

**Integrating Relief and Development
to Accelerate Reductions in Food Insecurity
in Shock-Prone Areas**

**Implications for the USAID Office of Food for Peace
2004-2009 Strategic Plan**

Lawrence Haddad, IFPRI

and

Tim Frankenberger, TANGO

Draft: January 28, 2003

International Food Policy Research Institute
2033 K Street, N.W.
Washington D.C. 20006
USA

1. Introduction¹

For the past decade, many development agencies, led by USAID, has understood that food security is achieved when a wide variety of food is available in local markets or fields, when people have enough income to purchase and eat a variety of foods, and when the food is eaten in an environment that supplies appropriate care, clean water, good sanitation and health services, *and* when the risk of losing these levels of food availability, food access and food utilization is low.

Too often, however, actions to reduce food insecurity have been operationalized based solely on the first half of the food security definition, ignoring the risk of losing the ability to get and use food. On the emergency or relief action side, there is an obvious concern with getting food to those who need it today. But there is less incentive to engage those who can meet their food needs today only by undermining their ability to meet their food needs tomorrow. Moreover, emergency or relief actors operate within a time frame and within an institutional setting that do not lend themselves to a thinking-through of the consequences of emergency action for subsequent development activities. On the development side, there tends to be a similar focus on helping people to meet their current food needs. The sustainability and riskiness of such actions, especially within shock-prone contexts, tends to be less considered.

The missing perspective is vulnerability. One can think of vulnerability as the ability to manage the risks one is exposed to. Lowered vulnerability can be achieved through either (a) a reduction in exposure to risks such as shocks that affect many (i.e. aggregate shocks such as drought) or shocks that affect the individual (i.e. idiosyncratic shocks such as the death of head of household), or (b) an increase in the ability to manage such risks, or (c) both.

Against a backdrop of the trends in food insecurity location and causes, this paper draws on results from the recent empirical literature to argue: (i) that the operationalization of a fuller definition of food security—one that pays explicit attention to risk and vulnerability--will accelerate attempts to reduce food insecurity, (ii) that relief and development actions both have important roles to play meeting current needs and in reducing risks of losing this ability in the future, and (iii) that an explicit recognition of the pre- and post-shock contexts—realizing that a post-shock environment at some stage becomes a pre-shock environment--will promote the ability of relief and development actions to work in concert.

These issues are discussed in the context of food aid programming, although they are quite general in scope. Within the food aid context, many feel that a strengthened ability of the emergency and development functions to integrate with each other would result in a more effective use of resources for both (e.g. Bonnard et. al. 2002). The authors of this paper agree. We believe that the functions of food aid interventions can be unified by within a conceptual framework that explicitly recognizes vulnerability within a pre and post shock context.

We conclude that the food assistance community can and should: (a) develop a new conceptual framework to guide operations that shows how relief and development interventions can be

¹ The authors would like to thank Tom Marchione for his thoughtful, detailed and extensive comments on an earlier version of the paper and for additional useful comments from Mara Russell.

integrated to accelerate reductions in food insecurity, with vulnerability concepts at its core. The conceptual framework should be flexible enough to allow adaptation to different contexts such as in urban areas and in areas heavily affected by HIV/AIDS, (b) get integrated into the broader development and poverty debate. Safety net transfers are not just residual to the growth process, they are now regarded by many as an integral part of a growth strategy, (c) link into the current empirical debates by partnering with applied research organizations that have interest in these areas, to update food aid community thinking on concepts such as vulnerability, targeting, livelihoods, governance, rights and social capital, and then to update research thinking through operational experiences, (d) support some “gold standard” evaluations of key programming issues, and (e) contribute to improving the supply of high quality information freely available on global food insecurity levels and changes over time.

2. Trends in Food Insecurity Incidence and Causes

This section briefly describes national and subnational trends in food security location and causes as a backdrop to the discussion of actions to accelerate reductions in food insecurity.

2.1 Location of food insecurity

National Level

Using FAO “undernourishment” data as a very imperfect but best available indicator of national level food insecurity today, Table 1 shows that food insecurity is on the decline in Asia, South America, West Africa, and on the rise everywhere else. Data on infant height for age (stunting), weight for age (underweight) and weight for height (wasting) show similar trends at the regional level (ACC/SCN 2000) although there are differences in direction of trend between anthropometric data and FAO’s undernourishment data (see Appendix Figure 1). The increases in the numbers of undernourished and underweight are particularly large in Africa and the Near East.

At the national level, the countries that have performed the most poorly in terms of reducing undernourishment over the past 10 years (see Table 2) tend to be experiencing shocks or poor governance (the 11 worst performers includes D.R. of Congo, D.R. of Korea, Burundi, Cuba, Mongolia, Somalia, Iraq and Afghanistan). The countries of Southern and Eastern Africa heavily affected by HIV/AIDS can be expected to show up at the wrong end of the rankings in 5-10 years time.

Table 1: Changes in the numbers of undernourished, by region

Region (as in SOFI 2000)	Number of countries	Change in numbers of undernourished between 1990-2 and 1996-8 (millions)		
		Decrease	Increase	Net changes
South Asia	5	-17.87	10.30	-7.57
Southeast Asia	8	-14.40	0.35	-14.05
East Asia	5	-59.27	9.55	-49.72
Oceania	1	0	0.26	0.26
North America	1	0	0.68	0.68
Caribbean	5	-0.08	2.10	2.02
Central America	6	-0.10	1.74	1.64
South America	12	-10.59	1.58	-9.01
Near East	11	-0.41	9.17	8.76
North Africa	5	-0.07	0.35	0.28
Central Africa	6	-0.76	15.85	15.09
East Africa	9	-4.34	11.00	6.66
Southern Africa	11	-1.27	4.15	2.88
West Africa	14	-8.71	3.56	-5.15
Total	99	-117.8700	70.6400	-47.2300

Data sources: SOFI 1999 and SOFI 2000

Table 2: Selected countries sorted by changes in the percentage of people undernourished, 1990-2 to 1996-98

rank	Country (note: countries 1-10 are improving over time. Countries 89-99 are getting worse)	Difference between percentage undernourished in 1996-8 and in 1990- 92	Difference between numbers undernourished in 1996-8 and in 1990- 92 (millions)	Change in no. of undernourished, from 90-92 to 96-98 as a percentage of the no. of undernourished in 1990-92	Percentage undernourished in 1996-98
1.	Peru	-22.40	-4.48	-50.45	18
2.	Chad	-20.20	-0.75	-21.74	38
3.	Ghana	-18.90	-2.62	-57.96	10
4.	Kuwait	-18.20	-0.36	-78.26	4
5.	Malawi	-15.20	-1.27	-28.41	32
6.	Ethiopia	-12.40	-2.04	-6.70	49
7.	Sudan	-11.50	-2.16	-29.75	18
8.	Togo	-11.00	-0.25	-23.81	18
9.	Thailand	-10.40	-5.48	-31.00	21
10.	Mozambique	-8.80	0.86	8.74	58
89.	Afghanistan	7.40	4.85	49.74	70
90.	Iraq	7.90	1.82	108.33	17
91.	Mali	8.20	1.24	57.41	32
92.	Somalia	8.30	1.35	25.71	75
93.	Guatemala	10.00	1.24	98.41	24
94.	Tanzania	10.50	4.66	57.96	41
95.	Mongolia	10.50	0.32	41.03	45
96.	Cuba	14.50	1.62	337.50	19
97.	Burundi	23.90	1.83	74.09	68
98.	D.R of Congo	24.30	15.03	105.33	61
99.	D.R of Korea	37.70	9.18	228.36	57

Data sources: SOFI 1999 and SOFI 2000

The national level “undernourishment” data are conceptually a very great distance away from what we mean by food insecurity and are really only a measure of food availability at the national level.² Table 3 outlines the progression in thinking about food security—the move from physical access to economic and social access to future access (vulnerability) and future ability to articulate access needs (rights). One can view this paper as outlining how food aid programming can flesh out the vulnerability and rights/governance components of food security.

The “undernourishment” indicator does, however, have the very real strength that there is no ready substitute for it at present, at least in terms of the extensiveness of its country and year coverage, although there are plenty of ways it can be strengthened (see Appendix Table 1). Appendix Table 2 highlights the strengths and weaknesses of related indicators that can complement the FAO indicator to give a richer assessment of food insecurity and an analysis of its causes.

Neither the FAO indicator nor the alternatives in Appendix Table 2 are used to identify which countries are eligible for the receipt of food aid. The current list is defined by the FAO classification of low-income food-deficit countries (LIFDCs). This comprises three criteria. First, a country should have a per capita income below the “historical” ceiling used by the World Bank to determine eligibility for IDA assistance and for 20-year IBRD terms. The historical ceiling of per capita GNP for 2000 was US\$1445. The second criterion is based on the net (i.e. gross imports less gross exports) food trade position of a country averaged over the preceding three years. Thirdly the self-exclusion criterion is applied when countries that meet the above two criteria specifically request to be excluded from the LIFDC category.

Appendix Table 3 lists the LIFDC countries in 2000 and adds their 1997-99 undernourishment prevalences and the change in prevalences since the early 1990s. Many countries on the LIFDC list have low and declining levels of “undernourishment”, including China, Nigeria, Morocco, Ghana, Albania, Benin, Indonesia, Gambia, and the Cote d’Ivoire. Some countries with high--and in some cases rising--levels of “undernourishment” are not on the list, including Namibia (33% undernourished, up from 30% in early 1990s), Zimbabwe 39% (down from 43%), Thailand 21% (down from 30%), Vietnam 19% (down from 27%), and Botswana 23% (up from 17%). It is not surprising that the LIFDC list tends to include less food insecure countries because GNP per capita is not very well correlated with undernourishment. There is definitely a technical case for finding a way to better identify actual food security needs. Serious consideration should be given to changing the country-level criteria that are used for targeting food aid by incorporating data from one or more of the food insecurity indicators listed in Appendix Table 2-- both in terms of current levels of food deprivation and trends in food deprivation—into the eligibility criteria.

