



INSTITUTE FOR
WORLD ECONOMICS
HUNGARIAN ACADEMY OF SCIENCES

Working Papers

No. 133

December 2002

Zoltán Tiba

FOOD AID FOR FOOD SECURITY?
TRENDS AND CHANGES IN THE 1990s



1014 Budapest, Orszagház u. 30.

Tel.: (36-1) 224-6760 • Fax: (36-1) 224-6761 • E-mail: vki@vki.hu

SUMMARY

The purpose of this paper has been to investigate the extent to which food aid can contribute to reducing undernourishment in the world. The three chapters each highlight the complexity of the problem. Analysis is hampered by serious methodological and data problems.

First, the definition of food aid is unclear: the classification into three types, used in virtually all publications, does not account for important food-security aspects of food-aid operations. For example, project food aid, though assumed to have been distributed among beneficiaries, may be sold instead, so limiting its direct effects on food security. The increasingly complex flows of food-aid transactions can hardly be categorized at all into the three broad types of food aid used by the World Food Programme Statistical Department.

Secondly, food aid has been found to have various unpredictable economic and food-security effects. It is impossible to draw general conclusions about how food aid in the field should be managed. Each operation proves to be specific and special in many ways.

Nevertheless, in spite of the serious methodological problems, food aid in the 1990s was tied increasingly to the concept of food security. The idea that food aid, which is becoming a scarce resource, should be targeted better towards countries with the highest prevalence of undernourishment and contribute more to food security in recipient countries has been emphasized increasingly in international documents. On the other hand, there is little concern with what food aid 'is' in practice.

It is not just the definition of food aid that has been problematic, but the measurement of undernourishment and hunger, which has proved virtually impossible on a macro level. Both the macro models briefly

described in Chapter 2 of the paper suffer from methodological problems. The FAO method, based on 'average calorie consumption' and hypothetical individual cut-off points, has recently been found to be extremely sensitive to minor modifications in the data. Anthropometric surveys also have serious limitations and are available only for children under the age of five.

In spite of the above limitations, Chapter 3 of the paper attempts to compare food aid and undernourishment. Global food-aid deliveries could contribute to national food security in developing countries, if more food aid were provided when agricultural prices were high, in other words if there was an inverse relationship between the level of food aid and wheat prices. This has not been found to be the case. A simple comparison of the top ten recipients of food aid and the prevalence of undernourishment in countries reveals that the countries receiving the most food aid have not been the ones with the highest levels of undernourishment.

Finally, it can be concluded that food aid, for most countries, makes up only a tiny proportion of national food availability, so that significant long-term food-security effects cannot be expected. This does not mean that aid in kind cannot have positive nutritional effects in emergencies or in countries where food is the binding constraint on development. In fact, food aid should be analysed more closely on the micro (household and village) level and the opinions of beneficiaries solicited and considered when planning and designing food-aid operations. Although macro-level analysis does not demonstrate the food-security aspect of food aid, the micro level may well do so, but this needs to be conducted for each separate food-aid programme.

INTRODUCTION

The expression ‘food aid’ in everyday life may remind people of the huge trucks sometimes seen on television delivering ‘free food’ to ‘hungry people’, to help them survive an emergency. Deeply touched by the immense suffering of such destitute people, we may stop for a moment to remind ourselves how lucky we are not to be among them. The impression is also gained that the international community is trying to help and acting to the best of its ability. Periodically, there is news of conventions, declarations, commitments and promises to ‘make it a better world’, and every year billions of dollars are donated to needy countries in the form of aid. Recently, 2015 had been set as a ‘UN target year’ for global reduction of undernourishment and other goals. The heads of state signing the commitment in 1996 at the World Food Summit undertook to ‘reduce the number of undernourished people to half, at the latest by 2015.’

But what is meant by ‘reducing’ undernourishment? Could food aid, under current circumstances, play any role in this process? What does ‘food aid’ mean in reality? Is it really ‘edible commodities donated to needy populations’, as the *Food Aid Lexicon* defines it?

This paper attempts to address the extremely sensitive and sometimes political question of what role food aid can play in reducing global undernourishment and how food aid can contribute to food security. Food aid, during its history, has been analysed and hotly debated for its possible negative effects on prices, production and agricultural trade. However, the idea of joining food aid with food security has been triggered quite recently by changes in world agricultural trade and production in the 1990s.

Over the last decade, food aid has become a scarce resource that has lost its basis

and impetus. Whereas world agricultural trade in the 1990s was increasingly liberalized, food aid remained an implicit export subsidy in market-oriented agricultural trade. Agricultural surpluses, export-import subsidies, price regulations and import barriers were the pillars of the international food-aid system set up in the early 1950s and these institutions are no longer ‘tolerated’ in an agricultural trade system determined by short-term fluctuations in supply and demand. Recognition of the changing environment of food aid, as well as its scarcity and cost-inefficiency, has turned the attention of analysts from the ‘traditional’ production-price debate towards the food-security aspect of food aid. This shift towards the ‘humanitarian’ aspect of food aid has been re-enforced by the World Food Summit in 1996 and the Millennium Development Goals of reducing worldwide undernourishment. Recent international documents emphasized, ‘Food aid is one of the many instruments which can help to promote food security’ (World Food Summit, 1996). ‘Food aid... should be aimed at enhancing food security in recipient countries’ (Food Aid Convention, 1999). ‘The objectives of the food-aid operations... shall be to promote food security geared to alleviating poverty’ (EC Council Regulation on Food Aid, 1996). ‘USAID will allocate resources and manage programs to increase the impact US food aid has in reducing hunger’ (USAID Food Aid and Food Security Policy Paper, 1995).¹

This brings us back to the starting point. Can food aid play a role in reducing global undernourishment? In other words, can food aid contribute to food security?

Chapter 1 clarifies some problems of definition and surveys briefly the history and current trends in food aid. *Chapter 2* addresses the problem of ‘food security’ and the conceptual, measurement and theoretical problems it presents. *Chapter 3* bridges the previous two chapters by analysing whether food aid can, even in theory, affect

¹ See *Appendix 1* for other extracts from these documents.

food security and play a role in reducing undernourishment.

1) FOOD AID: DEFINITION, HISTORY AND TRENDS

Defining food aid

It is by no means easy to say what is meant by food aid or how food aid ‘works’ in practice. There are several aspects of food aid, which can be categorized according to various criteria. This section aims to clarify the main problems of defining food aid and show that it does not fall into a single category.

Food aid in its most general form can be defined as ‘some kind of agricultural commodity financed by a donor and ultimately used in a recipient country.’ Issues that are usually taken for granted in the ‘conventional’ definitions of food aid, such as ‘edible commodities’, ‘distributed free’ or ‘donated to poor countries’ are not part of this general definition or necessarily true.

Food aid in general can be categorized according to several aspects or characteristics of any food-aid programme:

- (1) Terms of delivery: on what terms is the food aid provided to the recipient by the donor country?
- (2) Procurement: how are the commodities procured, *i.e.* where does the shipment come from?
- (3) Sold or distributed: what is the fate of the commodities in the recipient country?

(1) Food aid can be given either as a grant (donation) or a concessionary sale/loan. The reason why concessionary sales are considered ‘food aid’ and not normal ‘commercial transactions’ is because the terms of

delivery are more favourable than those on prevailing market conditions. The repayment period is usually longer, interest rates are lower, or the price may simply be lower than on the open market. When food aid is provided on concessionary terms, it is repayable by the recipient government either in kind or in cash over a stipulated repayment period (usually 10–15 years). Grants of food aid do not have to be repaid and are usually targeted at specific groups of people.

It should be emphasized that food aid is not necessarily free to the recipient government. Food aid delivered in the past on concessionary terms has either been repaid by the recipient government (10–15 years later, at the end of the repayment period), or more commonly, has become part of the recipient country’s overall debt, still awaiting repayment.

(2) There are various ways that food aid can get into a recipient country, the most ‘conventional’ being direct transfer, when food aid is delivered directly from the donor to the recipient country. A more complicated form of providing food aid is triangular purchase, whereby the donor finances the purchase of a commodity in another (developing) country, which is then transferred to the recipient country. The third way of providing food aid is simply to provide cash for local purchase of the commodity: food aid, in which case it is procured in the ‘hungry’ country and (usually) redistributed among beneficiaries. This way of providing food aid may be the most beneficial to local agricultural producers (providing a buyer for their output), but it is the most problematic in terms of justifying a food-aid programme with the argument of ‘inadequate food supplies’ in the recipient country. If the food aid is procured locally, there is no macro increase in food supply, simply a redistribution, which could, theoretically, take place without the involvement of international food aid. Nevertheless, the economic effects of these three types of food aid should be considered when evaluating food aid from a food-security point of view.

(3) Whatever the terms on which food aid has been procured, let us now suppose that the agricultural commodity is finally in the recipient country. Following the ‘conventional’ definition of food aid, it would be reasonable to expect it to be distributed among beneficiaries; but this may be far from the fact. Food aid may be sold on the open market, at prevailing market prices, or in ‘fair-price shops’, as it is, for instance, in India. Alternatively, it may be distributed for some kind of recompense, as it is under a food-for-work programme, or it may be distributed free among the beneficiaries. Selling food aid raises many problems. One can justifiably ask why an agricultural trade transaction should be considered as food aid if it is not in fact food aid at the beneficiary level, because people are buying the commodities on the open market at prevailing prices (just as they would local produce or commercial imports). This issue is considered in more detail later.

Further problems with the ‘generalization’ of food aid into a single category arise. From the food-security aspect, it is important to know the type of commodity that has been delivered (is it ready for human consumption?), when the shipment arrived (compared with the production cycle, it may have arrived at harvest time, when it is more likely to have a negative effect on local agricultural production and trade.) In addition, it is important to know the channel through which the food aid arrived. Was it an NGO, was it provided bilaterally, or did it come through a multilateral channel such as the World Food Programme?

