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

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Executive Summary

For the past decade, the U.S. Agency for International Development (USAID) and its partners throughout the international development community considered food security achieved when:

1. a wide variety of food was available in local markets or fields (availability);
2. people had enough money to purchase a variety of foods (access);
3. food was eaten in an environment that supplied appropriate care, clean water, and good sanitation and health services (utilization); and
4. the risk of losing these levels of availability, access, and utilization was low.

Too often, however, strategies to reduce food insecurity have been operationalized that considered only the first three components of the food security definition. In emergency or relief interventions, there is an obvious priority on getting food to those with immediate need. The challenge, however, is to address the needs of households that may be food secure today but are using coping strategies that may compromise their food security tomorrow. Emergency and relief actors operate within timeframes and institutional settings that constrain them from considering the long-term impact of emergency interventions on development activities. On the other hand, development actors do not always consider the ability of households to manage future risk, especially in shock-prone areas.

The perspective that both emergency and development actors are missing is *vulnerability*. Vulnerability is defined here as the ability to manage risk. Vulnerability can be lessened by 1) reducing exposure to risks from shocks that affect many (e.g., drought) or shocks that affect individuals, households, or communities (e.g., the death of the household head); 2) increasing the ability to manage such risks; or 3) both.

This paper concludes that the food assistance community can and should do the following:

- Develop a new conceptual framework to integrate relief and development interventions to accelerate reductions in food insecurity. Vulnerability concepts should be at the core of this framework. In addition, the framework should be flexible enough to allow adaptation to different contexts such as urban areas and areas heavily affected by HIV/AIDS.
- Play a more active role in the broader development and poverty debate. Safety net transfers are not just residual to the growth process—they should be an integral part of a growth strategy.
- Form partnerships with applied research organizations that work in these areas to update the food aid community on concepts such as vulnerability, targeting, livelihoods, governance, rights, and social capital. Research organizations will also benefit from the operational experiences of development organizations.
- Support rigorous evaluations of key programming issues.
- Contribute to improving and widely disseminating good data on global food insecurity levels and changes over time.

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1 Introduction

For the past decade, the U.S. Agency for International Development (USAID) and its partners throughout the international development community considered food security achieved when:

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- the risk of losing these levels of availability, access, and utilization was low.

Too often, however, strategies to reduce food insecurity have been operationalized that considered only the first three components of the food security definition. In emergency or relief interventions, there is an obvious priority on getting food to those with immediate need. The challenge, however, is to address the needs of households that may be food secure today but are using coping strategies that may compromise their food security tomorrow. Emergency and relief actors operate within timeframes and institutional settings that constrain them from considering the long-term impact of emergency interventions on development activities. On the other hand, development actors do not always consider the ability of households to manage future risk, especially in shock-prone areas.

The perspective that both emergency and development actors are missing is *vulnerability*. Vulnerability is defined here as the ability to manage risk. Vulnerability can be lessened by 1) reducing exposure to risks from shocks that affect many (e.g., drought) or shocks that affect individuals, households, or communities (e.g., the death of the household head); 2) increasing the ability to manage such risks; or 3) both.

Drawing on recent empirical literature on trends in food security location and causes, this paper argues that:

- 1) the operationalization of a fuller definition of food security—one that pays explicit attention to risk and vulnerability—will strengthen programs that aim to reduce food insecurity;
- 2) relief and development programs both play important roles in meeting current food needs and reducing risks of losing the ability to meet needs in the future; and
- 3) an explicit recognition of the pre- and post-shock continuum, i.e., that a post-shock environment at some stage becomes a pre-shock environment, will promote the ability of relief and development programs to collaborate more effectively.

These issues are discussed in the context of food aid programming, although the issues are quite general in scope. Within the food aid context, it is argued that better integration of relief and development program interventions would result in a more effective use of resources for both (e.g., Bonnard et al. 2002). The authors of this paper agree. Food aid interventions can be carried out within a conceptual framework that explicitly recognizes vulnerability within a pre- and post-shock context.

This paper concludes that the food assistance community can and should do the following:

- Develop a new conceptual framework to integrate relief and development interventions to accelerate reductions in food insecurity. Vulnerability concepts should be at the core of this framework. In addition, the framework should be flexible enough to allow adaptation to different contexts such as urban areas and areas heavily affected by HIV/AIDS.
- Play a more active role in the broader development and poverty debate. Safety net transfers are not just residual to the growth process—they should be an integral part of a growth strategy.
- Form partnerships with applied research organizations that work in these areas to update the food aid community on concepts such as vulnerability, targeting, livelihoods, governance, rights, and social capital. Research organizations will also benefit from the operational experiences of development organizations.
- Support rigorous evaluations of key programming issues.
- Contribute to improving and widely disseminating good data 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 proposed actions to accelerate reductions in food insecurity.

2.1 Location of food insecurity

National level

Using FAO undernourishment data as the best available (though imperfect) indicator of national-level food insecurity today, Table 1 shows that food insecurity is on the decline in Asia, South America, and West Africa, but 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). There are differences in the direction of trends 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 reducing undernourishment over the past 10 years (Table 2) tend to be those experiencing shocks or poor governance (the 11 worst performers include the Democratic Republic of the Congo, the Democratic Republic of Korea, Burundi, Cuba, Mongolia, Somalia, Iraq, and Afghanistan). The countries of southern and eastern Africa, which are heavily affected by HIV/AIDS, are expected to show up at the wrong end of the rankings in five to 10 years.

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.¹ Table 3

¹ 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. This would enable governments to target food security programs more effectively.

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

Region (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

outlines the dimensions needed in thinking about food security—the move from physical access to economic and social access to future access (vulnerability) and the ability to articulate access needs (rights). This paper focuses on how food aid programming can address the vulnerability and rights/governance components of food security.

Despite its limitations, the FAO undernourishment indicator is important, because there is no ready substitute for it at present, at least in terms of the extensiveness of its country and year coverage. There are a number of ways, however, it can be strengthened. A list of related indicators that could complement the FAO indicator and give a richer assessment of food insecurity and its causes is shown in Table 2 of the appendix.

Neither the FAO indicator nor the alternatives are used to determine which countries are eligible for food aid. The current list is defined by the FAO classification of low-income food-deficit countries (LIFDCs). There are three criteria. First, a country should have a per capita income below the historical ceiling set by the World Bank to determine eligibility for International Development Account (IDA) assistance and for 20-year terms. The historical ceiling of per capita GNP for 2000 was \$1,445. 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. Third, the self-exclusion criterion is applied when countries that meet the above two criteria specifically request to be excluded from the LIFDC category.

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 1996-98 and in 1990-92	Difference between numbers undernourished in 1996-8 and in 1990-92 (millions)	Change in number of undernourished from 90-92 to 96-98 as a percentage of the number of undernourished in 1990-92	Percentage undernourished in 1996-98
1 THROUGH 10 IMPROVING OVER TIME	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 THROUGH 99 GETTING WORSE OVER TIME	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

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	Physical access at national level	Is there potentially enough food at the national level to feed all people?
	Physical access at local level	Is food in local markets or in local fields?
Household food consumption surveys	Economic access	Can households afford to purchase what they do not consume from home production?
Individual food intake surveys	Social access	Do all household members have equal access to food?
	Food quality and safety	Is food of sufficient diversity and safety to promote good health?
Anthropometric data	Physiological access	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	Risk of loss of access	How sensitive are any forms of access to shocks and cycles? (e.g. seasonality)
Governance-rights, capacity	Access as a human right	What is the capacity of the food system to deliver and what is the capacity of individuals to press their claims to food?

