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ABBREVIATIONS

CSM	corn soy milk
DSM	dried skim milk
EEC	European Economic Community
FAO	Food and Agriculture Organization
FPC	fish protein concentrate
g	gramme(s)
h	hour(s)
Kcal	kilocalories
kg	kilogramme(s)
KJ	kilo-Joule
l	liter
LDC	less developed countries
LLDC	least developed countries
mg	milligramme(s)
Mio	million(s)
MJ	mega-Joule
ml	milliliter
PEM	protein energy malnutrition
SCM	sweetened condensed milk
SEF	supplementary enriched foods
t	ton(s)
UN	United Nations, New York
US	United States (of America)
WFP	World Food Programme, Rome
WSB	wheat soy blend
WSM	wheat soy milk
\$	US-dollar

FOREWORD

Since the end of World War II emergency relief in developing countries, as a part of the ecumenical service, has been a function of Diakonisches Werk of the Evangelical Church in Germany and its programme "Bread for the World". From the very beginning, disaster assistance was not only an actual and direct form of Christian Samaritan service, but also an impetus for compiling progressive development concepts, which aim at preventing future disasters, or at mitigating their consequences. Despite the long-term development projects and programmes which have been always adjusted to the latest findings, it would be an illusion to believe that the "fire-brigade" measures of immediate aid for natural or man-made disasters will ever be unnecessary. This is why this form of assistance too has always to be adjusted to the given requirements and to be evaluated with respect to its greatest possible effectiveness.

This manual for experts and field workers of disaster relief gives guidelines to the selection of appropriate foods, for the assessment of given nutritional requirements and for the acquisition and distribution of food. In this way, the compendium wants to help all those in charge of emergency relief to come to decisions which are always in favour of the affected people. In order to do so, all considerations which place their own interests before those of the victims have to be disregarded; e.g. the reduction of EEC food surpluses, or statistical considerations which primarily aim at eulogizing the generous donor.

The motive for compiling this manual by nutritionists of the University of Giessen is that the composition of European food shipments has not always been in accord with the actual situation and food habits of the distressed population; because of the widespread lactose intolerance, milk powder donations can even endanger the recipients.

Discussing a global subject like this, necessarily leads to incompleteness; thus, we solicit the co-operation of all readers of this manual and would appreciate any information which could be considered in a later edition. This is at least a beginning to improve disaster relief and to induce a fruitful and sensible consideration of this topic.

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PREFACE AND ACKNOWLEDGEMENTS

Emergencies, either natural or man-made, have repeatedly led to unconceivable human suffering in the past. An end to this, however, is not likely in the future. All the more, are those, who are not directly afflicted, obliged to eliminate the causes of distress, or - where this is impossible - to mitigate the consequences by unbiased assistance. Emergency relief, in these cases is essential, but its planning and implementation has to be well considered. It must not be satisfied with a more or less prompt supply of some kind of relief items; emergency assistance rather has to be in accordance with the specific situation and should always consider the short- and long-term needs of the victims.

For various reasons, disaster relief stands much less in the cross-fire of criticism than does general food aid. It is therefore all the more commendable, when an aid agency, like "Brot für die Welt" (Diakonisches Werk of the Evangelical Church in Germany, Stuttgart) endeavours to examine previous relief operations, in order to responsibly adjust future action to the very needs of the distressed people.

For a well-grounded analysis of such a global issue, it is necessary to cover the whole range of various experiences and knowledge. This can be achieved only with the co-operation of specialists and officials working in this field. Here, we want to thank them all for their detailed information and positive suggestions. We would particularly like to mention the staffs of "Brot für die Welt" in Stuttgart, as well as the FAO and World Food Programme in Rome, who patiently spent hours answering our questions and, through

their own experiences, provided us with a better understanding of the practical problems.

We were granted personal support from Dr. Franz Simmersbach and Marilu Mechitarian, to whom we are indebted for intensive inquiries at the FAO. Tony Jackson, OXFAM, supported us with publications, his own experience and helpful encouragement in a most generous way.

