3 SELECTED ASPECTS OF FOOD AID IN DISASTERS

3.1 Introduction

Spontaneous, unbureaucratic and unbiased relief in times of emergency situations is undoubtedly important and to be welcomed. The charitable nature of such a response (which is certainly a positive value in all societies) gives it, however, a touch of infallibility, which makes it difficult to question its effectiveness and makes it almost impossible to estimate its efficiency. Those inquiring might easily be suspected of trying to deny the ideal merit of those helping and the benefit of their actions.

Within the general food aid an intensive and fruitful debate about its advantages and disadvantages for the beneficiaries and the programmes' prerequisites and objectives has been documented for some time. However, similar reasoning and discussion within emergency relief can only be found recently and so far only a small proportion of it has been taken into consideration.One of the few discussing this matter is Frederick CUNY, working for a Texas consulting company which has many years of experience, mainly in earthquake disasters. He states that current food aid in disasters is obviously based on three generally accepted assumptions which are nevertheless not always true:

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 (CUNY 1979, p. 141).

Despite this there have been only very few, if any, conclusive evaluations of relief action in the past.

3.2 Objectives of food aid

The general objective of disaster assistance should be the effective and lasting improvement of the victims' situation. Three guiding principles, which should be materialized in every relief action can be derived from this:

1. Emergency assistance must reach those in need.

   It is not sufficient to organize transportation of aid commodities to the first collecting point (airport, harbour, border) in the affected country. Only subsequent distribution will finally prove the success or failure of the action.

2. Aid measures and foods supplied must significantly improve the victims' nutritional situation.

   Food and distribution systems which are not appropriate to the local circumstances will not reach this goal.

3. Improvement of the victims' nutritional status must be lasting.

   This means that measures taken should aim to prevent similar situations occurring in the future, or at least diminish their impact. This principle is not always easily fulfilled and there might be situations in which its negligence is justified. Nevertheless it should be considered much more than it has been in the past.

3.3 Criteria for the necessity of food aid

Food aid (and not only in disasters) must be designed to meet the specific needs and requirements of the population affected which, in fact, should have been well-known, considered and practised for some time. Referring to that main criterion for any intervention within a society, the frequently observed detrimental effects of relief actions call for a repetition of foregone conclusions:

Food aid should only be employed where actual food shortage exists; that is when:

- the population affected has no access to normal markets, or other food resources for a long time, or when
- the local market system is not capable of covering existing food demands (CUNY 1979, p. 144).

3.4 Implementation of food aid

Many reports of relief actions give the impression that any of those situations call for the whole spectrum of generally known aid measures. Brochures and manuals even reinforce this impression by trying to give the most comprehensive information for all eventualities. Despite that, mobilising the total "aid-machinery" was and is not always needed. One of the most popular (because well-documented), but certainly not the only, example of this is the experience after the earthquake in Guatemala 1976.

Attention and carefulness is not only important during implementation, but also at the very beginning of any assistance. An early analysis directed at assessing the specific circumstances can for example prevent intervention in situations which can still be handled by the population affected; generally, every society possesses a number of measures to cope with emergencies (HARTOG 1981, p. 155). In cases where help from outside is necessary, it is essential to support these traditionally-known measures in order to avoid smothering any self- reliance by adverse and externally determined actions.

Despite the fact that emergency relief usually has to be provided immediately, which therefore requires a fair proportion of spontaneity and improvisation, the hitherto given statements suggest that a comprehensive assessment of the situation be given before a relief action is planned and implemented. The measures to be chosen have to be determined by knowledge of the present situation, which has to be seen against the background of specific social,

economic and ecologic circumstances. Accordingly only those organisations which are provided with a constant flow of information on all these aspects of a specific country should provide emergency assistance, or at least organisations should confine themselves to those countries/ regions with which they are acquainted to the degree demanded (CUNY 1979, p. 145). This demand does not necessarily exclude smaller organisations and neither does it prove all big organisations capable of adequate emergency assistance in principle. A list of questions of interest is given as an example in the appendix (Table 10).

