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Linking Emergency Response to Need in "Food Emergencies"

by

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EXECUTIVE SUMMARY

When an emergency occurs, agencies must make quick decisions on how to help people facing severe food insecurity. This paper addresses the challenges of designing appropriate responses that are linked to identified needs of affected households and individuals. The primary goal of any response is to save lives now and protect the food security of households and individuals now and in the future. However, instrumental goals and the specific means of achieving them are varied, and must be responsive to the setting in which the emergency occurs.

The paper conceives the costs and benefits of a response as the product of how efficiently a resource is delivered (resource transfer efficiency) and the effectiveness of the resource and its mode of delivery in achieving the objectives of the response (resource use efficiency). Those designing emergency response operations need to focus on the combination of these efficiencies, not just on one of them.

Policy change is frequently one of the most efficient responses to food security emergencies, with low budgetary costs and potentially high benefits for millions of consumers. The paper shows how policy in southern Africa in 2002/03 could have reduced the cost and improved the effectiveness of emergency response operations.

Food security emergencies are almost never just about food, but about a range of needs. Also, in a market setting, even during emergencies, resources are fungible. As a result, the effect of a given resource (food, cash) on household behavior is difficult to predict. Based on these observations, and on findings emerging from research on cash transfers, the paper suggests that a diversified response will typically be most effective and least risky.

Food and cash should be complements in any response, not substitutes. There are many different ways to deliver these resources, therefore, choosing appropriate delivery mechanisms – and implementing them well – may often be as important as the specific resource used. New needs assessment tools are required to predict outcomes of different delivery mechanisms and resource bundles. Decision makers will also need to revisit agency mandates if a wider range of response options is to be considered.

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LIST OF ACRONYMS

CFW	Cash for Work
DFID	Department for International Development, UK
IAAE	International Association of Agriculture Economists
MSU/MACO	Michigan State University/Ministry of Agriculture and Cooperatives (Zambia)
NEPAD	New Partnership for African Development
RHVP	Regional Hunger and Vulnerability Project
SADC	Southern Africa Development Community
SENAC	Strengthening Emergency Needs Assessment
WFP	World Food Programme

1. INTRODUCTION AND OBJECTIVES

Humanitarian response operations are increasing in frequency throughout the world. Though governments and donors may all want them to be as efficient and effective as possible, there is little agreement about precisely how to design response on the basis of need. As a result, and due to the ready availability of food aid and to the institutional cultures and capacities built up to make use of it, most food-related emergency responses focus on direct provision of food aid to affected regions and households. Such responses continue despite an appreciation by many in the emergency response community that food alone may often not be the best way to satisfy the range of needs experienced by affected households and individuals. Thus, the primary purpose of this paper is to develop an analytical structure to link response to need in key food security emergencies. Its secondary purpose is to provide analytical guidance for identifying appropriate responses among a range of possible options for different types of emergencies, depending upon the characteristics of the shock that precipitated the emergency, the settings in which the shock occurred, and the type and severity of vulnerability to which households and individuals are exposed in the emergency. The analytical framework is expected to be useful for: 1) identifying the essential food security objectives to pursue in major types of emergencies; and 2) analyzing the responses that are appropriate to meeting food security objectives in these major types of emergencies.

The rest of the paper is organized as follows. First, we discuss a series of concepts which help understand the characteristics of emergencies and identify appropriate responses; these concepts also help us clarify more precisely the focus of the paper. Next, we discuss appropriate goals for emergency response, distinguish between primary and instrumental goals, and discuss how to choose among instrumental goals. We then outline a range of possible responses for each instrumental goal, highlighting the wide diversity of options and how the details of adapting each to local conditions will largely determine their success. We close by applying the concepts and principles we have developed to common types of emergencies to illustrate the usefulness of the approach developed in the paper.

2. KEY CONCEPTS

2.1. Food Security and Insecurity

We start with the widely accepted definition of food security as access by all people at all times to enough safe and nutritious food to ensure an active and healthy life. Ensuring food security requires sufficient availability of food within some economic/geographic space; that households have access to that food through own production, purchases, or other means; and that the social and health environments be conducive to effective utilization of the food by all individuals within a household.

