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### **Forward Logistics Bases**

In an emergency operation, it is often necessary to set up new logistics bases to simplify supply operations in or adjacent to the famine zone (the "forward" areas). These bases can usually be established quickly, especially if existing buildings are available to use as warehouses. If suitable buildings cannot be found, storage cubes may be used until prefab warehouses are erected.

The minimal requirements for a forward base are:

1. Adequate warehouses.
2. Storage cubes or tarpaulins to protect stockpiles.
3. Fuel depot.

4. Vehicle workshop.
5. Radio, telephone, or telex communications.

The site for the base is determined by the type or types of transport that will be used to delivering supplies to and taking them from, the base. A railhead or major road junction is usually a good location. The most important factor, however, is the amount of time required to deliver goods in the forward area. In other words, the decision should be made not based only on distance (the site physically closest to the areas to be served), but on the amount of time it takes to travel that distance (the site with the best access to those areas).

A checklist of equipment and facilities for a forward logistics base is found in Table 11-A.

## **TRANSPORT**

As mentioned earlier, transportation is the most expensive part of a relief operation. Thus, it is important to select the most appropriate form of transport for specific commodities.

### **Cargo Factors**

The first consideration is weight. Weight is the primary limiting factor in all forms of transport. The heavier a commodity, the more expensive it is to transport and the more rugged (and generally, slower) the form of transport.

The second consideration is volume. Items that are light in weight but large in volume should usually receive a lower priority for transport. For example, plastic jerrycans are often in great demand in a relief operation. They are lightweight -- a thousand weigh only one ton -- but 30 of them can take up a lot of space -- one cubic meter. Therefore, in a transport plane the size of a C-130, it is possible to bring only about 1,000 jerrycans cans per flight. Since the jerrycans only cost about \$5 each, shipping them by air (which could cost up to \$50,000 for an international flight) does not make sense.

Most logistics planners use a rule of thumb known as "cubing-out" to determine the most appropriate type of transport -- they try to strike the right balance between the volume and the weight of an item. Nowhere is this more important than in choosing cargoes to transport by air.

### **Transport Efficiencies**

Ships/barges are the most cost-efficient means of transport, but they are usually the slowest. Aircraft are the least cost-efficient.

Shipping by rail over long distances is usually more cost-efficient than using lorries; the longer the distance, the more efficient. However, lorries are still needed at both ends of the rail line.

While railways are more cost-efficient than lorries, and can sometimes reach areas in the rainy season that lorries cannot, railways are also more problematic in most Third World countries. In an emergency, when timeliness is crucial, it may be more advantageous to ship by lorry than by rail. If one truck breaks down, there are still others that are likely to get through; but if one locomotive breaks down, 20 railway carriages can be stopped indefinitely.

In remote areas, particularly mountainous ones, pack animals may be more practical than trucks and other forms of transport.

### **Criteria for Selecting Vehicles**

Important considerations when selecting vehicles include:

- The distance to be traveled.
- The terrain.
- Road conditions.
- Whether streams must be forded.
- Load-carrying capacity of bridges en route.
- Fuel efficiency.
- Compatibility of the vehicle with maintenance in the country and the availability of parts.

### **Determining Fleet Size**

In determining the number of vehicles that must be used for a mission, it is important to consider:

- Time en route and turnaround times.
- Load-carrying capacity of the vehicles being used.
- Total tonnage needed to serve the target population.

### **Logistics staff**

Successful implementation depends on a good logistics staff. Most logistics operations are understaffed. A good system requires many people, including a traffic director, procurement coordinator, transport coordinator, fuel coordinator, forward logistics officer, inventory control officers, accountants, warehouse staff, procurement officer, and maintenance officers. Control will be lost (and so will commodities) if too few qualified people are used.

### **Equipment**

Critical equipment in a relief logistics operation includes telecommunications, control forms, forklifts (special forklifts may be necessary to unload planes), pallets to stack supplies, and spare parts for vehicles.

### **Air Transport**

The advent of large military cargo aircraft and large wide-body "jumbo jets" has made it common for relief organizations to ship cargoes by air in the early stages of an emergency. But this makes little sense since many of these shipments consist of items available locally or for which local substitutes could be found. With basic health programs, such as UNICEF's Expanded Program of Immunization (EPI), even the need for sending vaccines has greatly diminished since adequate stockpiles have been developed in most countries.

Air transport is both costly and, ultimately, of little sustainable impact. Even the largest jet transports, such as the Boeing 747 and Lockheed C-5 Galaxy, have negligible cargo-carrying capacity when compared to other forms of transport. The C-130 Hercules and the Antonov An-28, the most popular transports used in relief operations, can only carry a maximum of about 20 tons of food; that is equivalent to the capacity of one medium-sized lorry without a trailer. The C-130 will burn approximately 10 tons of fuel during a typical flight of 1,000 kilometers. At an average cost of \$1,000 per ton, it will cost about \$10,000 in fuel alone to deliver the supplies. Compare this to a shipping cost of \$50 per ton by sea, or \$25 per ton by lorry, and it is clear that air shipments make little sense unless the cargo is needed immediately to save lives.

Despite the costs, there are often tremendous pressures on relief agencies to fly in supplies during an emergency. Donor governments often make military transport available to humanitarian organizations at little or no cost. In these circumstances, the following principles may be followed:

1. *Use of Aircraft.* In first-stage logistics:
  - Use the largest plane available. Ideal civilian aircraft are the Boeing 747, DC-10, L-1011, DC-8F, or Boeing 707; military aircraft include the C-5 and

C-141 transports. Avoid the smaller tactical transports like the C-130 or C-160 Transall for long international flights.

- Land as close as possible to the famine zone.
- Ship only items of verified high priority (such as measles vaccines, etc.) or equipment that will facilitate operations (radios, light vehicles, prefabricated warehouses, etc.).
- If foods must be shipped, choose those that will provide the highest amount of calories and energy per weight. Avoid sending basic grains; send blended foods instead.

In second-stage logistics, use aircraft only when all other means have failed. If planes must be used, the following principles may apply:

- Generally, the shorter the distance, the more practical the airlift (the aircraft will need to carry less fuel and therefore can carry a greater cargo load).
- Avoid using helicopters. They are costly to operate and have a low carrying-capacity. Helicopters should only be used to ship supplies over short areas and into remote or isolated sites.
- In second-stage logistics, the C-130, the French-German C-160 Transall, and smaller aircraft are more practical since the flights are over shorter distances, less fuel is required, and more cargo can be carried. Planes like the C-130 were originally designed as tactical transports to land on relatively short, unimproved strips.

In summary, if someone else is paying for the aircraft, go ahead and use them; but remember, it will still be necessary to use trucks at both ends of the flight!

*Figure 11-3*

#### **USE OF AIRCRAFT IN EMERGENCY LOGISTICS**

Medium Haul  
(500-1,000 Km)

Short Haul  
(300-500 Km)

Spot Delivery  
(100-300 Km)



Equivalent Loads

15-20 Tons

2-3 Tons

1 Ton

Equivalent Lorry Capacity

## OPERATIONAL LESSONS AND SUGGESTIONS

### Problems to Expect

Certain problems tend to occur frequently in a logistics operation. The most common are listed below.

1. *Problems in Stage 1:*
  - a. Procurement delays. These delays are usually a result of bidding procedures, confusion about specifications, or lack of clarity in field requests.
  - b. Donor pressures to accept substitutes.
  - c. Acquisition of materials that were not requested and are unsuitable for the local situation, climate, or terrain.
2. *Problems in Stage 2:*
  - a. Customs delays (paperwork, clearances, etc.).
  - b. Congestion at the port of arrival.
  - c. Inland transport delays.
  - d. Theft and pilferage.
  - e. Losses due to improper storage or inadequate protection of the commodities while in storage. (The rations for a quarter of a million people were destroyed by one rainstorm in Ethiopia in 1985.)
  - f. Materials handling delays (off-loading (??) bulk grains, bagging operations at the port. etc.).
  - g. Losses from lack of insurance coverage.
3. *Problems in Stage 3:*
  - a. Inadequate storage facilities at the destination.
  - b. Inadequate means of protecting supplies while in storage.
  - c. Lack of suitable milling equipment.
  - d. Theft and pilferage.

- e. Problems with registration/disbursement procedures.

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Figure 11-\_\_

**SCHEMATIC OF LOGISTICS SYSTEM AND EXPECTED DELAYS**

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**Selecting a Logistics Agency**

It is often difficult to select or designate a lead agency for managing a multi-agency logistics operation. There are several options:

- Hiring a private firm.
- Designating an NGO.
- Selecting an experienced UN agency (e.g., UNICEF). (Note: World Food Programme usually only delivers food to the port of entry; the government or NGOs are responsible for inland transfer.)

As a general rule, the agencies best suited for the role are those NGOs with experience in managing large-scale food aid programs, especially the US PL-480 Title I and II programs. These agencies already have expertise and personnel familiar with food logistics systems. In many countries they already have a logistics system set up. Smaller development agencies usually do a marginal job in managing logistics programs.

**Operational Hints**

1. Always have adequate *buffer stocks* of supplies on hand to cover the times when logistics operations are not able to keep up with demand and unanticipated emergencies. Plan for an oversupply of 20 to 50 percent in an emergency.
2. Buy locally. Local purchase is an important and under-used resource. Wherever available, locally purchased supplies can provide significant advantages including:
  - Saving time.
  - Saving money.

- Bridging gaps until other supplies arrive.
  - Providing a buffer against supply irregularities.
  - Stimulating the local economy.
3. Simplify the system. The objective is to reduce the number of stops and transfers in the system. This speeds up the operation and reduces theft. Even if simplification increases operational costs, it will eventually reduce total costs.
  4. Consolidate facilities to avoid unnecessary loading and unloading or extra staffing.
  5. Unify the logistics system. For example, where there are several organizations simultaneously ordering and distributing food in a large operation, unify purchasing and shipping procedures.
  6. Create redundancy in transport. If the operation depends on a railway system, for example, the loss of one bridge can halt an entire operation. It is necessary to have a backup system to deliver supplies.
  7. Define the area of operation. The headquarters of most agencies are likely to be in the capital, but operations are usually in a remote area. The traffic director should be located in the area of operation, i.e., where the key commodities are needed or being moved. The area of operation generally extends from the port of entry to the distribution points and includes all the communications and transport facilities inside that area.
  8. Standardize equipment, especially trucks. This is difficult when donors want to provide trucks from their own countries, but it is extremely important to standardize vehicles.
  9. Make small, manageable shipments to the distribution points. Shipments should be of a size that can be controlled and not consumed by the people too rapidly.
  10. Standardize and minimize supplies. A key concept in logistics management is standardizing the types of supplies and equipment being used and keeping the number of articles in a system to a minimum. Usually, the first thing a logistics consultant will do is reduce the number of supplies in the system until logistics management controls are in place and working well.