Food aid must reach those in need in time. If several days, weeks or even months having passed one can no longer talk of emergency help. Donor organisations, therefore, have to find a way to shorten considerably the sometimes very long time period between the onset of the emergency situation and the arrival of the aid commodities in the affected region. Local purchase of foods in neighbouring countries or regions can serve as an excellent measure to achieve that goal (see chapter 6).

The demand for a timely arrival of the commodities is additionally based on the experience, that a belated (and then usually inappropriate) influx of vast quantities of gratuitous foodstuffs can put a heavy burden on the local economy and food production. It may also counteract relief steps already started (JACKSON and EADE 1982, p. 12). For these reasons belated consignments are usually superfluous and should be cancelled.

In recent years, the trend to sustain relief actions long beyond the actual emergency phase has been observed. Droughts in the Sahel-zone and rice crop failures in India and Bangladesh probably made many organisations believe that any disaster has a long-term effect on the food supply and therefore food aid has to be continued until all stocks are replenished and markets are fully reestablished (CUNY 1979, p. 141).

Also the amount of aid shipments has to be well considered. It would be rather a detriment than a relief for the affected population, if food is "pumped" into the country in quantities which exceed its capacity in terms of storage, transport and demand (JACKSON and EADE 1982, p. 8).

Lately there are more and more people who warn against excessive, inappropriate and unduly protracted interventions in disasters. It is neither necessary nor desirable to continue free distribution of food beyond the initial emergency phase. Emergency assistance should not be used to implement long-term general food aid-projects (JACKSON and EADE 1982, p. 22).

On principle a well organized and 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 action.
- 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.

3.4.1 Target groups of food aid

Besides the total population, target groups of food aid in disasters may be in particular the so-called physiological and socio-economic risk groups (vulnerable groups).

3.4.1.1 Physiological risk groups

Normally-nourished adults may survive several weeks with no food without any health hazard. But in most of the so-called developing countries parts of the population are already marginally nourished, so that the tolerance of a sudden or slowly developing food shortage is reduced. Malnutrition, usually in its form of protein-energy-malnutrition (PEM) is widely prevalent even in normal times, particularly within the physiological risk groups. Thus it is very likely that in times of disaster, when an already marginal food supply gets worse, severe deficiency diseases become more prevalent. Particularly endangered are those risk groups which have increased nutrient requirements because of their physical growth or their specific physiological situation. The different vulnerable groups are not endangered to the same degree (see figure 1).

Figure 1: Physiological risk groups (sequence indicates decreasing risk; MASEFIELD 1967)

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

Infants who are not breast-fed and children under 5 years are the most endangered by all forms of malnutrition. As long as infants are sufficiently breast-fed, they will be adequately nourished and develop normally. PEM usually occurs after the age of 6 months, when the mother's milk starts to supply inadequate amounts of nutrients and infants need to have supplementary food (DANISH RED CROSS et.al. 1978, p. 10; OXFAM 1981, p. 22-9). Quite often weaning foods in developing countries do not fit the specific needs of the infant; frequently they consist of thin gruels or monotonous low-protein foods. The inadequate food intake leaves the children less resistant to infectious diseases such as measles, diarrhea and parasites. Within a short time such an infant will lag in physical growth and show symptoms of slight PEM, such as apathy, retarded development and weakness. Severe forms of malnutrition, marasmus and kwashiorkor, will occur if food intake is not then adjusted to the child's requirements.

Infants up to the age of 2 years have the highest relative (i.e. corresponding to body weight) protein requirement. In some cases it is therefore necessary to prevent severe malnutrition by setting up supplementation programmes for infants and preschool children. In other cases, it may be helpful to register all children showing any sign of marasmus and kwashiorkor in order to supply high-protein and high-energy foods under medical supervision (OXFAM 1981, p. 51-5).

Pregnant and lactating women are the next vulnerable group, having raised protein and energy requirements because of their specific physiological situation. Also vitamin and mineral (mainly calcium) requirements are increased, leaving those women at a high risk of relating deficiency diseases. Malnutrition of the mother impairs fetal development; low birth weights or miscarriages may result.