The critical reading of the first draft of the German edition yielded further considerations and suggestions from colleagues and friends which we greatly appreciate. Particularly helpful were the comments of Dr. Bastian (DIFÄM, Tübingen), Dr. Siegfried Bethke (Stuttgart), Julius Holt (International Disaster Institute, London), Dr. Rolf Korte (GTZ, Eschborn), Prof. Dr. H.-D. Cremer and Dr. Ulrich Oltersdorf (University of Giessen). Not least, we owe many thanks to two students of nutrition (University Giessen), Marianne Eisinger and Ute Latzke, who were of constant help with searching, reading and preparing the relevant literature; it was a pleasure to work with them.

Finally we have to thank Helen Haywood, whose corrections of the translation made it comprehensible to English-speaking readers.

The authors carry full responsibility for the contents of this work, and would be very grateful for any comments, criticisms or corrections.

P. Glasauer

C. Leitzmann

Giessen, July 1983

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SUMMARY

The target groups of this publication about food aid in disasters are primarily all persons and institutions who, in the role of helpers, are in charge of the planning, preparation and implementation of aid measures. Still, this publication does not - as is the case with manuals - discuss all aspects of such actions, nor does it provide a check-list instruction book; for those interested in such, a detailed reference list is added at the end.

It is the objective of this manual to investigate features of food aid in catastrophes, which have proved to be problematic in the past, (especially if the implemented programmes were examined, in a responsible way, for their effects on the beneficiaries. Whenever possible, the statements are condensed in specific recommendations and guiding principles.

Disasters are all events of ecological or social origin, which cause a relatively sudden and thorough disorder of the whole, or a substantial part, of the social system of a society. Characteristic features are the human suffering and/or the destruction of the material basis of existence to an extent which exceeds the self-sufficiency of the affected society.

A clear und undisputable categorization into natural disasters and man-made disasters is not always feasible. Even in the genesis of such crises, quite often social factors are of considerable impact, and they certainly determine the consequences of any natural event on the affected population. Most often, the secondary effects within the stricken society have a more disastrous impact than the original event itself.

The chronological differentiation of the various types of disasters into suddenly and slowly developing catastrophes indicates much better than the first-mentioned differentiation

whether food assistance is necessary or not. On principle any disaster can evoke food shortages within the stricken population. If, and to what extent, this effect will take place depends on many different factors (e.g. geographical, climatic, seasonal, political, economic and social factors). Past experience provides evidence that food aid programmes are generally only necessary in long-term, slowly developing disasters.

With cataclysmic disasters (comprising most of the natural disasters) only short-term food aid - if at all - is needed, since things get generally better as time passes. A deterioration of food supply can affect staples as well as drinking water and can also have an effect on the different levels of the food system (production, storage, distribution).

Despite wide-spread opinion to the contrary it has to be said that not natural disasters, but man himself causes the most suffering for the human race. Wars and their consequences (e.g. refugee camps), in which millions of people are sacrificed for political and economic purposes, require now the largest proportion of international disaster relief.

Famines are very illustrative examples of the fact that not the original event (war, drought, crop-failure etc.), but the missing capability of the affected society to cope with it, leads to the situation called 'a disaster'.

Spontaneous, unbureaucratic and unbiased relief in times of emergency is undoubtedly important and welcomed. The charitable nature of such a response makes it difficult to question its effectiveness and makes it almost impossible to estimate its efficiency. This, certainly, contributes to the situation that evaluations (and their financial, personal and chronological resources) are, up to now, insufficiently considered in the planning and implementation of emergency relief. As a consequence for temporary

food aid in disasters there developed three generally accepted, nevertheless not always true, assumptions:

1. Victims have lost all their food supply.
2. Normal distribution systems are totally disrupted.
3. Victims have no money to buy food, even if it were available.

Aid organisations should closely consider the following three guiding principles for food aid programmes:

1. Emergency assistance must reach those in need.
2. Aid measures and food supplied must significantly improve the victims' nutritional status.
3. The improvement of the victims' nutritional status must be lasting.

It should go without saying that food aid should only be implemented where actual food shortage exists. On principle, a well-organized, and for the specific circumstances appropriate, disaster relief-action can be established, if the following aspects are considered:

- The demand for food or other commodities has to be assessed and specified in advance.
- Only those commodities which serve this specific demand in quality and quantity should be applied.
- Measures of self-help have to be supported and never stopped by foreign actions.
- Locally unknown food should not be brought in if possible.
- Food and other commodities should be acquired from local or regional sources if possible.
- Food aid must arrive in time.
- Belated consignments are in most cases superfluous and detrimental.
- Food aid has to be stopped when the acute emergency phase has passed and there is no longer demand, or if measures show adverse effects.