## **Controlling Transport Costs**

One of the major problems is keeping the cost of transport at acceptable levels. Often, local contractors raise prices to unacceptable levels when they know that an emergency exists and that a relief organization has few other options for delivering commodities.

To control transport prices, the relief agency has two options:

1. Purchasing a fleet of vehicles and setting up an independent transport operation. This is usually a costly option and requires the agency to manage and maintain the trucking fleet.
2. Purchasing trucks and then reselling them to local operators on a work-equity basis. This approach, known as "captive contracting," still requires an investment in the vehicles, but places the burden of maintenance on the purchaser/operator. These programs are usually popular, and the trucks can be amortized over a period of several years. In return for work-equity agreements, the purchaser agrees to provide transport services at fixed prices for a specified period of time. An added benefit of captive contracting is that the vehicles are usually maintained better than if they are operated by the relief agency. The prospective owners have a vested interest in maintaining the vehicles.

## **Rules of Thumb for Logistics Operations**

1. Use trucks for distances under 500 km., rail for longer distances.
2. Don't build roads for food supplies; instead, build up buffer stocks. The only time to build roads for a transport system is when water tankers are being operated. (Improving patches in the road, however, could speed supplies.)
3. Mill grains in the camps or settlements. This will prolong the life of the grain and will eliminate the need for a complex unloading, bagging, and reloading operation further up the logistics chain.
4. The need for transporting supplies by air occurs in the early stages of an operation, not later on.
5. If a portion of the food supplies must be purchased overseas, buy food for the general ration from overseas and supplemental food from internal sources (if fresh foods of good quality are available).

6. In Africa, it may be necessary to import foods for a large-scale operation, especially those related to conflicts. In the rest of the world, food can usually be purchased locally.

Figure 11-

**CHECKLIST OF EQUIPMENT & FACILITIES  
FOR FORWARD LOGISTICS BASES**

1. Site Preparation

Grading and Leveling  
Road Improvements  
    Surfacing  
    Culverts  
    Drainage

2, Office Buildings

Permanent  
Prefab, Metal  
Tent

3. Office Equipment

Desks  
Chairs  
Photocopier  
File Cabinet  
Bookshelves  
Expendable Equipment  
Office Supplies

4. Warehousing

Permanent  
Prefab, Metal 1000 MT  
Prefab, Metal 500 MT  
Prefab, Metal ?  
Prefab, Plastic 1000 MT  
Prefab, Plastic 500 MT  
Prefab, Plastic ?

5. Storage Equipment

Silos 1000 MT  
Silos 250 MT  
Silos 100 MT  
Storage Cubes 100 MT  
Storage Cubes 50 MT  
Storage Cubes 20 MT  
Storage Cubes 5 MT

6. Radio Room

Permanent  
Prefab, Metal  
Tent

7. Communications  
Equipment

Radio (SSB)  
Telephone  
Intercom  
Telex  
FAX  
Walkie-Talkies

8. Workshop

Permanent  
Prefab, Metal  
Prefab, Plastic

9. Workshop Equipment

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Other Work Buildings

Permanent  
Prefab, Metal  
Plastic

11. Other Work Equipment

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Fuel Depot

Carts/Trolleys  
Forklift  
Storage Shelves  
Plastic Sheeting  
Other \_\_\_\_\_

Storage Tank(s)  
Pumps, Hoses, Fittings  
Defueling Stand  
Barrel Storage Area  
Fire-fighting Equipment

13. Airfield/Heliopad

Furnishings

Strip Grading/Leveling  
Fueling Station  
Bladders  
Storage Tank  
Pump (hand)  
Pump (motorized)  
Radio Beacon  
Landing Lights  
VHF Radio

14. Security Facilities

Guardhouse  
Fencing  
Gates

15. Electrical System

Generator  
Wiring  
Poles  
Light Standards  
Fuel for Generator

16. Water System

Deep Well (Borehole)  
Submersible Pump  
Storage Tank  
Shallow Well  
Handpump  
Pipes  
Outlets  
Taps

17. Sanitation System

Toilets  
Showers  
Incinerator

19. Residential

Beds  
Tables  
Chairs  
Personal Storage  
Other

20. Mess Hall/Kitchen

Refrigerator  
Stove  
Wash Rack  
Gas  
Utensils  
Pots and Pans  
Tables  
Chairs  
Other \_\_\_\_\_

21. Misc. Facilities

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



18. Housing

Permanent  
Prefab  
Tent

## Chapter 12

### ASSESSMENT AND MONITORING

#### INTRODUCTION

From the beginning of a relief operation to its conclusion, it will be necessary to collect a variety of information to guide program planning and execution. This process is called assessment and monitoring; assessment refers to the process of determining the situation and possible responses, monitoring is the on-going evaluation of the interventions. The collection of information should be guided by a clear understanding of the interventions that are available and the most appropriate time to use them. If an agency is planning to use conventional food aid approaches, food availability and food logistics are important issues. If the agency chooses an income-support approach, the assessment must identify potential projects and determine the financial mechanisms that can be used. Most importantly, the assessment must decide whether the income-support approach can get adequate food supplies into problem areas in the time available.

The assessment and monitoring process usually consists of three stages. It begins with a reconnaissance of the area to determine the overall situation; this provides information to guide the first relief response. But more importantly, the reconnaissance is the first step in a continual monitoring process. It is necessarily a brief overview, based mainly on observations by the assessment team and relies on trained or experienced observers who look for indicators of problems.

After the initial reconnaissance is completed, and programs are being established, relief agencies collect more detailed data about the situation. In this, they may collect statistics from their programs or carry out sample surveys to compile more detailed information. This provides program staff with information for adjusting their programs.

#### IMPORTANCE OF ASSESSMENT

Rapid, accurate assessment is the key to a successful initial response. The purposes of an assessment are:

- To determine people's needs.
- To help set priorities for action.
- To provide data for program planning.

The importance of an accurate assessment cannot be overstated. A swift, accurate, credible assessment will enable relief managers to proceed quickly and efficiently. An incomplete or inaccurate assessment -- one that does not address major needs or provides misleading data -- may lead to inappropriate responses and costly delays.

#### VARIATIONS OF DATA REQUIREMENTS

Assessments and assessment information needs vary according to the group doing the assessment. Assessments may be carried out by host governments; international food agencies, such as WFP and USAID; donor governments; and NGOs. Assessments carried out by governments and the international organizations tend to be more comprehensive (because their interests are wider); surveys by the NGOs tend to be more problem-focused, e.g., on health and nutrition.

#### TYPES OF ASSESSMENTS

There are usually five types of assessments.

1. A *situation assessment* (also known as initial reconnaissance) is the immediate estimate of the overall situation. It determines the extent of the famine, locates the area of critical need, and identifies health threats. In the initial stages of a famine, relief agencies must respond according to certain assumptions; therefore, one of the most important functions of this initial reconnaissance is verifying that the assumptions are correct, and if not, developing the data needed to adjust the initial response.
2. *Needs assessment* is a determination of the needs of the people. These are usually classified as immediate needs, which concern health, life support, and protection, and long-term needs, which refer to economic and agricultural requirements.
3. *Sector or activity assessments* are evaluations of the needs in specific sectors (e.g. food, health, nutrition, etc.). One of the most important activity assessments deals with logistics.
4. *Resource assessment* determines the resources available within the country to support the relief operations and the impact that large-scale use of these resources might have on the local economy. This helps planners determine the aid levels required.
5. *Epidemiological surveillance* is the early identification of threats to public health precipitated or aggravated by the famine and the establishment of a monitoring and medical

response to identify, isolate, and eliminate any health problems.

#### **ELEMENTS OF ASSESSMENT**

An assessment can be divided into six activities:

1. *Preparedness Planning:* An accurate assessment depends on thorough planning and preparation. The information needed can be identified well in advance. The methods for collecting the necessary data and the selection of formats for collection and presentation of the information should be established as part of the organization's general emergency preparedness activities. By preparing to undertake assessments well in advance of an emergency, all potential information needs can be identified and adequate procedures and methodologies can be developed. Standard survey techniques, questionnaires, checklists and procedures should be prepared to ensure that all areas are examined and the information is reported using standard terminology and classification.
2. *Survey and Data Collection:* The gathering of the information must proceed rapidly and thoroughly. In an initial reconnaissance, surveyors should look for patterns and indicators of potential problems. Using the procedures developed earlier, key problem areas are thoroughly checked.
3. *Interpretation:* Thorough analysis of the information gathered is critical. Those doing the analysis must be trained to detect and recognize indicators of problems, to interpret the information, and to link the information to action programs.
4. *Forecasting:* Using the data that have been collected, the assessment team must develop estimates about how the situation might develop so that contingency plans can be drawn up. Forecasting can benefit from many specialists, especially those who have had extensive experience in emergencies and who might be able to detect trends and provide insights as to what course an emergency might follow.
5. *Reporting:* When data analysis and forecasts are complete, the results need to be disseminated. Reports should be prepared in a format that enables managers to formulate plans and projects. Essential information should be presented and structured so that the main patterns and trends are clear.
6. *Monitoring:* An assessment should not be seen as an end result. It is one part of a continuing process. The initial assessment should provide baseline data and a basis for further monitoring. Data systems must be set up so that relief officials can determine whether a situation is improving or

deteriorating. The systems must also provide a way to measure the effectiveness of relief activities. Each assessment or survey should be designed so that it builds upon previous surveys and expands the data base.

## **ASSESSMENT METHODS**

Several methods can be used to carry out assessments. The two most common are:

*On-site visual inspections by trained observers:* Qualified, experienced observers can often interview key personnel on site and visually review the people, their condition, and the sites where they are situated. From their observations, they can prepare estimates about the scope and magnitude of the situation. Visual inspections, however, have their drawbacks. Some major problems cannot be detected by simple observation. Often, what one can't see is more important than what is visible. For example, death rates, which are the most important indicator of stress in a population, cannot be determined from observation. In many societies, childhood diseases and malnutrition cannot be detected without detailed surveys since families routinely keep those children out of the sight of strangers. In one classic case in East Africa, a survey team reported that all was fine in a settlement because they saw no malnourished children. A simple survey would have shown that all the children had died.