² Currently data on these various dimensions of food insecurity do not exist across all countries. An effort should be made to capture many of these dimensions in future surveys to enable governments to target food security programs more effectively.

Table 3: The conceptual distance between FAO’s numbers of “undernourished” and food insecurity

Type of data needed	Dimensions of Food Insecurity	
FAO “undernourishment data”	<i>Physical access at national level</i>	Is there potentially enough food at the national level to feed all people?
	<i>Physical access at local level</i>	Is food in local markets or in local fields?
Household food consumption surveys	<i>Economic access</i>	Can households afford to purchase what they do not consume from home production?
Individual food intake surveys	<i>Social access</i>	Do all household members have equal access to food?
	<i>Food quality and safety</i>	Is food of sufficient diversity and safety to promote good health?
Anthropometric data	<i>Physiological access</i>	Are the care and health/sanitation environments sufficiently good so that ingested nutritious food can be used for good growth and development?
Vulnerability—ability to manage risk, exposure to risk	<i>Risk of loss of access</i>	How sensitive are any forms of access to shocks and cycles? (e.g. seasonality)
Governance—rights, capacity	<i>Access as a human right</i>	What is the capacity of the food system to deliver and what is the capacity of individuals to press their claims to food?

Sub-National Level

At the sub-national level, poverty and malnutrition seem to be moving, at varying rates, from rural to urban areas. The level of deprivation in rural areas is still much higher than in urban areas, but the gap is closing faster than many thought. Table 4 shows this quite clearly for countries with available data.

Table 4: The changing rural-to-urban location of infant undernutrition

	<i>Absolute number of urban underweight children increasing</i>	<i>Absolute number of urban underweight children decreasing</i>
<i>Share of urban underweight children increasing</i>	Bangladesh, 85-96 Egypt, 90-92 Honduras 87-94 Malawi 92-95 Philippines 87-93	China 92-95 Egypt, 92-95 Madagascar 92-95 Nigeria 90-93 Uganda 88-95
<i>Share of urban underweight children decreasing</i>	Tanzania 91-96	Bangladesh, 89-96 Peru 91-96 Zambia 92-97

Source: Haddad et. al. 1999

This is not just important from a mapping point of view, but also from an assessment perspective. There are certain phenomena that are unique to or are exacerbated in urban areas and they challenge the very models we have in our heads as to what food insecurity looks like, what is causing it and how it should be addressed. Table 5 summarizes some of the key phenomena separating urban from rural areas.

Table 5: Difference in urban and rural areas of relevance to food aid programming

Urban Phenomenon	Implication for food and nutrition interventions
Food purchase dependence	Is there a role for urban agriculture? Tradeoffs between food safety and entrepreneurship
Weaker informal safety nets	Is there a greater importance of building up community participation and social capital? Or should it simply not be relied upon?
Greater female labor force participation	Dislocation of employment and child care leads to tradeoffs in reducing poverty today (women's employment) and reducing poverty tomorrow (infant undernutrition due to lack of child care substitutes)
Closer to public services	But is access improved? Targeting to poor may be more difficult in more heterogeneous urban areas
Non traditional property rights	May reduce cost-sharing by community and investment by NGOs

Source: Ruel et. al. 1999

Also at the sub-national level, there seems to be a growing gap in poverty rates between areas that are less favored and areas that are more favored by public investment (Fan et. al. 2002, 2000, 1999). In rural areas, green revolution technology has been able to address poverty where irrigation, roads and market institutions have been invested in. In the more remote areas, poverty has proven to be more stubborn. Nevertheless, public sector investments in the less-favored areas (at least in the countries investigated so far--India, China and Uganda) seem to have a higher payoff in terms of growth *and* poverty reduction than the more-favored areas (see more on this in section 3.3). It would serve USAID Missions well to re-evaluate the strategy of targeting development assistance to the higher potential areas. When it makes sense from a poverty perspective to target non-food aid development resources to less favored areas they can be complemented by food aid resources and positive interactions between the two resource streams can be realized.

2.2 Causes of food insecurity

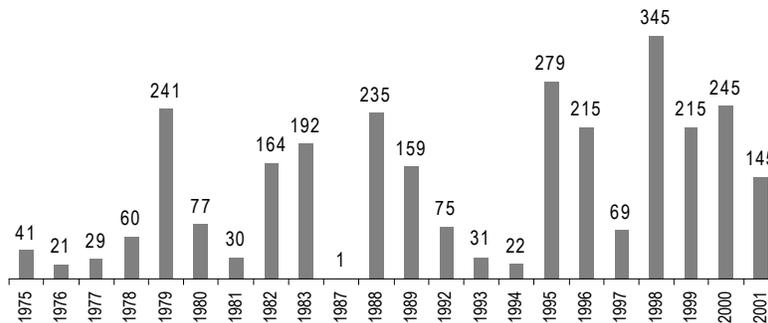
Recognizing that overcoming food insecurity requires attention to specific factors that promote food availability (e.g. productivity-enhancing technology, infrastructure, markets), food access (income, prices, employment, control of resources) and food utilization (care, clean water, sanitation, adequate housing, health services) a consensus is emerging that:

- **Developing country governments have to live up to their commitments to invest more in their own people** and their own assets, providing basic public goods such as peace, education, clean water, sanitation, infrastructure, health and nutrition services, and agricultural research and development. The returns to investment in human capital in less favored areas seem particularly good. Only in this way can countries begin to seize opportunities that emerge.
- **The developed world has a responsibility to generate favorable conditions for overcoming food insecurity.** In particular they must prevent their own agricultural producers from exporting from depressing food commodity prices by exporting foods at highly subsidized prices into developing world markets and perhaps more importantly to open up its own borders to agricultural and other products produced efficiently by the

developing countries. This question is particularly relevant given the current debates that have been going on among the cooperating sponsors and the food processors and other commodity groups in the U.S. Intellectual property right regimes also have to be more sensitive to developing country emergency conditions.

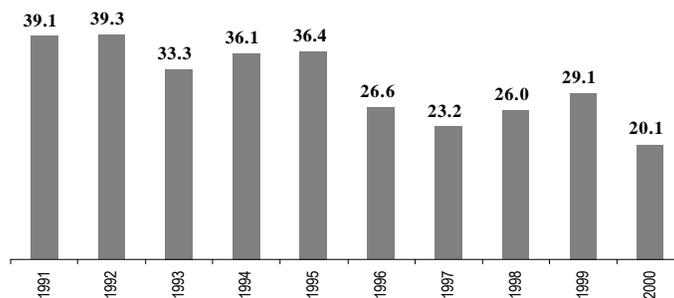
- **The management of shocks has to improve at the local, national and international levels.** The frequency of these shocks shows no sign of diminishing (see Figures 1-2) and the emergence of AIDS as another shock that is crippling some sub-Saharan African countries can only increase the fragility of the environments in which it is hoped that development will occur.³

Figure 1: Total Affected by Natural Disasters:
Worldwide Estimate (millions)



Note: Total Affected= people that have been injured, affected (requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance) and left homeless after a disaster (www.cred.be/emdat/intro.html). International Disaster Database.

Figure 2: Total Affected by Conflict:
Worldwide Estimate (millions)

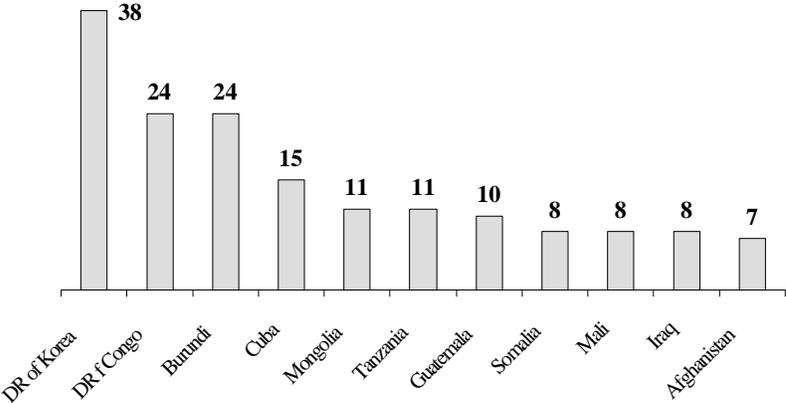


Note: Total Affected= people that have been injured, affected (requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance) and left homeless after a disaster (www.cred.be/emdat/intro.html). International Disaster Database.

³ Note that the long wave nature of HIV/AIDS ensures that even if infection rates were to drop to zero today that the consequences of the infection to date would be felt for the next generation. Given the devastating effect that HIV/AIDS has on all aspects of people's lives, reducing the impact of HIV/AIDS must be tackled through a multi-disciplinary approach. Food aid can play a key role in this effort

- Governance**--(a) voice and accountability in decision making (in public and private fora), (b) the capacity to formulate and implement policies; and (c) the respect of the state and citizens for institutions that govern interactions between different groups—is crucial to constructive innovation, to the stability and accountability that attracts foreign and domestic investment, and to the effective delivery of services to the poor. The association between governance and food insecurity is clearly shown in Figure 3. The majority of the worst performing countries over the course of the 1990s in terms of increases in the rate of undernourishment (out of the 99 for which FAO has data) all have suffered deficits in good governance.