Table 3 of the appendix lists LIFDC countries in 2000 and adds their 1997–1999 undernourishment prevalence rates and the change in prevalence rates 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 Côte d'Ivoire. Some countries with high—and in some cases rising—levels of undernourishment are not on the list, including Namibia (33 percent undernourished, up from 30 percent in early 1990s), Zimbabwe (39 percent, down from 43 percent), Thailand (21 percent, down from 30 percent), Vietnam (19 percent, down from 27 percent), and Botswana (23 percent, up from 17 percent). It is not surprising that the LIFDC list tends to include fewer food insecure countries because GNP per capita does not correlate well with undernourishment. There is definitely a technical case for the need to find a better way to identify actual food security needs. Serious consideration should be given to changing the country-level criteria that are used to target food aid by incorporating data from one or more of the food insecurity indicators listed in Table 2 of the appendix—both in terms of current levels of food deprivation and trends in food deprivation—into the eligibility criteria.

Subnational level

At the subnational level, poverty and malnutrition appear 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 clearly for countries with available data.

Table 4: The changing rural-to-urban location of infant undernutrition		
	Absolute number of urban underweight children increasing	Absolute number of urban underweight children decreasing
Share of urban underweight children increasing	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
Share of urban underweight children decreasing	Tanzania 91-96	Brazil 89-96 Mauritania 90-96 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 use to define 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 security programming	
Urban Phenomenon	Implication for food security 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 subnational level, there appears to be a growing gap in poverty rates between areas less favored and areas more favored by public investment (Fan et al. 2002, 2000, 1999). In rural areas, investments in green revolution technology such as irrigation, roads, and market institutions have been able to address poverty. In more remote areas, poverty has proven more intractable. Nevertheless, public sector investments in the less favored areas (at least in the countries investigated so far) 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). Because of this, the authors recommend that USAID field missions reevaluate the strategy of targeting development assistance to areas with higher potential. Such a change in strategy would have the added advantage of creating opportunities for synergy between development resources and relief resources—the latter of which tends to be allocated to less favored areas in any case.

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:

1) *Developing-country governments must live up to their commitments to invest more in their own people and their own assets.* This requires 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. Governments need to build up human and material resources to take advantage of development opportunities.

2) *The developed world has a responsibility to generate favorable conditions for overcoming food insecurity.* In particular, it must prevent its own agricultural producers from depressing food commodity prices by exporting foods at highly subsidized prices into developing world markets. Perhaps more importantly, it should open up its own borders to agricultural and other products produced efficiently by developing countries. This issue is particularly relevant given the current debate among the cooperating sponsors,² food processors, and other commodity groups in the United States. Intellectual property right regimes should be more sensitive to developing country emergency conditions.

3) *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). The emergence of the HIV/AIDS pandemic is crippling some sub-Saharan African countries and is increasing the vulnerability of the development environment.³

4) *Good governance is crucial* to accelerating reductions in food insecurity. Good governance includes the capacity of the state to formulate and implement policies; accountability, transparency, and the participation of civil society in public decisionmaking; and the capacity of and respect for these institutions to mediate differing interests within the country peacefully and justly. The association between governance and food insecurity is clearly shown in Figure 3. The majority of the worst performing countries in the 1990s in terms of increased rates of undernourishment all suffered deficits in good governance.⁴

² Cooperating sponsors are private voluntary organizations (PVOs), cooperatives and international organizations that, in partnership with USAID, deliver food aid for emergency relief and development programs under Public Law 480.

³ Note that the “long wave” nature of HIV/AIDS ensures that, even if new infections ceased altogether, 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.

⁴ The FAO has data for 99 countries.

Figure 1: Total affected by natural disasters: Worldwide estimate (millions)*

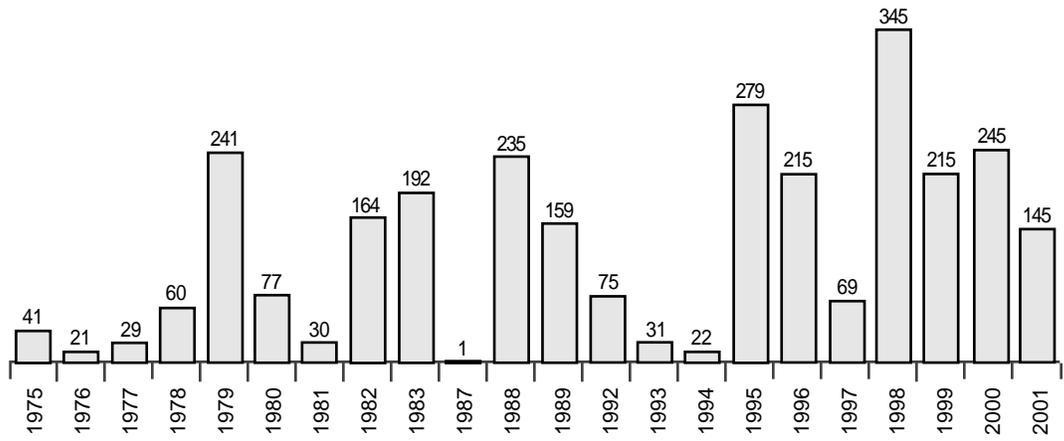


Figure 2: Total affected by conflict: Worldwide estimate (millions)*

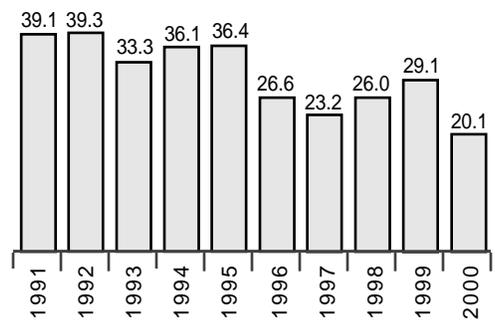
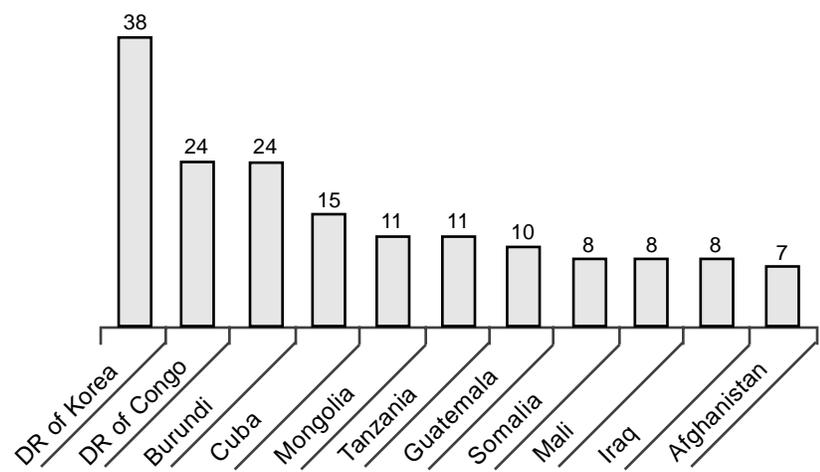


Figure 3: Increase in percent “undernourished” from early to late 1990s: Worst performers out of 99