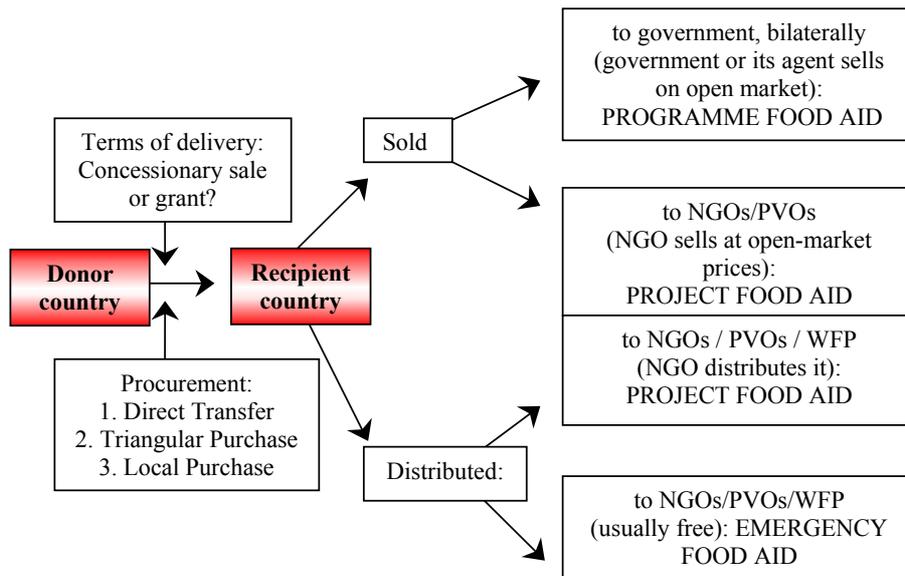
Over the years, it has become harder to classify food aid into major categories that bring all the issues just mentioned into a single framework. The primary source of data about food aid is the International Food Aid Information System (INTERFAIS) maintained by the World Food Programme, which categorizes food aid into three main groups:

1. Relief (emergency) food aid: targeted and freely distributed to victims of natural or man-made disasters.
2. Project food aid: distributed to targeted beneficiary groups to support specific development and disaster-prevention activities. Part (or all) of such project food aid may be monetized to generate local currency to cover transport and handling costs.
3. Programme food aid, usually supplied as a resource transfer for balance of payments or budgetary-support objectives. It is provided as a grant or a loan on a bilateral basis. Unlike the food aid provided for project or relief purposes, it is not targeted at specific beneficiary groups, but sold on the market in the recipient country.

These three broad categories incorporate in some form the issues just discussed, although the three types inevitably overlap and generalize the determinants of food aid. *Figure 1* shows the relationship between the different definitions of food aid.

The original definition of food aid was produced by the FAO in 1954, under the title *Principles of Surplus Disposal*. This defined 13 transactions as food aid, including sales on credit, loans repayable in kind, and monetary grants tied to the purchase of specific commodities (see *Appendix 1*). Even the most widely used and accepted INTERFAIS database simplifies the problem by lumping together these transactions into three broad categories. The question of what does not constitute food aid also arises. The World Bank in 1992–3 financed drought-related maize imports by making an International Development Association (IDA) Emergency Recovery Loan, with the Maize Marketing Board required to tender openly for each import contract under IDA procurement rules. FAO and WFP do not class such transactions as food aid.

Figure 1
Food aid from donor to recipient country



Source: Clay and Stokke, 2000.

The three broad categories of food aid used for the INTERFAIS database cannot cover all the aspects of the various food-aid programmes. The distinction between emergency, project and programme food aid, widely drawn in studies about food aid, does not say whether the food aid has been provided free or on concessionary terms, or how it has been procured. Furthermore, it gives an unsatisfactory response to the question of whether the food aid has been sold or distributed. Programme food aid is always sold on the market, but project food aid (in part or total) may also be monetized, so that the food aid *sold* on the market embraces not only programme food aid, but some project food aid as well. Ultimately, therefore, what is the difference between programme food aid and project food aid?

Programme food aid is always sold on the market and provided bilaterally, on a government-to-government basis. It is handled by the recipient government or its agent and the primary motive is to provide balance-of-payments or budgetary support to the recipient country. The revenue from sales is accumulated in so-called local-currency counterpart funds that can be used for development purposes. Monetized project food aid is also sold on the market at prevailing market prices, but it is handled

by NGOs and the revenue obtained is not used for budgetary support or accumulated in special funds: it goes entirely for project support, to provide cash to implement the project. How significant these categories are statistically will be discussed in the following section.

Non-monetized project food aid programmes include food-for-work (FFW) programmes, vulnerable-group feeding (VGF), school feeding (SF), etc.

There are several problems with the idea of selling food aid on the market, especially with NGOs monetizing project food aid:

- * The poorest do not benefit directly from the food aid, although they may indirectly, if the revenues from the counterpart funds are channelled to the region to finance development. However, there is a mismatch between the food-security component of food aid and the fact that it is sold on the market.
- * The various market effects of such sales should be taken into account. There is no general rule about where, how and when the commodities should be sold, so that it cannot be assured *a priori* that the monetization will not affect agricultural markets. (In fact, this question has been at the core of the debate on food aid over the years.) Most people in the developing world live in rural areas and work in agriculture, as subsistence farmers with some cash cropping or as wage labourers on estates. The injection of programme food aid into local markets may have widespread and serious detrimental ef-

fects if it tips the balance of supply and demand on rural agricultural markets.

The history of food aid

The first food-aid operations started in the early 1950s and were provided mainly by the United States. When US Public Law 480 was passed in 1954, the food-aid programme was tied intimately to national agricultural policy (see *Box*). Government surpluses, the result of commodity-support programmes, provided the grain for food aid and the basis for support among farmers and agricultural organizations. US farm welfare was directly linked to food aid (Christensen, 2000). Thus the primary rationale for providing food aid has never really been food security as such and the first food aid programmes had various additional political, economic and military motivations. Food aid played an important role in increasing US agricultural trade, as countries that had once been food-aid recipients went on to become commercial customers. Substantial proportions of food aid were programme food aid: direct transfers of commodities provided bilaterally (through government-to-government negotiations) and sold on the markets of recipient countries.

Other donors became involved in food aid in the 1960s. Subsequently, an institutional system was built up for managing food-aid operations.

Institutional arrangements for food aid

The institutional arrangements that regulate food-aid donations did not change substantially in the 1990s, despite several major changes in international affairs. The World Food Pro-

The US Food Aid Programme

1. PL480 (Food For Peace Programme)
 - a. Title I: Trade and development assistance
Government-to-government concessionary-sales programme administered by USDA. The loans offer terms of 10 to 30 years with a 7-year grace period and low rates of interest.
 - b. Title II: Emergency and private assistance grant programme administered by USAID. Provides food aid for emergency purposes, but also for non-emergency purposes through PVOs, cooperatives and international agencies (WFP). Commodities supplied may be monetized.
 - c. Title III: Food for development
Multi-year bilateral grant programme to provide economic development and food security, also administered by USAID. The food aid may be sold, with the CPFs generated used for development activities.
2. Section 416 (of the Agricultural Trade Act 1949)
Grant programme administered by USDA entailing donations of surplus food, acquired by the Commodity Credit Corporation (CCC), to developing countries.
3. Food-for-Progress Programme
Independently authorized, usually grant-aid programme that uses commodities, Title I funds or CCC funds in support of countries that have made commitments to introduce or expand free-enterprise elements in their agricultural economies.
4. Food Security Commodity Reserve
A reserve of 4 million t of cereals created in 1980 to help fulfil PL480 commitments, where US supplies were short, or to meet unexpected emergency needs.

Source: Clay and Stokke (2000).

gramme was set up in 1963 as a UN agency within the FAO. The first Food Aid Convention (FAC) was agreed in 1967 and has been renegotiated several times since. Signatories legally committed themselves to provide specified minimum tonnages of food aid in wheat equivalent. Historically, the principal objective has been to provide a safety net for recipient countries against downward fluctuations in food aid. *Table 1* shows the minimum commitments under past Food Aid Conventions.

Table 1
Minimum commitments under the Food Aid Conventions
(million t)

Convention	1967	1971	1980	1986	1995	1999
Aggregate minimum commitment	4.3	4.2	7.6	7.5	5.4	4.9

Source: Benson (2000).

The latest, 1999 FAC stipulated for the first time that 'food aid...provided in the form of grants shall represent not less than 80 per cent of a member's contribution.' Recent analysis of the efficacy of the Food Aid Convention in providing a stable level of food aid (Benson, 2000) has revealed serious shortcomings: dips in food-aid shipments following poorer harvests in donor countries have not been prevented. The minimum food-aid flows have been set so low by the FAC that they have a negligible impact on actual shipments. The FAO Consultative Sub-Committee on Surplus Disposal (CSSD) has monitored food aid since the early 1960s to ensure that food-aid principles are not violated.

The World Trade Organization (WTO) is responsible for monitoring the follow-up to the 1994 Marrakesh Decision under the Uruguay Round Agreement, which embodies commitment to assist developing countries affected by trade liberalization.

Changes in the 1990s

The last decade has seen several major international changes with an impact on food aid.

The impetus behind food-aid programmes and the rationale for providing aid in the form of commodities rather than cash were provided until the 1990s by the huge agricultural surpluses that existed in major food-exporting developed countries, notably the United States and the EC countries. Due to the liberalization process in internal agricultural markets (in the US and the EU) and international agricultural trade (the Uruguay Round), these surpluses have dwindled, so that food aid, instead of being surplus driven, has become increasingly budget driven, a scarce resource. The changed environment in which food aid is funded and organized is marked by a stronger market orientation in agriculture and by budgetary constraints.

The political and military motives behind food aid changed with the collapse of the Soviet Union. The inclusion of the former Soviet countries in the list of eligible recipients greatly increased the global demand for food aid, as did the surge in natural and man-made disasters in the 1990s.

Since the second half of the decade, the food-security role of food-aid programmes has been placed to the fore in some important international documents: the World Food Summit, the 1999 Food Aid Convention, and policy papers by major donors such as United States and the EU. (Quotations from these appear in *Appendix 2*.) A gulf can be seen between the desired (and increasingly emphasized) 'food-security effect' of food-aid programmes and the actual contribution they make to food security. The recent international documents just mentioned treat food aid as a single category, without distinguishing among the different types of food aid and ignoring the fact that an analysis of the food-security aspect calls for a classification of food-aid operations according to the proportion of them distributed among beneficiaries. Given the complex definition of food aid, it is clear that a high proportion of food aid never gets distributed to the intended beneficiaries, so that it does not have any direct effect on local or national food security. Although the 1999 Food Aid Convention requires that 80 per cent of the global food-aid deliveries be donated, that still does not mean the food aid is actually distributed among the poor. In many cases it is sold on the market instead.

Surprisingly, there is no methodology or indicator for focusing on the food-security effect of food aid. Still, 11 million tonnes of food aid (in grain equivalent) were delivered in 2000, with slight macro targeting towards LIFDCs and questionable micro targeting to actual, deserving beneficiaries.

Food aid in statistics

The problems of definition mentioned in the first section make it hard to analyse food-aid statistics. Agencies responsible for reporting food aid² define food aid in various ways, so that the estimates differ widely. The best course is therefore to stick to one source of data. The choice here is the World Food Programme INTERFAIS database, with all statistics converted into grain equivalents (tonnes).

Global food-aid deliveries

Global food-aid deliveries in the 1990s show a rather predictable fluctuation: after 1993, there was a sharp decline in global deliveries, due mainly to a significant decrease in US donations. The decline is partly attributed to the Uruguay Round agreements which involved agriculture into the global trade liberalization process. This decrease was seen as a food-aid crisis – it was widely believed that the history of food aid was over. However, the year 1999 saw a huge, almost two-fold increase in global deliveries (*Table 2, Figure 2*).