Figure 3: Increase in % “undernourished” from early to late 1990s
Worst performers out of 99



Source: from FAO data in SOFI 1999 and 2000

3. Implications for action to accelerate reductions in food insecurity in shock-prone environments: evidence on integrating relief and development

Table 6 lays out one menu of options for integrating relief and development interventions with the goal of accelerating reductions in food insecurity in shock prone areas. The columns of the table split interventions into the traditional functions of relief and development. The rows of the table split time in shock-prone areas into post-shock and pre-shock states, recognizing the transitions that occur back and forth between the two.⁴

⁴ Some of the distinctions are artificial and are for ease of description only. Indeed there has been a growing appreciation of the growth function that safety nets play in terms of their assistance and insurance roles. Assistance is important for riding out current shocks while avoiding the depletion of assets. Insurance is an important measure to take in advance for minimizing exposure to shocks thereby encouraging innovation and entrepreneurship, and for increasing the ability to cope with shocks after they occur, thereby preserving assets (Devereaux 2002 and Skoufias 2002). Thus, safety nets are essential to development programming and should not only be associated with relief efforts.

Before getting into the specifics of various interventions, it is useful to note that the table does several things: (a) it recognizes that relief and development activities occur in the same spatial environment, even if they do not occur at the same time, and (b) it demonstrates that relief actions have relevance in pre-shock environments and that development actions have relevance in post-shock environments—a traditional view of the table might argue that relief interventions have relevance only in a post-shock situation and development in a pre-shock situation, (c) in a post-shock setting it distinguishes between current and future deprivation—if the first is only preserved at the expense of the second, a hollow victory has been achieved and vulnerability to future food deprivation is increasing, and (d) in a pre-shock setting it distinguishes between shock exposure and the ability to deal positively with the shock once it has occurred—the ability of the first to overwhelm the second again reflects vulnerability to further food deprivation.

Figure 4 provides some stylized scenarios describing how vulnerability might develop over time. In scenario 1, the ability to manage risk is declining in the context of shocks of fairly regular size and frequency. Shocks are undermining the ability to meet future needs and development and relief actions are not building up the ability to manage those risks. Scenario 2 shows a similar shock environment, but where development and relief actions have been able to build up risk management capacity. Scenario 3 shows a more severe than normal shock occurring—perhaps conflict—where capacity to manage risk falls dramatically. Without the right interventions pre-shock the exposure to shock might have been greater and the capacity to deal with it may have been lower. Scenario 4 shows an ideal scenario—exposure to shocks being reduced to some fixed minimum and the capacity to manage risk increasing over time. Many more such scenarios might be constructed using the concepts of exposure to shocks, capacity to manage risk, and time.

Figure 4: Vulnerability scenarios:
(ability to manage risk *minus* exposure to risk)

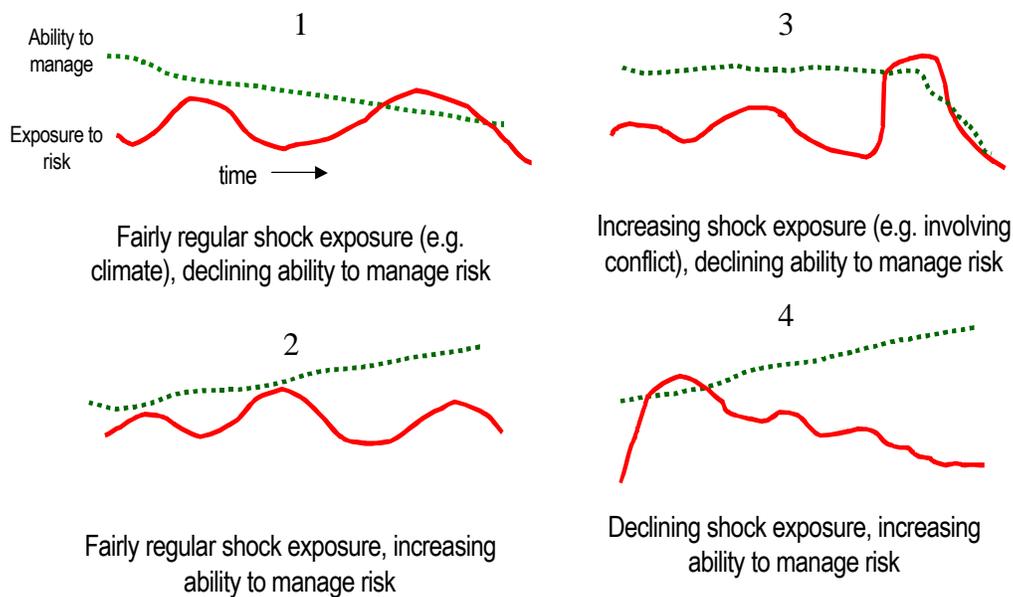


Table 6: A menu of options for integrating relief and development interventions in shock-prone areas to accelerate reductions in food insecurity

State	Function	Relief interventions ?	Development interventions
Post-shock: Goal is to meet current needs AND anticipate future needs	Getting food and nonfood resources to those who cannot meet current needs in a more efficient manner	*Improve accuracy and objectivity of food aid assessments *Reduce pledge-to-shipment lags *Improve nutrition content of interventions *Increase ability to combine food and nonfood resources *Build on existing social capital	*Improve the capacity to target resources
	Getting food and nonfood resources to those who can only meet current needs by undermining ability to meet future needs	*Focus more on underlying asset and livelihood indicators *Focus more on future vulnerability, even when dealing with current vulnerability	*Understand the vulnerability of this population to future shocks and how such shocks can undermine investment in growth oriented initiatives
Pre-shock: Goal is to reduce vulnerability (the difference between exposure to the hazard, risk or shock and the ability to manage that risk)	Decrease exposure to potential shock	*Early warning systems (including media strengthening) (e.g. India) *Target humanitarian interventions ex-ante (to groups that are likely to experience a potential hazard) (e.g. Zimbabwe)	*Promote good governance *Build social capital *Strengthen capacity to make claims and meet obligations *Invest in less-favored areas (e.g. India, China, Uganda)
	Increase ability to cope positively with potential shocks	*Preventative infant feeding (e.g. Haiti) *Build assets (infrastructure, market institutions, livelihood skills) via public works (e.g. South Africa)	*Cash transfers conditional on human capital investments (e.g. Mexico, Honduras, Nicaragua, Bangladesh) *Invest in infrastructure to allow private market development for key anti-famine foods (e.g. Bangladesh)

Note: Vulnerability = Potential Shock - Ability to Cope Positively (Webb and Harinarayan 1999)

3.1 Post-shock actions to improve the efficiency of getting food and nonfood resources to those who cannot meet current consumption needs

In general, these are issues that the food aid community has long-struggled with. Some are food-aid specific (e.g. the objectivity of food aid assessments, the constraints imposed by the Cargo Preference Act and the Value Added Mandate) and some are not (e.g. how to target effectively and how to quickly identify and build on existing social capital).

Examples from the relief side:

There needs to be a post-crisis mechanism for reviewing food aid assessments. It is clear that donors, inter-government agencies, governments, PVOs, the media, and local authorities all have their own institutional incentives for understating or overstating food aid needs (Devereaux and Hoddinott 1999). Currently, post-crisis evaluations rarely look at the effectiveness of targeting or the predictive success of food security assessments.

Institutional innovations need to be found to reduce the tradeoffs between those that support the current cargo preferences and value added mandates. At the very least the distribution of costs and benefits generated by these constraints across the set of developed and developing country vested interests needs to be assessed. To what extent is there (a) less flexibility in combining food and nonfood resources and (b) increased transport lags due to the cargo preferences? If so, what impact do the constraints have on the livelihoods of lobby group members and what impact do they have on the ability to keep people alive in the developing world?

The nutrition content of food aid transfers needs to be improved. Nutrition is really one of the keys to being able to address food insecurity today and for the next generation. It is one of the most sustainable investments that can ever be made given that it pays off throughout the lifecycle in terms of lower fertility rates, better school attainment, and increased income and strengthened livelihoods. Food provided through Title II programs is rarely seen as a long-term investment in human capital due to funding modalities. (India may be the exception to this).

Relief actions need to build on existing social capital. Research from rural Ethiopia suggests that food aid is shared widely within communities (Dercon and Krishnan 2002). But, the authors also note that there is some, but not complete, “crowding out” of existing informal risk-sharing arrangements for dealing with idiosyncratic crop risks—that is, the public intervention dampens the strength of the private action. This is not that surprising a result, although “crowding in” has been found from larger pension transfers in South Africa (Lund 2002), but we must be sure that food aid adds to overall risk sharing ability.

Look for ways in which existing social capital can be maintained through the distribution of food aid. For example, in an evaluation that was carried out in Bangladesh (Meyer et.al. 2001), it was found that despite the late delivery of food to a flood affected region, the food was eventually used to pay back loans that were taken earlier from others. This example demonstrates how food can be used to solidify social capital ties. The familiar precautionary principle “do no harm” must be a guiding principle when determining the appropriate use of food aid in relation to social capital. But

without a perspective that considers actions within a pre-and post-shock environment as legitimate, in practice there will not be time to understand existing social networks and trust norms.