Source: FAO data in SOFI 1999 and 2000

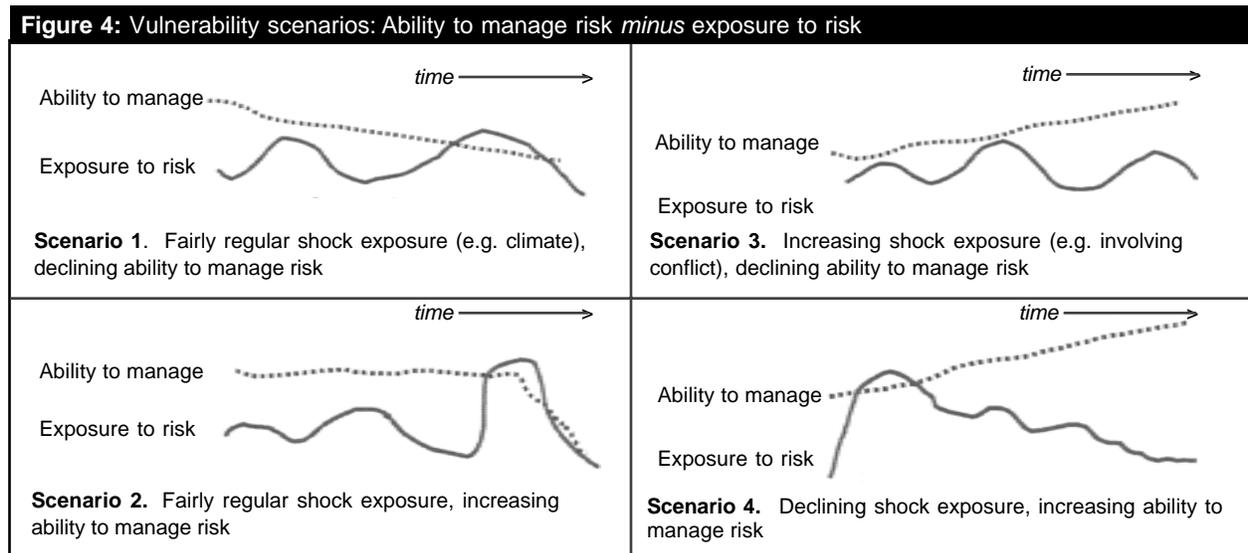
*Note: Total affected= people that have been injured, affected (requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance) and left homeless after a disaster (www.cred.be/emdat/intro.html). International Disaster Database.

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

Table 6 presents a 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 split time in shock-prone areas into post-shock and pre-shock states, recognizing that transitions occur back and forth between the two.⁵ Table 6:

- 1) recognizes that relief and development activities occur in the same spatial environment, and could occur at the same time;
- 2) demonstrates that relief activities have relevance in pre-shock environments and that development activities have relevance in post-shock environments; a traditional interpretation of the table might be that relief interventions are relevant only in a post-shock situation and development in a pre-shock situation;
- 3) distinguishes in a post-shock setting between current and future deprivation; if the first is only preserved at the expense of the second, a pyrrhic victory has been achieved and vulnerability to future food deprivation is increasing; and
- 4) distinguishes in a pre-shock setting 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 declines in the context of shocks of fairly regular size and frequency. Shocks undermine the ability to meet future needs, and development and relief actions strengthen the ability to manage those risks. Scenario 2 shows a similar shock environment, but development and relief actions have been able to build up risk management capacity. Scenario 3 shows a more severe than normal shock occurring—such as conflict—where capacity to manage risk falls dramatically. Without the



⁵ Some of the distinctions are artificial and are for ease of description only. Indeed, there is 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.

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 need 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)

appropriate interventions in a pre-shock setting, exposure to such shock might have been greater and the capacity to deal with it 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.

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, the food aid community has long-struggled with getting resources to those in need efficiently. Some problems are food-aid specific (the objectivity of food aid assessments) and some are not (effective targeting and quickly identifying and building 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, intergovernmental 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.

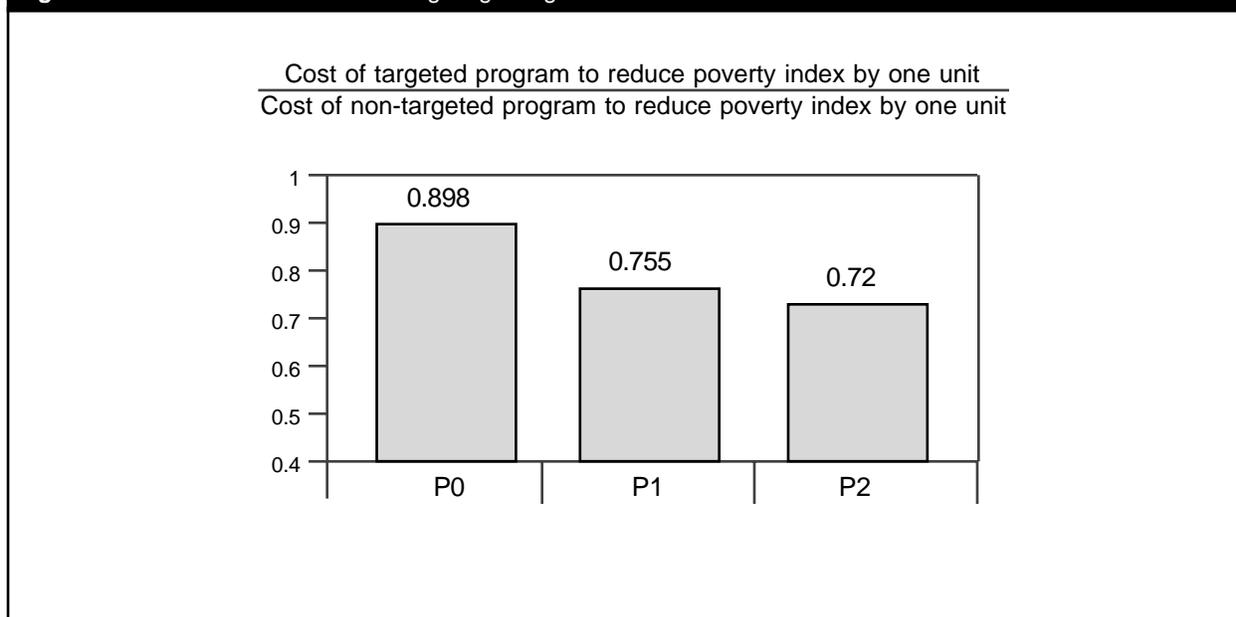
The nutrition content of food aid transfers needs to be improved. Nutrition is key to addressing food insecurity today and for the next generation. Investments in improved nutrition translate into lower fertility rates, better school attainment, increased income, and strengthened livelihoods. With the possible exception of India, food provided through Title II programs is rarely seen as a long-term investment in human capital due to funding modalities.

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). However, there is some, but not complete, “crowding out” of existing informal risk-sharing arrangements for dealing with crop risks—that is, the public intervention dampens the strength of the private action. This is not surprising, although “crowding in” has been found from larger pension transfers in South Africa (Lund 2002). Nevertheless, we must be sure that food aid strengthens overall risk-sharing ability.

Ways should be sought to maintain existing social capital through the distribution of food aid. For example, in an evaluation 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. While it would have been preferable to have the food be delivered in a timely fashion, 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.

Examples from the development side

Development interventions should be targeted more effectively. The need to target resources at the regional or community level is not restricted to those working in the relief context. Unfortunately, targeting is difficult. In a recent review of 66 large-scale targeted antipoverty 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.