- Local partners should be integrated, as far as possible, in the selection and distribution of food.
- Emergency assistance has to be carefully watched and resources (financial, personal) for the evaluation of the aid programme have to be considered at the planning phase.

The target groups of food aid in disasters are all victims. Particular attention, and possibly special measures, are necessary with the physiological and also socio-economic risk groups.

The physiological risk group consists of all members of a population, who have increased nutrient requirements because of their physical growth or their specific physiological situation. This group includes:

- infants, not breast-fed (up to 2 years)
- infants during the weaning period (1 to 3 years) and lactating women
- preschool children (3 to 5 years) and pregnant women
- school children
- elderly
- adolescents and adults.

The socio-economic risk group consists of subgroups of a population, which, because of their social and/or economic marginality, are at once existentially endangered by any crisis. In general, they lack material and financial reserves, a political and social medium of articulation and are sometimes ideologically and religiously discriminated against.

In order to establish appropriate aid programmes it will usually be necessary to assess the current nutritional status of the affected population. Under disaster-conditions, the most useful methods are the anthropometric measurements, such as the age-independent indicators weight-for-height and arm circumference-for-height. The same methods are helpful for the urgently necessary

nutrition surveillance in long-term programmes and for the indispensable evaluations during, and at the end of, the aid action.

The selection of the foods to be delivered has to be in accordance with the given situation of demand. A specific lack of protein, which is usually mentioned in order to justify shipments of protein-rich foods (such as milk powder), or even highly concentrated protein blends, will very rarely be the case. If the task is to supply the disaster victims in general, then meeting the demand for food energy has priority over supplying specific nutrients. Imported foods do not always represent the best solution in such cases and, instead, various kinds of cereals and combinations with other available foods (e.g. pulses) should be preferred. In general, food for emergency assistance should meet the following standards:

- Foods have to be familiar to the beneficiaries; this is also true for special mixtures, e.g. baby-food, regardless of their nutritive value.
- Foods have to be easily prepared; they should be ready to consume in the form distributed or need only little expenditure of preparation.
- There must be a satisfactory cost-benefit-relation.
- Foods must have a sufficient shelf life.
- Packages should refer to local circumstances in material and container size.
- Foods should not have a high black market value, if possible.

For distribution of the foods there are three possibilities with very specific fields of employment:

1. general feeding
2. supplementary feeding
3. therapeutic feeding.

The distribution system should always be as less centralized as possible, in order to avoid the disadvantages and problems of large crowds of people and their absence from their living and occupational spheres.

General feeding should be employed when a general lack of effective demand coincides with sufficient food supplies; it is usually essential in refugee camps. A mixed diet, in accordance with local food habits, will most likely meet the needs of the victims. The employment of local foods has the advantage that they are familiar to the beneficiaries, who are then able to handle and prepare them properly.

Supplementary feeding aims to supply some groups of victims with special food in addition to the rations of the general feeding; it is designed to meet specific nutrient demands of vulnerable groups such as all children under 5 years or 110 cm body length, pregnant and lactating women, convalescents and individuals with chronic diseases. In case of scarce resources, the programme can be limited to prevent under- and malnutrition within the most vulnerable groups. In the selection of beneficiaries then, specific anthropometric indicators are usually employed. With the distribution and consumption of the meals in especially established centers, it can be guaranteed that the person in need will in fact receive his food supplement.

Therapeutic feeding is a measure to supply severely malnourished children, whose serious situation requires qualified medical care and treatment with appropriate foods. In supplementary and therapeutic feeding, foods rich in protein can be helpful.

The food energy needs of a healthy adult are about 10,0 to 12,6 MJ (2,400 - 3,000 Kcal)/day, which allows for heavy physical activity, likely to occur in rehabilitation efforts after disasters. If the food energy needs can only partially be covered, which can be due to insufficient funds, lower levels of food energy intake can be chosen; but then the consequences - lowered physical activity and the shorter time span of the measure - have to be noted. A diet, with its sufficient food energy supply derived from about 10 % protein, 20 to 30 % fats and oils and more than 50 %

carbohydrates, will be the best guarantee for the provision of all essential nutrients.