3.4.1.2 Socio-economic risk groups

Beside the physiological risk groups (chap. 3.4.1.1) several socio-economic risk groups are known. Those are sub-groups of a population which, because of their social and/or economic marginality, are at once existentially endangered by any crisis. Lacking any reserve supply and/or alternatives, they are forced by relatively minor interruptions or disorders to drastic reductions, even in such primary living aspects as nutrition (figure 2).

Figure 2: Elements of marginality, their manifestations and consequences (according to HARRISS,no date a).

Elements	Manifestations	Consequences
Poverty	lack of material and financial reserves	immediate emergency by any man-made or natural disaster
Powerlessness	lacking political and social medium of articulation	no access to administrative or traditional structures of social insurance mechanisms
Social and spatial marginality	ideological and religious discrimination	impeded reproduction opportunity even at normal times and therefore no chance to build up surplus and reserves

It is not possible to state in general which subgroup of a given society has to be seen as a socio-economic risk group; this depends on the specific social structures. In an Indian rural community, for example, three groups could be identified (HARRISS, no date):

- rural population without property (agricultural and other day-labourers, many craftsmen, ritual specialists)
- semi-proletarianised peasantry (craftsmen, stock-farmers, etc. whose properties are too small to earn their living)
- widows and widowers,single-parent households etc.

Identifying and considering those risk groups is of two-fold importance in emergency relief:

- in the early recognition of an impending severe crisis; lacking any compensation capacity, the above-mentioned social subgroups can function as early crisis indicators
- in planning and implementing emergency assistance, the specific needs of the socio-economic risk groups should be considered - similar to what has been long recognized and realised for physiological risk groups.

3.4.2 Assessment and surveillance of nutritional status

Emergency relief which is quickly at hand, certainly can be of great benefit for those in need. Nevertheless, attention should not only be concentrated on a fast provision of any kind of aid commodities. Assistance which fails to supply the needs of the given situation, is always inferior - no matter how fast it is at hand.

Of course this is also the case in the field of food aid. Almost always it will be necessary to assess the nutritional status of the victims and relating circumstances in order to achieve knowledge of the specific demands. This should be done before emergency assistance is requested. The assessment of the nutritional status ahead of the relief action brings several advantages:

- The generally limited (financial, nutritional) means should be for the benefit of those most gravely in need.
- Knowledge of the given situation allows appropriate selection (quantity, quality) of aid commodities.
- Losses by inappropriate or non-accepted foods will be avoided.[1]

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1) In Upper-Volta for example butteroil was partially used as cart-grease and houses were whitewashed with milk-powder (KORTE 1981, p. 33).

For the assessment of human nutritional status a number of different techniques is known, but only few of them are useful under disaster conditions. The methods applied should rely on indicators which show the attributes given in figure 3:

Figure 3: Attributes of nutritional status indicators (OLTERSDORF 1980, p. 36)

specific for nutritional status
objective determinable
numerical measurable
easy accessible
unequivocal and simple to interpret
fast and economical on material and personnel to implement

In cases of disaster relief particulary the last 3 aspects are of primary significance.

The measurements of a person's physical consitution, the so-called anthropometric measurements, will serve the purpose and are also feasible under emergency conditions. Out of those mainly body height, weight and upperarm-circumference and several derivable indicators are of interest (figure 4).

Figure 4: Anthropometric indicators, easy to assess even under impeded conditions

age-dependent measurements	age-independent measurements
weight for age	weight for height
height for age	upperarm-circumference for height (QUACKSTICK-method)
upperarm-circumference for age	

With emergency relief, the age-independent anthropometric measurements (weight for height, upper-

arm-circumference for height) have proved to be the most useful (IFEKWUNIGWE, no date, p. 32; SIMMONDS 1980, p. 130).

In a practical realization, it will be sufficient to apply only one of the two methods. Actually the assessment of the nutritional status with both methods at the same time will complicate the interpretation of results and therefore will be more of a handicap than a help for the field team. The indicator weight-for-height can be recommended because of its simple assessment and its results being easily reproduced (VILLE de GOYET et al. 1978, p. 24).