Food insecurity has temporal dimensions (transitory and chronic) and severity dimensions (moderate and severe) which are connected but which need also to be distinguished[1]. Transitory food insecurity is short-term or temporary, while chronic food insecurity is longer-term or persistent. Transitory food insecurity typically results from a shock (drought, flood, earthquake, hurricane, civil disturbance) which pushes the food consumption or utilization of a population temporarily below some threshold level. The shock could affect overall food availability, or household access to available food, or the ability of individuals to use food, e.g., due to an increase in water-borne disease. Chronic food insecurity typically results not from any obvious emergency like ongoing civil strife, but due to persistent poverty resulting from low labor productivity in the economy, particularly agriculture. Crucially, repeated bouts of transitory food insecurity, brought on by repeated shocks, can push households into chronic food insecurity and food poverty as they exhaust their assets to cope with each individual shock and have too little time between them to replenish those assets. This process can also be understood as a poverty trap (Barrett and Maxwell 2004).[2]

Food insecurity's severity dimension (moderate and severe) is best understood as the distance a household or population falls below some threshold of minimally adequate consumption. Moderate and severe food security are also linked: populations already suffering from moderate food insecurity when a shock occurs are at much greater risk of severe food insecurity because they are already on the edge, with insufficient productive resources and savings with which to withstand the shock. Viewed another way, populations that are fully food secure when a shock occurs are likely to be able to use savings and other resources to moderate their consumption shortfall, at least for a limited period of time.

The focus of this paper – identifying the best set of reactions to emergencies – can be further clarified by combining these temporal and severity dimensions of food security. While acknowledging the linkages just discussed, the paper will focus primarily on response to cases of severe (or potentially severe) transitory food insecurity.

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[1] This discussion of food security draws heavily on Devereux 2006a.

[2] Households can also fall into poverty traps due to shocks at the household or individual level, such as the death or extended illness of a family member. This paper focuses on responses to larger-scale shocks that affect many households.

2.2. Food Security Emergency

An emergency is a circumstance, caused by an external event (an event outside the control of affected households) which threatens human lives and livelihoods and which requires urgent action beyond the capacity of local or even national governments[3]. Droughts, floods, earthquakes, hurricanes, and intense civil disturbance are the typical events, or shocks, that might lead to an emergency.

In Sub-Saharan Africa and poorer areas of South and Southeast Asia, where large percentages of households barely meet basic needs under normal circumstances, nearly any emergency can be usefully viewed as a food security emergency; while food will seldom if ever be the only need, it will frequently be one of the most important needs. For example, the Asian economic crisis of the late 1990s was triggered by macroeconomic events, but had major implications for the access of the poor to food in countries like Indonesia, when the resulting inflation priced many people out of the food market.

A wide range of actions can have effects on the probability, severity, and duration of any emergency developing out of a shock. One way to view this range of actions is from the most preemptive (e.g., varietal research and dissemination to increase the yields and drought tolerance of staple crops for smallholder farmers) to the most reactive (e.g., putting food and water in the hands of an individual at imminent risk of starvation). Preemptive measures are fundamental to reducing the likelihood that a shock will lead to an emergency, and to reducing the potential severity and scope of any emergency that does develop. However, as long as poverty is widespread, emergencies will occur that require reaction. Ideally these reactions will address the immediate need while not undermining the longer-term preemptive actions that reduce the probability of future crises.

2.3. Multiple Needs, Fungible Resources, and the Complexity of Household Behavior

Households have multiple needs, and the resources they use in meeting these needs are fungible. Taken together, these two facts have important implications for emergency response.