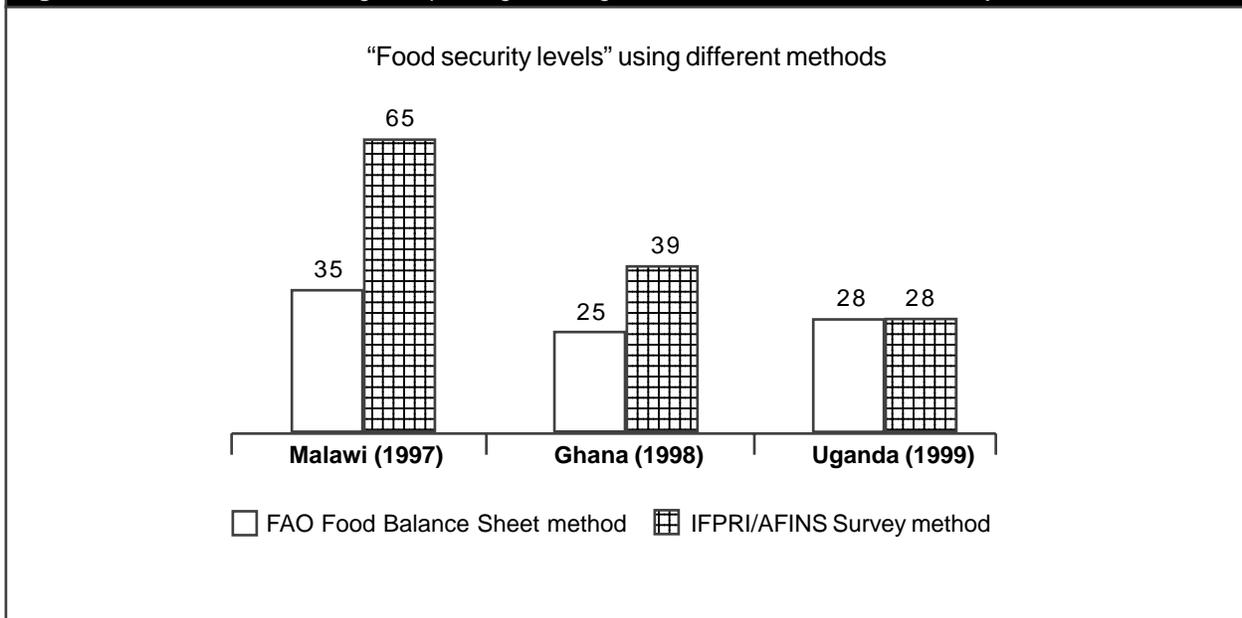
Figure 5: The cost-effectiveness of targeting: Progresa

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

The targeting of food aid is not exempt from these difficulties, and may in fact be more vulnerable, due to the rapidity with which the resources have to be programmed in a relief context. Recent research in Ethiopia has shown that once food aid is received, it has a large positive impact on growth of infants in the 6–24-month age range, up to 1.9 cm in height over a six-month period (Christiansen and Alderman 2002). However, other research indicates that food aid targeting in mid-1990s Ethiopia could have been much better. Jayne et al. (2002) 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 appears to be the main determinant of current receipt. This reflects, in part, chronic need, but it also exposes organizational inertia, driven perhaps by high program startup costs or lobbying by past recipient groups. Targeting, however, done well, saves lives, livelihoods, and money. Figure 5 shows how the percentage of individuals below the poverty line (P0), the average distance below the poverty line (P1), and the severity of poverty (P2) are decreased in Mexico at a given resource bundle from targeting the large antipoverty intervention, PROGRESA. For example, it costs the targeted PROGRESA program 72 percent of what it would have cost an untargeted program to have the same impact on the P2 poverty index.⁶

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

⁶ These costs include the cost of administering the targeting progress.

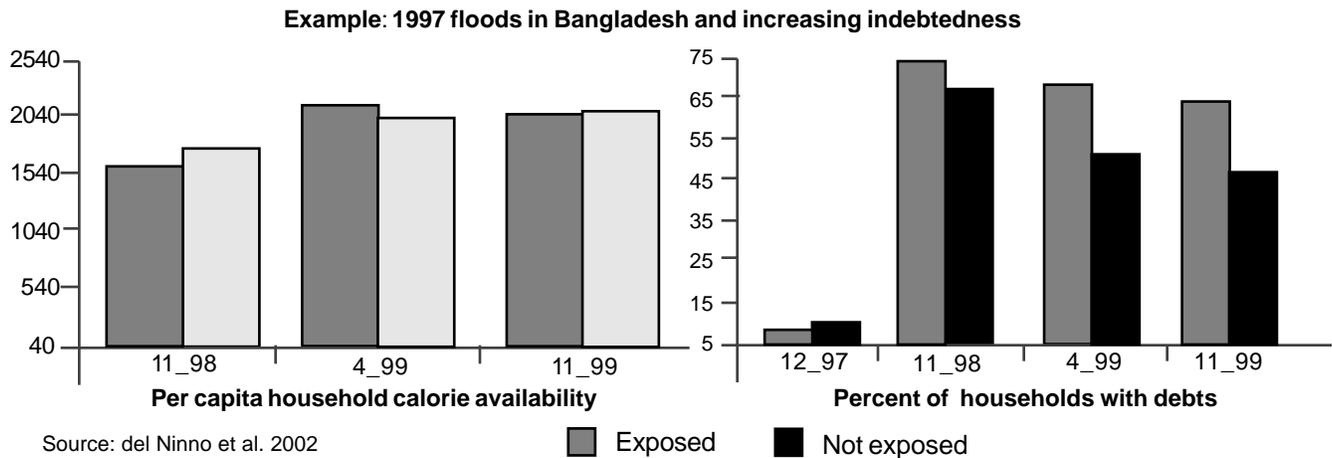
Figure 6: The need to invest in global public goods: e.g. Global database on food insecurity with extant data

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 needs

This is perhaps the most difficult type of action to implement successfully. On the one hand, program resources should not go to all those who live in a shock or disaster-prone area (WFP 2000). Some households and communities can cope positively with these shocks. Instead, it is better to target those who *appear* to be coping well but who simultaneously are eroding their ability to cope with future shocks.

Examples from the relief side

Monitor underlying assets. Households use assets to generate income, which in turn is used to support consumption. When income fluctuates but consumption does not, economists consider households as having adequate access to consumption-smoothing mechanisms, such as borrowing or sales of assets. Therefore, households are not vulnerable in the sense that they do not encounter welfare losses 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 before the shock. For consumption indicators, trend data are less crucial than current data on shortfalls from accepted food security norms. It is more important 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-à-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.

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

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 compared to a conventional project monitoring and evaluation system include 1) ensuring comprehensiveness, 2) monitoring of interactions and processes as much as outcomes, 3) encouraging the building of partners and linkages with other institutions to share in monitoring efforts, 4) linking the context with the outcomes, and 5) encouraging 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 caloric 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 nonexposed, but that the latter group was more able to repay its loans over time.

Examples from the development side

Pay more attention to poverty transitions and asset accumulation in the design of development interventions. Based on 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 noncrisis environments (Baulch and Hoddinott 2000). What is less clear is whether the households that move in and out of poverty do 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 probability of falling into poverty should some shock occur (Mansuri and Healy 2002), inability to smooth consumption in the face of variable income (Skoufias and Quisumbing 2002), or independence of various components of household income (Ligon and Schechter 2002). This interest is fueled by many factors, one of which is an increasing recognition of the role that shocks play in poverty dynamics.