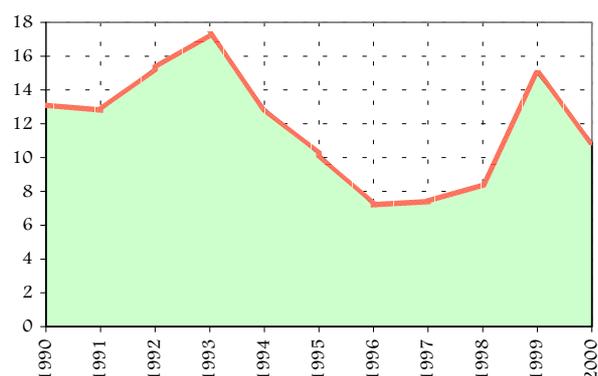
Table 2
Global food-aid deliveries
('000 t)

1990	13.1
1991	12.8
1992	15.3
1993	17.3
1994	12.9
1995	10.2
1996	7.2
1997	7.4
1998	8.4
1999	15.0
2000	10.9

Source: WFP INTERFAIS.

² Among which the most important ones are: World Food Programme International Food Aid Information System (WFP INTERFAIS), FAO, OECD / DAC (Development Assistance Committee).

Figure 2
Global food-aid deliveries, 1990–2000



Source: WFP INTERFAIS.

Food aid by type of programme

Disaggregating the global INTERFAIS statistics into the three main types of programmes reveals an interesting picture (*Table 3, Figure 3*). The steep decline after 1994 was due to a reduction in programme food aid, whereas emergency and project food aid were relatively stable over the decade. Programme food aid also accounted for the jump in global food aid in 1999.

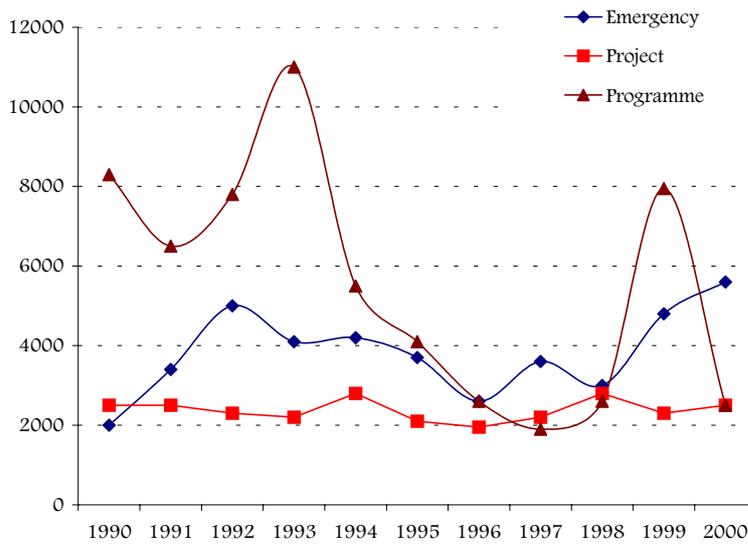
Table 3
Food-aid deliveries broken down by type of
programme
(thousand MT)

	Emergency	Project	Programme	Total
1990	2042	2664	8446	13151
1991	3366	2717	6636	12719
1992	5033	2570	7699	15302
1993	4257	2506	10571	17334
1994	4553	2718	5656	12926
1995	3697	2314	4192	10203
1996	2662	1706	2860	7228
1997	3265	2282	1774	7322
1998	2984	2513	2878	8375
1999	4557	2345	8084	14985
2000	5483	2677	3178	11339
2001	5510	2779	2723	11012

Source: WFP INTERFAIS

The increasing use of food aid for emergencies reflects not only natural disasters, but also the rising number of conflicts and complex emergencies, such as Somalia, Rwanda and Kosovo. The increasing

Figure 3
Food-aid deliveries by type of programme



Source: WFP INTERFAIS

emergency demands, in the context of lower food-aid availability, led to declines in food aid used for economic development.

Sold and distributed food aid

As mentioned before, market-delivered food aid encompasses not only programme food aid, but also project food aid (and in some cases

emer-
gency
food
aid). It
there-
fore
makes
sense to
classify
food aid

as sold or distributed, to clarify what proportion of global food aid reaches beneficiaries directly (Table 4, Figure 4).

Market-delivered food aid fluctuated more widely in the 1990s than food aid distributed to beneficiaries.³ Up to 1993, a

³ It should be noted that 'distributed' food aid does not refer only to 'donated' or 'free' food to benefi-

higher proportion of global food-aid deliveries was sold, while in 1994–8, distributed exceeded market-delivered food aid. This classification shows that food aid, in an average of about 50 per cent of cases, is sold on the market and does not reach the poorest directly.

Since the usual classification of food aid erroneously assumes that market-delivered food aid consists only of programme food aid, what is then the relationship between programme food aid and market-delivered food

aid? In other words, what proportion of total food aid beyond programme food aid is likewise sold, although the fact is somehow concealed in the international statistics? This can be answered by comparing programme food aid with the more general term of market-delivered food aid (Table 5).

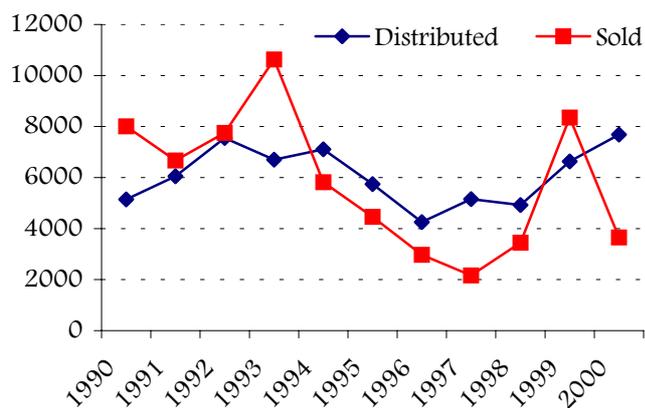
Table 4
Market-delivered (sold) and distributed food aid, '000 t and percentage of total

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Distributed:											
Volume	5142	6053	7550	6703	7105	5743	4257	5154	4927	6634	7686
Proportion	39	48	49	39	55	56	59	70	59	44	68
Sold:											
Volume	8007	6668	7750	10630	5820	4460	2971	2167	3447	8350	3652
Proportion	61	52	51	61	45	44	41	30	41	56	32

Source: WFP INTERFAIS

aries. Food-for-work programmes or school feeding programmes are also distributed, whilst requiring some kind of 'repayment': performing public works or attending school, respectively. On the other hand, it is the purpose of this chapter to show that if food aid is market-delivered/monetized or sold (the terms are used here synonymously), it is not just programme food aid, but project food aid (and sometimes emergency operations as well). In other words, the question of whether food aid is sold on the market or distributed among beneficiaries is not answered by the traditional *programme*, *project* and

Figure 4
Food aid sold and distributed



Source: WFP INTERFAIS.

Table 5
Proportions of programme and market-delivered food aid
(% of total)

	Programme	Sold
1990	0.64	0.61
1991	0.52	0.52
1992	0.5	0.51
1993	0.61	0.61
1994	0.44	0.45
1995	0.41	0.44
1996	0.4	0.41
1997	0.24	0.3
1998	0.34	0.41
1999	0.54	0.56
2000	0.28	0.32

Source: WFP INTERFAIS

Figure 5 reveals an interesting trend: programme food aid and monetized food aid were more or less equal in volume up to 1994. The proportion of project and emergency operations sold on the market was not significant; so that market-delivered food aid was practically synonymous with programme food aid. However, after the Uruguay Round in 1994, the gap between monetized and programme food aid widened and market-delivered food aid has exceeded programme food aid ever since. This means that a higher proportion of project (or emergency) food aid, originally seen as 'distributed', is being sold on the open mar-

emergency classification.

ket, mainly by NGOs, which monetize it to obtain cash to support their operations.

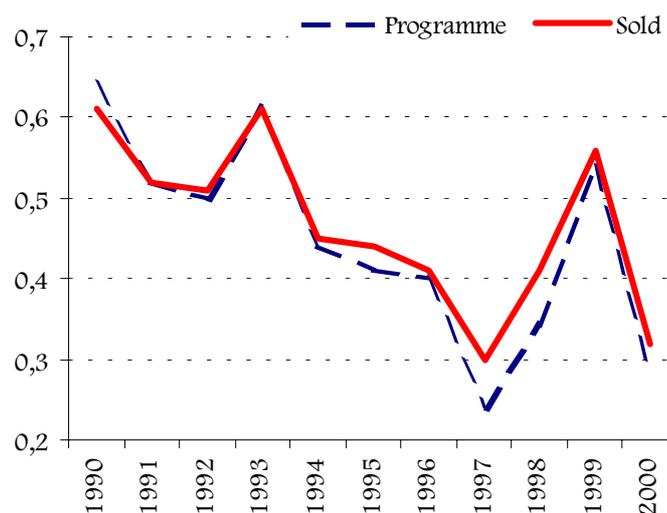
The causes of this trend are unclear. NGOs have always been allowed to sell (monetize) food aid to generate cash for their operations; why did they start to sell a higher proportion of mainly project food aid after 1994? The following hypothetical explanations should be considered:

* Cash for the support of food-aid programmes declined after 1994, forcing NGOs to sell a higher proportion of food aid on the market.

* Increasingly fluctuation of agricultural prices after 1994 encouraged NGOs to sell instead of distribute commodities when prices were high.

* Programme food aid was being 'converted into' or 'concealed as' monetized project food aid. There has always been strong criticism of programme food aid, which should ideally tend to decline under an increasingly liberal system international agricultural trade. Monetized project food aid is little different from

Figure 5
Proportions of programme and market-delivered food aid
(% of total)



Source: WFP INTERFAIS

programme food aid. Indeed, the strongest similarity between them is that both are sold on the open market at prevailing market prices. Theoretically, monetized

project food aid could or should be considered programme food aid. Since it is not, it is possible for programme food aid to decrease whilst overall monetized food aid does not, because the difference will be 'hidden' as monetized project food aid.

These possibilities are only part of a general explanation of these trends. Further research is needed to obtain a clearer picture of the various causes.

Major donors of food aid

The top three donors of food aid were the United States, the European Community/European Union, and Japan, which provided 70–84 per cent of global food aid

Food aid and world agricultural trade

The decision at the 1994 Uruguay Round to liberalize the world agricultural trade system has had an impact on world cereal imports and exports. The following table and graph show that after 1994 world cereal exports have been constantly above cereal imports and that net exports have been positive.

Food aid can be considered as an implicit export subsidy to the donor country. It has been seen in the last chapter that a comprehensive definition of food aid makes it possible to consider various commercial transactions as food aid 'if need be.' As food aid, theoretically driven by humanitarian

Table 6
Major donors to food-aid programmes
(1990–2000, '000 t)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
USA	7831	7348	7549	10945	7186	4216	3147	3224	3995	9610	7016
EU	2274	1868	3800	3068	2306	2850	1473	1165	1173	2503	766
Japan	476	413	451	415	312	882	458	323	1173	402	630
Sum of above	10581	9629	11800	14428	9804	7948	5078	4712	6341	12515	8412
Total food aid	13151	12719	15302	17334	12926	10203	7228	7322	8375	14985	11339
Proportion	0.80	0.76	0.77	0.83	0.76	0.78	0.70	0.64	0.76	0.84	0.74

Source: WFP INTERFAIS.

in the 1990s. It should be noted that the EU contribution came both from the organization as such and from its separate member countries.