Among the foods frequently employed in disaster relief milk powder is - after the various kinds of cereals - one of the most important; nevertheless, its use has caused many controversial discussions. The milk powder's obvious popularity within food aid is undoubtedly connected with its role as a surplus commodity in the EEC; hence, its distribution is rather a surplus disposal than humanitarian assistance. Beside these development-policy-criticisms, physiological objections, on account of the milk's specific constitution, are also mentioned.

The nutrient constitution of milk makes it an ideal food for babies, but not for the global majority of adolescents and adults. This is caused by the increasing ability to digest lactose (carbohydrate of milk) that already develops during infancy (1 - 4 years). Its consequence, lactose intolerance, is present for almost all mankind, with the exception of Caucasians and some nomads and pastoral tribes. Lactose intolerant people consuming milk will not only have serious discomforts, which will make them reject milk, but in children, it can even cause death. Over and above this, dried skim milk, because of its low energy content, is also not appropriate for feeding babies and toddlers, unless fortified by adding oil or fat and supplementing the missing vitamins.

Milk and milk powder can be quite helpful in supplementary and therapeutic feeding programmes, when competent and cautious handling can be guaranteed. In general, shipments of milk powder are neither necessary nor very favourable. If it should, however, be employed in emergency relief, a number of guiding principles have to be considered in order to prevent misuse and detrimental consequences.

Processed baby foods from industrialized countries are much more expensive and not always of a better quality than locally produced, well-balanced weaning foods. Therefore, they should not be included in imported food aid shipments.

Processed food mixtures basically consist of local foods and are useful to cover the specific nutritient needs of physiological risk groups.

Food is not only necessary for man to cover his physiological needs, but, beyond that, is an important factor in his cultural existence. It seems to be necessary and reasonable to make this aspect more public, since the largest portion of the food aid donated by western nations is determined either by purely physiological or by market-political considerations. Being familiar with the given cultural context is important for aid agencies which do not want to reduce disaster victims to recipients of any kind of aid commodities, but which prefer to respect people in emergencies in their total existence with values and attitudes all their own.

These cultural characteristics are anything but voluntary, lax regulations. On the contrary, they form a rather tight network of values and guiding principles, which - particularly in traditional societies - for example determine the affiliation to certain subgroups of the society. A strong, external alteration of food habits, characterized in this way, amounts to a symbolic breaking with the society. A given nutrition pattern can be characterized for example by the preference or avoidance of certain food items or a strict distribution system within the social group. Aid agencies which want to consider such aspects as these, should rely on local partners whenever possible.

Local purchase of food is a concept of general food aid and thoroughly develops all its positive elements only

in a long-term application. However, a number of merits makes this concept particularly interesting for emergency relief. The following points are pertinent:

- time-saving and consequently quick availability of relief supply
- a reduction of transport costs, which can mean an increase in the amount of aid supplies, if needed
- the use of locally appropriate foods and, therefore, no problems with their acceptance
- no detrimental market-effects by the competition of local production with extensive food shipments
- support for the farmers in resuming food production, which is, at the same time, an important rehabilitation measure.

If the pre-conditions of local purchase are fulfilled (e.g. political willingness of donor, as well as recipient countries, surpluses in the local or regional neighbourhood, favourable purchase date, known and accessible supply sources) this concept should always be given preference over conventional shipments from industrialized countries.

Two of the most important prerequisites of an effective disaster assistance are:

1. the announcement of an impending food shortage, as early as possible
2. the quick qualitative and quantitative assessment of the needed relief supplies.

National early warning systems, with their extensive data files, render good services in the prediction of food shortages, as well as in the appropriate design of aid operations. Observation systems, which gather detailed information of elementary areas of a country are even with international patronage problematic and reservations of concerned governments are understandable and to be respected.

National food reserves are also a means of prophylaxis and quick reaction to food shortages in times of disaster. Operating perfectly, they could even prevent the upcoming of a food shortage; but, at least, they will help to mitigate the crisis by its appropriateness of stock-piled foods and their quick availability.

INTRODUCTION

Over the last years food aid has become the subject of more and more controversial discussion. In contrast to the very common view of an exclusively humanitarian aid, close analysis of this transfer of foodstuffs shows a number of much more egoistical motives. Strong economic interests, as well as agricultural and global policies, have been and are still today crucial determinants of the measures implemented. Studies of various food aid projects and programmes reveal that many of the often postulated positive effects on general development could not be materialized (or only partially) in the recipient countries.