2.3.1. Multiple Needs

Food security emergencies occur almost exclusively in low-income areas where many households are routinely unable to meet fully their basic needs for food, housing, health, safe water, and savings with which to confront future crises. Thus, any circumstance perceived as a food security emergency is in fact multidimensional. While food access may often be the greatest need for most households, it will almost never be the only need. For example, a drought which reduces food availability and access may also decrease wage-earning opportunities and the income from rural businesses dependent on local demand. Similarly, pastoralists in the midst of a

[3] This definition largely echoes World Food Programme (WFP) 2005. Note that we make no distinction between emergencies and crises.

drought may have a greater need for water and feed for livestock (their key source of food and income) than for staple foods for themselves. Studies of expenditure patterns of households receiving cash transfers during emergencies show that food is nearly always the primary expenditure item but never the only one, with food shares sometimes as low as 60% (Edirisinghe 2005).

2.3.2. Resource Fungibility

At the household level, fungibility means that some of the relief provided in the form of food may be used for other pressing household needs, either directly or indirectly. For example, food transfers may free up cash, or be sold to generate cash, for use in health clinics, paying school fees, or reducing debt. Reduced fees at health centers, or lower-cost targeted commodities, may likewise free resources for other needs. The degree of resource fungibility is primarily determined by a household's involvement in the market economy, which is related to the efficiency of markets; resources become less fungible when transaction costs and physical marketing costs are high. The form of the assistance, and the channels through which it is provided, may also influence fungibility. For example, corn-soy blend and other high energy protein supplements are not typically a part of households' diets, and may therefore be more difficult to convert into cash because little if any market exists for them; food served to HIV patients at a clinic, or to children at a school, is less fungible than if provided to a household through general distribution.

Taken together, resource fungibility and multiple needs imply two things. First, any resource provided to a household will be incorporated into that household's portfolio of assets and income sources, and will have effects that (a) are not fully predictable, and (b) will vary across households, depending on their prioritization of needs and their level of involvement in markets. Second, two very different resources may have similar effects on household behavior and outcomes. For example, a household receiving food may sell some or all of it for cash and spend that cash on a combination of items, including other foods, health care, animal feed, seeds, debt repayment, and many other perceived needs; a household receiving cash may spend it on a similar set of perceived needs. These patterns suggest that the efficiency of any transfer (resource transfer efficiency) deserves a heavy weight in the choice of what resource to use, since households will define their own needs and will seek to satisfy them using whatever resources they have.

Resource fungibility, however, is not perfect. For example, research suggests that delivery of food is likely to have a greater effect on the nutritional status of pre-schoolers than delivery of cash (Haddad et al. 2003; Hoddinott 2006); similarly, goods received in-kind nearly always generate less cash when sold than if the same value had been delivered to households as cash. In practice, then, the specific resource that is provided has some effect on the composition and size of the consumption basket that a household creates for itself. Because they tend to have a detailed and nuanced understanding of local conditions, and because only they can know their own risk preferences and how they weight each of their diverse needs, beneficiaries can often provide the best guidance in deciding between cash and in-kind transfers.

Of course, this statement abstracts from the fact that the primary desired beneficiaries, such as women and children, may not always receive their intended share of aid, especially in a generalized distribution. Two comments are relevant. First, the potential diversity of priorities within households and the difficulty of targeting effectively suggests, as we argue at more length later in the paper, that a basket of several resources may often be more effective in emergency response than any one resource. Second, intra-household decision making is complex, and may often feature more cooperation across genders than is sometimes assumed (Pitcher 1996).

2.4. Vulnerability

Because we are addressing food-related emergencies, we define vulnerability as the probability that a household or individual will fall, now or in the short- to medium-term future, below some threshold of food consumption; a vulnerable household or individual faces an unacceptably high probability of this occurring[4]. One's level of vulnerability is determined by her exposure to shocks that could undermine access to food, and by her ability to cope with these shocks (Haddad and Frankenberger 2003). The same shock or set of shocks could undermine a vulnerable household or individual's food security, while the more resilient could maintain their current consumption and their ability to ensure future consumption. Resilience is essentially a measure of a household's ability to cope with a shock.