This high concentration shows how dependent food aid is on a few exporter countries. Food aid is not an 'international' institution determined by the international community or the United Nations. It depends on the goodwill of a few countries. Further questions about the future of food aid arise because these countries are the ones liberalizing their agricultural sectors most rapidly.

Table 7
World cereal imports and exports
(1990–2000, '000 t)

	Imports	Exports
1990	223,138	226,234
1991	229,626	234,202
1992	259,588	255,188
1993	234,339	235,518
1994	227,713	234,259
1995	245,953	250,692
1996	243,297	239,472
1997	241,022	247,815
1998	245,136	256,373
1999	260,813	265,599
2000	263,59	271,478

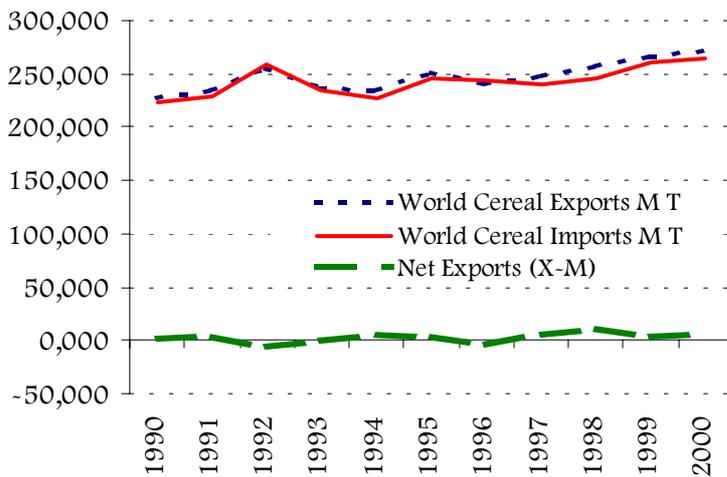
Source: FAOSTAT

motivations, enjoys preferential treatment under WTO rules, it seems reasonable to assume that in certain cases, there is a strong incentive to categorize particular

commercial transactions as food aid. It is therefore interesting to see how food aid relates to world agricultural trade. *Figure 6* shows the relationship between food-aid flows and world net cereal exports.

Food aid is clearly but a small proportion of world agricultural trade, and despite increases in food-aid levels after 1997, it plays a relatively small role in world grain markets. Food aid in grains amounted to almost 18 per cent of world grain trade in the mid-1960s, 10 per cent in the early 1970s, and only 4–6 per cent in the 1990s (Christensen, 2000). Food aid currently constitutes only 4–6 per cent of Official Development Assistance (ODA, *i.e.* total aid to developing countries).

Figure 6
World cereal imports and exports and net exports
'000 t

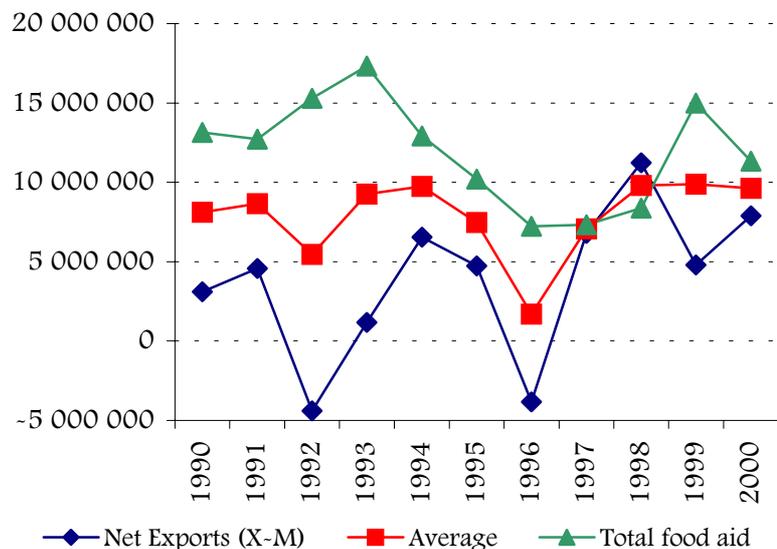


Source: FAOSTAT 2002 and author's calculations.

There were three main trends in the 1990s (*Figure 7*). The average of net agricultural exports and food aid – (net exports + food aid)/2 – was more or less constant until 1994, meaning that food aid successfully substituted for decreasing net exports. In 1996–8, the fall in net exports, although no more significant than in 1993, was *not* compensated for by increasing food-aid donations, so that the average of net exports and food aid decreased sharply. This trend seemed to be reversed after 1998, with the average returning to its pre-1996 level and food-aid donations again cancelling out the decreasing net exports. Time will tell to what extent the trend will be stable in the longer term.

The institution of food aid is probably one of the most controversial parts of the Uruguay Round agreements. Under a liberalized agricultural trade system, where all kinds of agricultural subsidies and trade-protection measures are restricted and then removed, the broadly defined institution of food aid with all its flexibility (especially programme food aid, which differs little from commercial transactions) does not seem to fit into the long-term picture. If agricultural trade and production are required to correspond to short-

Figure 7
Global food aid and world net cereal exports
'000 t



Source: WFP INTERFAIS, FAOSTAT and author's calculations

term fluctuations in supply and demand, and all distortions, barriers, subsidies and preferential agreements in agricultural trade are being phased out, food aid for development becomes harder to justify on humanitarian grounds. Why give programme food aid and provide preferential food imports to a developing country when the global aim is to liberalize agricultural trade to make it 'freer' and 'fairer'? Why give aid for development in kind instead of financing development with cash, when the cost-efficiency of food aid is clearly low? It has been clear since the first food-aid programmes started in the 1950s that food aid, as only a small proportion of world trade and a temporary resource, doubly tied and determined by donor preferences and political motives, can never be a long-term, permanent way of providing food security in developing countries. The future of food aid is also questioned by its shrinking role since the Uruguay Round and its seeming incompatibility with the concept of liberalized agricultural trade.

2) FOOD SECURITY, UNDERNOURISHMENT AND LONG-TERM DEVELOPMENT GOALS

There has been much inconclusive debate over the years about how widespread global undernourishment is and how many people are chronically hungry. This chapter sets out to introduce briefly the two major databases for estimating the number of undernourished and to point out the unreliability of such estimates, which are widely used and analysed because they are the only estimates available.

The two macro databases are produced by two UN agencies: the Food and Agricultural Organization (FAO) and the World Health Organization (WHO). They derive from quite different methodologies. The FAO database rests on per capita calorie availability on a country level, which is ul-

timately derived from food balance sheets and so related to national food production and availability. The WHO uses anthropometric surveys to monitor worldwide undernourishment, focusing on the relationship of weight and height with age, but the latter is restricted to monitoring children under the age of five. The two estimates differ substantially. According to the FAO, undernourishment is most prevalent in Sub-Saharan Africa, whilst the WHO finds South Asia more severely undernourished.

The following sections analyse both methods and address some criticisms of them. It is important to note that the FAO model is being used to monitor progress towards one of the Millennium Development Goals: the target of the 1996 World Food Summit in Rome, of reducing by half the absolute number of undernourished by the year 2015.

The FAO model

The Sixth World Food Survey, published by the FAO in 1996,⁴ introduced several modifications of the methodology applied laid down in the Fifth Survey, reviewing world food situation up to the 1980s. In the most up-to-date assessment of the worldwide prevalence of undernourishment, the latest period assessed was 1990–92, but pattern comparisons were made with 1969–71 and 1979–81. It revealed a substantial decline in the absolute number of undernourished in the world, from 918 million in 1970 and 906 million in 1980, to 841 million in 1990.

⁴ The following have been conducted by the FAO since World War II: 1946 World Food Survey (British Library), 1952 Second WFS, 1963 Third WFS, 1977 Fourth WFS, 1987 Fifth WFS, 1996 Sixth WFS (LSE library).

General description

The FAO method is based on three main parameters, derived from three different sets of data:

- * The number of calories per capita available for human consumption on a national level (NPCCA).
- * The coefficient of variation for the available calories across households (CV).
- * The lowest acceptable per capita calorie intake or calorie cut-off point below which a household counts as undernourished (CCOP).

The NPCCA is derived from national food-production data (based on the Food Balance Sheets produced by the FAO) and from net trade estimates, through a long series of conversions to obtain the calorie content of food supplies. The conversions allow for waste, seed, food used for industrial purposes, etc.

The CV represents the inter-household food (calorie) distribution, but it does not take into account the intra-household distribution of food. To estimate the distribution of food among households, FAO classifies countries into five main categories (A, B, C, D, E) depending on the availability of data (*Table 8*). The two sources of data for estimating the CV are, in order of importance, household income/expenditure surveys (Groups A and B), containing information about 'energy intake' of household members, and calorie-income elasticities (Groups C and D), used to estimate food distribution in countries for which no survey data is available. The distinction between Groups A and B rests on whether the data are available for the individual households (A) or just for groups of them (B). With Groups C and D, the distribution of

food is directly related to income distribution. For the last group of countries (E), no information is available about inter-household food distribution. The food-balance sheets are available for all countries, but these do not show anything about the *distribution* of calories.

Table 8
FAO classification of countries based on available data of calorie distribution

	A	B	C	D	E
Availability of energy-intake data	Yes	Groups only	No	No	No
Availability of food-expenditure data	Yes	Yes	Yes	No	No
Total income/expenditure data	Yes	Yes	Yes	Yes	No
Food balance sheet	Yes	Yes	Yes	Yes	Yes

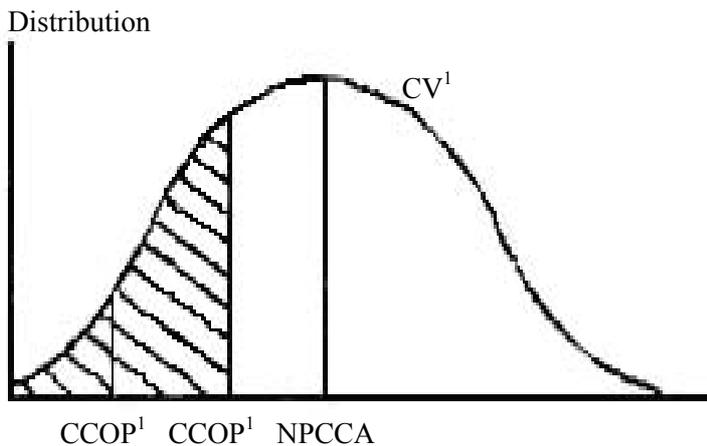
Source: FAO, 1996.

The estimation of CCOP rests on two indicators: the Basal Metabolic Rate (BMR), which is the minimum calorie expenditure for internal body functions (in other words, for survival), and the Body Mass Index (BMI, = weight/(height)²), which is the minimum acceptable body weight for height.⁵ This norm for individuals is subsequently aggregated to the household per capita norm or CCOP, which is eventually taken as the national average.