Examples from the development side:

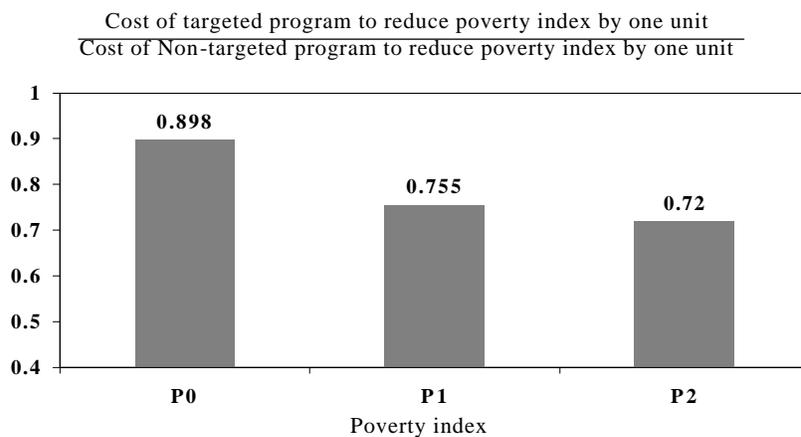
Target development interventions more effectively. The desire to target resources at the regional or community level is not restricted to those working in a relief context. Successfully targeting chronic poverty requires a similar set of skills and data. Unfortunately, targeting is difficult. In a recent review of 66 large scale targeted anti-poverty interventions from around the world, over one third were actually found to divert resources away from the poor. Environments characterized by poor governance were most likely to support this misdirection or misappropriation of resources.

The targeting of food aid is not exempt from these difficulties and may in fact be more likely to be non-progressive due to the rapidity with which the resources have to be programmed. Some recent work from Ethiopia has shown that once food aid is received, it has a large positive impact on child growth for infants in the 6-24 month age range, up to 1.9 cm in height over a 6 month period (Anonymous 2002). However, other work has shown how much food aid targeting in the mid 1990s Ethiopia can be improved (Jayne et. al. 2002). The paper shows that the probability of receiving free food or food for work is only weakly related to income levels. Those at the lower end of the income scale are only slightly more likely to receive food aid than those at the higher income scale. Rather it is previous receipt of food aid that seems to be the main driver of current receipt. This reflects in part, chronic need, but the authors also conclude that it reflects inertia, driven perhaps by high program start up costs or lobbying by past recipient groups.

But targeting, done well, can save lives, livelihoods and money. Figure 5 shows how poverty severity incidence (P2) is decreased in Mexico at a given resource bundle from targeting the large anti-poverty intervention, PROGRESA. For example, it costs the targeted Progres program 72% of what it would cost an untargeted program to have the same impact on the P2 poverty index (note that costs include the cost of administering the targeting process).

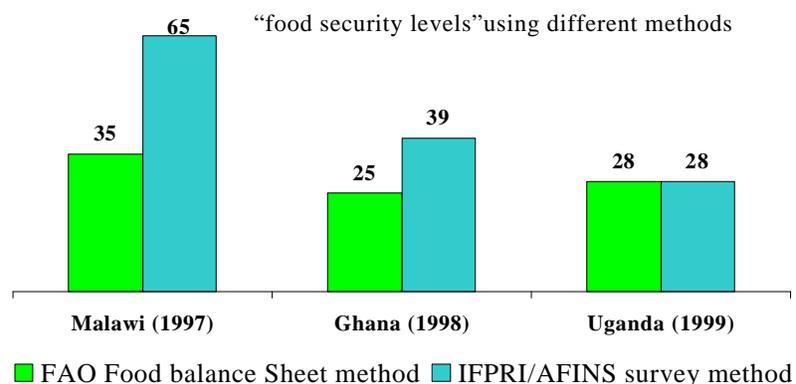
Publicly available food security data must be available, reasonably accurate and timely, and must be used and acted upon in a transparent way for administrative targeting to work. Such data are in principle available through various World Bank (LSMS), DHS, and National Government Expenditure and Income surveys. In reality they are difficult to get access to, are in various states in disrepair and are non-comparable. However, with minimal resources they can be rehabilitated and serve as an essential cross-country check on the FAO “undernourishment” data (see Figure 6 for the mismatch between the 2 sources of data in Malawi and Ghana). They can also serve as a valuable way of identifying chronic food insecurity within countries. Although these data sets are good for monitoring long term trends, additional data will need to be collected on a more frequent basis to monitor short-term fluctuations and the effects of periodic shocks.

Figure 5: The Cost-Effectiveness of Targeting: Progresa



Source: Adapted from Skoufias, Davis and de la Vega 2001

Figure 6: The Need to Invest in Global Public Goods:
e.g. Global Database on Food Insecurity w/Extant Data



3.2 Post-shock actions to improve the efficiency of getting food and nonfood resources to those who can only meet current consumption needs at the expense of future need

This is perhaps the most difficult type of action to implement successfully. On the one hand one does not want to program resources to all of those who live in a shock or disaster prone area (WFP 2000). Some of the households and communities in these areas can cope positively with these shocks. One wants instead to target those who, on the face of it, are coping, but beneath the surface their ability to cope with future shocks is being eroded.

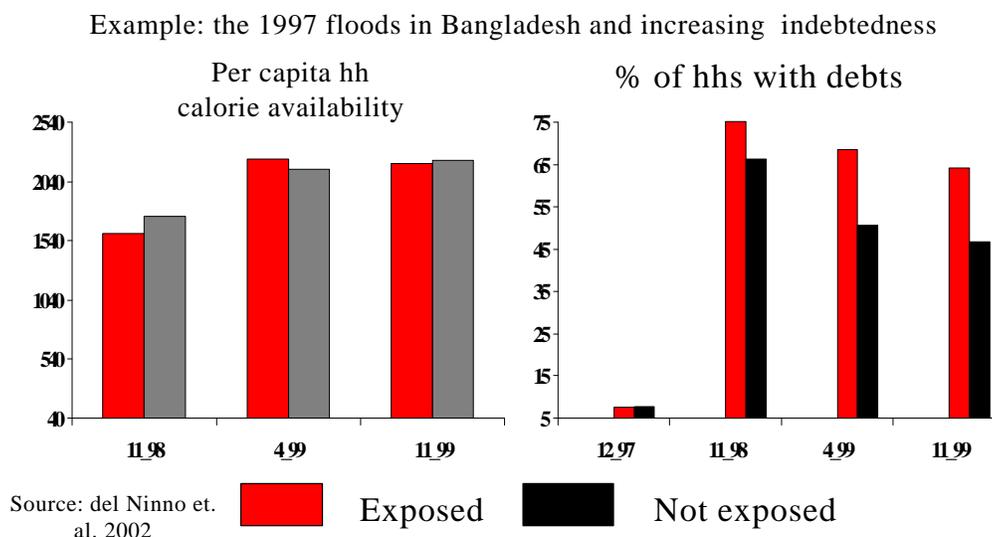
Examples from the relief side:

Monitor underlying assets. In households that are not entirely self-subsistent, assets are used to generate income, which in turn is used to support consumption. When income fluctuates and consumption does not, economists consider households as having adequate access to consumption smoothing mechanisms such as borrowing, or sales of assets and hence not vulnerable in the sense that they do not encounter some welfare loss above some socially accepted norm. However, this is a very static view of vulnerability. In a post-shock phase, and for households that are showing relatively lower consumption declines, monitoring and evaluation systems need to focus very much on what is happening to underlying livelihoods and assets. This can only be done if monitoring and evaluation systems are in place pre-shock. For consumption indicators, one is looking for shortfalls from accepted food security norms and trend data are less crucial—we primarily want to know when food consumption is close to some trigger level. For livelihoods and assets, however, there are less likely to be easily identifiable food security norms or triggers, so trends in assets vis a vis their starting levels are the most informative. The livelihood monitoring systems pioneered by CARE (e.g. CARE 2001) and further developed by TANGO (2002) are particularly useful for this type of environment.

For example, livelihood monitoring systems have been established in the northwest region of Bangladesh by CARE to track changes in livelihoods over time (Westley and Rashid 2000). Livelihood monitoring systems should use a range of quantitative and qualitative methods to explore livelihood impact. The major differences of a livelihood monitoring system when compared with a conventional project M&E system include: 1) comprehensiveness; 2) looks at interactions and processes as much as outcomes; 3) encourages the building of partners and linkages with other institutions to share in monitoring efforts; 4) links the context with the outcomes; and 5) encourages a more dynamic view of impact, looking at vulnerability, trends and changes over time in relation to the context rather than just food security status. (Westley and Rashid 2000).

Figure 7 illustrates the value of monitoring dimensions of livelihoods in Bangladesh after the floods of 1997. The directly exposed and the non-exposed households had similar calorie intakes post flood—one indication of an effective response to the floods by the food marketing systems, the food aid community and the households themselves. However the second panel of the figure shows that this coping came at the cost of borrowing by the directly exposed and by the so-called non-exposed, but that the latter group was more able to repay its loan over time.

Figure 7: Making *relief* interventions more effective at getting food to those who can only meet current needs by undermining future needs



Examples from the development side:

Pay more attention to poverty transitions and asset accumulation in the design of development interventions. Through an increasing number of studies that follow households over time, it is becoming clear that household income is very volatile. Large percentages of the population of a country move in and out of poverty periodically, even in non-crisis environments (Baulch and Hoddinott, 2000). What is less clear is whether the households that move in and out of poverty are doing so because they are accumulating or depleting assets or are struck by some transitory consumption windfall or disaster.

Hence the broader development literature is becoming more interested in vulnerability to deprivation, measured either as the probability of falling into poverty should some shock occur (Mansuri and Healy 2002), or an inability to smooth consumption in the face of variable income (Skoufias and Quisumbing 2002) or the independence of various components of household income (Ligon and Schechter 2002). This is fuelled by many factors, one of which being an increasing recognition of the role that shocks play in poverty dynamics.