Food aid in disasters, which contributes only about 10 % of total food aid, is hardly criticized. In its image as a support in acute emergencies, emergency aid justifies itself. Only very few experts regard even emergency food aid as inferior to untied financial aid: "... and there is enough prima facie evidence to suggest that political corruption, administrative inadequacy and logistic blunders have turned many emergency food supply operations into a fiasco of incompetence..." (CATHIE 1982, p. 4).

It is therefore commendable that organisations involved in emergency aid show sensibility and self-criticism towards their own policies and are willing to search for unjustified aspects in their operations. This does not only comprise such spectacular blunders as slimming foods in a Pakistan refugee camp (1981) or strawberry flavoured milk-tablets in a refugee camp in Somalia (1981). Potential sources of error are in all phases of aid operation, starting from the selection of aid commodities and their procurement, and including their transportation, storage and distribution.

However, it is not sufficient to perfect the "aid-machinery". Aid organisations, inspired by their experience and knowledge, should also make full use of their possibilities of persu-

ading governments to eliminate the social and political factors which cause most of the famines and catastrophes.

In order to give support in that concern this publication is based on the experiences of emergency aid so far and their conclusions in respect to selected aspects. The main subjects are the question of necessity, the kind and volume of aid operations, the strategy of local purchasing in the procurement of aid commodities, the nutritional value of different relevant foodstuffs (including milkpowder and the associated lactose intolerance) and the consideration of nutrition as an important part of the cultural life of man.

In contrast to a handbook, this publication deals mainly with subjects relevant before the implementation of aid programmes, which therefore can serve as general guidance in the practical formation of aid operations. Thus, target groups are mainly the administration staff of aid organisations, but those "in the field" should also be familiar with the text.

2 CHARACTERISTICS OF VARIOUS TYPES OF DISASTERS
AND THEIR IMPACT ON FOOD SUPPLY

2.1 Definition

The expression "disaster" in its colloquial meaning is used for different occasions and describes primarily a personal perception rather than the objective circumstances of a given situation. If the specific perception of a situation leads to reactions of substantial impact - as usually happens with aid programmes in emergencies - than it is not only suitable but even necessary (the past teaches us) to establish a generally accepted definition of "disasters". Within this publication, disaster is defined as follows:

Disasters are events of ecological or social origin, which cause a relatively sudden and thorough disorder of the whole or a substantial part of the social system of a society. They cause human suffering and/or destroy the material basis of existence to an extent which exceeds the self-sufficiency of the affected society.

Referring to different underlying causes one can (more or less) differentiate between 2 types of disasters.

Natural Disasters

earthquakes
storms (hurricanes,
cyclones, typhoons,
tornados)
floods
tidal waves
volcanic eruptions
droughts
etc.

Man-made Disasters

war
flight
expulsion
revolutions
civil upheavals
(droughts)
etc.

A clear and undisputable categorization is not in every case obtainable. Thus the eradication of wide forest areas can aggravate occasionally missing rainfalls to droughts of disastrous impact; or inappropriate farming allows what had been a somewhat higher prevalence of pests to multiply and become severe plaques. Such cases can only in a limited sense be called natural disasters and they give evidence that even with natural disasters man widely determines how and how strong any natural event affects himself.

Regarding the timespan of their impact, disasters can be divided into two categories which also refers to the necessity of food aid (CUNY 1979, p. 144).

- Cataclysmic disasters (e.g. earthquakes, volcanic eruptions, floods) - usually the result of one large scale event - threaten the affected population and often cause chaos. But generally the situation gets better quickly as time passes.
- Long-term continuing disasters (e.g. crop failures, droughts, wars, civil strife) remain constant for a long time or may even worsen as time passes.

2.2 Features of various disaster types

2.2.1 Wars

Military fights, including civil strifes and upheavals, are the most frequent crises that affect thousands of people every year.