Figure 8 shows the relationship between the three parameters; with the hatched area under the CCOP showing the proportion of undernourished.

⁵ From the first indicator, the minimum acceptable calorie requirement is set by the FAO at 55 per cent higher than the person's BMR, allowing for extra physical activity. As with the Body Mass Index, the norm of 'minimum calorie requirements' for individuals of different ages and sexes is determined by the lowest body weight and physical activity level consistent with health. The FAO minimum weights are derived from a body mass index of 18.5, with which many nutritionists agree.

Figure 8
The basic FAO model: the NPCCA, CV and CCOP parameters



Source: FAO. 1996.

Criticism and unreliability of the FAO method

The FAO model has long been criticized for inaccuracy, based on two arguments: first, the data for each of the parameters are ‘dangerously weak’,⁶ and secondly, the relationship between the coefficients leaves plenty of leeway for manipulating the final estimates of the prevalence of undernourishment.

Probably one of the most equivocal numbers in the estimation process and definitely the least reliable estimates for Sub-Saharan African countries are the agricultural production data. These have been gauged to have a margin of error of 15–40 per cent in previous studies (Svedberg, 1999). This is mainly because subsistence production dominates in Sub-Saharan Africa and the number of minor crops is usually large. Furthermore, the estimation methods used are primitive (mainly ocular observations) and not all parts of all Sub-Saharan African countries are covered. The region’s food-trade estimates are also unreliable.

⁶ This Leroy Quance, former director of the Statistical Division of the FAO, conceded in an unpublished report (according to Svedberg).

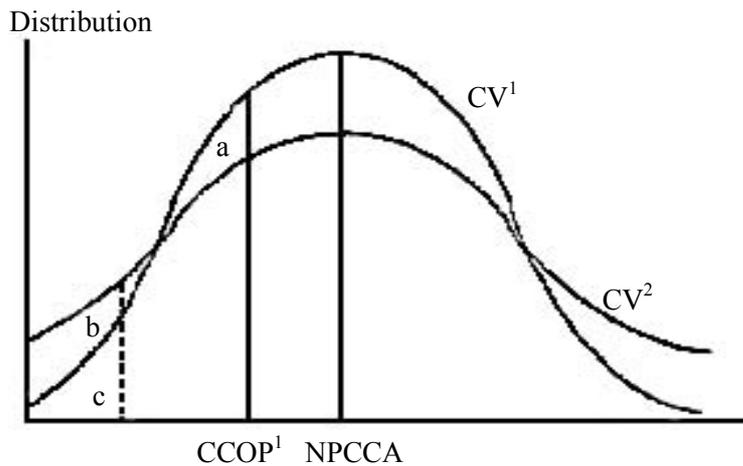
The estimate of the coefficient of variation in Sub-Saharan Africa is based on only two household-expenditure surveys (conducted in Kenya and Zambia) produced by the IFPRI. These involved non-random samples of 400 households, so that they are unrepresentative of the whole of Sub-Saharan Africa. Furthermore, they produced different results (in Kenya, $CV = 0.17$, and in Zambia $CV = 0.37$). Based on these two surveys, the FAO chose a CV of 0.30 for the whole of Sub-Saharan Africa.

There are serious problems both with the calorie cut-off point estimates as well – the Basal Metabolic Rate and the Body Mass Index. The BMR until about ten years ago was believed to be the same for people of all races. It has turned out more recently that people in ‘tropical’ countries have a lower BMR than Caucasians (according to some studies 10 per cent lower). The FAO uses the Caucasian BMR as a norm, which consequently raises the estimate of undernourished in the world. (With a BMR norm 10 per cent lower, it would be only 650 million, whilst the official FAO estimate is 841 million.) With the Body Mass Index, the main criticism focuses on the variability of exogenous parameters (e.g. illness), which influence body weight but are not included in the FAO model. These parameters make the estimates far less reliable.

Apart from the problems with the data on which the model is based, there are serious methodological errors in the model. Other factors being equal, a lower CCOP will mean a lower prevalence of undernourishment and a smaller NPCCA (a shift of the entire distribution to the left), which will imply a higher percentage of undernourishment. However, the change in the CV is less clear. This is apparent in *Figure 9*, where a more uneven CV^2 distribution is added to the model.

It seems that the change in the coefficient of variation (CV^2) does not determine

Figure 9
Various CV parameters in the FAO model



Source: Svedberg (1999).

clearly, other things being equal, whether or not the prevalence of undernourishment will increase. This depends on the size of the two areas in the graph (areas *a* and *b*), which show the difference between the estimated number of undernourished according to the two distributions. It is possible that a more dispersed distribution (CV^2) area *b* will be larger compared with *a*, implying a higher number of undernourished than CV^1 would estimate (other factors being equal), whereas a distribution with a smaller variance may make *a* bigger than *b*, recording a lower prevalence of undernourished for CV^2 than for CV^1 . Thus the effect on the number of undernourished from change in the variation of the distribution cannot be revealed *a priori*.

Sensitivity analysis of the parameters reveals (Svedberg, 1999) that changing CCOP and NPCCA by plus/minus 10 per cent and CV by plus/minus 5 per cent can alter the prevalence of undernourishment by 21–61 per cent around the FAO estimate of 43 per cent for Sub-Saharan Africa. This underlines how unreliable the FAO estimates are.

Anthropometric measurement: the WHO approach

The WHO methodology for assessing the prevalence of undernourishment among children under the age of five applies anthropometric indicators instead of the food production and distribution among households used by the FAO. The main features of this approach are the following:

- * Wasting (low weight for height) indicates a process of weight loss that may be associated with acute starvation or chronic unfavourable condition. The prevalence under 'normal circumstances' is below 5 per cent and scores of 10–15 per cent are regarded as serious on the severity index.
- * Stunting (low height for age) reflects a process of failure to reach linear growth potential. For the children under the age 2-3 low height for age reflects a continuing process (failing to grow) whereas for older children it reflects a state of 'having failed to grow'. Stunting, as opposed to wasting, represents chronic starvation.
- * Underweight (low weight for age) reflects body mass relative to chronological age. One disadvantage of this indicator is that it fails to distinguish between short children of adequate body weight and tall, thin children. Usually, a reduction in weight for age reveals change in weight for height.

It may happen that one of the indicators does not show evidence of undernourishment, whereas another one shows an alarming situation.

General description

The WHO set up the Global Database on Child Growth and Malnutrition in 1986, as a compilation of child growth and malnutrition data from over 1700 surveys conducted since 1960. According to the WHO website, ‘Growth assessment... provides an indirect measurement of quality of life of the entire population.’

To compare data of undernourishment among countries, there is a need for an adequately fed control population to provide an acceptable set of reference values. The idea behind such a reference population is the assumption that growth patterns of pre-school children from different ethnic backgrounds are very similar. The WHO adopted in the late 1970s the reference curves of the National Centre for Health Statistics (NCHS). These are based on two distinct data sets: the Ohio Fels Research Institute Longitudinal Study on children under the age of two (1929–75) and three cross-sectional representative US surveys (1960–75) for older children.

The standard Z-score⁷ is widely recognized as the best measure for making a population-based assessment system for analysis. It is calculated as:

The anthropometric value is expressed as a number of standard deviations below or above the reference median value, so that a

$$\text{Z-score} = \frac{(\text{observed value} - \text{median value of the reference population})}{(\text{SD}) \text{ standard deviation of the reference population}}$$

fixed Z-score interval (independent of sex) implies a fixed height (cm) or weight (kg) difference for children of a specific age. The central 95 per cent of the distribution is regarded as the ‘normal’ range, and the lower

⁷ The two other indicators besides the Z-score, by which a child can be compared to the reference population, are percentiles and percentage of median.

cut-off points of (–2) SD or (–3) SD classify as moderately or severely undernourished respectively.

The big advantage of the Z-score system is that a group of Z-scores can be subjected to summary statistics such as the mean and the standard deviation, so that the nutritional status of the entire population can be described. A *mean* Z-score is calculated, and if its value is significantly lower than zero (the expected value for the reference distribution), it means that most individuals have been affected.

Criticisms of the WHO approach

The main criticism of the WHO approach questions the origin and type of data used for the construction of the reference curves and the analytical methods applied in deriving them.

It is frequently objected that the two sets of data comprising the reference curve are not derived by the same method. Younger children are measured supine (length) and older children standing (height), giving a marked discrepancy in estimated height immediately before and after 24 months of age, where the two curves ideally should merge. Another criticism is that the WHO approach focuses only on severely malnourished children. This will be insufficient to improve child survival globally and inadequate in addressing malnutrition’s toll on human development. The most significant impact, critics argue, can be expected when *all* grades of malnutrition are targeted. A

high prevalence of anthropometric deficit in a population will show up in severe health and nutritional problems, but the risk is not confined to individuals below the cut-off point, which should be used only to facilitate applying the indicator. Even children not below conventional cut-off points for defining malnutrition are at increased risk

and should be taken into account in intervention programmes.

A recommendation stating that a new growth reference was needed urgently to enhance the nutritional management of infants was endorsed in 1994 by the World Health Assembly (resolution WHA47.5). An international effort is currently under way to develop such a reference.

Comparison of the two models

There is a remarkable difference between the results of the two calculation methods. According to the FAO, undernourishment is highest in Sub-Saharan Africa, while the WHO finds that the food situation is worst in South Asia. *Table 9* shows the difference between the two estimates.

Table 9
Prevalence of undernourishment according to various indicators (per cent)

	Sub-Saharan Africa	South Asia
FAO proportion of households undernourished	43	22
WHO proportion of young children stunted	38	60
WHO proportion of young children undernourished	30	58

Source: Svedberg, 1999.

Although Svedberg (1999) estimated the margin of error of the FAO method at 21–61 percent, it may be much higher than that. The three pillars of the method are of extremely dubious origin. To recapitulate, the food balance sheets may not reflect real agricultural output, the calorie conversion rates for food products have a wide range of flexibility, the coefficient of variation (food distribution) seems to be guesswork based on only two household surveys from Sub-Saharan Africa, and the estimation process of the calorie cut-off points is debated due to problems with the Basal Metabolic Rate and the Body Mass Index. Integrating all

these parameters into a single model does not seem to give a reliable prevalence for undernourishment at all.

On the other hand, there are serious problems with anthropometric measurements as well. The usual problems with surveys are applicable (questions of sampling and how representative it is) and it is also clear that alarming anthropometric indicators are a combination of several factors, of which food intake is only one. Health facilities, food quality *etc.* may also play a crucial role in this respect.

Although all too little is known about the prevalence of worldwide undernourishment, the FAO and WHO data sets are widely used and quoted. What is more, the international target of reducing the absolute number of the undernourished by 2015 is being monitored with the FAO model. When trying to compare food aid with undernourishment, the margin of error is inevitably high. Before turning our attention to analysing the problem of food aid and food security, it is worth outlining the goals of the 1996 World Food Summit.