One of the few papers that combines the poverty dynamics approach with a shock approach is by Carter and May (2001). They find (see Table 7) that households that were poor in 1998 stayed poor since 1993 mostly because they could not accumulate assets--not because of consumption shocks (episodes of high prices and low incomes). Similarly most of those that became poor between 1993 and 1998 did so because they could not accumulate assets not because of a specific consumption shock. Their work confirms the value of looking at the underlying asset accumulation

process to understand why poor people stay poor and why the nonpoor become poor—in their context policy has to focus more on how to stimulate asset accumulation than on how to improve risk management.

Table 7: Poverty Dynamics Due to Consumption Shocks: 1171 Households in KwaZulu-Natal South Africa

		1998	
		poor	nonpoor
1993	poor	18% stayed poor, of which: *at least 8% were kept below the line in 1993 and 1998 by consumption shocks *up to 92% could not accumulate assets	10% got ahead, of which: *58% were hit by a consumption shock pushing them below the poverty line in 1993 *42% were able to accumulate assets
	nonpoor	24% fell behind, of which: *15% were hit by a consumption shock pushing them below the poverty line in 1998 * up to 85% could not accumulate assets	48% never poor

Adapted from: Carter and May (2001)

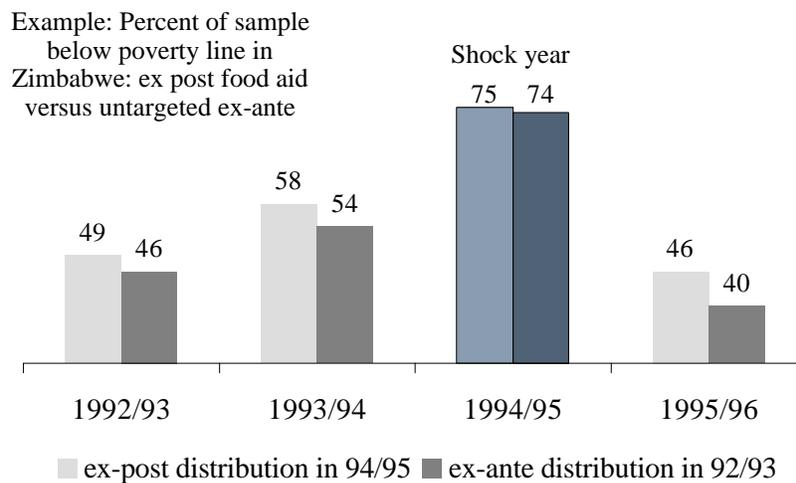
3.3 Pre-shock actions to decrease exposure to potential shock

Examples from the relief side:

Keep investing in early warning systems and link into local newspapers and media whenever possible. One way to decrease exposure to a shock is to build up the ability of people in a threatened area to highlight the threat they face. Early warning systems are obviously important way of doing this. One way to amplify and add to the messages coming out of an effective early warning system is to direct them to an effective media. Building on Sen’s ideas, and holding a number of confounding factors constant within a regression framework, Besley and Burgess (2001) find that in India over the period 1958-1992, every 1% increase in the local language newspaper circulation resulted in a 5.5 % increase in Calamity Relief expenditure. This is a demonstration of how newspapers can give voice to those potentially affected by a shock.

Target humanitarian interventions in anticipation of future shocks (to groups that are likely to experience a potential hazard). In a shock prone area in Zimbabwe, recent research has shown that if resources allocated for post-1994/95 drought relief to a set of affected households had instead been allocated to asset accumulation in 1992/93 for a broader set of households, the poverty rates in the non shock *and* shock years would have been lower (Owens et. al. 2002). This is a powerful result, and one that needs to be replicated in other shock settings. But it clearly points to the potential value of investing in pre-shock years in the assets that will help carry people through the non shock and shock years (see Figure 8).

Figure 8: Making *relief* interventions more effective at decreasing exposure to potential shock



Owens, Hoddinott and Kinsey 2002

This preventative approach may be more difficult to sell politically. It is more difficult to claim credit for a crisis averted than one whose effects are being ameliorated. Preventive action has less appeal than responding to a “CNN moment”. In an HIV/AIDS area, this kind of approach may be even more difficult. In a drought setting, being proactive means investing in assets and livelihoods in areas that are historically known to be drought prone. But in a HIV/AIDS setting, does a proactive role for food aid mean expanding the coverage of food aid in an unrealistic manner? Moreover, given the long wave nature of HIV/AIDS does this mean acting proactively for over a decade? HIV/AIDS is a unique shock for many reasons and merits a lot of hard thinking about how to use food aid. The attached Appendix Table 4 is an example of some of the suggestions being made about what food aid should do differently in areas with heavy and not so heavy AIDS loads (Kadiyala and Gillespie 2002).

Examples from the development side:

Promote good governance: Good governance is now recognized as intrinsic to the development process. Governance can be thought of as comprising voice (participation, democracy, human rights), capacity (human capital, social capital and organizational structures and incentives) and respect of the state and citizens for institutions that govern interactions between different groups (e.g. the formal legal system or traditional methods of adjudicating disputes). In particular, social capital, or the strength of associational life⁵, has emerged in recent years as a recognized asset. It has been shown to have positive impacts on income in a wide range of settings (Grootaert and von Bastelaer 2002) and has been shown to have positive effects on the ability of households in South Africa to deal with idiosyncratic shocks (Carter and Maluccio 2002). Also in South Africa,

⁵ Including culturally-specific practices to improve information flows, strengthen reciprocity and foster collective action (e.g. positive deviance in food selection and feeding practices and modes of communication technologies such as use of folk singers).

membership in groups at the community level has been shown to expand the radius of trust beyond the community to promote income generation (Haddad and Maluccio 2002).

Governance used to mean “government”. However, the governance picture has become more complex in recent years in terms of levels (community, local, national, global) and actors (government, civil society, for-profit private sector, NGOs and PVOs, international agencies). This complexity provides many opportunities for food aid to leverage interventions that promote good governance. When governance breaks down, food insecurity and malnutrition follows quickly. Food insecurity and malnutrition are also hypothesized to be the precursors to further food insecurity and malnutrition. There are a number of mechanisms at work ranging from the physiological (e.g. Fernald and Grantham-McGregor 2002) to those based on inequality across different power groups (Stewart 2000, Marchione 2002).

More directly, however, development food aid could be used to: promote the ability of communities to claim rights and meet obligations; establish new community associations, networks and collectives (e.g. farmer federations for sharing information, reducing transactions costs in certain dealings and gaining power in certain negotiations); and to facilitate more coordinated forms of engagement across several development actors (Bebbington and Carroll 2002). Recent changes in the structure of USAID now create opportunities for divisions within the DCHA Bureau to combine food assistance with programs aimed at strengthening governance.

Consider increasing investments in less-favored areas: Recent research results from China, India and Uganda, indicate that per unit of expenditure, investment in less-favored areas will do more to relieve poverty and to improve growth than investment in more-favored areas (Fan et. al. 2002 for Uganda, Fan et. al. 1999 for India and Fan et. al. 2000 for China—see Table 8). The less-favored areas are characterized by poor soils, poor water resources and by poor infrastructure. It is likely that the marginal returns to the more favored areas are diminishing. Development investors that think the biggest growth or poverty impact per dollar is from investing in more favored areas and relying on growth linkages to disseminate the benefits of the investments are being forced to re-think strategies. This result is particularly relevant for the food aid community because the less favored areas are primarily occupied by food insecure people. These new results should generate a stronger incentive for development and relief partners to coordinate and integrate approaches.

Table 8: The poverty payoff from investing in less-favored areas

	No of poor reduced per unit of government expenditure in roads	
	National	Less-favored areas
China	1	4.93 (Western Region)
India	1 (high potential rainfed areas)	2.71 (low potential rainfed areas)
Uganda	1	2.72 (Northern Uganda)

Sources: see text

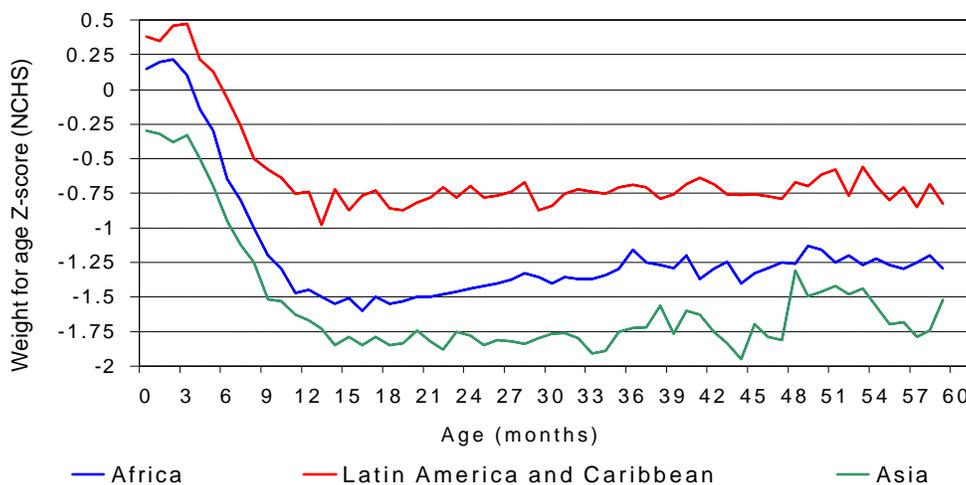
3.4 Pre-shock actions to increase ability to cope positively with potential shocks

Examples from the relief side:

Consider preventative infant feeding: Relief and development activities often include infant feeding and parental behavior change components. The returns from reducing malnutrition are vast—for example, 50% of child deaths are attributable to the potentiating effects of mild and moderate malnutrition in infectious diseases (e.g. Pelletier et. al. 1993). Typically activities are targeted to children under 5 that are already malnourished. But due to the irreversibility of the impacts of malnutrition on children under the age of 2 in terms of physical growth (see Figure 9 which shows how infant weight for age in the developing world drops drastically away from zero which represents the standard for a healthy population between the ages of 12 and 18 months) and cognitive development, is this the best strategy to promote a long-term resilience to shocks? Would it be better to target all infants under the age of 2, so as to inoculate their physical and cognitive development against future shocks? Research under controlled settings suggests that this is the most appropriate way of protecting the human capital of future generations. Research is now being conducted in Haiti by IFPRI, Cornell and FANTA working with World Vision to test whether the proactive or reactive mode is better at promoting infant growth and development in an operational context, all the while cognizant of the costs of these alternative targeting approaches.