In addition to the dead and injured, these situations often create more or less extensive migrations of refugees which add another threat to the victims or even cuts them off from their living wage. When people must migrate beyond national borders, specific political constellations frequently impede their repatriation or settlement. Numerous

specific factors occur repeatedly with wars and military conflicts (IFEKWUNIGWE, no date, p. 40 ff.):

- If one of the combatant groups has no internationally recognized legal status, it has no voice in the United Nations and thus cannot directly appeal to other nations for assistance.
- One of the contenders, who has international recognition, may use that to further handicap the other side by, e.g., blocking relief programmes for the civilian population (prominent example from the past: Nigeria-Biafra War).
- Essential public services and structures (e.g. transportation, administration) may be disrupted which makes relief operations additionally difficult.
- Social disruption (e.g. breakup of families, orphanhood).
- While escaping military operations, the people frequently alter their location which makes it difficult to organize services.
- Relief workers and the civilian population are constantly threatened by military attacks.
- Crops may be intentionally destroyed (e.g. defoliation campaign in Vietnam).
- For political reasons, each combatant group may either exaggerate or play down the extent of the disaster, thus making it extremely difficult to plan appropriate relief services.
- The army may confiscate relief supplies intended for the civilians, molest and threaten the relief workers, and try to influence or control relief programmes.

Expulsion from their living space and disruption from their accustomed way of life generally makes refugees totally or partially dependent on external food resources (INTERNATIONAL DISASTER INSTITUTE 1982). In that case there is primarily a need for local staples and for the few ingredients needed for their preparation (e.g. oil, spices, salt). Inadequate supply of specific nutrients (protein, vitamins, minerals) for elderly people, babies, toddlers, pregnant and lactating women (so-called physiological risk-groups, see chap. 3.4.1.1) can only occur

when migrations last for a long time or when malnutrition was frequently prevalent before the military operations began.

2.2.2 Drought, crop failure

Droughts are the result of no, or insufficient, rainfall particularly in semiarid or arid zones. Unlike other natural disasters (earthquakes, storms etc.) they develop slowly with initial phases extended over months or years (CARITAS INTERNATIONALIS 1981, p. 59). An example in Africa (Sahel) shows that droughts, although called natural disasters, are to a considerable though undetermined extent man-induced. Long-term deterioration of soils, mainly by deforestation, but also by short fallow-periods, overgrazing, erosion etc. curtails heavily the regions compensation-capacity at climate induced critical situations (here: missing rainfalls) and thus creates serious crop failures (FOSBROOKE 1973; DEVITT 1973). Also these countries and regions can usually be characterized by the following features (GEBRE-MEDHIN und VAHLQUIST 1977, p. 200):

- great and widespread poverty
- poor infrastructure
- poor storage and transport facilities
- large estates
- heavy bureaucracy
- incapacity or unwillingness to disclose early signs of impending disasters, partly for prestige reasons on the part of the governments of the countries affected.

Droughts rarely affect an entire region or country to a similar extent; therefore the severity of the crisis can vary substantially within the stricken country (CARITAS INTERNATIONALIS 1981, p. 59). AALL and HELSING (1976) reported that even at times of drought it was possible to buy the staple food millet in the Sahel-zone.

Missing rainfall can sometimes quickly reduce available water supplies, which causes not only crop failures but can also drive man and animals to consume contaminated water (WESTERN 1972, p. 65).

2.2.3 Floods

Floods are not only the result of heavy rainfall, they are also a consequence of other disasters or events like tidal waves after earthquakes and dam breakage or spring-tides after heavy storms. In flat, spacious regions flood-waters rise gradually and thus permit salvage and safeguard measures for man, animals, food supplies and other essential goods.

Spring-tides and tidal waves nevertheless are extremely violent in their suddenness and velocity. They break dams and dykes, excavate riverbanks and sweep away buildings, food, machines, technical equipment etc. Deposits of debris and salt on the arable lands necessitate intensive measures before the fields can be recultivated. It is important to begin as early as possible with the purchase and distribution of seeds and young plants. With weather permitting food shortage will then be eliminated by the following harvest time.

Floods, especially after spring-tide, can contaminate surface water and wells in the affected areas. Occasionally floods are extensive enough to destroy crops (primarily, if just before harvest-time) over wide areas (WESTERN 1972, p. 66). With crops totally or mostly destroyed, a distinct food shortage is usually felt only after several months, at harvest-time (CARITAS INTERNATIONALIS 1981, p. 59). Precautionary measures and speculation on the food market nevertheless can quite soon create increasing prices and shortages. In those cases the disaster area is usually quite limited.