The World Food Summit plan of action

The heads of state participating in the World Food Summit held under the auspices of the FAO in 1996 made a specific political pledge to reduce the number of undernourished by 2015. For the base period, 1991–2 was chosen, with the FAO model as the monitor for progress.

Table 10 shows that to achieve the required decrease in the *absolute* number of undernourished by 2015, taking into account the high population growth in developing countries, the *share* of undernourished would have to fall by more than half, from 20 per cent in 1991 to 7 per cent in 2015.

Table 10
Changes in the proportion and absolute number of undernourished according to the FAO model and estimates for the UN target year 2015

	1969–71	1990–92	1997–9	2015
Proportion of undernourished (%)	35	20	(18)	7
Absolute number of world undernourished	918 million	841 million	815 million	420 million
Total population in developing countries	2623 million	4100 million*	4500 million	6000 million*

Note: * (4,100 million) x (1.015)²⁵ = (4,100 million) x 1.451 = 5,949 million

Source: Various FAO publications and own calculations.

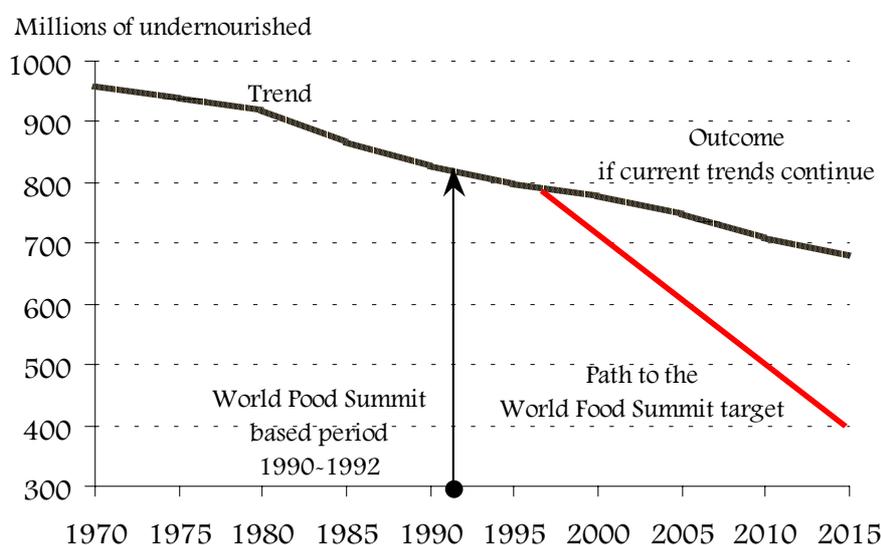
According to the UN target, there should in absolute terms be only 420 million undernourished by 2015 (7 per cent of the world population). Between 1992 and 1997, the annual average fall in the number of undernourished was 6 million, but to

Table 11
Undernourishment in different regions of the world (1969–1990)

Country region	1969/71		1979/81		1990/92	
	N	Percent	N	Percent	N	Percent
Sub-Saharan Africa	130	38	148	41	215	43
South Asia	238	33	303	34	255	22
East and Southeast Asia	476	41	379	27	269	16
Latin America and the Caribbean	53	19	48	14	64	15
Near East/North Africa	48	27	27	12	37	12
<i>Total</i>	<i>918</i>	<i>35</i>	<i>906</i>	<i>28</i>	<i>841</i>	<i>20</i>

Source: FAO 1996a

Figure 10
Progress towards the World Food Summit target: current trends and the required pace of reduction



Source: FAO, 2002.

reach the 2015 target, this annual decrease would have to rise to 22 million, which means accelerating the pace significantly. As acknowledged by the *State of Food Insecurity in the World* (FAO, 2002), the required reduction will not be achieved by 2015 if current trends continue (Figure 10).

Broken down by regions, Table 11 presents a different picture.

Over the past 30 years, Sub-Saharan Africa has clearly been the only region where the

proportion of undernourished has increased and is still growing in absolute and relative terms. If current trends continue, there will be 350 million undernourished people in Sub-Saharan Africa alone by 2015.⁸ South Asia seems to be 'doing well' if trends since 1979 continue, but any return to the trends before 1979 would jeopardize development. The future of the region in terms of undernourishment is

⁸ However, this is true only according to the FAO estimates. Anthropometric measurements, as noted earlier, present a picture in which undernourishment is higher in South East Asia. This boils down to the question of which model is more appropriate and should be used to monitor the World Food Summit target.

greatly determined by the developments in a single country, India. The other regions have also been ‘performing well’, according to the model, and only a continuation of current trends is necessary to meet the 2015 targets. The East–Southeast Asian region is also determined by the progress in a single country, China.

It is important to keep in mind that these estimates refer to the *chronically* undernourished, those who theoretically consume less than the required calories every day, so that the model and estimates are valid only if other things are equal. The estimates are implicitly based on an ‘equilibrium’ model that only changes over time. The food balance estimates are based on three-year averages that do not reflect short-term fluctuations in production (production shocks) or in population (epidemics, mass starvation, wars). In fact, beyond the chronically undernourished, there is a strongly fluctuating *seasonal, short-term or acute* hunger that the model does not capture by definition. The number of these people may rise substantially over time, whilst the model still shows an improvement. Whether or not the *ceteris paribus* assumption of the model is reasonable is open to question.

The next chapter places food aid in the model, by investigating what role food aid can play in reducing the number of undernourished in the world.

3) FOOD AID FOR FOOD SECURITY?

The prime justification for giving food aid to a developing country is always humanitarian in some respect: to provide relief in an emergency, to help the destitute in a ‘normal’ situation, or to reduce undernourishment and so contribute ultimately to the Millennium Development Goals. It has been seen in the first chapter that emergency operations increased in the late 1990s without

wide fluctuations. Project food aid was also more or less stable and the overall variability in global food aid was triggered by *programme* food aid sold on the market, not reaching beneficiaries directly. Programme food aid may have indirect food-security effects by depressing prices in times of soaring demand coupled with scarce local supply. The argument runs that the poorest (mainly wage labourers who obtain their food needs on the market) will then be able to buy essential commodities at lower prices. A counter-argument could be that a high proportion of the rural population in developing countries is involved in agricultural production – subsistence farming mixed with cash cropping – and depressed agricultural prices may worsen their situation by decreasing the revenue they obtain from the market for their produce.

Since the first food-aid deliveries in the 1950s, there have been concerns about the food-security effects of food-aid programmes and a huge literature has evolved around the issue. Some of the trends in this debate are summarized in the following sections.

The debate on food aid

Until the 1980s, food aid constituted about 10–15 per cent of global official development assistance (aid). The proportion today is estimated to have fallen to about 4 per cent. Despite the relative insignificance of aid, the debate on its effectiveness and impact has attracted disproportionate attention. One reason is that food aid, for some of the poorest countries, has been an essential factor in foreign-exchange availability and developmental investment resources. The debate in the literature has concentrated on the general economic effects of food aid on prices and production, on commercial displacement, labour markets, local consumption patterns, *etc.*

The economic effects

Maxwell and Singer (1979) identified four positive and four negative aspects of food aid. This classification still provides a useful analytical framework for investigating the effects of food aid on economic development. Of the arguments *for* food aid, the most important are the output aspect (does food aid affect aggregate output or foster growth?), the distribution aspect (what are the effects of supplementary feeding and food-for-work projects on employment and income distribution?), the stabilization aspect (how can food aid contribute to stabilization policies?), and additionality aspect (how far is food aid additional?). The cases *against* food aid are the disincentive aspect (what are the effects of food aid on local prices, production, government policy and on the labour market?), the allocation aspect (which countries receive food aid and when?), the dependency aspect (do recipients of food aid become increasingly dependent on donor countries?) and the inferiority aspect (food aid is expensive, double-tied, dependent on surpluses, irregular, bureaucratic and often inappropriate).

Instead of going into the arguments in depth and evaluating the contradictory findings of different studies about the general effectiveness of food aid, *Table 12* summarizes the concepts and highlights the most important arguments for and against. It should be noted that the discussion has been mainly about *development* food aid, which involves project aid (both monetized and distributed) and programme food aid. Emergency aid has not been subject to major criticisms, or not to the same extent.

Based on the table and the discussion on the economic effects of food aid, several 'general' conditions can be identified which are regarded as necessary for food aid to contribute to economic growth:

- (1) Food aid should substitute for commercial imports, so that it releases foreign exchange for investment goods. It should also stabilize food supplies, to provide favourable conditions for growth.
- (2) Food should be the binding constraint on growth in the country concerned, so that food aid can release pressure to produce food crops for consumption, and therefore land can be used more profitably for the production of export cash crops.
- (3) The commodities delivered should be part of the normal diet in the country concerned. Food aid should contribute to better nutrition of the population and assist the formation of human capital.
- (4) Food aid should be part of a broadly based development plan and complemented with other aid. It must be planned in advance and resources generated from the sale of food aid must not be tied to non-developmental uses.

Drawing general conclusions about the effectiveness of providing aid in kind is problematic: regions, countries and situations vary substantially, and any kind of general guidance may be too broad to be applied in a particular situation. The recognition of this fact has drawn increasing attention at the problem of targeting food aid.

Food aid and food security

What are the main requirements if food aid is to contribute to food security and be used in the 'best and most efficient' way? The answer is simply that the food has to be given to hungry people at the right time and in the right place and quantity. However, previous chapters have shown that the problem is more complicated than that.