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: 92% could not accumulate assets	10% got ahead, of which: 42% were able to accumulate assets
	non-poor	24% fell behind, of which: 85% could not accumulate assets	48% never poor

Adapted from: Carter and May (2001)

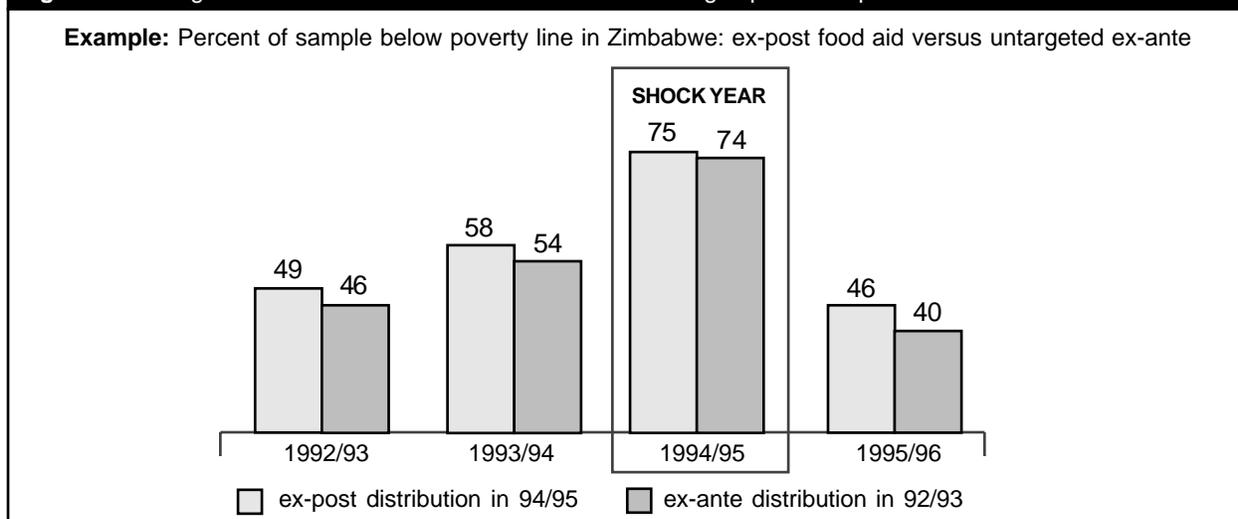
One of the few papers to combine the poverty dynamics approach with a shock approach is Carter and May (2001). They find (see Table 7) that households that were poor in 1998 stayed poor since 1993 mostly because they could not accumulate assets—not because of consumption shocks (episodes of high prices 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 this light, policy ought to focus more on stimulating asset accumulation than improving risk management.

3.3 Pre-shock actions to decrease exposure to potential shock

Examples from the relief side

Keep investing in early warning systems and ensure that the local media is integrated in the early warning system whenever possible. One way to decrease exposure to a shock is to make sure that people in that area are aware of the threat of shock. Early warning systems are an important way of doing this. One way to amplify and enhance 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 percent increase in local-language newspaper circulation resulted in a 5.5 percent increase in Calamity Relief expenditure. This is a demonstration of how newspapers can give notice to those potentially affected by a shock.

Target humanitarian interventions in anticipation of future shocks to groups that are most likely to experience a potential hazard. In a shock-prone area in Zimbabwe, recent research has shown—through econometric modeling—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 powerful result 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

Source: Owens, Hoddinott and Kinsey 2002

This preventive approach may be more difficult to sell politically. It is more difficult to claim credit for averting a crisis than ameliorating it. 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 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-term nature of the HIV/AIDS pandemic, does this mean acting proactively for over a decade? HIV/AIDS is a unique shock for many reasons, and thus more critical thinking is required about how best to use food aid to address it. Table 4 in the attached appendix lists some of the suggestions being made about what food aid should do differently in areas with high and low HIV/AIDS prevalence rates (Kadiyala and Gillespie 2002).

Examples from the development side

Promote good governance. Good governance is now recognized as intrinsic to the development process. In particular, social capital, or the strength of associational life, has emerged in recent years as a recognized asset.⁷ Social capital has been shown to have positive impacts on income in a wide range of settings (Grootaert and von Bastelaer 2002), and it 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, 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).

Historically, *governance* meant the formal central government. However, the concept of governance has become more complex in recent years. There are now 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 follow quickly. Food insecurity and malnutrition are also hypothesized to be the precursors to poor governance. There are a number of mechanisms at work, ranging from the physiological links between undernutrition in infancy and antisocial behavior later in the lifecycle (e.g., Fernald and Grantham-McGregor 2002) to those based on inequality in wellbeing across different power groups—often aligned along ethnic, religious, and cultural lines—and the resulting lack of social cohesion within society (Stewart 2000; Marchione 2002).

⁷ 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).

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
- facilitate more coordinated forms of engagement across different development actors (Bebbington and Carroll 2002).

Recent changes in the structure of USAID now create opportunities for divisions within the Agency’s Bureau for Democracy, Conflict and Humanitarian Assistance to combine food assistance with programs aimed at strengthening governance.

Consider increasing investments in less-favored areas. Recent research from China, India, and Uganda indicate that per unit of expenditure, investment in less-favored areas does more to relieve poverty and improve growth than does investment in more-favored areas (Fan et al. 2002 [Uganda]; Fan et al. 1999 [India]; Fan et al. 2000 [China]).⁸ Less-favored areas are characterized by poor soils, poor water resources, and poor infrastructure. It is likely that the marginal returns to the more-favored areas are diminishing. Development investors who 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 rethink strategies. This result is particularly relevant for the food aid community, because less-favored areas are primarily occupied by food insecure people. These new results should generate a stronger incentive for development and relief partners—food-aid related or not—to coordinate and integrate approaches.

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

	Number 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)

Source: see text

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

Examples from the relief side

Consider preventive infant feeding. Relief and development activities often include infant feeding and caregiver behavior change components. The returns from reducing malnutrition are enormous. For example, 50 percent of child deaths are attributable to the potentiating effects of mild and moderate malnutrition on infectious diseases (e.g., Pelletier et al. 1993). Typically, activities are targeted to children under age 5 who are already malnourished (reactive). However, due to the irreversibility of the impacts of malnutrition on children under 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, i.e., the standard for a healthy population between 12 and 18 months) and cognitive development, is this the best strategy to promote long-term resilience to shocks? Would it be better to target all infants under age 2 (proactive) by inoculating their physical and cognitive development against future shocks?⁹ Studies under controlled

⁸ See Table 8 for road investment, but the results hold for other types of investment.

⁹ Of course, the approach depends on the nature of malnutrition. Low weight-for-height, as often witnessed in a post-shock situation must always be treated.

settings suggest that this is indeed the most appropriate way of protecting future human capital. Research is now being conducted in Haiti by the International Food Policy Research Institution (IFPRI), Cornell University, and USAID's Food and Nutrition Technical Assistance (FANTA) project working with World Vision to test whether the proactive or reactive approach is better at promoting infant growth and development in an operational context.¹⁰

Build assets (broadly defined, e.g., infrastructure, market institutions, livelihood skills) via public works. Public works programs offer the potential to generate employment, develop skills, and build assets, all of which help increase the ability of the poor to cope positively with shocks. In addition, these interventions can help improve the post-shock environment when they expand employment of those most in need via a mechanism such as self selection based on below-market wages. 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 in the future are clear. They 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 nonfood aid counterparts in PVOs or government to develop these kinds of interventions. This would include making sure that complementary nonfood resources are also available to make the programs effective.

Examples from the development side

Consider investing in transfers conditional on human capital behavior change. In the last five years these interventions are increasingly used 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 children 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 Protección* in Nicaragua) or food (Food for Education in Bangladesh) in return for school attendance and health clinic attendance.¹¹ They are generally classified as development interventions but are motivated by a desire to keep chronic poverty and 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 preventing shock impacts rather than improving shock response in that they rely on administrative targeting rather than self-selection (as in public works programs). 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.

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 1) long-term government investment in production of the winter (boro) rice crop to diminish reliance on the flood susceptible monsoon (aman) rice crop; 2) investments in infrastructure and private sector trade to develop competitive food grain markets able to respond to an impending rice shortfall; and 3) an effective food distribution system (del Ninno, Dorosh, and Smith 2002). The synergies between these strategies, at the district and household level, are clear.

¹⁰At the same time this research is tracking the costs of these alternative approaches.

¹¹ See Figure 11 for a brief summary of impacts; see Skoufias and McClafferty 2001 for a detailed summary of the PROGRESA experience.