*Surveys:* Simple surveys based on interviews with villagers in the affected areas and statistical information from registration forms at health and feeding centers can provide information that can be used to plan projects. Usually, sample surveys can indicate people's immediate needs and health and nutritional status.

A key assessment activity that must be carried out by survey is the first health and nutritional assessment. This survey provides the information needed to establish the baseline data, i.e., points of reference, for disease surveillance and for evaluation of nutritional progress.

## **APPROACHES TO ASSESSMENT**

Assessments may be broad in scope or focus on certain aspects.

*Comprehensive assessments* collect information about every aspect of an emergency. Relief authorities must weigh the importance of each set of problems in deciding where to assign priorities. Comprehensive assessments are usually carried out by the agencies that have overall emergency responsibilities, such as the government of the country. These exercises require extensive information-gathering and usually take longer to complete than

sector assessment. But if they are properly planned and executed, they provide invaluable information. The primary result of a comprehensive assessment is the establishment of priorities.

*Critical sector assessments* focus on those sectors that are critical for saving lives: food, water, public health and immunizations, and sanitation.

#### **THE KEYS TO SUCCESSFUL ASSESSMENT**

To design a successful and accurate assessment, planners should:

1. Identify the users. Every element of an assessment should be designed to collect information for a specific user. The potential users should specify their data needs during the design phase. For example, health workers need some types of information that will only be useful in certain formats, usually tables, while a procurement officer will need quantitative or statistical data.
2. Identify the information that is needed to plan specific programs. Too often assessments collect information that is incomplete or of little value for planning relief programs or specific interventions. In many cases, information is anecdotal rather than substantive. In others, valuable time is wasted collecting detailed information when representative data would be as useful. Determine what information is key, the method that needs to be used to develop the data, and how much and how detailed the it needs to be. The type of assistance an agency usually provides should be considered when listing the data to be collected. For example, an agency that provides food will need to know about availability of transport and fuel, road conditions, etc.
3. Determine the best places to obtain accurate information. If the information must be obtained from sample surveys, it is important that the areas to be surveyed provide an accurate picture of needs and priorities. For example, carrying out a health survey in a medical center would yield a distorted view of the overall health situation since only sick or severely malnourished people would be in the center.
4. Consider the format. It is important to present the data in a form useful to analysts and program planners -- one that makes the implications clear so that priorities can be set quickly. Lap-top microcomputers with integrated spreadsheets and graphics make it possible to present pertinent data in graphic form. By applying baselines and standards to the presentation, key relationships can be

quickly noted. For example, daily death rates should be calculated and compared to the international standard of 1.0 deaths per 10,000 per day.

5. Consider the timing of the assessment. Timing can effect the accuracy of the assessment since situations and needs can change dramatically day to day and information needs to be collected when it is available and most useful. Relief needs are always relative; but as a general rule, initial surveys should be broad in scope and should determine overall patterns and trends. More detailed information can wait until emergency operations are well established.
6. Distinguish emergency from chronic needs. Virtually all developing countries have long-standing, chronic needs in most sectors. The assessment should be designed so that analysts can distinguish between chronic and emergency needs. For example, malnutrition may be prevalent in the country in normal times; therefore a nutrition survey will almost certainly reflect poor nutritional status. The surveyors must differentiate between what is normal for the location and what isn't, so that emergency assistance and health care can be provided to those most in need. (Assessments may bring to light previously unrecognized or unacknowledged problems in a society. Thus, the data collection system should be careful to structure the information so that critical data such as health status, etc., can be used for long-term planning.)
7. Use recognized standards, terminology, and procedures. Assessments will invariably be carried out by a variety of people operating independently. To provide a basis for evaluating the information, the assessment must be reported using standard terminology, ratings and classifications. Standard survey forms that give clear guidelines for descriptive terms are usually the best way to ensure that all information is reported on a uniform basis.

It will be difficult to differentiate between chronic and emergency needs without having baseline data, accepted and recognized, and realistic standards in each sector.

*Baseline data* are normally used as a reference in health and nutrition programs. For example, health officials must know the prevalence of the disease in the community in normal times to determine whether there is an increase in the number or severity of cases.

*Reference data* are usually used en leiu of baseline data to establish a point of reference from which a program's performance

can be judged. For example, when trying to determine death rates in a population, one must first know the normal death rates in order to determine whether or not mortality in the target population is abnormally high. In this case, relief authorities would obtain reference data on normal mortality among the population and compare it to the rates currently being experienced.<sup>1</sup>

*Standards* are used as targets for supplying food, water, and other basic human needs. For example, the World Health Organization (WHO) has set emergency water quantity standards at 30 liters per person per day.<sup>2</sup> While some people, such as infants and small children require less, adults doing heavy work in warm environments require more. The average standard is a means of making sure that the families' total supply needs are met. In addition to the water standard mentioned above, the three most important standards are: the number of calories for relief rations (2250 kcal), the number of latrines per family (1), and the amount of space per person for emergency shelter (3.5 square meters).

*Indicators* are aspects of a situation that can be monitored to give an indication of the overall situation, changes or trends. Indicators are most often used in public health; for example, a reported increase in infant mortality could be a result of disease, starvation, or contaminated water. By cross-checking food consumption at the family level, water quality at distribution points, and diseases reported to aid stations or clinics, a more accurate picture of health and nutrition among the population can be gained. Thus, it is important to know which indicators to examine as "points of entry" in each sector.

#### **THE IMPORTANCE OF CREDIBILITY**

A major objective of assessment planning is to establish its credibility. The assessment must be thorough and provide information in such a way that it reduces the necessity for other agencies or personnel to conduct their own assessments. In reality, few agencies accept the assessments of others; most agencies want to conduct their own assessments to confirm what others have said. To some extent, this duplication can serve as a means of verification. But if an assessment is well-planned, if the methodologies and procedures used provide an objective, clear, concise, and rapid picture of the situation, and if the assessment

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<sup>1</sup> The death rate in a population should not be exceed the normal rate. If the normal rate is not known, the international reference figure of 1.0 per 10,000 per day may be used.

<sup>2</sup> A much more realistic standard for emergencies is 10 liters per person per day.



report describes the information-gathering techniques, procedures, and standards, the need for verification and follow-up assessments can be substantially reduced.

Detailed and overly sophisticated survey techniques can yield useful information for long-term planning but are usually of limited value for emergency assessment. The time required for data processing and interpretation can take longer than the time available for planning an emergency response. For this reason, assessments should be used to verify or refute the assumption on which an immediate response is made.

The people must be consulted. Community social structures and responses to the situation should be reviewed to find out how to provide relief in culturally acceptable and supportive ways.

### **ASSESSMENT PRIORITIES**

In an emergency, certain lifesaving interventions must be made immediately and certain systems must be established before other options can be brought into play. These responses begin as soon as famine conditions are recognized and follow a prescribed pattern until on-site assessments prove beyond a doubt that a specific set of interventions is not required. Assessment should begin simultaneously. The information collected is used to verify the types of problems that are occurring and to modify and adjust the responses. Therefore, in the initial reconnaissance, the assessment must focus on the primary threats to life that are expected and determine whether resources are being applied or are available, to address the expected problems.

Since malnutrition, measles, and diarrhea are the main causes of death during a famine, the first task is to determine the level of these three threats. This is done by calculating the mortality rates, identifying the prevalent diseases and their incidence, determining the nutritional status of the vulnerable groups, and determining the prevalence of diarrhea.

An effective response supplies ample food, immunization against priority diseases, and diarrhea control. Each of these responses -- food security, immunization, and clean water, ORT and sanitation -- requires that certain programs and systems be established and that each meet certain minimum standards.

Water and sanitation issues require consideration of the physical site where the refugees are living. Issues such as space, shelter, and flood protection may also require attention.

The way food will be provided must be considered. Top priorities are work programs to provide income; food logistics, including transport, fuel and storage.

The medical program requires close examination of the logistics system for receiving, transporting, and storing vaccines, i.e., the cold chain.

## SUMMARY OF THE IMMEDIATE ASSESSMENT PRIORITIES

### Step 1. Assess:

- daily death rates
- prevalence of disease and morbidity rates
- nutritional status
- prevalence of diarrhea

### Step 2. Assess the food situation, including:

- the availability of staple grains, including:
  - quantity
  - quality
  - cost
  - affordability to poor
  - geographic extent of food problem area
- food assistance programs, especially:
  - methodology
  - system of enrollment and monitoring
  - outreach

### Step 3. Assess health programs, especially:

- measles immunizations
- the integrity of the cold chain
- record-keeping (surveillance)
- diarrheal control program (oral rehydration)

### Step 4. Assess water and sanitation programs, including:

- amount of water supplied
- quality of the water
- type of latrines in use
- personal hygiene habits of people

### Step 5. Assess the logistics system, including:

- availability and suitability of transport
- availability of fuel
- storage space in the logistics system
- availability of grain milling facilities

### Step 6. Identify labor-intensive income generating projects that can be started quickly.

### Step 7. Assess potential for alternative food security programs (e.g. cash for work, food for work, etc.).



### Selecting the Assessment Team

An assessment team should be made up of people qualified to evaluate and report on the priority areas. Comprehensive assessment should be carried out by three- or four-person teams. The following configurations could be used.

#### TEAM CONFIGURATIONS

##### 3-PERSON TEAM

<u>Function</u>	<u>Profession</u>
Health and Nutrition	Nurse-Nutritionist or Physician
Water, Sanitation, (Shelter) Logistics	Engineer or Planner Logistician

##### 4-PERSON TEAM

Health and Diarrhea Nutrition and Feeding	Nurse or Physician Nurse-Nutritionist, Dietician
Water, Sanitation (Shelter) Logistics	Engineer or Planner Logistician

## Chapter 13

### OPERATIONAL ISSUES

#### INTRODUCTION

Throughout famine relief operations, agencies will experience a variety of issues that slow progress or confuse the situation. These are common and understanding them can provide some help in overcoming them.