Very often it will not be possible (and even not be necessary) to cover the total population in the survey. In that case, the selection of a survey sample must be careful and directed to serve as representative of the population. Frequently infants and preschool-children are the sample chosen. This age-group (1 - 5 years) is known as a vulnerable group (risk group), showing any crisis of food supply quite early and destinctively. In case the age of the children can not at once and exactly be determined, all children able to walk but smaller than 110 cm will be included in the survey (GRAITCER 1981, p. 223).

Here it is not possible to explain in detail the specific features and mode of implementation of each assessment method. For those interested, the following publications can be recommended (JELLIFFE 1966; PAG 1977; VILLE de GOYET et al. 1978; LEITZMANN and OLTERSDORF 1982).

Surveillance of the nutritional status and elaborate evaluations of the measures implemented have only very rarely been carried out in general food aid and even less in emergency assistance. Yet, this follow-up sug-

gested is not of pure academic interest; instead it is of very high practical importance. For various reasons, evaluations should be done early after beginning the aid programme and be repeated from time to time. Benefits will be:

- critical examination of measures implemented so far enables adequate corrections in case of need
- collection of empirical data that can help to avoid making the same mistakes in future assistance programmes
- thorough understanding of results for persons involved in the aid programme (e.g. beneficiaries; local staff; local, regional and national administrators; donors).

Evaluations and their temporal, personal and financial requirements have to be considered as early as the planning of the aid programme. The methods employed correspond to those of the initial survey and can also be restricted to simple anthropometric measurements of the victims' nutritional status. More detailed information on the implementation of evaluations is given in various manuals (see bibliography section) and also in KOPPERT (1977; cited in HIEL et al. 1982, p. 35).

3.4.3 Selection of food

The most appropriate and helpful food aid - its necessity presumed - is the one which supplies the victims exactly with those food stuffs which, on account of the emergency, are not available or out of financial reach. If food aid comes in the form of surplus commodities of foreign countries - as in the past - it will, most likely, consist of foods which are foreign and unfamiliar to the beneficiaries. The problems of those foreign influences on a society's food and in their nutritional sphere are discussed in chapter 5.

In the selection of appropriate foods, their physiological features must also be considered, not least in order to

allocate the generally limited financial means most efficiently. The knowledge of the given, specific demands will then enable the directed application of suitable foods.

The assumption that food shortage in developing countries generally means a lack of protein-rich foods determined also the food aid in disasters; it usually served as an excuse for the delivery of milk, milk products or industrial produced food blends with sometimes very high protein contents. Nowadays it is well-known that a general protein-deficiency is only relevant - if at all - in countries on the African continent or in the Pacific where starchy roots and tubers (e.g. Cassava) represent an extremely high proportion of the diet. Even the presence of kwashiorkor, which is generally understood as an indicator of a diet very low in protein, can not justify a massive application of various protein-concentrates since the etiology of kwashiorkor is not only due to lack of protein in the diet. Besides, an isolated protein-deficiency occurs only very rarely (IFEKWUNIGWE 1976, p. 12). HEGSTED (1972, p. 53) mentions a complex structure of various factors; GARINE (1970, p. 10) states, that besides weaning methods, also non-material factors, such as mother-child-relationship, have to be considered.

Food assistance in emergencies generally does not call for a particular supply of protein-rich foods or even protein-concentrates; it is most often more important to meet the general demand for food, which means to cover the demand for food energy (WESTERN 1972, p. 78; IFEKWUNIGWE 1976, p. 12; JACKSON and EADE 1982, p. 13). In addition to this, it has to be emphasized that an elimination of protein-deficiency will not be possible, as long as the demand for food energy is not covered because any protein digested will in this case be metabolized primarily as an energy resource (IFEKWUNIGWE 1976, p. 12; see as well chapter 4.2).