Exposure to shocks is largely outside the influence of a household[5]: short of moving out of areas prone to drought or flood or hurricanes or civil disturbance, households need to develop strategies to deal with these possibilities. Resilience is a measure of how successful these strategies are, and is influenced by both internal and external factors. Internal factors include members' intrinsic abilities, their learning from past shocks, and their past decisions (including coping strategies during past shocks) that resulted in the accumulation or depletion of productive assets and savings. The setting in which a household operates also influences their resilience. For example, households living in areas where market performance is more robust, and which present a diversity of income-earning opportunities, will be more able to cope with the same shock than will households with similar assets and intrinsic abilities living in less favored areas.

2.5. Fragile Markets and Economies

The performance of individual markets, and of the set of markets that define an economy, are key aspects of the settings in which a household operates. Like households and individuals, markets and economies can face high risks of negative outcomes during and after a shock. The key negative outcomes for such fragile markets are price spikes and stock outs during a shock

[4] A key issue is whether the definition of what is unacceptably high should depend on judgments about normal risk levels that households are exposed to (which can vary widely across countries and zones), or whether it should instead be based on standard criteria applied to all situations. We do not address this issue here.

[5] This is not true of some shocks, such as contracting HIV/AIDS, where personal behavior may determine exposure to the shock. In this paper we deal with more generalized shocks typically resulting from natural events such as droughts or floods.

and reduced ability to avoid such problems in the future. Thin markets (where a small share of production enters the market) that are poorly integrated over space and time are more likely to experience such price spikes and periodic shortages. Markets for food staples, inputs, and rural labor in Africa are often thin and poorly integrated due to structural characteristics – low population densities, sparse and poorly maintained physical infrastructure, poor communications, and widespread poverty, which results in low levels of market transactions per person.

Yet poor market performance in Africa is not due only to these structural characteristics; policy also matters. The empirical record in Africa shows that heavy government control, especially over imports or when buffer stocks are poorly managed, often leads to greater price instability, not less (NEPAD [New Partnership for African Development] 2004; Tschirley et al. 2006a). Southern Mozambique, with very low population densities and perennially deficit production, has used efficient trade to maintain the most stable maize prices in the region outside South Africa (Tschirley et al. 2006a). Donors and government in Malawi could make better use of trade with northern Mozambique – a perennially surplus area – to stabilize staple food prices with less government action and reduced food aid.

The design of emergency response also matters. In attempting to avoid price spikes and meet food needs of affected populations, emergency response has been shown at times to depress staple prices in the aftermath of the crisis, as in Mozambique in 1993 (Tschirley, Donovan, and Weber 1996; Tschirley 1998) and Malawi in 2003 (Whiteside 2003; Tschirley et al. 2006a). On the other hand, inadequate or inappropriate response can exacerbate staple price spikes, as in Malawi in 2001/02 (Devereux 2002).

Structural and policy factors that create fragile markets lead to fragile economies. Such economies are primarily subject to disruptions from massive changes in terms of trade (e.g., between herders and farmers) and reduced growth during a shock, and to increased probabilities of such disruptions during future shocks. Larger and more diversified economies (economies with more and larger markets) are less fragile, and allow households to specialize more (thus earning higher incomes) without increasing their vulnerability.

2.6. Primary and Instrumental Goals

2.6.1. Primary Goals

Primary goals in any emergency always relate to people. A primary goal that changes little with different types of shocks is saving lives now, and protecting people's food security now and in the future. Protecting people's future food security during a current emergency highlights the crucial role that coping strategies play, either in leading households into poverty traps and chronic food insecurity over the course of repeated transitory crises, or in breaking that link; emergency responses that allow households to avoid negative coping strategies that erode productive assets (including health and the education of their children) help protect future food security.