#### POLITICAL CONSTRAINTS

Assisting famine victims in the midst of a conflict is one of the most politically sensitive activities that relief agencies will carry out. In cases where the government is one of the parties in a civil conflict, agencies are often placed in the difficult position of having to deal with government authorities who are unwilling or hesitant to provide assistance to people whom they consider "enemies". In many cases, government actions or policies may be root causes of the conflict.

The fact that relief agencies must often provide assistance from the government's side of the lines can lead to charges that they are not neutral. This is especially a problem when NGOs are operating as part of a broad UN operation. Many liberation groups mistrust the UN because they must work with the knowledge of the host government. However, the reality is that the majority of assistance provided to famine victims in conflicts is delivered from the government's side since most people displaced by the famine and fighting tend to migrate to government-controlled areas. This is for a variety of reasons -- they tend to follow normal migration routes, try to use family ties, and stay in areas where their language is spoken. The main reason, however, is that they move towards the most viable economies, i.e., where the best opportunities for jobs are found. Migration is as much an economic survival strategy as flight from conflict. The displaced must earn a living; since they cannot rely on international relief, they must go where the economy is functioning.

#### LOGISTICAL DIFFICULTIES

It is often difficult to reach famine victims with assistance. In many cases, they reside in remote areas where access is difficult and transportation may be poor. The topography may be rugged and seasonable rains may make surface transportation hazardous and difficult. In conflict zones, security conditions may prohibit or severely restrict travel. In areas adjacent to conflict zones, security conditions may be marginal at best, especially for the displaced.

In these situations, full attention must be given to advance planning. It will often be necessary to stockpile supplies in, or near, the areas where people are going so that shortages do not occur during times when the areas are isolated by conflict or climatic conditions.

In some cases, relief agencies may have to rely on extraordinary means of transport. Garrison towns may have to be supplied by aircraft and on-site management may also require the use of small planes to move quickly over vast areas where needs can change instantaneously. Emergency operations are often said to require planning in three dimensions: air, land and sea. However, operations planners should be aware that long-range relief operations, especially when aircraft are involved, are extremely expensive. Emphasis should be placed on procuring as many relief supplies as possible from local or nearby sources. It is often possible to use a broad range of market interventions that can have the same results as bringing large amounts of relief supplies from outside the affected area. (See Chapter \_\_\_\_.)

#### **"STRUCTURAL" PROBLEMS IN THE RELIEF SYSTEM**

Many relief workers talk about the "international relief system". However, no unified system exists. Rather, there are a variety of organizations that provide different types of assistance at different levels. They band together formally or informally as necessary. Some organizations act in the capacity of fund raisers and donors. Some provide funds directly to the famine victims while others fund local agencies.

Within this *ad hoc* structure, there are many difficulties. NGOs are the primary operating agencies. While many have a wide range of capabilities, most specialize in a limited number of services. Many of the most important technical fields where lives can be saved are routinely overlooked. For example, only a handful of agencies have the capability of providing water and sanitation. Few agencies are experienced in setting up and maintaining the food logistics systems required for providing massive food aid and, within the international community, no agency is specifically tasked with providing protection or security to the displaced.

Because of these "structural" deficiencies in the relief system, responses in critical areas are often *ad hoc* and uncoordinated. Added to this is the fact that the international assistance system is vastly overstretched. Needs have grown beyond their ability to meet all requirements. Experienced personnel are often transferred from one operation to another before their original assignments are completed. While the agencies need to build up cadres of emergency management personnel, the inconsistent nature of emergencies and the funding patterns of relief agencies preclude such measures.

## DEALING WITH FOOD SHORTAGES

Often, relief agencies or governments are faced with situations where shortages of food supplies will cause deaths. In these situations, the person in charge must decide quickly how to equitably distribute the available foods and keep deaths to an absolute minimum.

Relief administrators have three choices. They can:

1. Give a fixed percent of the population a full ration and accept the resultant mortality;
2. Uniformly reduce the rations by a fixed percent; or
3. Reallocate the food according to need.

In the first method, the food available is determined and rations sufficient to feed X percent of the population at normal levels. That percentage will receive the normal intake; the rest of the population will receive nothing. This is shown in Figure 13-1 below. For example, if there is a 20 percent shortfall in food, 80 percent of the population will receive adequate nutrition and 20 percent will die.<sup>1</sup>

*Figure 13-1*

In the second method, the authorities supply a reduced ration to all the people. This strategy is referred to as "hard rationing."

In the third method, which is called the "fair-share" strategy, food is distributed throughout the population according to need; adjustments are made for such individual differences in requirements as size, work, age, sex, and pregnancy. If the total amount of food available is only a percentage of the normal requirement, all people will receive a reduction equal to that percentage of their normal food ration.

Each strategy will result in significantly different patterns of survival rates as shown in Figure 13-2, which is a comparison of the hard rationing and fair share strategies and their effect on survival.

*Figure 13-2*

To understand the graph, let us look at an example. Suppose

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<sup>1</sup> Manetsch. T.J. "On Strategies and Programs for Coping with Large Scale Food Shortages." In Robson (Ed.), *Famine: Its Causes, Effects and Management*. 1981.



for a given population there is enough food to feed ninety-nine percent of the people at a normal rate on a continuing basis. In the first strategy, 1 percent of the people would not receive enough food to survive. Yet if we were to reduce everyone's ration by only 1 percent, as in the hard rationing strategy, all would probably survive if the food distribution were equitable.

At the other extreme, suppose that we have a food shortage of 99 percent and only 1 percent of the food supply is available to feed the same population. In this case, the survival rate would be 1 percent on the first distribution strategy while 100 percent of the people would die using hard rationing or a fair-share distribution.

Comparison of these two curves on the graph suggests that fair-share can result in higher survival rates in a number of cases, but that beyond a certain point, that strategy would result in a higher percentage of deaths. In our examples, that point occurs at the 50 percent level. In actual practice, where that point occurs is determined by many extraneous factors including the amount of food being supplied, the supply mechanisms employed and the planned over supply allowance for children that is built in to most relief rationing schemes. (See Chapter \_\_) Generally, the crossover point between the two strategies is at about the 40 percent of food shortage level.

Additional strategies for stretching good supplies include:

#### **Better Targeting**

This can be accomplished by using more accurate recipient targeting methods (which would include weight-for-height measurements) for selecting families. Some food requirements in some areas could be reduced by 10 to 20 percent if the agency got more accurate data on the needs of individual families.

#### **Using Nutritional Status as a Determinant for Issuing Food Rations**

This approach can be used when nutrition-based feeding programs are in use. If food supplies are scarce, the authorities can use a persons nutritional status as a means of determining how much food a family should be given. The program would provide full rations to families until children (who are used for monitoring overall nutritional status) have reached 90 to 100 percent of the weight-for-height standards for three months. At that point, rations could be reduced 10 percent per month until the allocation is 70 percent of the full ration. If the children show no further deterioration at that time, rations could be reduced to 50 percent for an additional three months. If no deterioration in the child's nutritional state occurs, he or she could be phased out of the program.

This approach is based on the following assumptions: 1) that family food needs are not constant and change over time; 2) that

while a family receiving food changes will be occurring in the overall food supply; and 3) that food serves as income support allowing the family to build up small cash reserves that will be used to buy food to supplement the ration. It would be very unusual if food had to be supplied to the same family for over six months.

#### **Reducing Rations in Areas Showing Major Improvements in Food Production or Only Marginal Deficits**

Since famines shift geographically, it will probably be necessary to shift the assistance program to meet needs. If famine indicators are monitored monthly, it should be possible to detect the passage of acute famine conditions and begin reducing rations. As the price of food declines and people regain the ability to purchase food, rations can be gradually reduced to 70 to 75 percent of the normal amount. Continuing to give full food rations could have a negative effect on local market prices in recovering areas and impede production. Food in these recovering areas should be phased out as soon as practical and be sent to other areas.

#### **Reducing or Halting Food Distribution Immediately After Harvests**

Some food is produced even in the worst famines. When those crops are harvested, food distribution should be cut back or even temporarily halted for one to three months. (The period of suspension should be adjusted based upon the amount harvested.) This would allow the normal market to function as usual and would ensure that food distribution would not have an adverse impact on those areas where limited recovery is taking place.

#### **Discharging Healthy Persons from the Rolls**

In many instances, people are kept in feeding programs, or continue to receive assistance, long after they have been nutritionally rehabilitated. When food supplies are scarce, program administrators should closely monitor people in the program and discharge healthy patients as soon as they have recovered. Those who are discharged can then be enrolled in income support projects (cash-for-work, food-for-work).

All of the above strategies for stretching food depend upon strict nutritional surveillance and the monitoring of all communities in the program. The more accurate weight-for-height measuring method needs to be used in these strategies.

Program staff should be alert for the problem of "rotating beneficiaries." This occurs when people who have been nutritionally rehabilitated are phased out of the program too soon or without adequate means for maintaining their nutritional status. After leaving the program, they quickly deteriorate and several months later require readmission.

## **FOOD SELECTION ISSUES**

### **Cultural Acceptability**

The foods donated to famine victims often are not suitable or desirable to the recipients. This is a very real and unpleasant aspect of food aid. Relief workers have reported on numerous occasions that foods have been refused because they did not fit into existing dietary patterns. Although people who desperately need food sometimes accept unfamiliar products for a short time, they are more likely to reject the food outright, even in states of severe malnutrition. In addition, the diseases that often accompany famines may further reduce the willingness of a community to eat unfamiliar foods. In some cases, unfamiliar foods can lead to diarrhea, which further complicates the human body's ability to respond to a feeding routine.

On several occasions foods were first refused, then accepted, and then rejected again. These experiences usually occur after the first energy needs have been satisfied during a long-term food relief program. When this pattern exists, however, it prevents total nutritional recovery and can result in large numbers of people hovering on the borderline of starvation.

To help food donors select the appropriate foods during a food emergency, the Food and Agricultural Organization of the UN has prepared a provisional list of foods eaten in a number of countries. This report, titled "List of Major Foods Consumed in Selected Countries," is available from the FAO in Rome from the Food Policy and Nutrition Division. It should be in every relief worker's reference library.(3)

### **Mixing Foods to Balance Diets**

A growing concern among relief nutritionists is the lack of a balanced diet in relief feeding programs. It is generally accepted that for emergencies the central foods in the food basket should include a grain, a source of protein and oil. But individuals also need a good mix of vitamins and minerals. In many areas, children do not receive enough vitamin A and have problems with their eyes as a result. In a number of recent operations, scurvy, a disease that results from vitamin C deficiency, has been seen in relief camp populations. Pellagra, a niacin deficiency has shown up in corn consuming populations when lime is not used to break down the outer shell of the corn's kernels. And in one camp in Thailand, beriberi broke out because the people had not received adequate supplies of vitamin B which is usually obtained from eating green leafy vegetables.