- (1) There is the persistent problem of *targeting*: How can we find the poorest and ensure that the aid does not leak away to relatively prosperous households or be-

Table 12
Discussion of the positive and negative effects of food aid on economic development

Issue	Positive effects	Negative effects
Output: does food aid foster growth?	If development runs into a food constraint, food aid provides real resources and prevents excess demand, so contributing to growth. Food aid can also contribute to growth by releasing foreign exchange for investment goods, relieving the need to produce food (freeing land for more profitable crops), providing cheap inputs (feed aid), improving nutrition of the workforce, and stabilizing food supplies.	Food is not always the binding constraint on growth. Food aid can also substitute for domestic savings or be used to increase consumption, so that it does not necessarily foster growth.
	<i>Empirical investigation is needed before it can be said for certain what fiscal, investment, import and other policies would have been in the absence of food aid that was received.</i>	
Distribution: employment and income distribution. The effect of supplementary feeding programmes and food-for-work programmes.	Food aid has positive distribution effects by enabling governments to avoid squeezing agriculture and making it possible to undertake specific poverty-focused feeding programmes. Food-for-work programmes reach the poor and contribute to income and employment. Wages in kind guarantee additional consumption and nutritional status is benefited.	Food aid also has negative distribution effects. It encourages governments to maintain existing policies of capital-intensive industrialization. It diverts investment in grain storage from villages to big harbours. Development projects are biased towards developed, accessible areas. Public-works programmes worsen the distribution of assets and the number of long-term jobs created is often disappointing. Paying wages in kind is expensive, inconvenient, conducive to low productivity, and unpopular among workers, who often sell on food wages at a discount.
	<i>Less than one-third of food aid is used to support poverty-focused projects through direct distribution. The debate is inappropriate because distribution effects are more likely to occur through market sales of food aid, including concessionary sales through 'fair-price' shops.</i>	
Contribution to stabilization programmes.	Storage and stabilization schemes contribute to long-term welfare by funding village-level store construction and establishing international buffer-stock arrangements.	Planned stabilization schemes often succumb to pressures of rising demand and administrative complexity.
	<i>A potential exists for food aid to contribute to stabilization policies, but it has yet to be realized.</i>	
Additionality	Food aid is additional and does not disrupt commercial imports. The 'usual marketing requirements' are maintained.	Developing countries benefit most from food aid when it substitutes for commercial purchases, so that it frees resources for imports of investment goods.
	<i>No one can be sure what import policies would have been pursued in the absence of food aid. It is thought that between half and three-quarters of the aid has acted as a substitute for commercial imports.</i>	
Disincentives: changes in prices, food production and government attitudes.	Benefits of high food prices in times of inflation often go to traders, not farmers, and food prices reach the long-term levels required to attract sufficient investment. Where a recipient country faces a food constraint on development and serious inflationary pressure, provision of food aid helps to curb inflation. The perfect market implicit in the counter-argument is not present in reality. Rural works can have a beneficial effect by competing for labour and driving wages up towards minimum standards.	If food aid is sold on the market, food prices fall below what they would have been and farmers produce less food than they otherwise would. Government investment in agriculture falls, regulation of grain marketing becomes inefficient, and technical assistance to producers decreases. Agricultural labour is attracted away from normal employment and the consequence is a decline in output.
	<i>The disincentive effect on food production can be negligible and it is necessary therefore to resort to empirical tests.</i>	
Allocation aspect: who receives food aid?	India and Bangladesh have been the largest recipients of food aid.	Humanitarian arguments for appropriations are not reflected in the allocation of food aid between countries. US food aid has been used to provide extra-budgetary military assistance to recipient countries.
	<i>For donors conditions may differ, but there seems to be little targeting of food aid towards food-insecure countries.</i>	
Dependency	Greater food imports may not be undesirable, especially if the land released from domestic food production is used productively for export cash crops. Transnationalization is not 'bad' in itself.	Increasing dependency on food imports, selling food aid as a source of revenue and conditions imposed on the use of counterpart funds create dependency on the donor. Deeper penetration by foreign capital leads to economic dependency. Food aid can be a vehicle for transnationalization because corporations benefit at the expense of developing countries: they are paid to process and pack food aid commodities.
	<i>There are a few case studies to test these alternative hypotheses against individual country experience, but most of them are ambivalent in their findings.</i>	
Inferiority	Food aid is not cost-ineffective in regions where there is lack of food, where food is not available. In these regions, aid provided in kind is superior to cash.	Food aid is inferior to cash and reduces freedom of choice. It is also expensive: US and EU prices are above world-market prices; US shipping is expensive. Food aid is dependent on surpluses and thus irregular, and composed of inappropriate, exotic products that are hard to dispose of. It is also bureaucratic and logistically difficult.
	<i>The opportunity cost of resources invested in handling food aid is particularly high. The administrative heaviness of food aid and the associated expense are recurring themes in food-aid literature.</i>	

Source: Summary of various articles.

come lost in the bureaucracy surrounding distribution? The neediest people are scattered around the country, not grouped in one area. Both self-targeting and administrative targeting have inefficiency-inducing effects.

- (2) It has been pointed out already that injecting food aid into local markets will have various *economic effects* (positive or negative) on various segments of the population. No general conclusion can be reached about whether food aid is 'good' or 'bad'. Moreover, food aid is dwarfed by commercial imports (into most countries), so that it is questionable whether it has an overall effect on food security. Be that as it may, a better way of financing and addressing national food security could presumably be found.
- (3) Then comes the *in cash/in kind* dilemma. Why supply aid in kind (food)? The argument against financing development in kind (transport, handling, organization) is its high cost, and food aid is certainly cost-inefficient.
- (4) Food aid is obviously a temporary resort, a resource that is soon consumed. So how can food aid as such affect a country's longer-term food security? It could be argued that this can be done by financing long-term development, which ultimately contributes to people's well-being and indirectly their food security. On the other hand, if a specific development project had been financed in cash, which is more cost-efficient, the same result could have been achieved with a smaller investment at lower cost.
- (5) Finally, the commodities provided under a food-aid programme are tied – determined by the donor – which restricts the recipient in choosing appropriate commodities. For example, if the type of food aid provided does not feature in the local diet and food habits, the food-security aspect of the programme becomes problematic again.

How can the food-security aspect of food aid be examined statistically. How can it be determined numerically whether food aid has had an effect on food security on the macro level?

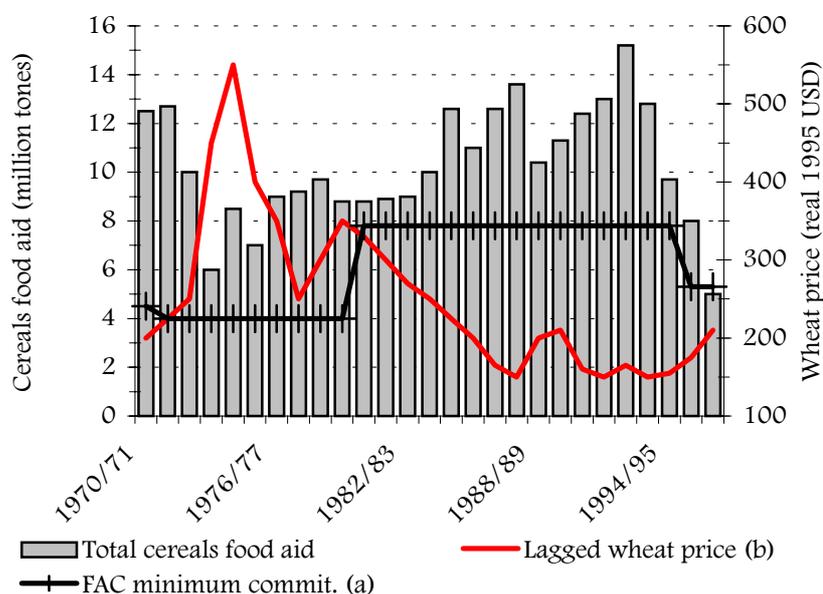
- * The Food Aid Convention should be investigated as a possible way of providing an effective safety net for developing countries in times of high food prices.
- * Most global food aid goes to quite a small number of countries. Are the main recipients the countries with the highest proportion of undernourishment? Or conversely, are the countries where undernourishment is most prevalent receiving the highest proportion of food aid?

The Food Aid Convention

The Food Aid Convention (FAC) is an international agreement whose signatories are legally bound to provide specified minimum tonnages of food aid in 'wheat equivalent'. The aim is to provide a guaranteed minimum flow of food aid to developing countries and an effective safety net to protect recipient countries from possible downward fluctuations in annual shipments of food aid.

Benson (2000) analysed the role of the FAC in determining actual flows of food aid. It was found that the floor levels for food-aid flows set by the FAC were so low that their impact on actual shipments was negligible, globally and from international donors. The study concluded that on only two occasions in 30 years (in 1973–4 and 1996–7) had the FAC probably prevented a steeper decline in food aid than actually occurred. A comparison of the minimum commitments and flows of food aid indicated that, despite the FAC, annual global flows had varied by up to 20–25 per cent. The FAC appeared to have done little to alleviate such wide fluctuations. *Figure 11* shows that global cereal food aid decreased

Figure 11
Trends in global food aid in cereals and FAC minimum commitments
(1970–1998)



(a) Global minimum obligations rose from 3,974 to 4,100 thousand tonnes at the beginning of 1973.

(b) US No. 2 hard winter ordinary wheat in real 1995 prices, lagged 6 months
Source: Benson (2000).

when world wheat prices increased, and *vice versa*.

The fact that the FAC has been unable to provide an effective safety net raises serious questions about its credibility as a means of determining international commitments to protect the food security of developing countries.

The main recipients of food aid

One requirement if food aid is to have a food-security function on a macro, global level is that it should be allocated to the countries with the highest proportion of undernourishment. *Tables 13 and 14* show that this was not the case in the 1990s. *Table 13* shows the countries with the highest prevalence of undernourishment, whilst *Table 14* shows the ones that were the main recipients of food aid in the 1990s. Ideally, the two tables would show the same countries, but this is not the case.

The countries with the highest proportions of undernourishment were not the biggest recipients of food aid in the 1990s, as *Figure 12* shows in graphic form. Afghanistan and Burundi, for example, ranked second and third in the FAO list of countries with the highest prevalence of undernourishment, but they received only 5 and 3 kg of food aid per capita respectively. (At the opposite extreme, Cape Verde received 123 kg per capita in 2000. Such ‘explosions’ of food aid are frequent in the data.)

A comparison of the two tables reveals that only three of the countries with the highest proportions of undernourishment feature among the top ten recipients of food aid: Ethiopia, Korea and Mozambique. The third most important recipient of food aid in the 1990s was the Russian Federation, where the proportion of undernourishment was a rather low 6 per cent, while, India, albeit with a surprisingly low prevalence of undernourishment of 21 per cent, received virtually no food aid by comparison with its population: 0.28 kg per capita.

This rather simple analysis reveals that the allocation of food aid on a macro (country) level does not correspond with the food-security situations of the recipient or non-recipient countries. In addition, it should be recalled that a high proportion of food aid is not distributed among beneficiaries, but sold on the market at prevailing market prices. There is no direct food-security effect of monetized food aid and its positive indirect effects cannot be assured, due to various unpredictable market effects.

Table 13
Average food aid to the ten countries with the highest proportions
of undernourishment
(1990–2000)

	Proportion of population undernourished in 1997	Average food aid, 1990–99, t	Average food aid per capita, t
Somalia	75	77,425	12
Afghanistan	70	108,587	5
Burundi	68	14,871	3
Eritrea	65	72,887	19
Haiti	62	115,423	14
Congo, Dem. Rep.	61	11,529	13
Mozambique	58	373,375	35
Korean PDR	57	401,644	17
Ethiopia	49	895,212	32
Liberia	46	124,423	39

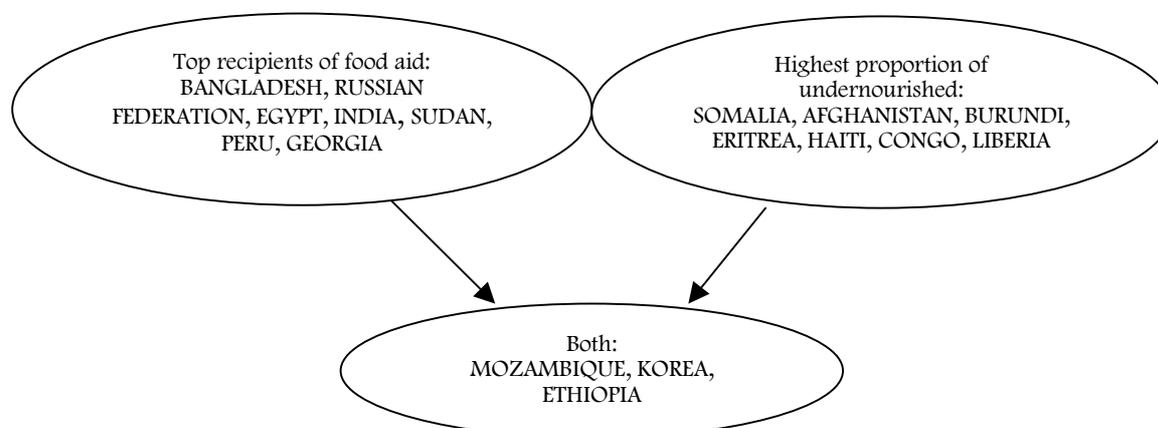
Source: FAOSTAT CD 2000, and author's calculations.