There is a sense in which our primary goal can be viewed as two distinct and even potentially competitive goals. Two long-standing concerns about food aid suggest such a trade-off: the potential disincentive effect of food aid on agricultural production, and the possibility that food aid over time creates dependency among recipient populations and perpetuates behavior patterns that make households more vulnerable to shocks. Our point here, supported by many years of research that fails to find any systematic long-term negative effects of food aid on local economies (Singer, Wood, and Jennings 1987; Maxwell 1991; Ruttan 1993; Abdulai, Barrett, and Hoddinott 2005), is that these goals need not be competitive, that proper design of emergency response can in fact make them complementary, and that the challenge for governments and emergency response agencies is to maximize these complementarities.[6]

Short-term and longer-term goals can also be competitive through the budgetary process: money spent on short-term emergency response is not available to spend on longer-term developmental efforts that raise productivity, pull people out of poverty, and reduce their vulnerability to future shocks. Again, the point here is that those responsible for emergency response need to find and exploit the complementarities that do exist between short-run and longer-run goals.

2.6.2. Instrumental Goals

Instrumental Goals relate to the means by which these primary goals can be achieved. Potential instrumental goals are many, because they depend on the characteristics (type and severity) of the shock, the settings in which the shock occurred, perceptions of the contribution of different instrumental goals to the primary goal, and value judgments about the importance of different elements of the primary goal (savings lives now vs. saving and improving lives in the future). Examples of potential instrumental goals include improving general market performance so that households can obtain food at lower and more stable prices, providing targeted subsidies to affected households to further extend their purchasing power, and directly ensuring that affected households have the food and other resources they need to survive the emergency and avoid negative coping strategies. We return to this issue below.

2.7. Details Matter

Finally, perhaps the most striking result of over 20 years of research on the effects of food aid on local economies is that few if any generalizations can be made: the balance of positive and negative effects depends critically on the details of how the food aid is programmed, delivered, and distributed within the country, and on the country's overall economic and agricultural sector policies (Singer, Wood, and Jennings 1987; Maxwell 1991; Ruttan 1993; Abdulai, Barrett, and

[6] The argument for complementarity emerges clearly out of the vulnerability and poverty traps literature; see Devereux 2002; Frankenberger et al. 2003; Haddad and Frankenberger 2003; House of Commons 2003; Barrett and Maxwell 2004. Regarding the challenge for emergency response agencies, Tschirley and Howard (2005) conclude that "most reasonable conclusion [from research on the food aid disincentive effect] is that the balance of positive and negative effects depends critically on the details of how the food aid was programmed, delivered, and distributed within the country …".

Hoddinott 2006). Details matter, meaning that a solid understanding of the diversity of household circumstances and the performance of local markets can substantially improve emergency response practice (Donovan et al. 2006).

3. CHOOSING APPROPRIATE INSTRUMENTAL GOALS IN AN EMERGENCY

3.1. Conceptual Background

We suggested earlier an unchanging primary goal in any emergency (saving lives now, and protecting or improving people's food security now and in the future), but indicated that there were many potential ways to reach it – many potential instrumental goals. Deciding which specific approaches might be most appropriate in a given circumstance requires analysis on three levels: the cost of the response, the extent to which the response achieves stated objectives, and the level of risk and who bears it.

Conceptually, costs and benefits can be combined into a benefit:cost ratio, which is the product of two efficiencies: resource transfer efficiency and resource use efficiency[7]. (See Figure 1.)

Resource transfer efficiency is the cost of transferring a dollar's worth of assistance to someone. Its numerator is the value of the goods or cash delivered; its denominator the sum of that value and the administrative, logistical, and other costs of delivering it. This efficiency is relatively straightforward to calculate, though it is seldom made public by assistance agencies. Resource use efficiency is the amount of the desired objective achieved per dollar of assistance. In terms of our primary goals, it is the cost to save one life or to maintain one person's future food security.

Numbers such as these are conceptually and practically complex to calculate. A full treatment is well beyond the scope of this paper, but two points are especially relevant. First, assistance can be efficient even if one of its component efficiencies is low, as long as the other component efficiency is high enough. For example, it might cost two or three dollars to deliver one dollar of food assistance to populations at imminent risk of starvation and closed off from markets due to

Figure 1. Benefit:Cost in Emergency Response

$$\frac{\text{\$ of resource delivered}}{\text{total cost of delivery}} \times \frac{\text{objectives achieved}}{\text{\$ of resource delivered}} = \frac{\text{objectives achieved}}{\text{total cost}} = \frac{\text{Benefit}}{\text{Cost}}$$