The diets of most societies have evolved over many years of practice and assumed some degree of nutritional balance, even the most basic diets. Often what people do not receive nutritionally from the main staples, comes from condiments and spices. A practical way to start planning a diet for famine victims is to

examine the people's normal eating patterns and try to build around them.

Table 13-A lists sources for vitamins and minerals.

*Table 13-A*  
*Food Sources of Vitamins and Minerals*

### **Boredom with Diets**

Relief diets -- especially those without spices -- are often boring. In some refugee camps in Sudan in 1985, people were given a simple meal of bread, oil, and pulses (beans, peas, etc.) for months on end; relief agencies reported that many people lost interest in eating. Famine workers observed the same phenomenon in Ethiopia in 1974.

The best solution is to vary the diet, adding a different mix of vegetables and fruits as often as possible. But if food supplies are limited, providing a variety of spices may be the best short-term solution. That way, at least the taste of the food varies. In the Ethiopian case, relief workers distributed a local spice called *burpali*. Spices and condiments are rarely in short supply and can be readily purchased in local markets.

### **DEPENDENCY CONCERNS**

Relief programs should be alert to the possibility that long-term food aid might foster dependencies that could ultimately lead to greater hardships for famine victims. Many agencies believe relief efforts should switch from dry ration distribution to food-for-work or similar mechanisms to reduce the likelihood that dependencies will be created. Another way is to close out all food distribution programs and switch to a variety of cash-for-work and cash-based development assistance. Special emphasis should be given to promoting agricultural recovery and stimulating food production.

There are two types of dependencies associated with food aid: perceived and situational.

*Perceived dependency* is an attitude. It can result from apathy, lethargy, frustration, and, commonly, paternalism. Development agencies are most concerned about the latter two, frustration and paternalism. They often result from programs that last a long time, have little input from victims, and continuously provide free goods and services. The victims often find it more convenient not to work; it is easier to receive food than to work to produce the food that would remove them from the distribution rolls. Perceived dependency syndrome exists when disaster victims

refuse to participate in self-help activities, when they demand they be given more, or when they won't participate in food-for-work or similar programs.

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

*Situational dependency* is an economic situation in which forces created by the relief program have disrupted local economies and food production cycles. Situational dependency should be of far more concern to relief agencies. Three types of dependencies can be created: individual dependency, local economic dependency, and national agricultural dependency.

Individual dependencies occur when people are able to obtain more food from relief programs than they can by working at their normal endeavors. There are hidden disincentives in relief projects that tend to discourage food production. If a farmer can earn more food working in a food-for-work project than he can toiling in his fields, and if the work project requires that he spend most of his time on the project, he is unlikely to till his fields. If this occurs during the planting season, he could become dependent on food aid for the remainder of the year. For this reason, salaries in cash- and food-for-work programs should be lower than normal wages. If they are equal to or higher than normal, the relief agency may find itself the principal employer in the area.

Local economic dependency is a far more serious situation. It occurs when food aid distributions affect the agro-economy of a community. If large amounts of food aid are distributed throughout the year, local farmers may find a depressed market after harvest. If they cannot sell enough food to recoup their investment or buy seeds 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 may be forced onto the relief rolls. A cycle of dependency can eventually develop.

National food dependency occurs when the amount of food being imported brings food supplies in the country up to a level that is more than the amount normally grown nationwide. Even if that level is still less than the total food need, food prices nationwide may drop below the cost of production. This is because commercial food sales normally make up the difference between food production and total demand. If imported food continues too long, it may replace some of the commercial imports and lower prices thereby creating a disincentive to local production. National dependencies are not usually the result of famine assistance programs, but of normal food aid imports but they sometimes start in the aftermath of famine assistance programs.

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

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

### **WOMEN'S ISSUES**

The majority of adult famine victims are women and most of these are heads of households. In many programs, especially in conflict zones, women and children make up two-thirds to three-quarters of the population. Yet most relief programs have a distinct male bias. For example, many loan programs are less effective because women are not eligible to apply. Other programs, such as food-for-work, are often predicated on males being the primary breadwinners.

Women's programs tend to be minimal; few go beyond handicraft projects or small cottage industries. No program of assistance for displaced persons will succeed unless it is designed to involve women in decision-making at all levels.

### **Women in Income Support Projects**

Women make up half the rural work force and are involved in most agricultural activities. Their working hours tend to be much longer than those of their male counterparts -- they are responsible for taking care of the family, working in the fields, helping with the livestock, collecting firewood and water, all in addition to maintaining the home. They frequently share 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 productive sector of the population.

In planning income support projects, consideration must be given to increasing women's participation. Projects should be designed so that women can continue their necessary daily activities at home. Activities should take place close to the home or village and should not require that every participating woman spends the entire day on the job; hours should be flexible so that women with dependent households can attend to other responsibilities. Projects should also introduce new technologies

to help women reduce their daily burden. For example, rural women are traditionally responsible for fetching firewood. This can consume several hours each day, especially when the people are living in peri-urban or refugee camp environments: the nearby trees will soon be depleted and people have to go farther each day to find wood. Introduction of more efficient wood-burning stoves would make the task easier (and help slow environmental degradation).

Women can participate in anything men can do so long as their tasks do not involve heavy labor. The following summarizes the considerations for projects that will facilitate women's participation:

- They should be close-to-home activities.
- They should be in accessible areas.
- They should require only a few hours a day.
- They should not involve unusually heavy labor.
- A 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:

- Earth-moving projects in which dirt and gravel need to be carried. This includes terracing, road building, and clearing sites for construction projects.
- Tree planting in reforestation projects.
- Clearing light brush for farmland or reforestation projects.
- Maintaining windbreaks.
- Most aspects of small building projects including clinics, outpatients facilities, mother-child health (MCH) centers, schools, and community centers. Women can be involved in tasks ranging from ground-clearing to roofing.
- Helping with the production of cooperatively produced or marketed crops, such as roasting and turning coffee beans or winnowing and thrashing wheat.
- Operation and maintenance of day-care centers and

involvement in food-distribution center activities.<sup>2</sup>

### **PRESERVING PEOPLE'S DIGNITY DURING FOOD RELIEF**

Dependency is a problem of the spirit more than anything else. Receiving free food for long periods can rob people of their dignity and self-esteem. To avoid breaking people's spirits, several approaches should be considered.

The first provides work that results in either cash, script, coupons, or credit to purchase food. In these cases, food sales should be permitted.

A second approach allows people to contribute cash or barterable materials for the food they receive. The contributions should not be considered a payment for food but a voluntary contribution. Nor is it a true hardship for those people who can make the contributions. Contributions help people preserve their dignity when they are facing pressures that could create perceived dependencies.

### **GENERAL OPERATIONAL CONCERNS**

#### **Coordination**

Many of the difficulties in relief operations arise because national and international groups haven't coordinated their efforts or worked effectively with local governments.<sup>3</sup> There are several reasons why coordination is difficult. First, agencies rarely agree on what approach is the most effective to use in a situation. This is particularly a problem when new, inexperienced agencies come onto the scene. And second, there are few internationally recognized standards for programs. Even agencies involved in feeding programs don't agree on the services to be offered and the levels of assistance that should be given. If the local government or UN doesn't set the standards, there is no basis for coordination.

One of the most important actions that needs to be taken early in an emergency is the joint development of program standards, standard operating procedures, and mutually acceptable protocols for programs.

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<sup>2</sup> INTERTECT, "Ethiopian Food Needs Assessment," Catholic Relief Service, December 1985.

<sup>3</sup> Cox, W. "The Ecology of Famine: An Overview." In Robson (Ed.), **Famine: Its Causes, Effects, and Management**. 1981.



## **Staffing**

An effective relief organization requires more than food and medical personnel. The organization also needs technicians to conduct assessments and monitor all aspects of the famine; public health workers, especially those trained in epidemiology, to treat and prevent famine-associated disease; logistics and communications personnel to handle the acquisition, transport, and distribution of materials; business and economics specialists to handle financial matters and give advice on the integration of the relief activities into the local economy; and liaison personnel to mesh relief work with the local civil authority. An effective operation requires that relief workers with little knowledge of the local scene be brought in and trained quickly, that a large variety of food and other materials must be mobilized from distant sources, and that a fleet of vehicles of some size and diversity must be deployed and maintained. Under those circumstances, one can appreciate the need for a large organization with a wide mix of capabilities.

## **NOTES**

1. De Waal, Alex, **Famine that Kills, Darfur, 1984-85**, Save the Children Fund, 1987.
2. Bang, F.B. "The Role of Disease in the Ecology of Famine." In Robson (Ed.), **Famine: Its Causes, Effects and Management.**[incomplete footnote]

## Chapter 14

### FAMINE OPERATIONS DURING CONFLICTS

Denying food to one's foes to try to weaken their resistance is a tactic as old as war itself. The sieges of the Middle Ages, for example, were often characterized by attempts to starve people inside their walled cities into submission. In the civil and separatist conflicts of the latter part of the 20th century, withholding food has become even more widespread as a tactic. And when it comes from a government trying to starve segments of its own people, as it often does, it has an unprecedented viciousness.

It is perplexing why the tactic is still used after all these centuries. Ultimately, it is a failure. All the great military strategists, from Clausewitz to North Vietnamese Gen. Vo Ngyen Giap, have said that making war on the civil population solidifies the opposition and stiffens their resolve. No war has ever been won by starving the enemy's civilians; those bearing arms will always be the first to receive food. Even the indirect effects, such as famine's impact on morale, are greatly overestimated. During the U.S. Civil War, enlistments in the Confederate Army increased during Sherman's scorched earth campaign, so much that they more than compensated for desertions. In some cases, the enlistees wanted revenge; in most, they knew that the Army was the only source of a good meal.

In spite of what military history has shown, relief officials are constantly having to provide famine assistance during today's proliferating conflicts. For the most part, the strategies for famine assistance are dictated by the politics of the moment, as well as the military situation. In recent years, however, a number of approaches have been developed that might be applied in other situations. Before discussing them, however, let's take a brief look at some of the recurring patterns and consequences of war that have an impact on relief operations.