Table 14
Top ten recipients of food aid in the 1990s

	Proportion of population undernourished in 1997	Average food aid, 1990–99, t	Average food aid per capita, t
Bangladesh	38	925,660	7
Ethiopia	49	895,212	13
Russian Federation	6	820,405	6
Egypt	4	439,228	6
Korean PDR	57	401,644	17
Mozambique	58	373,375	35
India	21	284,962	0.281
Sudan	18	265,655	9
Peru	18	246,881	10
Georgia	23	213,989	43

Source: FAOSTAT, 2000, and author's calculations.

Figure 12



APPENDICES

Appendix 1. Quotations from international documents

The following quotations have been taken from various recent international documents and conventions. The purpose of this annex is to underline the motivations of this paper and highlight the shift in food-aid towards food security which has been emphasized in these papers.

World Food Summit, 1996

(Commitment) We pledge our political will and our common and national commitment to achieving food security for all and to an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015.

(Definition of food security) Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

(The role of food-aid) Increased production, including traditional crops and their products, in efficient combination with food imports, reserves, and international trade can strengthen food security and address regional disparities. Food-aid is one of the many instruments which can help to promote food security.

(Referring to food-aid) It is important to maintain an adequate capacity in the international community to provide food-aid, whenever it is required, in response to emergencies. Equitable access to stable food supplies should be ensured.

Food-aid Convention, 1999

(Food-aid for food security) Food-aid [...] should be aimed at enhancing food security in recipient countries. In responding to those needs, members shall pay attention to meeting the particular nutritional needs of women and children.

When food-aid is sold within a recipient country, the sale shall be carried out, as far as possible, through the private sector and be based on market analysis. In targeting proceeds from such sales, priority shall be given to projects aiming to improve the food security of beneficiaries.

(Food-aid as grant) Food-aid under this Convention provided in the form of grants shall represent not less than 80 percent of a member's contribution and, to the extent possible, members will seek progressively to exceed this percentage.

Council Regulation (EC) No 1292/96 of 27 June 1996 on food-aid policy and food-aid management and special operations in support of food security

(Food aid for food security) The objectives of the food-aid operations [...] shall [...] be:

- * to promote food security geared to alleviating poverty, to help the population of developing countries and regions, at household, local, national and regional levels,
- * to raise the standard of nutrition of the recipient population and help it obtain a balanced diet,
- * to promote the availability and accessibility of foodstuffs to the public.

When products are selected, consideration shall be given [...] to reaching the maximum number of people.

(Targeting and measuring food aid) Food aid [...] is the only way to improve the food security of groups which do not have the means or possibility of plugging their food shortage themselves. To that end, consideration shall be given to [...]:

- * the food situation measures using human development and nutritional indicators,
- * per capita income and the existence of particularly poor population groups,
- * social indicators of the welfare of the population in question,
- * the recipient country's balance-of-payments situation,
- * the existence in the recipient country of a long-term policy on food security.

USAID food aid and food security policy paper, 1995

(Food aid for food security) Greater priority in allocating food aid will be given to countries most in need of food. Under current world conditions, those countries are primarily in Africa.

USAID will allocate resources and manage programs to increase the impact U.S. food aid has in reducing hunger.

One of the obvious strengths of food aid is its immediate application in feeding people – either as part of a humanitarian relief effort, as part of a recovery strategy or as part of a broader development effort.

(Targeting and 'measuring' food aid) Performance monitoring and assessment systems will be introduced to permit USAID and the PVOs to demonstrate more clearly the food-security impact of U.S. food aid programs.

Appendix 2. Selected definitions of undernutrition

Mild malnutrition: sometimes called undernutrition, may not present any clinical or laboratory symptoms, although the affected individual may suffer a loss of vitality and reduced ability to function physically and mentally.

Undernutrition: Inadequate intake of one or more nutrients and/or of calories. (The converse 'overnutrition' is not a recommended term.)

Chronic undernutrition refers to a long-term inadequate food intake and is reflected by low height-for-age levels. It was defined as a height-for-age less than the fifth percentile of the National Center for Health Statistics growth charts, and acute undernutrition was defined as a weight-for-height less than the fifth percentile.

Acute undernutrition refers to a short-term, severely inadequate food intake and is reflected by low weight-for-height levels. Weight-for-height is the anthropometric index best correlated with caloric nutriture. Low weight-for-height levels (less than fifth percentile) are usually associated with acute undernutrition, referred to technically as 'wasting.'

Chronic undernutrition: Height-for-age is an anthropometric indicator that associates consistent adequate nutrition with normal growth. Chronic undernutrition, especially during critical growth periods, results in the stunting of an individual. Low height-for-age levels (less than the fifth percentile) are associated with chronic undernutrition.

Undernutrition: A form of malnutrition resulting from a deficit of nutrient availability in relation to tissue needs. One of the signs of undernutrition is inadequate growth in children. Growth is judged relative to accepted growth standards supplemented by a consideration of genetic variables. Undernutrition is accompanied by an excessive loss of lean body mass in children and adults.

Undernutrition represents measurable changes in nutritional status that result from a chronic marginal deficit of food quality and/or quantity. Although hunger increases the risk of undernutrition, hunger does not necessarily result in a measurable impairment of nutritional status; likewise, undernutrition can develop without the occurrence of frank hunger.

REFERENCES

- Abbott, P. (1982), 'Welfare effects of tied food aid'. *Journal of Development Economics*, Vol. 11, pp. 63–79.
- Arndt, C. (2001), 'Who gets the goods? A general equilibrium perspective on food aid in Mozambique'. *Food Policy*, Vol. 26, pp. 107–119.
- Benson, C. (2000), 'The food aid convention: An effective safety net?' In: Clay and Stokke (2000).
- Bezuneh, M. (1989), 'Farm level impacts of Food For Work in a Semi-Arid Region of Kenya'. *Eastern Africa Economic Review*, Vol. 5, No. 1.
- Christiansen, C. (2000), 'The new policy environment for food aid: the challenge of Sub-Saharan Africa'. *Food Policy*, Vol. 25, pp. 255–68.
- Clay, D. (1999), 'Food aid targeting in Ethiopia. A study of who needs it and who gets it'. *Food Policy*, Vol. 24, pp. 391–409.
- Clay, E., and O. Stokke (2000), *Food Aid and Human Security*. Eadi Book Series 24. London: Frank Cass.
- Clay, E., N. Pillai and C. Benson (1998), 'Food aid and food security in the 1990s: performance and effectiveness'. ODI Working Paper 113.
- Cole, R. (1991), 'The impact of food aid on cereal and livestock prices in Red Sea Province, Sudan: 1980–1989'. *Development in Practice*, Vol. 1, No. 2.
- Dorosh, P. (1997), 'Shifting sands: The changing case for monetizing project food aid in Bangladesh'. *World Development*, Vol. 25, No. 12, pp. 2093–2104.
- Dudley, L. (1974), 'The side effects of foreign aid: the case of Public Law 480 Wheat in Colombia'. *Economic Development and Cultural Change*, No. 23.
- Dzieteror, A. (1988), *Food Aid: a Trojan Horse?* Accra: Ghana Universities Press, 1988.
- Faminow, M. (1995), 'Issues in valuing food aid: the cash or in kind controversy'. *Food Policy*, Vol. 20, No. 1, pp. 3–10.
- FAO (1980), *Principles of Surplus Disposal*. Rome: FAO.
- FAO (1996), *The Sixth World Food Survey*. Rome: FAO.
- FAO (2001), *The State of Food Insecurity in the World*. Rome: FAO.
- FAOSTAT (www.fao.org), and CD-ROM, 2000. Rome: FAO.
- Farzin, H. (1991), 'Food aid: positive or negative economic effects in Somalia?' *The Journal of Developing Areas*, Vol. 25, pp. 261–82.
- Gebremedhin, B. (2001), 'Reconciling food-for-work project feasibility with food aid targeting in Tigray, Ethiopia'. *Food Policy*, Vol. 26, pp. 85–95.
- Jayne, T., J. Strauss and T. Yamano (2001), 'Giving to the poor? Targeting food aid in rural Ethiopia'. *World Development*, Vol. 29, No. 5, pp. 887–910.
- Maxwell, S. (1986), *Food Aid to Ethiopia: Disincentive Effects and Commercial Displacement*. IDS Discussion Paper 226.
- Maxwell, S. (1994), 'The monetization of project and emergency food aid: project-level efficiency first!' *Food Policy*, Vol. 19, No. 1, pp. 9–15.
- Maxwell, S., and H.W. Singer (1979), 'Food aid to developing countries: a survey'. *World Development*, Vol. 7.
- Reutlinger, S. (1999), 'From food aid to aid for food: into the 21st century'. *Food Policy*, Vol. 24, pp. 7–15.
- Roemer, M. (1989), 'The macroeconomics of counterpart funds revisited'. *World Development*, Vol. 17, No. 1.
- Schubert, J. (1981), 'The impact of food aid on world malnutrition'. *International Organization*, Vol. 35, No. 2, pp. 329–54.
- Seevers, G. (1968), 'An evaluation of the disincentive effect caused by PL480 shipments'.

American Journal of Agricultural Economics,
Vol. 50, No. 1.

Shaw, D. J. (1996), 'A future food aid regime: implications of the Final Act of the Uruguay Round'. *Food Policy*, Vol. 21, No. 4, pp. 447–60.

Singer, H.W. (1987), 'Food aid: development tool or obstacle to development?' *Development Policy Review*, Vol. 5.

Svedberg, P. (1998) '841 million undernourished?' *World Development*, Vol. 26.

Svedberg, P. (2000) *Poverty and Undernourishment*. Oxford: Oxford UP.

Tschirley, D. (1996), 'Food aid and food markets: lessons from Mozambique'. *Food Policy*, Vol. 21, No. 2, pp. 189–209.

USAID (1995), 'Food aid and food security policy paper'. <http://www.usaid.gov>

World Food Programme, International Food Aid Information System (INTERFAIS) Database, <http://www.wfp.org/interfais>

World Health Organization (WHO), Global Database on Child Growth and Malnutrition, <http://www.who.int/nutgrowthdb>