2.2.4 Tropical storms

In a zone between the 5. and 30. parallel on either side of the equator tropical storms occur quite regularly: cyclones in the Indian Ocean, typhoons in the Pacific and hurricanes in the Atlantic. They are nowadays foreseeable, geographically very localized short-term disasters, which are accompanied by heavy rains and violent storms. Along the coast, floods and extensive sea storms occur. When tidal waves coincide with high tide, offshore islands, low-lying coastal areas and estuaries become totally flooded (CARITAS INTERNATIONALIS 1981, p. 58).

The number of dead and injured in the affected area is usually not very high, but material damage is often substantial. The population therefore is frequently forced to leave their destructed villages and to settle outside the affected area. For that temporary stay camps should not always be organized. Solutions like accomodation of the victims in schools, churches, community houses, etc. should be preferred. This will facilitate people's return to their homelands, where they can continue in their former life-style.

2.2.5 Earthquakes

Earthquakes endanger the population primarily by collapsing buildings. As secondary effects tidal waves, land-slips, destruction of dams, bridges etc. can occur. Often survivors are threatened by the destruction of the infrastructure (shortage of water, electricity, gas, telephone; increased danger of explosions and fires; destruction of protection-services). Compared to other natural disasters the prevalence of dead and injured is high.

Generally urban populations are more endangered than those in the country-side. This is because of the direct

danger to life by collapsing high buildings as well as heavy disturbance or even break-down of workshops, equipment, stores etc. of merchants, small businesses and craftsmen. In developing countries without water systems, earthquakes have only little impact on the drinking-water supply; but in urban areas earth movements can damage water- and sewage-systems, leading to enhanced danger of drinking water contamination.

Since damages on fields and store-houses are rare following earthquakes, agriculture is usually hardly affected. Thus, a potential food shortage is generally short and geographically very localized (WESTERN 1972, p. 66; CARITAS INTERNATIONALIS 1981, p. 58). Disturbances in the transport system, and the insufficient purchasing power of the unemployed in the urban population are the actual problems which can cause a bottleneck in the distribution of supplies (INTERNATIONAL DISASTER INSTITUTE 1982, p. 2). Because of the locally limited effects of earthquakes on food supplies it is generally possible to relieve the perhaps short-term need for food-aid within the country itself, or in a neighbouring country (see chapt. 6).

2.2.6 Famines

Famine is defined as a wide-spread, extreme shortage of food in a country or area. By no means are always all inhabitants of the region affected to the same extent. As an event affecting vast proportions of a population, famines are not to be mistaken with "starvation" or "chronic malnutrition", which describes food shortage on the individual level. Famines occur in a wide variety of different manifestations. They range from widespread starvation and massive migrations of people searching for food to a more subtle increase of malnutrition, which can be concealed by increased trading activity in all kinds of valuables as people try to prevent a deterioration of the situation (INTERNATIONAL DISASTER INSTITUTE 1982, p. 2).

Considering the deterioration of life by famines it is justified to speak of them as disasters, but it must be recognized that famines are not the primary, causal event but the result and symptom of specific social circumstances. Sometimes crop failures because of natural disasters or pests and plaques precede them but famines, in the above described form, are not necessary consequences. Famines result only when the affected society is not capable of managing the situation by various prevention and relief measures. The active part of man himself in the genesis of such crises is obvious since very often political and social conflicts, such as wars and civil strifes, precede them, and famines may even be consciously used as a part of military strategy.

The spatial dimension of famines is often limited. But without an appropriate traffic system or, when this system is taken over by the army, compensation between surplus- and deficit-areas can not, or only partially, be organized.

Areas with a high proportion of monocultures within their agriculture are predisposed for extensive crop failures and resulting famines. This is much less likely with a diversified agriculture which enables compensation between cereals and root crops.

Famines are rarely limited to the period of one year. Even with weather conditions normalised in the subsequent year, a prolonged period of famine will be likely if for example seeds were consumed, livestock were heavily diminished or the necessary cultivation of soils could not get accomplished.

2.3 Impact of different types of disasters on food supply

Deterioration of a food supply can not only refer to staples like cereals, vegetables, animal foods etc. but can also occur in the form of an insufficient quantity

and/or quality of drinking water. Furthermore, the different levels of the food systems, which can be affected by certain events have to be differentiated.