From an operational point of view, the two most important constraints created by war are the collapse of the normal food marketing system and the massive displacement of the civil population. In their dislocation, people may have been forced to abandon their convertible assets, hastening the onset of famine conditions. Their inability to buy food and the collapse of the market system means that an artificial food distribution system must be set up in many cases. This does not rule out income support programs, however. In fact, food will still be available within the conflict zone but at abnormally high prices, especially if it's being hoarded by wholesale merchants.

Displacement complicates relief operations in many ways. People may migrate within the conflict zone. They may move to areas outside the zone but within the country. Or they may seek asylum in a neighboring country. Each migration pattern requires a different

set of approaches and each approach, if successful, will influence what options people may seek when they are displaced.

The fact that displacement rarely follows a predictable pattern makes it difficult to strategically place counter-famine resources. Pockets of need may develop over a wide geographic area and may shift dramatically as people are forced to flee. Combatants may destroy or confiscate food, creating instant food shortages that cannot be foreseen. In this environment, the need for a strong and flexible logistics system is paramount.

People tend to congregate at relief camps. And the failure of relief agencies to find alternative living situations for them poses other problems for supplying emergency aid. High density camps require massive infrastructures be set up to provide basic services, such as water, sanitary services and shelter. The term camp is a misnomer; it is a community with the same needs as a town. There are alternatives, but few agencies use them.

In many cases, displaced persons migrate to urban centers in search of jobs. They usually form, or move into, squatter settlements on the periphery of towns and cities. Obtaining food is less of a problem if the city is outside the conflict zone. People can find work and procure food in most urban areas. Food deficiencies will occur periodically, but the problem is usually hunger, not famine.

People migrating to cities within the conflict zone are another matter, especially when they go to "garrison towns" that are surrounded by opposing forces. In this case, famine conditions usually exist in the settlements of the displaced.

Crowding in both camps and settlements makes another problem worse: communicable disease. As we have seen, when people are nutritionally weak, it is difficult for them to resist many diseases. If a disease breaks out in these dense, dirty settlements, it can spread rapidly.

The movement of food is the major factor determining the success of a famine relief operation during a war. As we have noted, logistics is complex, costly and slow -- and, in war, it is even more so. Adjusting and redirecting food supplies to meet changing needs can be a frustrating exercise and is often a no-win situation. For this reason, agencies should be alert to alternative ways of freeing food supplies in, and adjacent to, the conflict zone. They should constantly seek alternatives to artificial distribution systems. One should never assume that there is no food available -- experience shows that there will always be some even in the worst situations. The problem is how to get it released and flowing into the hands of the people who need it.

There are three situations relief agencies are commonly faced with: 1) operating at the periphery of the conflict zone on the government's side; 2) operating from the periphery on the

government's side sending relief across the lines (cross-line operations) and 3) operating from a neighboring country into rebel-held areas (cross-border operations).

#### **OPERATIONS ON THE PERIFERY**

Relief operations on the periphery of a conflict zone are usually focused on assisting persons who have been forced out of the area due to fighting. Typically, feeding centers and temporary camps are set up in the first safe place that the displaced stop after leaving the conflict zone. In many cases, the people arriving are in terrible shape. They are often severely malnourished, sick and exhausted from their evacuation. They may have been traumatized by attacks upon them during their journey. And in some cases, they may have passed through endemic disease areas for which they had no resistance. Typically, large numbers of people will arrive without any visible assets, and families may be separated from or have lost family members.

In these conditions, emergency assistance and relief are required. Typically, large percentages of the people will accumulate around a health post, a water point or other rallying point, and a camp will evolve. Needs include food, nutritional rehabilitation, medical and public health assistance, water and possibly protection. Relief agencies can expect the majority of the displaced in the worst condition to congregate in relief camps.

Operationally, the emergency phase can generally be said to last as long as there are new arrivals and as long as malnutrition, morbidity and mortality rates are above normal. From the migrants point of view, however, the emergency phase lasts either until they can be assured that their families can live on the assistance being provided or they have accumulated enough resources to move on to an area where they can find steady employment.

In the initial stages of a conflict, it may be possible for the early arrivals to find employment opportunities in nearby towns or on local farms, especially if resident farmers have a tradition of employing migrant labor or establishing temporary sharecropping relationships. But soon, these openings will be taken and the job market saturated to a point where the wage scale is sufficiently depressed that subsequent arrivals must move outward in search of jobs and income. A viable strategy to reduce the burden on relief agencies and to help hold people in the area is to try to increase the availability of jobs in the area. This can be done by initiating cash-for-work projects, a variety of community development programs, etc.

Another strategy that has been used with some success is called "paired villages." In this approach, the non-resident population (the displaced or returnees) are formed into new "villages" that are then moved to, and paired with, existing villages inside the enclave. Relief agencies provide a range of assistance to help the outsiders integrate into the local economy

in ways that are mutually beneficial to both communities. The ultimate objective is to achieve a symbiotic relationship between the two.

The program should be carried out on a village-by-village basis. First, potential host villages are identified in areas where additional labor could increase agricultural or economic productivity. Village leaders are then queried to determine whether they would accept the establishment of a temporary settlement adjacent to their village. In return for accepting the people, the host village is assured priority for development assistance to their village.

When a village agrees to accept the newcomers, families are formed into groups according to their original village, area of origin, or ethnic group. Then they are taken to the new site, where they receive temporary food rations, materials to build shelters, and assistance designed to help them integrate into the community and economy.

At the same time, the relief agencies provide comprehensive assistance designed to help the two communities coexist. The first activity is usually upgrading or expanding water supplies, then expansion of health services, public works projects to improve the local environment, agricultural extension and rehabilitation assistance, and construction of schools or other facilities -- all in accordance with priorities established with the local leaders.

This approach has many advantages for both the people and the relief agencies. There are, however, some potentially serious implications that should be recognized not the least of which is the likelihood that the host village will exploit the temporary residents.<sup>1</sup> The factors that are likely to determine the success of the approach are:

- the selection of villages that 1) can absorb the new population and 2) can accept the newcomers with a minimum of intercultural conflict;
- capacity of the local economy to absorb new workers;
- the degree to which the host population remains receptive to the outsiders (which often depends on how much aid they receive.
- the degree to which the non-residents' former village lifestyle and social systems can be maintained.

On the whole, however, paired settlements is a workable strategy.

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<sup>1</sup>See: Cuny, Frederick C., "Paired Villages," INTERTECT, 1988.

## CROSS-LINE OPERATIONS

### Cross-line Feeding Programs

In cases where battle lines are well defined and it is difficult for people to cross between opposing forces, it may be possible to negotiate a cross-line feeding program. An example of such a program is the "Northern Initiative" which was set up in Ethiopia in 1985 to feed famine victims in the conflict zones in the north. A number of large NGOs were selected to operate the program on behalf of the donors -- they were perceived by all parties as being neutral. One part of the program, operated by Catholic Relief Services (CRS) in Eritrea, is representative.

The long war in the north, which began in the 1960s, had made progressively deeper cuts in the area's food production. To make up for the shortages, a number of relief agencies began a cross-border supply operation from neighboring Sudan (see the section below).

As the Ethiopian famine developed in the early '80s, major donors began to consider increasing the level of support for the cross-border program. The overall potential of the program to meet the increasing needs was limited, however, by logistics problems and the tonnages that could be delivered. Furthermore, the Ethiopian military periodically threatened to cut off the operation. It was not too great a threat at the time: the small scale of the operations made the convoys difficult to intercept. But the threat could become more important if the operation grew in size and consequently became more visible.

By late 1984, the famine situation in northern Ethiopia had reached such proportions that hundreds of thousands of people were streaming into Sudan, and millions more were estimated to be in a critical situation in the rebel-held areas. The people had 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 disruptive. As long as the refugees or displaced persons were being fed in relief centers, away from their villages, chances for agricultural recovery were minimal.

In response to the situation, a number of relief agencies sought permission to initiate feeding programs from bases in government-controlled areas. After much negotiation, the Ethiopian government agreed to a program that would place food 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 could feed a significant portion of the famine victims and keep people from becoming refugees or displaced persons.

The CRS program, which was carried out through the Ethiopian Catholic Secretariat, worked as follows: local priests were permitted to cross the government lines to visit villages in the famine zone and estimate need. Village elders were asked to

identify people in the villages who needed food and to prepare lists. The lists were submitted to CRS logisticians, who then prepared estimates of the monthly tonnages required. Based on these estimates, CRS trucks delivered food to churches located at the edge of the conflict zone. On appointed dates, church workers then took food stocks to designated sites that government troops withdrew from. Then village representatives came through the lines to collect the food and transport it to their villages. In the village, the elders were responsible for ensuring that the food reached the intended beneficiaries.

The priests were permitted to cross the lines to monitor distribution in the villages, although monitoring was always problematic. At the height of operations, about 3,000 MT of food per month was being distributed by CRS in Eritrea for a target population of 200,000 people.

The Northern Initiative was not the only way food was provided in the rebel-held areas; in addition the cross-border operation from Sudan delivered 3,500 tons per month, an airlift to several garrison towns supplied 4,800 MT, air drops from low-flying transports delivered 1,500 MT and a food supply operation of the International Committee of the Red Cross provided 2,600 tons. Therefore, it is difficult to accurately judge the overall impact of the program. However, it must be conceded that the Northern Initiative was an important factor in increasing food supplies in the famine zone.

The most serious constraint on a cross-line program is the difficulty in monitoring food distribution. In the CRS program, the priests who crossed the lines had neither the time nor the resources to interview more than a few selected families or observe the distributions as they occurred. It would have been difficult for them to detect abuses, food diversion, etc., unless the practices were widespread. The distribution at the village level, therefore, could be affected by intentional diversion, withholding of supplies, or outright thefts. Even more probable, unintentional distribution problems could have been caused by a combination of inaccurate weighing or measuring of the food as it was distributed, and poor record-keeping on the part of those responsible for distributing the food.

There is a major logistical constraint on this type of program: the areas from which the food is distributed must usually be government-controlled. In more rugged terrain, the maximum distance that people are willing to go for the food is approximately a three-day journey. In areas where governments control the roads, there may be pockets where the people are not receiving food because the distances are too far.