Resource transfer efficiency ***X*** ***Resource use efficiency*** ***=*** ***Efficiency of assistance***

[7] The use of the terms benefit:cost and efficiency should not be taken to suggest that appropriateness is based only on economic factors. The value of attaining objectives – saving lives and protecting current and future food security – is very difficult to quantify economically. The terms do imply that the cost of attaining these objectives matters, and that attaining them at lesser cost is desirable.

civil disturbance or some other severe shock. In this case, the resource transfer efficiency is low; yet if the food is directly consumed by recipients and saves their lives, the overall efficiency of the operation would be high. Similarly, food delivered at lower cost (higher resource transfer efficiency) to areas well served by markets could have very low resource use efficiency as recipients sell much of it to meet other needs. In this case, the overall efficiency of the assistance could be lower than in the first case.

Second, assistance that results in positive policy changes in response to emergencies can be highly efficient: little budgetary cost against a potential benefit of reduced market prices to millions of consumers, resulting in saved lives and increased ability of these households to cope with the emergency. We discuss examples of such policy effects below.

Any emergency response operation runs the risk that the resources it delivers to affected households will not achieve the desired results. Conceptually, this can be conceived as the variance, or level of uncertainty, around the benefits expected to be derived from the operation. Putting in-kind resources such as food or seeds directly in the hands of affected households is often perceived as less risky than approaches that require market mediation (such as cash transfers, vouchers, cash for work, or self-targeting commodities injected into markets) because the agency can at least be certain of what was delivered. In light of multiple household needs, fungible resources, and complex household behavior, however, this reduced risk may be more apparent than real, since the final effect of any resource on a household's consumption basket and on its ability to maintain its previous asset levels cannot be known with certainty.

Assessing the benefits and risks of a given approach requires an understanding of how households use resources to meet their multiple needs, and how a shock affects their ability to do so. Hoddinott (2006) proposes a framework in which households allocate assets to activities that earn income, and do so within an economic, physical, political, and social setting. Designing appropriate emergency responses requires understanding the initial setting in which a shock occurs and the effect of the shock on the setting, on the range of income earning activities that households can undertake in that setting, and on the returns to those activities. For example, a drought in an agricultural area may have little direct effect on household assets, but may cause a drastic reduction in the earnings of poor households from agricultural wage labor and from micro-enterprises, which typically depend on local demand. Asset depletion in these cases results from the poor households liquidating assets to ensure food consumption and to meet other basic needs. Oftentimes in the estimation of affected households, these basic needs will include forward-looking investments such as purchase of school books, uniforms, and payment of school fees, or repayment of debt to maintain relations with individuals in the community who could help them in the future. In this case, protecting households' future food security requires that they be provided with a level and mix of resources that allows them to avoid depleting other assets in meeting these needs. In agro-pastoral areas, where livestock are major household assets, the same drought can directly reduce this asset through death, severe weight loss, and reduced animal birthrates, and can lead to further reduction through distress sales. In this case, approaches are needed that directly assist households to avoid these losses.

Taking a broader but complementary approach, Devereux (2006b) views droughts and floods as leading to the failure of four types of entitlements: production based, labor-based, trade-based, and transfer-based. Appropriate policy responses address the reasons for each type of failure, e.g., provision of public works opportunities to replace the wage or micro-enterprise income which poor households frequently lose as a result of droughts or floods

Each of these approaches recognizes that households have multiple needs, that they work to satisfy these needs in a variety of ways, and that shocks, in addition to making it more difficult for households to meet their needs, nearly always change the ways that they must behave in doing so. A corollary is that, whenever possible, it is preferable to pursue the primary goal of emergency response – saving lives now and maintaining or improving people's food security now and in the future – without radically altering the activities and transactions that households normally engage in and by facilitating a rapid return to these normal strategies.