The urgency of quick relief, particulary in short-term crises, very often makes relief organisations stick to the motto: "Anything to eat is far more impcrtant than a well-balanced, selected diet." Even if this approach may be justified under certain circumstances, it cannot be taken as guidance for either quality or quantity of relief actions in general. Besides objections of principle, it always has to be considered that even short-term assistance usually tends to continue far beyond the initially-planned time period. In those cases - medium- and long-term food aid - a well-grounded selection and allocation of aid commodities gain highest priority and should be designed to meet the local and recent demand. Imported foods do not always represent the best solution in such cases (WESTERN 1972, p. 76). In order to ensure a most appropriate selection of foods the group of beneficiaries must be well-defined and their recent dietary requirements assessed. At this step of the survey, information about the affected group's specific structure of needs and the capacity of local markets can also be gathered.

If a medically supervised nutrition therapy seems to be necessary in a specific situation, a protein-enriched food mixture can be quite helpful (JACKSON and EADE 1982, p. 13). In general, foods for emergency assistance should meet the following standards (KINNEY 1976, p. 291; IFEKWUNIGWE 1976, p. 12):

- 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.
- Satisfactory cost-benefit-relation.
- Sufficient shelf life.
- Packages should refer to local circumstances in material and container size.
- Foods should not have high black market value, if possible.

Various kinds of cereals and combinations with other familiar foods (e.g. pulses) in a mixed diet are most likely to meet the above mentioned requirements (see also chapter 4). Physiological risk groups (see chapter 3.4.1.1) should have food mixtures high in protein and energy additionally.

3.4.4 Possibilities of food distribution

There are different ways of distributing food within emergency assistance programmes. The most important systems are (PAG 1977; VILLE de GOYET et al. 1978; PEEL 1979; INTERNATIONAL DISASTER INSTITUTE 1981; UNHCR 1981):

- general feeding
- supplementary feeding
- therapeutic feeding

Finding the most appropriate distribution system in any given situation, of course, depends on a number of local circumstances and the specific needs of the victims.

Centralized distribution systems have the disadvantage of inducing people to crowd: they tend to stay around the place because of long distances between their home and the food source. This prevents them from participating in rehabilitation measures and gives the additional problem of supporting und supplying those camps. This should be avoided and distribution should instead be carried out as decentralized as possible, even at the cost of increased personal expenditure (UNHCR 1981, section 23). Financial expenditures do not have to increase to the same extent if the local population can be integrated as far as possible. When implementing general or supplementary feeding systems, one has to ensure that those victims who are not able to come to central distribution points are also reached (IFEKWUNIGWE 1976, p. 12).

3.4.4.1 General feeding

General feeding can be carried out either gratuitously or in the form of salary payments (PAG 1977, p. 79f).

- Gratuitous distribution is possible in the form of
  - . cash to buy food
  - . uncooked rations of food
  - . massfeeding (cooked food)
- Salary is possible in the form of
  - . money
  - . kinds (commodities)

The distribution systems most often chosen in emergency assistance are the distribution of (unprepared) food rations and massfeeding in the form of prepared meals.

Food shipments from abroad are particulary inappropriate in situations where sufficient food supply and a general lack of effective demand happen to occur at the same time. In such cases local purchase of food (see chapter 6) should be specially favoured.

Due to the specific situation of refugees, general feeding usually has to be installed in refugee camps. If possible, this system should be used only for a short time and possibly contain local, familiar foods which are in accordance with local food habits (PAG 1977, p. 74). Food rations must at the minimum supply 6.3 MJ (1,500 Kcal)/person in order to ensure a short-term (i.e. a few days) survival of the victims. If the emergency situation persists a minimum of 8.4 MJ (2,000 Kcal)/person has to be distributed. Table 1 gives an example of such a daily ration.