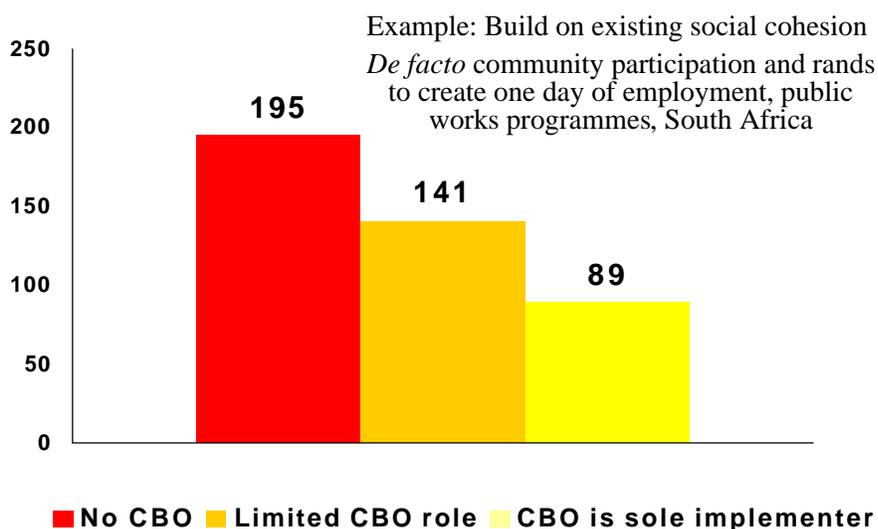
Figure 9: Making *relief* interventions more effective at increasing ability to positively cope with shock

Example: Targeting children's nutrition: Prevention or Cure?



Build assets (broadly defined, e.g. infrastructure, market institutions, livelihood skills) via public works: Public works programmes offer the potential to generate employment, develop skills and build assets, all of which help to increase the ability of the poor to cope positively with shocks. In addition these interventions can help to address the post-shock environment due to their ability to expand, via self selection based on a below market wage of those most in need. There has been much positive experience with these instruments in Asia, with a narrower evidence base for Africa (Subbarao 1997). However, recent experience with small-scale, short term public works in South Africa has shown that when the community is significantly involved in the process of selection, design and implementation of asset construction, the assets and skills produced are especially valuable to the poor (Hoddinott et. al. 2001 – see Figure 10). The principles for making these kinds of interventions successful in reducing poverty today and tomorrow are clear, and include labor intensity, careful choice of asset for value to the poor over the long term, minimal but non-zero cofinancing, the offering of below market wages, and an open and transparent worker selection process. If the receipt of food aid is too unreliable to ensure the kind of planning required, then the food aid community should be innovating institutionally to make flows more predictable or they should be encouraging their development counterparts in PVOs or in the government to develop these kinds of interventions. This would include making sure that complementary non-food resources are also available to make the programs effective.

Figure 10: Making *development* interventions more effective at decreasing exposure to potential shock



Source: Hoddinott, Haddad, Adato and Besley 2001

Examples from the development side:

Consider investing in transfers conditional on human capital behaviour change: In the last 5 years these interventions are increasingly found in South and Central America, and to a lesser extent in South Asia. The general idea behind them is to prevent shocks from disrupting household asset accumulation, either by drawing a child out of school or not taking them to the health clinic or diminishing the quality and quantity of the household diet. They transfer cash (PROGRESA in Mexico, PRAF in Honduras, and Red de Proteccion in Nicaragua) or food (Food for Education in

Bangladesh) in return for school attendance and health clinic attendance (see Figure 11 for a brief summary of impacts and see Skoufias and McClafferty 2001 for a detailed summary of the PROGRESA experience). They are generally classified as development interventions but are motivated by a desire to keep shocks from undermining the development process. They have worked well in the above countries. The expenditures underlying them are regarded as investments rather than transfers by the governments involved. They are probably more effective at shock prevention rather than shock response in that they rely on administrative targeting rather than the self-selection (as opposed to public works programmes for example). They are an example of how large development interventions can become explicitly focused on promoting the ability of households to deal with shocks as a means to a development end.

Figure 11: Progresa: breaking the transmission of intergenerational poverty

Dimension of living standards	Impacts of Progresa (based on randomized intervention at community level with baseline and follow ups)
Severity of poverty (P2)	Decreased by 45% with Progresa (compared to a 36% reduction if Progresa had been untargeted)
Visits to health clinic	Increase of 8% for for first prenatal visit in first trimester
Secondary School enrollment	Increased by 10%
Nutrition status	Increase of 16% in growth per year, under 3's

Source: Skoufias and McClafferty 2001

Invest in market infrastructure for products the poor rely on in an emergency: The floods of 1998 in Bangladesh did not result in a major food crisis. This is attributed to a *combination* of : (a) long-term government investment in production of the winter (boro) rice crop to diminish reliance on the flood susceptible monsoon (aman) rice crop, (b) investments in infrastructure and private sector trade to develop competitive food grain markets able to respond to an impending rice shortfall, and (c) an effective food distribution system (del Ninno, Dorosh and Smith 2002). The authors point out the synergies between these strategies, at the district and household level.

4. Implications for FFP

Those more familiar with FFP will draw their own conclusions about the implications for FFP of the preceding discussion. Here is my take on the implications for the Program:

1. *Develop a new conceptual framework to guide operations that*
 - a. Shows how relief and development interventions can be integrated to accelerate reductions in food insecurity
 - b. Recognizes the connections between pre and post shock environments
 - c. Uses the concept of vulnerability (the mismatch between risk and the ability to manage risk) to draw in development and relief actors within food aid and outside
 - d. Is flexible enough to allow adaptation to different contexts, especially the newer ones in urban areas and areas heavily affected by HIV/AIDS
2. *Within this conceptual framework*
 - a. *improve on core competency*—delivering food to those who need it urgently
 - b. *Focus more on livelihoods and assets*—get behind the consumption indicators and invest in nutrition, education, roads, social capital, skills development
 - c. *Focus more on governance*—governance failures are responsible for much and perhaps most food insecurity, but food aid may be able to promote good governance as well as react to deficits of it
 - d. *Focus more on prevention*—related to the focus on assets and livelihoods, but it brings in the intergenerational aspects too, namely investing in infant nutrition, prior to malnutrition occurring
3. *Get integrated into the broader development and poverty debate.* Safety nets are not just residual to the growth process they are now regarded by many as an integral part of a growth strategy. Food security is an excellent entry point into the growth and poverty debate and food aid has important contributions to make to reducing food insecurity and to the design of development interventions.
4. *Link into the current empirical debates by partnering with applied research organizations* that have interest in these areas, to update FFP thinking on concepts such as vulnerability, targeting, livelihoods, governance, rights and social capital, and then to update research thinking through operational experiences
5. *Support some “gold standard” evaluations of key programming issues* (a) targeting, (b) issues surrounding the tradeoffs involved in programming food versus cash, (c) the distribution of costs of the value added mandate and cargo preferences. There is a need for some credible, well respected success stories at a political level and there is a need to stimulate a culture of critical empirical inquiry in the area of food aid programming
6. *Contribute to improving the quantity and quality of high quality information freely available on global food insecurity and changes over time.* FAO’s undernourishment data are very flawed in terms of measuring food insecurity, but there is nothing else currently available. For a very small investment there are many datasets that could be rehabilitated and brought together to form a Global Database on Food Insecurity.