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

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

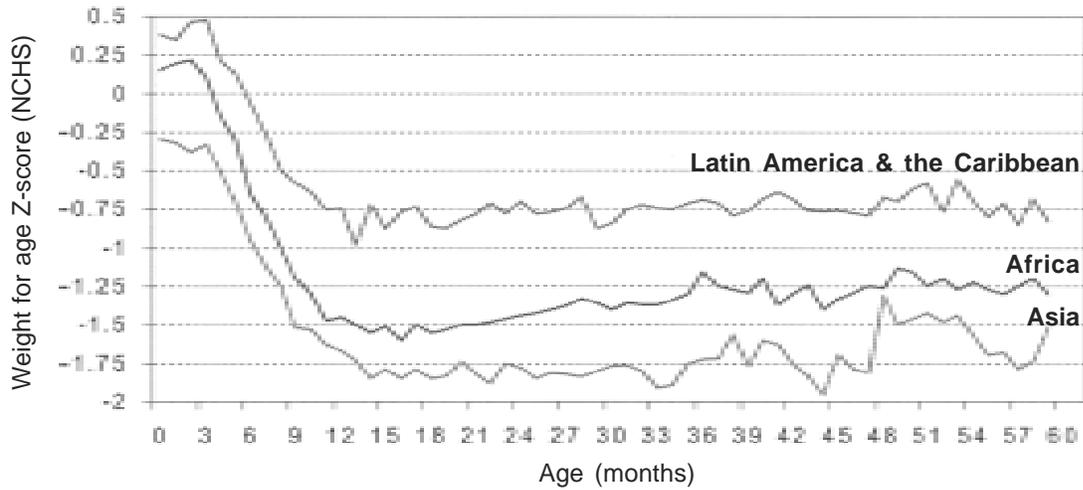
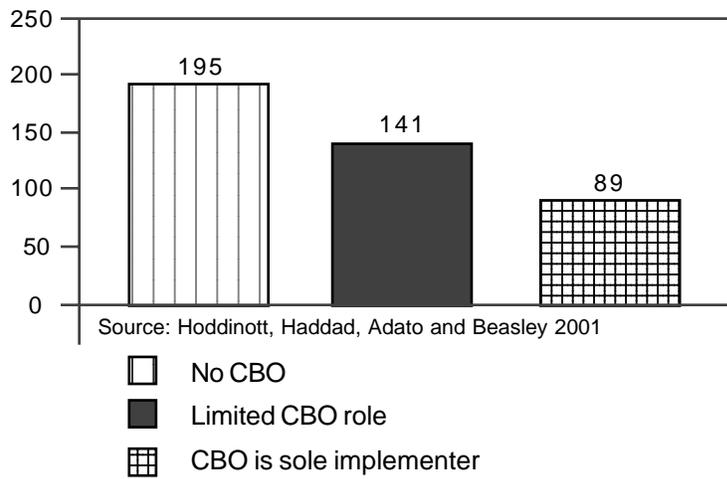


Figure 10: Making relief interventions more effective at decreasing exposure to potential shock



Example: Build on existing social cohesion
De facto community participation and rands to create one day of employment, public work programs, South Africa

Source: Hoddinott, Haddad, Adato and Beasley 2001

-  No CBO
-  Limited CBO role
-  CBO is sole implementer

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 first prenatal visit in first trimester
Secondary school enrollment	Increased by 10%
Nutrition status	Increase by 16% in growth per year, under 3's

Source: Skoufias and McClafferty 2001

4 Implications for the Office of Food for Peace

The preceding discussion has a number of implications for the Office of Food for Peace.

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 the food aid community; and
 - 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*— deliver food to those who need it urgently;
 - b. *Focus more on livelihoods and assets*— 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 respond to deficits of it; and
 - d. *Focus more on prevention*— this is 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. *Play a more active role in 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. Food aid has important contributions to make to reducing food insecurity and to the design of other development interventions.
4. *Link into the current empirical debates by partnering with applied research organizations* that have interest in these areas, to update Food for Peace thinking on concepts such as vulnerability, targeting, livelihoods, governance, rights and social capital, and to update research thinking through operational experiences.
5. *Support some rigorous evaluations of key programming issues such as* (a) targeting, and (b) issues surrounding the tradeoffs involved in programming food versus cash. 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 and widely disseminating empirically supported information on global food insecurity levels 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 relatively modest investment (about \$30,000 per data set), there are many datasets that could be rehabilitated and brought together to form a Global Database on Food Insecurity.

5 References

- ACC/SCN (United Nations Administrative Committee on Coordination, Sub-Committee on Nutrition). *4th Report on the World Nutrition Situation*. Geneva: ACC/SCN, 2000.
- Baulch, R., and J. Hoddinott. "Economic mobility and poverty dynamics in developing countries." *Journal of Development Studies* 36 (Issue 6, 2000): 1-24.
- Bebbington, Anthony J., and Thomas F. Carroll. "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. Cambridge: Cambridge University Press (2002), 234-278.
- Besley, Timothy, and Robin Burgess. *The Political Economy of Government Responsiveness: Theory and Evidence from India*. London: Department of Economics, London School of Economics, 2000.
- Bonnard, P., P. Haggerty, A. Swindale, G. Bergeron, and J. Dempsey. *Report of the FoodAid and Food Security Assessment: A Review of the Title II Development Food Aid Program*. Food and Nutrition Technical Assistance Project. Washington, D.C.: Academy for Educational Development, 2002.
- CARE International. Lead author: Dan Maxwell. *Managing Risk, Improving Livelihoods: Program Guidelines for Conditions of Chronic Vulnerability*. CARE International UK, 2001.
- Carter, M., and J. Maluccio. "Social capital and coping with economic loss: An analysis of stunting of South African children." Forthcoming in *World Development*.
- Carter, Michael R., and Julian May. "One Kind of Freedom: Poverty Dynamics in Post-Apartheid South Africa." *World Development* 29 (Issue 12, 2001): 1987-2006.
- Coady, D., M. Grosh and J. Hoddinott. "The Targeting of Transfers in Developing Countries: Review of Experience and Lessons." Food Consumption and Nutrition Division, International Food Policy Research Institute (IFPRI). Washington, D.C.: IFPRI, 2002. Mimeo.
- Del Ninno, Carlo, Paul A. Dorosh, and Lisa C. Smith. "Public policy, markets and household coping strategies in Bangladesh: Avoiding a food security crisis following the 1998 floods." Forthcoming in *World Development*.
- Dercon, Stefan, and Pramila Krishnan. *Risk sharing and public transfers*. United Nations University WIDER (World Institute for Development Economics Research) Discussion Paper No. 2002/85. Helsinki: UNU/WIDER, 2002.
- Devereux, Stephen. "Can social safety nets reduce chronic poverty?" *Development Policy Review* 20 (Nov 2002): 657-675.
- Devereux, Stephen, and John Hoddinott. "Improving food needs assessment methodologies: A 'viewpoint' paper for food policy." Sussex: The Institute of Development Studies (IDS), 1999. Mimeo.
- Fan, S., X. Zhang, and N. Rao. *Public Expenditure, Growth and Poverty Reduction in Rural Uganda*. International Food Policy Research Institute (IFPRI). Washington, D.C.: IFPRI, 2002. Mimeo.
- Fan, S. Linxiu Zhang, and Xiaobo Zhang. 2000. *Growth & Poverty in Rural China: the Role of Public Investments*. EPTD Discussion Paper 66. Environmental and Production Technology Division, International Food Policy and Research Institute (IFPRI). Washington, D.C.: IFPRI, 2000.
- Fan, S. and Peter Hazell. *Are Returns to Public Investment Lower in Less-Favored Rural Areas? An Empirical Analysis of India*. EPTD Discussion Paper 43. Environmental and Production Technology Division, International Food Policy and Research Institute (IFPRI). Washington, D.C.: IFPRI, 1999.