3.2. Instrumental Goals

With these ideas in mind, we identify three general instrumental goals that are potentially appropriate as an agency works during an emergency to save lives and protect (possibly enhance) people's current and future food security:

- Directly increase the food or other crucial resources available to affected households (targeted resource delivery);
- Reduce the cost of food and other basic items (e.g., health services) for individuals and households in economically vulnerable groups (targeted subsidies);
- Ensure vigorous positive private-sector response (including for imports) so that food and other items are available in markets and their prices remain relatively stable (untargeted improvement in market performance).

The approaches embodied in each of these instrumental goals are best viewed as complements, not substitutes. For example, facilitating private sector imports to keep general price levels from spiking will allow households' available purchasing power to go further, will stretch the value of any cash transfers that they receive, and should reduce the amount of food aid needed to meet any deficit. Del Ninno, Dorosh, and Subbarao (2004) document experience in Bangladesh in 1998, when floods devastated the country. Government removed import limits for rice and communicated transparently with the private sector regarding its intentions. In response, commercial rice imports from India exceeded food aid inflows by six times, helped keep prices within the reach of more consumers, and thus allowed more effective targeting of the smaller amount of food aid. In Mozambique in 1992, large-scale sales of food aid into competitive commercial distribution channels were crucial to maintaining price stability in the midst of the severe regional drought (Tschirley, Donovan, and Weber 1996).

Complementarity at the programmatic level applies also at the household level. For example, providing households with both cash and food will reduce the risk that the resource they receive (now a basket of resources rather than a single resource) is inappropriate for their circumstances.

To some extent, diversifying the basket of approaches at both the programmatic and household level reduces the need for highly accurate and disaggregated information which, in any case, is frequently missing or inadequate. A useful analogy is of the investor who is not sure how much each stock will change in value over her investment horizon. In the absence of this information, she diversifies across a basket of stocks.

The historical heavy focus on the first instrumental goal in emergency response, and the reliance on food aid to reach it, stems from the fact that it has been the most readily available resource and that emergency response agencies have therefore built up institutional cultures and capacities to make use of it. Three comments are relevant. First, a goal of directly increasing food availability remains the most appropriate in some circumstances. Households that have been displaced by an earthquake or flood or severe and prolonged drought may have lost many of their assets, and markets on which they might normally rely may not be functioning. These households are no longer able to use their normal strategies to meet their food and non-food needs, and therefore, require direct assistance. Households that have not been displaced but who live in areas poorly served by markets may also need this type of assistance. Agencies unable, due to time constraints or analytical limitations, to assure themselves that markets will respond effectively to demand in affected areas may also reasonably choose to reduce the risk of failure by delivering in-kind resources.

Second, agencies are increasingly experimenting with approaches that make better use of markets, such as cash transfers, during serious droughts and rapid onset emergencies[8]. Two empirical regularities from research in Africa support the idea that cash transfers may frequently be effective responses. First, even in high potential areas, the majority of rural smallholder households in many countries are net buyers of food staples, meaning that they buy staples and either do not sell (the most common combination) or sell less than they buy.[9] Second, net buying rates are highest in the lowest potential regions. In southern areas of Mozambique, for example, where rainfall is the lowest and least reliable, 71% of households are net buyers of maize, and 87% are net buyers of rice; in the north, where rainfall is higher and much more reliable, only 53% are net buyers of maize and 47% of rice. In West Africa, farm households living in areas with less reliable rainfall (such as the Sahelian zone) have more diversified income streams and rely more on markets for their food than those living in higher-rainfall areas (Staatz, D'Agostino, and Sundberg 1990).

Thus, the broad empirical pattern in Sub-Saharan Africa is that households are most accustomed to relying on food markets in areas that are most likely to require emergency assistance as a result of drought. Because droughts don't destroy market infrastructure, these patterns suggest that cash as one part of an overall response strategy would allow households to approximate most closely their normal behavior, which we have argued is the preferred approach.

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[8] See, for example, Edirisinghe (2005) for a review of experience with cash transfers in the response to the December 2004 Tsunami; Creti and Jaspars (2006) for a review of Oxfam's experience with cash transfers; and Donovan et al. (2006) for a review of ways to minimize the impact of food aid on markets.