#### **Market Based Approaches (Spill-Over Strategies)**

In some cases, it may be possible to increase food supplies in the markets on the edge of the conflict zone. As supplies increase,

prices decrease. At some point, traders from the famine zone or those who can pass safely through the lines will purchase the food and transport it back into rebel-held territory. This approach, called "spill-over," requires some degree of caution when selling the food in the peripheral markets; there is always the danger that prices could be depressed so low that it undercuts local farmers.

One way that local producers can be protected is to set up special arrangements for traders who are willing to run the risks of carrying the food into the conflict zone. This can be done by selling to designated traders from special supplies set aside for the purpose. The prices would be low enough to make it worth the risks.

### **RELIEF STRATEGIES IN REBEL-HELD AREAS**

In many countries, rebels effectively control the countryside. Government troops venture out of their garrisons, usually in the larger rural towns, only sporadically. In these cases, a number of initiatives can be taken to provide famine relief. The most common are shipping food across the border to distribute to the famine victims and the procurement of grain from suppliers in or adjacent to the famine zone and redistributing them via relief programs or market sales. The first program is called "cross-border relief" and the second "internal purchase." Once the food arrives in the famine zone, how it is distributed depends a lot on the degree of security in the area. If it is relatively secure, food distribution patterns are similar to those used in areas outside the conflict zone.

#### **Cross-border Relief**

In some cases, it may be possible and desirable to deliver food into the heart of the conflict zone. The most common approaches are: "open roads" programs where relief agencies negotiate an agreement with both sides to permit convoys to cross the border on designated routes to safe distribution points; cross-border operations where food is trucked surreptitiously (usually at night) from a neighboring country to distribution points held by the insurgents; and air supply operations where food is flown into the famine zone overflying contested areas. Since the first two rely on ground transport, they are the preferred method because they are the most effective and least costly.

Perhaps two of the most successful examples of cross-border operations were those carrying food from Sudan into Eritrea and Tigray in northern Ethiopia. Each operated effectively for many years, and they were cited as one of the reasons why relatively few Ethiopian refugees came to Sudan during the 1984-1985 Ethiopian famine. More importantly, they were cited as one of the reasons why major famine conditions did not break out again in 1987.



The operation was supported by a consortium of agencies with offices in Sudan and Europe that raised funds, procured food, and monitored the program on behalf of the donors. All transport and delivery was handled by indigenous relief organizations affiliated with the rebels. The overall strategy was to provide food to people in their villages so that they would not have to relocate in times of severe shortage. In 1988, transport capacity for the Tigrayan operation averaged 5000 MT per month. Food supplies were transported across the border by vehicles of the Relief Society of Tigray (REST) from storage facilities in Sudan. There was a central transit facility approximately 100 km from the border; from there routes branched out to ten distribution sites in western and central Tigray. The farthest point in the system was approximately 500 km from the border. With this operation, almost 400,000 people received food on an emergency basis.

The primary constraint on cross-border operations is security. When operating over wide areas, it may be possible to conceal the routes and make deliveries without much danger. In small, confined areas, however, the chances of being detected increase, and losses can be high enough to force alternative approaches.

The delivery of food should be only one part of an agency's assistance program. The cross-border operation in Tigray was, at its best, only one of several approaches being used -- cash distribution to families with vulnerable children and internal purchases were carried out simultaneously.

Internal food delivery projects require donors to make a major leap of faith: most assistance requires support and sometimes participation by the insurgents. Nonetheless, it is possible to establish some degree of accountability. For example, Biafran authorities in the Nigerian civil war (1967-70) did an excellent job distributing the aid flown in there. Likewise, most donors have been satisfied with the way food aid was distributed by the Eritrean and Tigrean groups in northern Ethiopia.

Perhaps the most important question is: does the assistance reach the intended beneficiaries? The answer might seem straightforward -- if the aid doesn't reach the beneficiaries, they'll move. But conflicts may prevent movement; for this reason, careful monitoring is necessary.

Agencies undertaking internal delivery programs without government sanction must also be aware of the logistical difficulties. Private contractors may be reluctant to risk their own vehicles in such a situation; therefore the agency may have to buy and maintain a fleet of trucks. Because deliveries will be off main roads and often over difficult terrain, those vehicles will need to be rugged ones. And much time and attention will go into maintenance. Above all, the vehicles should be considered expendable -- invariably some will be lost to hostile action, taken by rebel forces for their own use, or torn up by road conditions.

Agencies must also recognize that their food aid efforts will, in the eyes of the government, put them on the side of the insurgents -- humanitarian neutrality in a civil war is a distinctly Western concept, not necessarily welcome in the Third World. If the agency has other relief or development programs in the country, the government may sharply curtail them when the agency begins to operate in rebel areas.

In spite of these problems, cross-border food deliveries are important. Providing food, directly or indirectly, helps keep people at home. If access to food declines as a result of the conflict, displacement will increase and mortality will rise. Any strategy that can help reduce displacement is an important element in reducing the number of deaths.

### **Internal Purchase**

In many situations, the purchase and distribution of internally available food reserves is a viable alternative to imported food aid. In most conflicts and famines, the amount of food available is far more than outsiders realize. Often cereals, pulses and livestock may be available. Since famines are usually the result of market disturbances and conflicts have the effect of disrupting normal marketing, food is often trapped in pockets where it cannot be sold or transported as usual. In internal purchase program, a relief agency locates sources of supply, imports cash (local currency) to buy the food and then purchases and redistributes the food either by selling it at lower prices or giving it to relief agencies or committees in the famine or conflict zone to distribute through selective feeding or targeted food programs.

Internal purchase has many advantages. It is faster than importing food, is less costly, and can usually be managed by a few people working with local merchants and traders. Usually, once merchants start to release food that they are hoarding, others will also start to sell, especially if the agency is reselling the food to local vendors at low prices. Thus, the primary advantage is that it can help to reactivate the normal market system.

The food obtained through an internal purchase operation is often more compatible with local tastes than imported foods. When the food is sold, the proceeds can be used to buy more food or to support cash-for-work projects that give the poorest an chance to earn money to participate in the sales.

While the acquisition of internal food supplies is often more effective than external food aid, it is very important to be sure that buying and distributing local food reserves does not significantly disrupt the local economy. For example, villages outside the famine zone may produce a surplus. However, if villages adjacent to them are producing at a marginal or subsistence level, the adjacent villagers may depend on that surplus for their own

protection. Remembering that famines shift geographically, it is important to carefully analyze food availability.

#### IMPLEMENTING AN INTERNAL PURCHASE PROGRAM

Step 1: Assess whether food is available in the country to meet local needs.

Step 2: Inform the local authorities that you intend to conduct a feasibility study for the internal purchase.

Step 3: Establish an assessment team.

Step 4: Determine the amount of food available for purchase by assessing the gross surplus and subtracting the amount required for local needs and local trade.

Step 5: Identify the implementing agency.

Step 6: Assess the availability of local currency and the steps required to convert hard into local currency.

Step 7: Assess the availability and requirements for transportation, storage, and containers.

Step 8: Determine the maximum contract size, identify local sellers, and develop a list of sellers and the location(s) and amount(s) of their supplies.

Step 9: Evaluate the feasibility of the program by comparing the time and cost factors to those of importing food, and assess the logistical needs of the operation.

Step 10: Inform the local and/or national authorities of your intent to proceed; enlist their support for the currency exchange and obtain taxation information from them.

Step 11: Proceed with the actual purchase:

- a) Determine the amount of food to be purchased.
- b) Convert and transport the currency.
- c) Prepare contracts.
- d) Negotiate with sellers.
- e) Develop purchase and distribution plan.
- f) Conduct purchase.

## INTERNAL PURCHASE IN TIGRAY: A CASE STUDY

Continuing insurgency, as well as political and logistical problems, made providing relief food to the 1.5 million affected people difficult in the Tigray province of northern Ethiopia. In November 1984, the Relief Society of Tigray (REST) determined that 25,000 MT of grain usually sold to Eritran buyers or held in reserve by merchants, was available in western Tigray. REST appealed to donors to provide currency to procure the grain for distribution to famine victims.

The donors were hesitant at first. Several were suspicious about the severity of the famine if food was available. Since REST was affiliated with the Tigray People's Liberation Front (TPLF), the insurgents who control the area, the proposal required working outside government channels. Most donors were reluctant to give hard currency to buy the food.

The cost of the grain was high, more than in Europe or the U.S. It was feared, however, that food from abroad could not arrive in time to save lives. Thousands of people were preparing to migrate to Sudan or other areas, and starvation was already occurring in large areas of the region. Thus, the acquisition of available grains seemed a necessary intervention. With some hesitation, church agencies in Europe provided \$200,000 for the first purchase.

Planning and implementation was primarily undertaken by REST, which identified the merchants, determined average prices, and supervised transportation, storage, and distribution of the grain. Initially, purchasing was carried out jointly by REST and a donor representative.

The purchase proceeded smoothly, though there were problems. Original plans called for procurement of 10,000 MT of sorghum, which left a sizeable amount available for local needs and trade. However, during the time it took to convince donors to proceed, the available surplus dwindled to 3,000 MT, and the prices rose. The exchange of currency was difficult and cumbersome. Hard currency was sent to Sudan, drawn from the bank in cash, and transported to the border, where it was converted into Birr, the Ethiopian currency. Birr was available only in small notes; hence, the bulk carried was considerable. As the program continued, the supply of notes dwindled and often delayed the program.

Even with these problems, the program was rated an overall success in the short term. It was estimated that food arrived months earlier than imported food. Since that time, donors have continued to support the program during periods of scarcity and an efficient system of procurement has developed.

The long-term impact of the program, however, is not clear since it is not known what role donor intervention plays in the market economy.

### **Operations in Border Enclaves**

Another type of cross-border operation increasingly faced by relief organizations is support to people in border enclaves. Often large numbers of civilians displaced by fighting accumulate in enclaves along the border of a neighboring country. These groups may include a homogeneous ethnic or political group or may represent a variety of minorities, political factions, ex-soldiers, and other disparate groups. Some may cross the border to seek asylum as refugees but in many cases a larger number will stay in their own country, possibly slipping back and forth across the border to seek food and assistance.

The reasons why they remain in their own country are often mixed: some will stay because they do not trust the government of the neighboring country, some fear being put in refugee camps, others may be waiting for other members of their family, village or group to catch up. And in some cases, the people may be under restraint by armed factions operating in the area.