- FAO (Food and Agriculture Organization of the United Nations). *The State of Food Insecurity in the World 2001*. Rome: FAO, 2001.
- FAO (Food and Agriculture Organization of the United Nations). *The State of Food Insecurity in the World 2000*. Rome: FAO, 2000.
- FAO (Food and Agriculture Organization of the United Nations). *The State of Food Insecurity in the World 1999*. Rome: FAO, 1999.
- Fernald, Lia C., and Sally M. Grantham-McGregor. "Growth retardation is associated with changes in the stress response system and behavior in school-aged Jamaican children." *Journal of Nutrition* 132 (December, 2002): 3674-3679.
- Grootaert, Christiaan, and Thierry van Bastelaer, ed. *The Role of Social Capital in Development: An Empirical Assessment*. Cambridge: Cambridge University Press, 2002.
- Haddad, L., M. Ruel, and J. Garrett. "Are Urban Poverty and Undernutrition Growing?" *World Development* 27 (Issue 11, 1999): 1891-1904.
- Haddad, L. *Deepening the Analysis of the Factors Behind Progress Towards WFS Targets*. ODI Discussion Paper. London: Overseas Development Institute, 2001.
- Haddad, L., and J. Maluccio. "Trust, groups and household welfare in South Africa." Forthcoming in *Economic Development and Cultural Change*.
- Hoddinott, J., L. Haddad, M. Adato, and T. Besley. *Participation and Poverty Reduction: Issues, Theory and New Evidence from South Africa*. FCND Discussion Paper 98. Food Consumption and Nutrition Division, International Food Policy and Research Institute (IFPRI). Washington, D.C.: IFPRI, 2001.
- Jayne, Thomas S., John Strauss, Takashi Yamano, and Daniel Molla. "Targeting of food aid in rural Ethiopia: Chronic need or inertia?" *Journal of Development Economics* 68 (Issue 2, 2002): 247-288.
- Kadiyala, S., and S. Gillespie. "Rethinking food aid to fight AIDS." Forthcoming. Submitted to FCND Discussion Paper Series, Food Consumption and Nutrition Division, International Food Policy Research Institute (IFPRI).
- Ligon, Ethan, and Laura Schechter. "Measuring vulnerability." Paper presented at the Royal Economic Society's 2002 Annual Conference, University of Warwick, March 25-27, 2002.
- Lund, Frances. "'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 (2002): 681-694.
- Mansuri, Ghazala, and Andrew Healy. "Vulnerability prediction in rural Pakistan." Washington, D.C.: World Bank, 2001. Mimeo.
- Marchione, Tom. "Nutrition and crises." In *Nutrition: A Foundation for Development*. Brief 9 of 12. Geneva: ACC/SCN, 2002.
- Mason, J. "Measuring hunger and malnutrition." Paper prepared for Food and Agriculture Organization of the United Nations. New Orleans: Tulane School of Public Health and Tropical Medicine, Tulane University, 2001.
- Owens, T., J. Hoddinott, and B. Kinsey. "Ex ante actions and ex post public responses to drought shocks: Evidence and simulations from Zimbabwe." Forthcoming in *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 (Issue 8, 1993): 1130-1133.
- Ruel, M., L. Haddad., and J. Garrett. "The Urban Facts of Life: Implications for Food and Nutrition Policy." *World Development* 27 (Issue 11, 1999): 1917-1939.
- Skoufias, Emmanuel, and Agnes R. Quisumbing. "Consumption insurance and vulnerability to poverty: A synthesis of the evidence from Bangladesh, Ethiopia, Mali, Mexico, and Russia." Paper presented at the International Food Policy Research Institute - World Bank Conference on Risk and Vulnerability: Estimation and Policy Implications, Washington, D.C., September 23-24, 2002.
- Skoufias, E., B. Davis and S. de la Vega. *Targeting the Poor in Mexico. An Evaluation of the Selection of Households for PROGRESA*. FCND Discussion Paper 103. Food Consumption and Nutrition Division, International Food Policy and Research Institute (IFPRI). Washington, D.C.: IFPRI, 2001.
- Skoufias, E. "Economic crises and natural disasters: A review of recent evidence." Forthcoming in *World Development*.
- Skoufias, Emmanuel and Bonnie McClafferty. *Is PROGRESA Working? Summary of the Results of An Evaluation by IFPRI*. FCND Discussion Paper 118. Food Consumption and Nutrition Division, International Food Policy and Research Institute (IFPRI). Washington, D.C.: IFPRI, 2001.
- Smith, L. "Can FAO's measure of chronic undernourishment be strengthened?" *Food Policy* 23 (Issue 5, 1998): 425-445.
- Smith, Lisa. "How well are we doing in determining how well we are doing? Improving the assessment of food insecurity in developing countries in Asia." Food Consumption and Nutrition Division, International Food Policy Research Institute (IFPRI). Washington, D.C.: IFPRI, 2002.
- Stewart, F. "Crisis Prevention: Tackling Horizontal Inequalities." *Oxford Development Studies* 23 (Issue 3, 2000): 245-262.
- Subbarao, K. "Public works as an anti-poverty program: An overview of cross-country experience." *American Journal of Agricultural Economics* 79 (December, 1997): 678-83.
- Svedberg, P. *Undernutrition Overestimated*. Seminar Papers, No. 693. Stockholm: Institute for International Economic Studies, Stockholm University, 2001.
- TANGO International. *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. "Disasters, conflicts and natural resource degradation: Multidisciplinary perspectives on complex emergencies." In *Center for Development Research Annual Report 2001/2002*. Bonn: Center for Development (ZEF), University of Bonn, 2002.
- Webb, P., and A. Harinarayan. "A measure of uncertainty: The nature of vulnerability and its relationship to malnutrition." *Disasters* 23 (Issue 4, 1999): 292-305.
- WFP (World Food Program of the United Nations). *Disaster mitigation: A strategic approach*. Policy Issues, Agenda Item 4, First Regular Session, Executive Board. Rome: WFP, 2000.
- Yamano, Takashi, Harold Alderman and Luc Christiaensen. "Child growth, shocks, and food aid in rural Ethiopia." Paper presented at *Staying Poor: Chronic Poverty and Development Policy Conference*, University of Manchester, April 7-9, 2003.

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	<ul style="list-style-type: none"> ■ Exclusive focus on calories ■ No focus on within-country household-level food availability 		<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 B 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 3: LIFDC list of countries, 2000