References

- ACC/SCN 2000. Fourth Report on the World Nutrition Situation. Geneva. Standing Committee on Nutrition, U.N.
- AFINS 2002. Project to assess food insecurity in Africa. Lisa Smith. IFPRI.
- Baulch, Bob and John Hoddinott (2000) "Economic Mobility and Poverty Dynamics in Developing Countries" *Journal of Development Studies* (Special Issue) (August).
- Bebbington, Anthony J., and Thomas F. Carroll. 2002. Induced social capital and federations of the rural poor in the Andes. In *The Role of Social Capital in Development: An Empirical Assessment*, ed. Christian Grootaert and Thierry van Bastelaer, 234-278. Cambridge: Cambridge University Press.
- Besley, Timothy, and Robin Burgess. 2001. The political economy of government responsiveness: Theory and evidence from India. Department of Economics, London School of Economics, London. Photocopy.
- Bonnard, P., P. Haggerty, A. Swindale, G. Bergeron, and J. Dempsey. Report of the Food Aid and Food Security Assessment: A Review of the Title II Development Food Aid Program. FANTA. AED.
- CARE. 2001. Managing Risk, Improving Livelihoods: Program Guidelines for Conditions of Chronic Vulnerability. CARE. Lead Author: Dan Maxwell.
- Carter, M. and J. Maluccio. 2002. Social capital and coping with economic loss: An analysis of stunting of South African Children. Forthcoming. *World Development*.
- Carter, M. and Julian May, One Kind of Freedom: Poverty Dynamics in Post-apartheid South Africa, *World Development* 29 (12) (2001) pp. 1987-2006.
- Coady, D., M. Grosh and J. Hoddinott. 2002. "The Targeting of Transfers in Developing Countries: Review of Experience and Lessons", unpublished. IFPRI/FCND
- Del Ninno, Carlo, Paul A. Dorosh, and Lisa C. Smith. 2002. Public policy, markets and household coping strategies in Bangladesh: Avoiding a food security crisis following the 1998 floods. International Food Policy Research Institute, Washington, D.C. Photocopy.
- Dercon, Stefan, and Pramila Krishnan. 2002. Risk sharing and public transfers. University of Oxford, U.K. Photocopy.
- Devereux, Stephen. 2002. Can social safety nets reduce chronic poverty? *Development Policy Review* 20 (November): 657-675.
- Devereux, Stephen, and John Hoddinott. 1999. Improving food needs assessment methodologies: A 'viewpoint' paper for food policy. Institute of Development Studies, Sussex, U.K. Photocopy.
- Fan, S., X. Zhang, and N. Rao. 2002. Public Expenditure, Growth and Poverty Reduction in Rural Uganda. IFPRI mimeo.
- Fan, S. Linxiu Zhang, and Xiaobo Zhang. 2000. Growth & Poverty in Rural China: the Role of Public Investments. EPTD Discussion Paper 66. IFPRI.

- Fan, S. and Peter Hazell. 1999. Are Returns to Public Investment Lower in Less-Favored Rural Areas? An Empirical Analysis of India. EPTD Discussion Paper 43.
- FAO (Food and Agriculture Organization of the United Nations). 2001. *The State of Food Insecurity in the World 2001*. Rome.
- Fernald, Lia C., and Sally M. Grantham-McGregor. 2002. Growth retardation is associated with changes in the stress response system and behavior in school-aged Jamaican children. *Journal of Nutrition* 132 (December): 3674-3679.
- Grootaert, Christiaan, and Thierry van Bastelaer, ed. 2002. *The Role of Social Capital in Development: An Empirical Assessment*. Cambridge: Cambridge University Press.
- Haddad, L. M. Ruel, and J. Garrett. 1999. Are Urban Poverty and Undernutrition Growing? *World Development*. 27(11):1891-1904.
- Haddad, L. 2001. Deepening the Analysis of the Factors Behind Progress Towards WFS Targets. ODI Discussion Paper. Overseas Development Institute. London.
- Haddad, L. and J. Maluccio. 2002. Trust, Groups and Household Welfare in South Africa. Forthcoming. *Economic Development and Cultural Change*
- Hoddinott, J., L. Haddad, Adato, M., and T. Besley. 2001. Participation and Poverty Reduction: Issues, Theory and New Evidence from South Africa. FCND Discussion Paper 98. IFPRI
- Jayne, Thomas S., John Strauss, Takashi Yamano, and Daniel Molla. 2002. Targeting of food aid in rural Ethiopia: Chronic need or inertia? *Journal of Development Economics* 68 (2): 247-288.
- Kadiyala, S. and S. Gillespie. 2002. Rethinking Food Aid to Fight AIDS. Mimeo. IFPRI.
- Ligon, Ethan, and Laura Schechter. 2002. Measuring vulnerability. University of California, Berkeley, California. Photocopy.
- Lund, Frances. 2002. 'Crowding in' care, security and micro-enterprise formation: Revisiting the role of the state in poverty reduction and in development. *Journal of International Development* 14: 681-694.
- Mansuri, Ghazala, and Andrew Healy. 2001. Vulnerability prediction in rural Pakistan. World Bank, Washington, D.C. Photocopy.
- Marchione, Tom. 2002. Nutrition and crises. In *Nutrition: A Foundation for Development*. Brief 9 of 12. Geneva: ACC/SCN.
- Mason, J. 2001. Measuring Hunger and Malnutrition. Paper prepared for FAO. Tulane School of Public Health and Tropical Medicine. Tulane University, New Orleans.
- No author. Child growth, shocks, and food aid in rural Ethiopia. Photocopy.
- Owens, T., J. Hoddinott, and B. Kinsey. 2002. Ex ante actions and ex post public responses to drought shocks: Evidence and simulations from Zimbabwe. Forthcoming. *World Development*.
- Pelletier, D., Frongillo, E. and Habicht, J.P. Epidemiologic Evidence for a Potentiating Effect of Malnutrition on Child Mortality. *American Journal of Public Health* 83(8): 1130-1133.

- Ruel, M., L. Haddad., and J. Garrett. 1999. The Urban Facts of Life: Implications for Food and Nutrition Policy. *World Development*. 27(11):1917-1939.
- Skoufias, Emmanuel, and Agnes R. Quisumbing. 2002. Consumption insurance and vulnerability to poverty: A synthesis of the evidence from Bangladesh, Ethiopia, Mali, Mexico, and Russia. International Food Policy Research Institute, Washington, D.C. Photocopy.
- Skoufias, E., B. Davis and S. de la Vega. 2001. Targeting the Poor in Mexico. An Evaluation of the Selection of Households for PROGRESA. FCND Discussion Paper 103. IFPRI.
- Skoufias, E. 2002. Economic Crises and Natural Disasters: A Review of Recent Evidence. Forthcoming. *World Development*.
- Skoufias, Emmanuel and Bonnie McClafferty. 2001. Is PROGRESA Working? Summary of the Results of An Evaluation by IFPRI. FCND Discussion Paper 118. IFPRI.
- Smith, L. 1998. Can FAO's measure of chronic undernourishment be strengthened? *Food Policy*. Volume 23, No. 5 pp. 425-445.
- SOFI 1999. FAO. The State of Food Insecurity in the World 1999. Food and Agriculture Organization of the United Nations. Rome.
- SOFI 2000. FAO. The State of Food Insecurity in the World 2000. Food and Agriculture Organization of the United Nations. Rome
- Stewart, F. 2000. Crisis Prevention: Tackling Horizontal Inequalities. *Oxford Development Studies*. 23(3):245-262
- Subbarao, K. 1997. Public works as an anti-poverty program: An overview of cross-country experience. *American Journal of Agricultural Economics*. v79 (December): 678-83
- Svedberg, P. 2001 Undernutrition Overestimated. University of Stockholm. Department of Economics. Sweden.
- TANGO. 2002. Interagency Food Programming, Design, Monitoring and Evaluation Workshop. Sierra Leone. October, 2002. Supplementary Documents & Workshop Materials.
- Von Braun, Joachim, Paul L. G. Viek, and Andreas Wimmer. 2002. Essay: Disasters, conflicts and natural resource degradation: Multidisciplinary perspectives on complex emergencies. In *Center for Development Research Annual Report 2001/2002*. Bonn: ZEF.
- Webb, P. and A. Harinarayan, 1999. A measure of uncertainty: The nature of vulnerability and its relationship to malnutrition. *Disasters*. 23 (4), pp 292-305.
- WFP (World Food Programme). 2000. Disaster mitigation: A strategic approach. Policy Issues, Agenda Item 4, First Regular Session, Executive Board. Rome. Photocopy.

Appendix Table 1: Limitations in the Numbers of Undernourished Indicator and Suggested Actions to Strengthen it

Component of undernourishment estimate	Assumptions made	Weakness	Further details	Action for Strengthening
Per capita dietary energy supply	Based on food balance sheets; data collection methods and assumptions not clear	Exclusive focus on calories; No focus on within-country household-level food availability		*Use data on fats and proteins in future descriptive work *Develop a Global Database on Household Food Security
Coefficient of variation assumed for calorie intake distribution	DES is more important determinant of numbers of undernourished than CV	CV range not based on nationally representative data sets CV is not allowed to vary sufficiently by country CV is assumed not to vary over time	Smith 1998	Use extant data from nationally representative datasets on household calorie availability to update CVs
Log-normal distribution of calorie intakes	Distribution is always log-normal	Distribution may not always be log-normal	Smith 1998	Use actual distributions to characterize regions, updating as new data become available
Coefficient of variation assumed for calorie requirements	Average physical activity levels over 24 hours are assumed constant by country	Variation across country is likely given different levels of mechanisation, urbanization, productivity etc.	Svedberg 2001	Use actual data on time allocation in a few countries and group countries accordingly
Use of per capita denominator with dietary energy supply	Households assumed to have same composition in terms of age and sex	Variation by country. Poorer countries tend to have younger populations. Some South Asian countries have fewer women.	Svedberg 2001	Use extant data from nationally representative datasets on average household composition
Household composition affects energy requirement	Households assumed to have same composition in terms of age and sex	Variation by country. Poorer countries tend to have younger populations. Some South Asian countries have fewer women.	Svedberg 2001	Use extant data from nationally representative datasets on average household composition
Method of size of estimating tail of distribution	Single integral method used. Correlation between intakes and requirements is not addressed.	Correlation between intake and requirements is positive due to long term physiological regulatory mechanisms	Svedberg 2001	Use a range of estimates on this correlation coefficient and estimate joint probability method of estimating tail of distribution in addition to existing method

Appendix 2: Comparison of five methods for assessing hunger and malnutrition

Method	Main indicator(s)	Level at which indicator applies	Period to which indicator applies	Relation to hunger	Relation to diet quality and micro-nutrients	Applicability to evaluation
FAO: DES/CV	% with low kcals (interpreted as inadequate).	National only.	1 year average.	Aims to be estimate of % with food inadequacy.	Could be assessed like kcals.	Limited: possibly for national long-term policies.
Household Income and Expenditure Surveys (HIES)	Household kcal intake.	Population sub-groups, national if national sample.	Usually a few days; sometimes repeated to give estimates of fluctuation (e.g. seasonal) or trends.	Kcal intakes; if related to household requirements (not usually) gives % with food inadequacy	Can be estimated; less common than kcals.	Suitable; measures of program participation etc. need to be included, and surveys repeated.
Food Consumption Surveys; Food Frequency	Individual intake, related to requirement, hence adequacy.	Individuals, population sub-groups, not usually national.	24-hr recall to a few days; may be repeated.	Most direct estimate from measuring intake.	Usually estimated and related to requirement.	Suitable for small sample research into causality including impact evaluation.
Qualitative Measures of Food Security	% reporting experience of food insecurity and hunger.	Individual, sub-groups, national.	Usually monthly, then repeated to give annual estimate.	Direct estimate of reported experience, and related behavior.	Not readily assessed in quantitative terms.	Suitable for large-scale evaluation, with qualitative outcome measure.
Anthropometry	% underweight or stunted (children); thin (low BMI) adults.	National, population sub-groups; measures effects of inadequate food, not hunger itself.	Point estimate ? stunting reflects some months or years, underweight and thinness less time.	Not specific to food inadequacy, but trends similar and levels may give some bounds to hunger estimates.	Related, directly and through birth weight; still research area.	Suitable for evaluation, using measure of physical effects on growth and health.