There are several categories of people who may need assistance. They include:

- refugees who have crossed the border into the neighboring country;
- displaced persons who have congregated but not crossed the border (they are often found in a variety of spontaneous encampments along the border);
- people who have been affected by the conflict deeper inside the country but who have not fled their immediate areas;
- refugees who fled the country then quickly decided to return (ricochet repatriates); and
- villagers who find it increasingly difficult to survive because of increased competition for resources in the enclave.

Until recently the conventional approach was to encourage the neighboring country to grant people unrestricted asylum so that the people could come out and receive protection and assistance until they could be repatriated in safety. However, the current thought among many relief practitioners is that if the situation is safe enough for them to stay inside the enclave, it is generally desirable that most of the people do so. The determinants of whether this strategy should be pursued are:

- the degree of safety and security that is likely to exist during the peoples' stay in the enclave (and whether operations in the area will make the enclave a target);
- whether sufficient supplies can be delivered to support the population in the enclave (the displaced plus the host population); and
- the degree of cooperation and flexibility that armed factions within the area extend to the relief agencies.

The reason why this strategy is being increasingly advocated is straightforward: relief agencies usually have a freer hand in helping the people than if they were admitted as refugees. Despite a variety of international conventions and protocols designed to promote assistance and protection, the reality is that few host countries welcome refugees and most are increasingly harsh in their treatment of them. Most refugees are placed in squalid refugee camps without adequate food, water or sanitary services;<sup>2</sup> they are restricted from working, and face a long, debilitating existence where they are increasingly marginalized and disenfranchised. Relief agencies operating in border enclaves can often pursue a wider range of options to assist the people and can help them attain a larger degree of self-sufficiency than would be possible in a refugee camp setting. Furthermore, the government of the neighboring country can usually be persuaded to permit relief agencies to operate from their border and stage relief into the enclave -- they'll overlook the issue of national sovereignty and all other legal issues to keep the refugees out.

Both the United Nations and International Committee of the Red Cross (ICRC) are often unable to provide effective assistance or protection for people in enclaves since their operations require permission from the host government. But that government is not likely to give its permission to foreign agencies to establish an international presence in areas outside its control. Thus the task usually falls to non-governmental organizations (NGOs), which are not constrained by international agreements like those that govern the UN. If the population is not too large and the major donors support their operations, NGOs can usually provide the services that are required.

Operations in enclaves usually require a multi-pronged approach:

1. Assistance to refugees who have crossed the border.

This is necessary for both humanitarian reasons as well as to keep the host country off the agencies' backs. Primary responsibility for assistance and protection of refugees in

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<sup>2</sup>Recent comparisons of mortality among refugees and those who remain behind in conflict areas show that in most cases, the people would have had a higher chance of survival if they had stayed in the conflict zone.

the country of asylum lies with the host government and the UN High Commissioner for Refugees.

2. Assistance to communities that have been impacted by the influx of refugees.

This is usually accomplished through a "refugee affected areas program" carried out by UN, Red Cross, and private relief agencies. This program has two purposes, to equalize the amount of assistance being given in the border area so that resources are not drawn out of the enclave into the neighboring country and to take the pressures off the host government so that they will give the relief agencies more freedom to operate.

3. Assistance to displaced persons (and returnees) who have moved into the enclaves.

Assistance is provided via a mix of "cross-border" relief programs. Relief operations are usually organized by NGOs (possibly working in conjunction with the ICRC --though this is often not possible -- or with UNICEF<sup>3</sup>). Food and relief supplies are staged across the border using a combination of approaches, including:

- direct relief, where agencies take food and medical assistance across the border and deliver it to the people;
- a "take away" approach, where designated representatives of villages or other specific groups of people come to designated relief points along the border and pick up food to take back to their people;
- market interventions, where food is sold to merchants to take back to village markets for resale. The proceeds of the sales, which would be in the local currency, are then put back into the community via cash-for-work schemes, employment of public workers, agriculture and livestock rehabilitation activities, etc.

4. Assistance to villages in the enclave affected by the influx of displaced persons (and/or returnees).

Villages in enclaves are affected not only by increased competition for resources such as water, but may also be subjected to increased insecurity (both from armed groups among the displaced as well as from attacks by the government or other combatants). They may also be cut off from their

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<sup>3</sup>UNICEF is ~~the~~ one UN agency that can work in non-government controlled areas as its mandate gives it the right to work in any environment in which children are in danger.

normal markets in their own country and the neighboring state, thus impoverishing the people and increasing their vulnerability to food shortages. Because of these, it is important to tailor relief programs to include the resident population and meet a variety of their needs; if this is not done, they may be displaced themselves. Focusing on the resident community early in the assistance effort will also relieve many of the pressures that will quickly develop on the displaced population and help the relief agencies obtain cooperation from local leaders.

After a short period of relief operations in the enclave, the focus should shift to longer term, more development- and rehabilitation-style projects and activities. For example, schemes should be explored to provide farmers with small plots of land to work until they can return to their own land (alternative land leases). All programs in the enclave should be designed so that they can be operated by the people themselves with minimal intervention from the relief agencies.

Some of the programs which can be undertaken in enclaves are:

1. Market interventions;
2. Internal Purchase;
3. Agricultural inputs distribution;
4. Direct food relief (via cross-border food deliveries);
5. Livestock interventions (including purchase and redistribution, market support, and veterinary services (vaccination); ~~and~~
6. Reentitlement (short-term employment, usually through cash-for-work projects); *and*
7. Rural water system rehabilitation.

Operations in border enclaves can often provide a workable alternative to asylum and can help the displaced temporarily live relatively productive lives in dignity and in an environment where they have more control over their own lives. If security and resources permit, it may be possible to draw refugees back into the enclave through spontaneous repatriation. However, it must be recognized that security is paramount; if people feel threatened they will quickly abandon the enclave and may seek refuge in the nearby country. Agencies working in enclaves should be prepared for sudden changes that could completely alter the nature of their work, increase or decrease the caseload, and, possibly, undo months of work. On the other hand, enclaves that remain calm can sometimes provide a basis for expanding the area of relative stability and can be a means of stimulating talks to resolve the conflict.



## **OPERATIONAL CONCERNS IN CONFLICT ZONES**

Any operation into rebel-held territory is likely to be fraught with problems, not the least of which is targeting and monitoring the assistance. Income support programs may be accused of providing cash that will eventually end up in the hands of the insurgents; claims will be made that food aid will be skimmed off by fighters and not given to the intended people. In many cases this may be true, but experiences thus far have shown that it has negligible impact on the overall military situation -- mainly because the militants will have already obtained the food they need, and the relatively small amount of currency that would be skimmed off, especially if it is local currency, will have little value on the international arms market.

### **Dealing With Liberation Movements**

A major constraint in helping people in rebel-held areas is that organizations must deal with an anti-government group. Officially, the United Nations can only do so with the concurrence of the government. This means that many opportunities to help famine victims are lost. In some cases, it is possible to get the government's agreement to make limited contact with the insurgents. While it may not be comfortable with these arrangements, there are advantages to them which they recognize. With patience, it should be possible to establish a wide range of contacts, either directly or indirectly, with rebel groups even in the midst of intensive military campaigns. Over time, it may be possible to negotiate point-by-point agreements of what can and cannot be done in areas that rebels control, or in which they are operating, that will permit agencies to provide support in contested areas. It is important, however, to take special care that projects launched from the government side are not co-opted as pacification efforts or come to be viewed by the rebels as supporting pacification. The specific modalities of working with rebel groups, or their supporters, must be undertaken with utmost care and every effort must be made to ensure that all sides approve specific projects or activities.

### **Food Distribution Problems in Conflict Zones**

When food is distributed during a conflict without supervision by relief workers, a number of problems are likely to occur. But spot checks can detect many of them. For example, the measuring devices used to distribute grains are usually tins that have been roughly cut and marked to use as scoops. Since the villagers have no way of knowing how much the scoops are supposed to measure or how to calculate the volume being dished out, it is possible for some food to be skimmed regularly at the distribution point. In remote areas, distribution teams may charge the local people for delivering and distributing the food. People responsible for preparing distribution lists may demand a kickback for putting a family on the distribution roll. And, in some villages, food may simply be "taxed" by, or voluntarily diverted to, insurgents.

The most likely problem, however, is bogus recipients on the food rolls. Registration officials should be chosen for their honesty and

then thoroughly trained. During the registration process, spot checks by supervisors should be carried out wherever possible.

### **Choosing Foods for Programs in Lawless Areas**

In areas where programs are plagued by banditry and looting of food supplies, agencies should carefully consider the foods that they will be trying to supply. If the foods have become a target of the thieves, it is probably because they have relatively high value on nearby markets. In Somalia in 1992, relief agencies imported rice, wheat grain, and vegetable oil for their famine feeding programs. These were commodities that the more affluent Somalis favored in normal times. They also had long shelf lives, could be easily stored (or hoarded) for long periods, and were ideal food for soldiers. Since the Somali shilling was virtually worthless, it was better to hold those foods than money. Thus, it was no surprise that relief food quickly became a target. When bandits realized that the relief agencies and the political factions were powerless to stop or punish the looting, widespread attacks on relief shipments and stores began to occur.

To stop the thefts, the relief agencies decided on a two-pronged approach. They began by selling the higher valued commodities to private traders to take and sell in the markets at reasonable prices<sup>4</sup> then switched the foods in the free feeding programs over to lower value and less preferred commodities such as blended foods with a shorter shelf life and grains that the Somalis grew themselves, like sorghum.

### **Controlling Price Fluctuations in the Periferal Areas**

The arrival of large numbers of displaced famine victims will probably increase food prices in the periferal areas even though they may not have enough money or goods to purchase food for a sustained period. It usually will be necessary to intervene in the markets and to initiate income support projects to ensure the poor can buy food. As a rule, eligibility to participate in income support projects should not be restricted to the displaced alone; rising food prices will affect the local poor as well.

Cash-for-work should be the primary approach because if the people can buy food, the merchants in the area will quickly bring more food into the area to meet the increased demand thereby reducing the need for relief food. In many cases, this may be the fastest way to get food to the displaced. Indirect food distribution programs (such as food coupon stores and food-for-work) can also be initiated.

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<sup>4</sup> The proceeds from the sales were used to fund cash-for-work projects organized by NGOs.