- Production can be more or less affected by influences on the growth of food plants and on ensuing harvests, or by diminishing livestock.
- Storage will be affected by the destruction of storehouses, which can cause total or partial loss of stocks by humidity, spoilage, increased prevalence of pests etc.
- Distribution comprises the ways and services of getting the food from producers to the consumers. It is the urban population which is quickly and heavily affected by disturbances at the distribution level. Distribution gains importance in societies with a high degree of labour division and a low degree of subsistence production.

On principle any disaster can evoke food shortages within the stricken population. If, and to what extent, this effect will take place and how long it will last depends on numerous different factors. Different consequences of disasters of the same type are determined by the existence and character of all the factors which define such situations; e.g. locality of the event (continent, country, region etc.), political status of the stricken country, structural and functional aspects of the country's economy, group of those in need (concerning ethnic, cultural, religious aspects) and their specific food pattern. Furthermore it is of essential importance whether the event happens shortly before or after harvest-time, whether a latent food shortage already existed in the stricken region, whether food stocks are affected or even destroyed, whether the country installed an emergency relief programme etc..

Regarding the above mentioned considerations, a generalized synopsis of the impact of different disaster types on food supply has only limited validity. Nevertheless, it can be helpful as orientation and instruction for differentiated questioning if - as emphasized - the individual, close examination of every specific case does not get neglected.

Summarizing the descriptions of the different types of disasters (see chap. 2.2), as well as the above mentioned differentiation by their chronological etiology, it can be stated that generally food aid programmes are only necessary in long-term, slowly developing disasters.

Storms (cyclones, typhoons, hurricanes, tornadoes), earthquakes and floods usually evoke short-term shortages of local foods, if e.g. streets were damaged and field crops devastated. Thus, only short-term food aid is needed - if at all -, since things get generally better as time passes (CARITAS INTERNATIONALIS 1981, p. 20; JACKSON and EADE 1982, p. 7). Accordingly, the demand for housing, clean drinking-water, and a functioning sewage disposal, is often more urgent in short-term disasters than food. Disaster victims (including the elderly and the injured) can easily withstand 1 to 2 days without food if drinking-water supplies and elementary medical aid are provided. Such short-term emergencies make up the largest part of natural disasters. In past disasters, although huge amounts of food were usually delivered from donor countries, very often sufficient food supplies would have been available in surrounding, unaffected zones (WESTERN 1972, p. 76). The possibility and advantages of purchasing food locally is described in chapter 6.

Short- and medium-term food relief can be necessary following droughts and floods (of large extent) if they substantially disturb the local/regional food production. This can happen when rising prices for local staples are evoked by a food shortage. If seed-corn is then consumed for nutritional purposes, subsequent heavy crop-losses and prolonged food shortages are very likely.

Man-made disasters (wars and its consequences such as flight, deportation etc.) very often require food relief from outside the country (JACKSON and EADE 1982, p. 8). In 1981 the World Food Programme (WFP) spent almost 75% of its emergency food aid relief budget for the support of refugees and deported people (WFP 1982).

Attention must be drawn to the fact that the mere coincidence of two phenomena does not explain their causal inter-relationship. The need for exact analysis of the specific situation is documented by an example from Bangladesh. There, in the year 1974, extensive floods and widespread famines could be observed. But the famine was not caused by the flood - in that very year record harvests in rice were achieved. Rather it must be seen as the consequence of an immense increase in the unemployment rate, which caused a general loss of purchasing power and thus starvation (JACKSON and EADE 1982, p. 15 f.).

In other cases food aid from outside the country can be - despite a disaster of substantial impact - totally unnecessary and can even aggravate the emergency situation and impede rehabilitation. The classic example of this situation is the earthquake disaster in Guatemala in 1976. Although the earthquake's impact was remarkable (judged by the numbers of dead and injured) food was in short supply only immediately after the earthquake, and only for a few days. The event occurred in the middle of a record harvest and local grain supplies were abundant. Therefore, the need for external relief was limited to small consumer items and building materials which could have supported the victims in their engagement in reconstruction. Yet some relief organisations "pumped" large amounts of food into the country; by that the self-help of the population, especially that of the local small farmers, was undermined, since the influx of the food provoked (or at least supported) drastic price reductions in local staples (JACKSON and EADE 1982, p. 9 ff.).