Table 1: Example of a daily food ration in general feeding (modified version of UNHCR 1981, p. 23-6)

Foods	Energy contents		main nutrient	% of total energy contents	
	MJ	Kcal		example	recommendation
staples, e.g. cereals, 400 g	6.0	1,440	carbohydrates	64	55 - 70
energy-rich foods, e.g. oil, 40 g	1.5	370	fat	22	20 - 30
protein-rich foods, e.g. beans, 100 g	1.5	350	protein	14	10 - 15
total energy contents	9.0	2,160			

Beside staples, such as cereals, oil/fat and pulses, the diet – in order to supply vitamins and minerals – should be supplemented by vegetables, spices, fruits and tea, according to local habits and specific needs. A mixed diet will most likely meet the needs of the victims.

Within general feeding the distribution of dry and/or raw foods (foods which have to be prepared before consumption) has many advantages compared to general feeding which employs cooked, already prepared meals. Presuming that families are provided with fire-places and adequate storage facilities, preparation of the food by themselves and the familiar foodpattern will prevent too serious a disruption of the cultural and social structure (UNHCR 1981, p. 23-7). Massfeeding has to be used if these pre-conditions are not fulfilled. This distribution system requires central kitchens, dining rooms and a highly elaborate way of organization, administration and financial resources (PAG 1977, p. 80). Within a short time, however, it is quite often possible to change to the above mentioned distribution of unprepared foods.

General feeding should at least provide 2 meals/day for all people of the affected area. Food stamps can be quite helpful for efficient distribution. In general, quantity and quality of the food provided have to be checked regularly and their proper use, particularly with unfamiliar foodstuffs, has to be ensured. Since the composition of the generally provided diet is not totally suitable to the specific need of infants, they have to be taken care of in specially designed supplementary feeding programmes (see chapter 3.4.4.2).

3.4.4.2 Supplementary feeding

The objective of supplementary feeding is the provision of special food for defined subgroups of the population in addition to the general feeding rations, in order to meet their specific nutritional needs. Beneficiaries of such supplementary food are:

- all children under 5 years old, or smaller than 110 cm
- pregnant and lactating women
- convalescents (malnutrition, diseases)
- individuals with chronic diseases (tuberculosis etc.)

In case resources are insufficient to supply all of the above named subgroups with supplementary food, the programme can be limited to prevent under- and malnutrition within the most vulnerable groups. In that case, for example only individuals with less than 80 % of their standard weight and not receiving therapeutic feeding (see chapter 3.4.4.3) are enrolled. By the time body weight increases up to 90% of the standard (or 80% with very tight resources) they can be dismissed (SIMMONDS and BROWN 1979, p. 408).

Supplementary food can either be given to take home or better be consumed in especially established centers, which can guarantee that the person

in need will in fact receive this food and does not have to share with other family members. Besides that, organization, supervision and medical care are substantially facilitated (UNHCR 1981, p. 23-9). From 100 to 200 persons per center is ideal. With numbers of participants high above this limit, the establishment of additional centers is indicated (INTERNATIONAL DISASTER INSTITUTE 1981). Food should be provided once a day at a fixed time.

On an average the meals should provide at least 1,470 KJ (350 Kcal) and 15 g protein/day additionally. The selection of the food supplied has to be made under consideration of the beneficiaries specific needs and the local dietary habits. The food should be high in energy as well as minerals and vitamins and easy to prepare (PAG 1977, p. 81). Effectiveness of the programme has to be evaluated regularly (see chapter 3.4.2) and corrected, if necessary.

3.4.4.3 Therapeutic feeding

Therapeutic feeding programmes are used to treat severely malnourished children. All children, whose body weight is below 70 % (VILLE de GOYET et al. 1978, p. 50) or 65 % of the weight/age-standard (SIMMONDS 1980, p. 130) will be enrolled, or those who show edema or obvious marasmus. Their serious situation requires qualified medical care and treatment with appropriate food. This kind of nutrition intervention has to be done in well-equipped in-patient clinics, since quite often the patients condition is aggravated by infections or dehydration. Mothers of the children should be integrated in rehabilitation measures.

The treatment consists of 3 - 4 g protein and 650 KJ (150 Kcal)/kg body weight/day provided by 5 - 7 meals every 3 - 4 hours. After rehabilitation patients should participate in supplementary feeding programmes (UNHCR 1981, p. 23-10).