Source: Mason 2001.

Appendix Table 3: LIFDC List of Countries, 2000

Code	Name	Start Year	End Year	% "undernourished" in 1997-99 (from 2001 SOFI)
2	Afghanistan	-	-	58
3	Albania	-	-	10 (-4)
7	Angola	-	-	51
1	Armenia	-	-	35
52	Azerbaijan, Republic of	-	-	37
16	Bangladesh	-	-	33
53	Benin	-	-	15 (-4)
18	Bhutan	-	-	
19	Bolivia	-	-	22
80	Bosnia and Herzegovina	1992	-	4
233	Burkina Faso	-	-	24
29	Burundi	-	-	66
115	Cambodia	-	-	37
32	Cameroon	-	-	25
35	Cape Verde	-	-	
37	Central African Republic	-	-	43
39	Chad	-	-	34
351	China	-	-	9 (-7)
45	Comoros	-	-	
250	Congo, Dem Republic of	-	-	64
46	Congo, Republic of	-	-	32
107	Côte d'Ivoire	-	-	16 (-3)
49	Cuba	-	-	17 (+12)
72	Djibouti	-	-	
58	Ecuador	-	-	5 (-3)
59	Egypt	-	-	4 (-1)
61	Equatorial Guinea	-	-	
178	Eritrea	1993	-	57
238	Ethiopia	1993	-	49
62	Ethiopia PDR	-	1992	
75	Gambia	-	-	15 (-4)
73	Georgia	-	-	18
81	Ghana	-	-	15 (-20)
89	Guatemala	-	-	22
90	Guinea	-	-	34
175	Guinea-Bissau	-	-	
93	Haiti	-	-	56
95	Honduras	-	-	21
100	India	-	-	23
101	Indonesia	-	-	6 (-3)
114	Kenya	-	-	46
83	Kiribati	-	-	
116	Korea, Dem People's Rep	-	-	40
113	Kyrgyzstan	-	-	10
120	Laos	-	-	28
122	Lesotho	-	-	25
123	Liberia	-	-	42
154	Macedonia, The Fmr Yug Rp	-	-	5
129	Madagascar	-	-	40
130	Malawi	-	-	35
132	Maldives	-	-	
133	Mali	-	-	

136	Mauritania	-	-	28
141	Mongolia	-	-	42
143	Morocco	-	-	6 (+1)
144	Mozambique	-	-	54
149	Nepal	-	-	23
157	Nicaragua	-	-	29
158	Niger	-	-	41
159	Nigeria	-	-	7 (-7)
165	Pakistan	-	-	18 (-6)
168	Papua New Guinea	-	-	26
171	Philippines	-	-	24
184	Rwanda	-	-	40
244	Samoa	-	-	
193	Sao Tome and Principe	-	-	
195	Senegal	-	-	24
197	Sierra Leone	-	-	41
25	Solomon Islands	-	-	
201	Somalia	-	-	75
38	Sri Lanka	-	-	23
206	Sudan	-	-	21
209	Swaziland	-	-	12 (+2)
212	Syrian Arab Republic	-	-	<2.5
208	Tajikistan	-	-	47
215	Tanzania, United Rep of	-	-	46
217	Togo	-	-	17 (-10)
213	Turkmenistan	-	-	9
227	Tuvalu	-	-	
226	Uganda	-	-	28
235	Uzbekistan	-	-	4
155	Vanuatu	-	-	
249	Yemen	-	-	34
251	Zambia	-	-	47

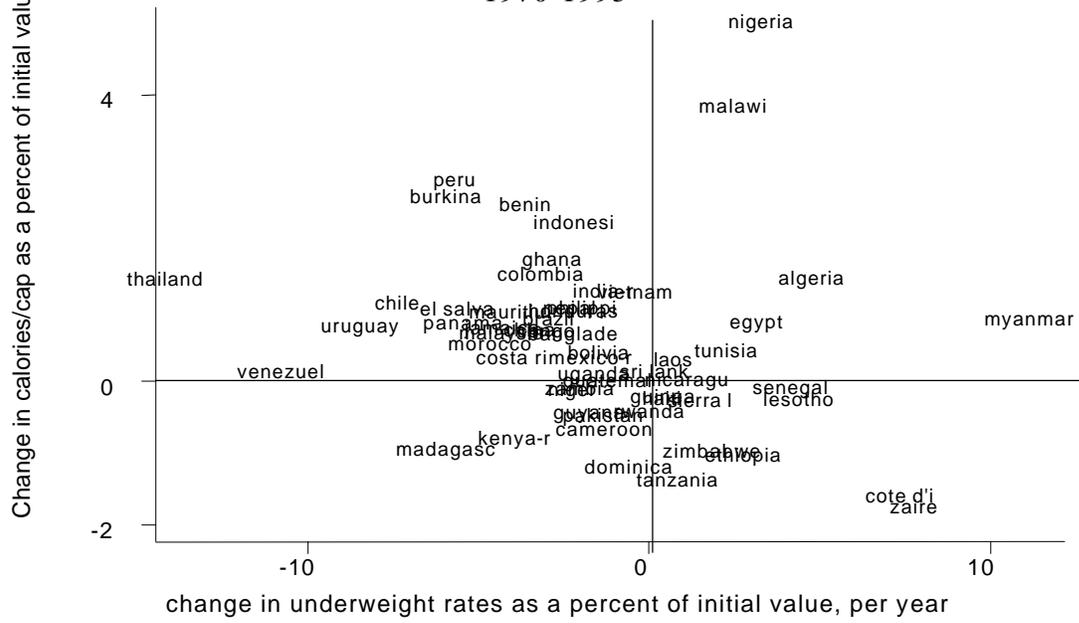
Source: Based on SOFI 2001 data and a LIFDC list for 2000 from: <http://apps.fao.org/notes/876-e.htm>

Appendix Table 4: What difference does HIV/AIDS make to food aid programming?

Type	Instrument	Design features in non-HIV context	Design Features in heavy HIV/AIDS context
Livelihood support	Income generation and microcredit	Mostly targeted to women's groups Difficult in reaching ultra poor	Could be targeted to PLWHA associations, OVCs and other vulnerable groups such as elderly headed households and households taking in foster children Lack of trust regarding repayment in group based lending in high HIV prevalent regions; greater stigma and social exclusion.
	Food-for-assets/work	Based on the premise of self targeting Labor intensive works	Self targeting will not work for PLWHAS or child headed and elderly headed labor-short households who are often least able to undertake manual work. Dissemination of labor saving technologies, promotion of labor and tool banks. Crop diversification with an emphasis in labor-extensive and nutrient rich crops
Human capital development	Food-for-training	Often limited to training volunteers mostly health and extension workers Mostly in food insecure regions	Should be continued but expanded to TBAs, HBC and community based child care center volunteers; volunteer teachers in informal schools and for teachers to be trained in HIV/AIDS related issues Could be expanded to high prevalent areas. (regardless of food security at the regional level)
	Food-for-education	One of the most popular food aid interventions targeting mostly schools in chronically food insecure regions Extra take-home ration given to girls	Could be expanded to high HIV prevalent areas (regardless of food security at the regional level). Extra-take home ration to be given not only girls but also to OVCs. Involvement of the community is crucial to prevent stigma of OVCs.
Emergency relief	Food-for-health	Supplementary feeding of pregnant women No attention paid to adult illness	Supplementary feeding of pregnant women and support of HIV positive mothers and their infants Critical to program nutrition interventions to chronically ill through HBC.
	Food-for-life (emergency response)	Often limited to distribution of relief food Characterized by food response No special attention to youth Little attention paid to often-dismal living conditions of host populations around refugee camps.	Need for structural response to build capacity and livelihoods to prevent survival sex and exploitative power relations. Need for nutrition response with special attention to chronically ill, pregnant and lactating women. Crucial to contain the epidemic. Strategies to be devised to assist youth, esp. girls in negotiating safe sexual practices and livelihood approaches Exploitation of refugees by host population and vice-versa is prevalent and fuels the epidemic. Investments in improving livelihoods and HIV-relevant education of <i>all</i> population groups should be given priority

Source: Adapted from Kadiyala and Gillespie (2002)

Appendix Figure 1: changes in per capita energy supply and changes in the percent of preschool children that are underweight, 1970-1995



Source: Haddad 2001