LIFDC List of Countries (Afghanistan - Kiribati), 2000					LIFDC List of Countries (D.P.R. Korea - Zambia), 2000				
CODE	NAME	START YEAR	END YEAR	% UNDER-NOURISHED in 1997-99*	CODE	NAME	START YEAR	END YEAR	% UNDER-NOURISHED in 1997-99*
2	Afghanistan	-	-	58	116	Korea, DPR	-	-	40
3	Albania	-	-	10 (-4)	113	Kyrgyzstan	-	-	10
7	Angola	-	-	51	120	Laos	-	-	28
1	Armenia	-	-	35	122	Lesotho	-	-	25
52	Azerbaijan, Republic of	-	-	37	123	Liberia	-	-	42
16	Bangladesh	-	-	33	154	Macedonia, FYR	-	-	5
53	Benin	-	-	15 (-4)	129	Madagascar	-	-	40
18	Bhutan	-	-		130	Malawi	-	-	35
19	Bolivia	-	-	22	132	Maldives	-	-	
80	Bosnia and Herzegovina	1992	-	4	133	Mali	-	-	
233	Burkina Faso	-	-	24	136	Mauritania	-	-	28
29	Burundi	-	-	66	141	Mongolia	-	-	42
115	Cambodia	-	-	37	143	Morocco	-	-	6 (+1)
32	Cameroon	-	-	25	144	Mozambique	-	-	54
35	Cape Verde	-	-		149	Nepal	-	-	23
37	Central African Republic	-	-	43	157	Nicaragua	-	-	29
39	Chad	-	-	34	158	Niger	-	-	41
351	China	-	-	9 (-7)	159	Nigeria	-	-	7 (-7)
45	Comoros	-	-		165	Pakistan	-	-	18 (-6)
250	Congo, Dem Republic of	-	-	64	168	Papua New Guinea	-	-	26
46	Congo, Republic of	-	-	32	171	Philippines	-	-	24
107	Côte d'Ivoire	-	-	16 (-3)	184	Rwanda	-	-	40
49	Cuba	-	-	17 (+12)	244	Samoa	-	-	
72	Djibouti	-	-		193	Sao Tome and Principe	-	-	
58	Ecuador	-	-	5 (-3)	195	Senegal	-	-	24
59	Egypt	-	-	4 (-1)	197	Sierra Leone	-	-	41
61	Equatorial Guinea	-	-		25	Solomon Islands	-	-	
178	Eritrea	1993	-	57	201	Somalia	-	-	75
238	Ethiopia	1993	-	49	38	Sri Lanka	-	-	23
62	Ethiopia PDR	-	1992		206	Sudan	-	-	21
75	Gambia	-	-	15 (-4)	209	Swaziland	-	-	12 (+2)
73	Georgia	-	-	18	212	Syrian Arab Republic	-	-	<2.5
81	Ghana	-	-	15 (-20)	208	Tajikistan	-	-	47
89	Guatemala	-	-	22	215	Tanzania, United Rep of	-	-	46
90	Guinea	-	-	34	217	Togo	-	-	17 (-10)
175	Guinea-Bissau	-	-		213	Turkmenistan	-	-	9
93	Haiti	-	-	56	227	Tuvalu	-	-	
95	Honduras	-	-	21	226	Uganda	-	-	28
100	India	-	-	23	235	Uzbekistan	-	-	4
101	Indonesia	-	-	6 (-3)	155	Vanuatu	-	-	
114	Kenya	-	-	46	249	Yemen	-	-	34
83	Kiribati	-	-		251	Zambia	-	-	47

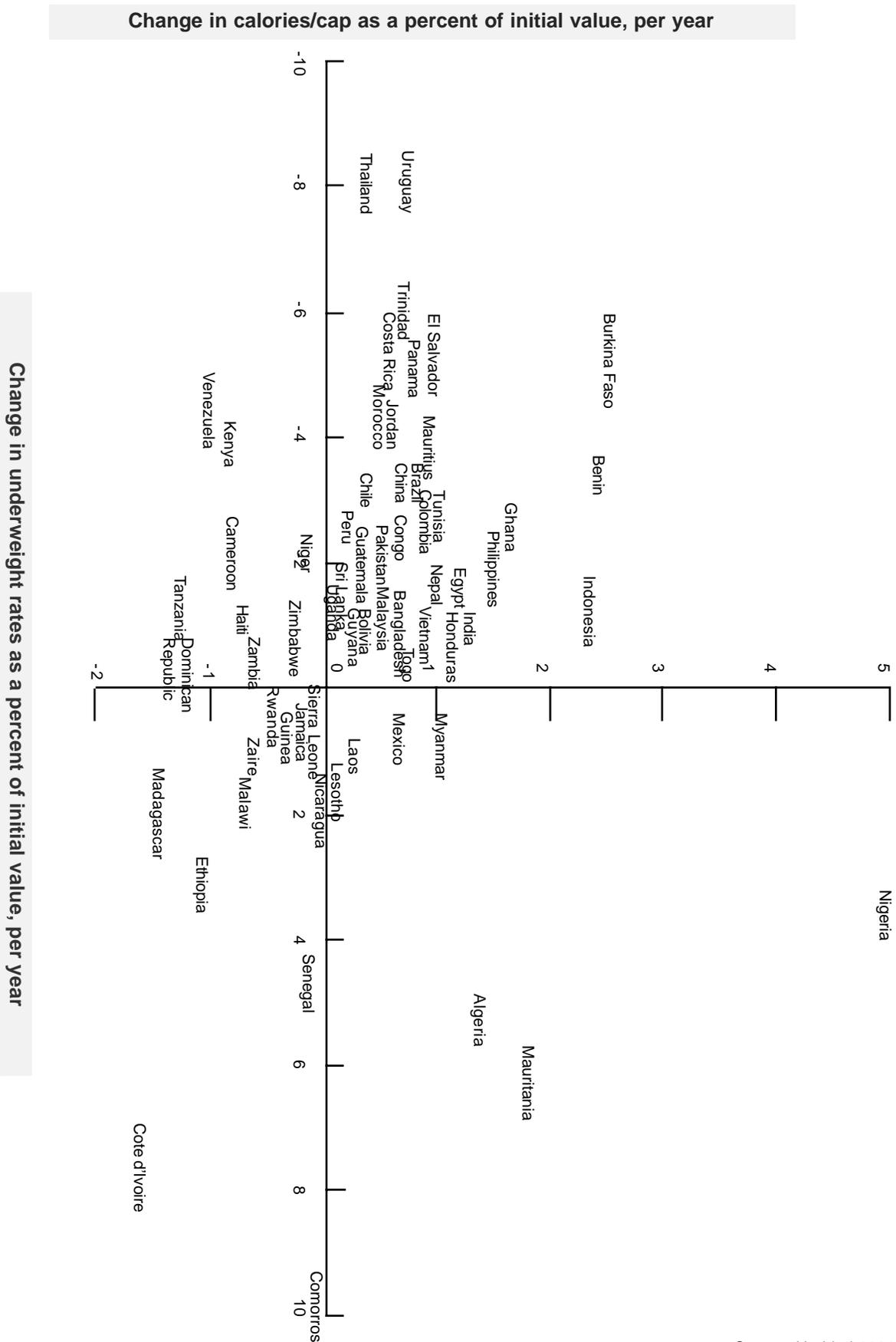
Source: Based on SOFI data and a LIFDC list for 2000 from <http://apps.fao.org/notes/876-e.htm>

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	Could be targeted to PLWHA associations, OVCs and other vulnerable groups such as elderly headed households and households taking in foster children
		Difficult in reaching ultra poor	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	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.
		Labor intensive works	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	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
		Mostly in food insecure regions	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	Could be expanded to high HIV prevalent areas (regardless of food security at the regional level).
		Extra take-home ration given to girls	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.
	Food-for-health	Supplementary feeding of pregnant women	Supplementary feeding of pregnant women and support of HIV positive mothers and their infants
		No attention paid to adult illness	Critical to program nutrition interventions to chronically ill through HBC.
EMERGENCY RELIEF	Food-for-life (emergency response)	Often limited to distribution of relief food	Need for structural response to build capacity and livelihoods to prevent survival sex and exploitative power relations.
		Characterized by food response	Need for nutrition response with special attention to chronically ill, pregnant and lactating women.
		No special attention to youth	Crucial to contain the epidemic. Strategies to be devised to assist youth, esp. girls in negotiating safe sexual practices and livelihood approaches
		Little attention paid to often-dismal living conditions of host populations around refugee camps.	Exploitation of refugees by host population and vice-versa is prevalent and fuels the epidemic. Investments in improving livelihoods and HIV-relevant education of all 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

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