[9] See Jayne et al. (2006) for evidence from Kenya, Ethiopia, Zambia, and Mozambique; see Tschirley, Abdula, and Weber (2006) for more detailed evidence from Mozambique.

Finally, government and donors are increasingly recognizing the importance of general market performance in reducing the need for and improving the effectiveness of emergency response.[10] For example, during the 2002/03 crisis in southern Africa, nearly all the early warning and emergency tracking bulletins put out under the consolidated response operation discussed markets and trade issues. Recently, Malawi has experimented with the use of options markets to help manage supply risk as a result of drought (Dana, Gilbert, and Shim 2005), and Mozambique has maintained open borders despite pressure from large food processing industries and attempts by local officials to inhibit trade. During the 2004/05 crisis in the Sahel, the government of Mali worked hand-in-hand with the market information system and with private traders to monitor markets and ensure a robust private sector import response, thus reducing the cost to government and donors of managing the crisis (Donovan et al. 2006, pp. 28-29).

3.3. Needs Assessment

Organizations currently involved in emergency response nearly always conduct some type of needs assessment before designing and implementing their program. We offer three observations regarding the practice of such assessments. First, just as responses have typically been driven by available resources, so too have needs assessments: there are few incentives for an agency to assess the type and mix of resources that might best meet household needs if there is little prospect of having access to anything other than food.

Second, the analysis under-girding needs assessment has typically been conducted just at the household level, with the objective of estimating the amount of food needed. Adding cash as an option, assessing the proper mix and sequencing of cash and food, and identifying the best delivery mechanisms for each will require greater attention to the broader market setting in which a household operates. World Food Programme is in the process of modifying needs assessments in a way that can incorporate the broader range of options, but has yet to operationalize new approaches. Donovan et al. (2006) indicate various levels of analysis for needs assessments that would help to diagnose the advantages and disadvantages of different responses at household, market and macro levels.

Finally, a key question is: what (type of) organization is best positioned to conduct these broader needs assessments. Most existing emergency response agencies have built-up institutional cultures, capacities, and mandates focused on food aid, and may not quickly be able to develop the broad-based perceived legitimacy to conduct such assessments on their own. Some NGOs are at the forefront of experimenting with various approaches to cash transfers during emergencies. Yet these groups tend to be relatively small, and they may be perceived by some as too skeptical of the value of traditional practices. Institutions that can draw from both viewpoints in a balanced fashion are needed. In southern Africa, the Vulnerability Assessment Committees may be a proper home for such work, but most will need continued substantial strengthening to play this role (Tschirley et al. 2006a).

[10] See Tschirley et al. (2006a) for an assessment of the actual and potential role of markets in response to the 2002/03 drought in southern Africa, and Donovan et al. (2006) for a more general treatment.

4. POSSIBLE RESPONSES

Table 1 (pages 16-18) lays out a set of possible responses to a food security emergency, organized by the three instrumental goals discussed above. The table illustrates four key points. First, a wide variety of response options exists for each instrumental goal; within each specific response, numerous details of design and implementation will have major effects on the success of the program.

Options include:

- Food can be procured locally or regionally or received in-kind from a donor; it can be delivered through general distributions in affected areas with minimal additional targeting, or through more highly targeted approaches, such as school feeding, mother and child programs, and food-for-work programs;
- Other in-kind provision for food security can include food aid for livestock feed, provision of veterinary services or of water for livestock, and provision of planting seed;
- Market-mediated targeted responses for individuals and households in economically vulnerable groups can include promoting self-targeted commodities, cash transfers and vouchers, input or seed fairs, livestock off-take programs, and others. All of these have multiple design dimensions. For example, cash could be delivered directly by an NGO, through a bank or micro-credit facility, through an existing social welfare agency, or as cash for work; and
- Market performance can be improved, even during a short-run emergency, in a wide variety of ways: import tariffs and non-tariff barriers can be removed, as was done on rice in Bangladesh in 1998 and in Mali in 2005 (the removal could be temporary or permanent); food aid can be monetized on a large-scale, as in Mozambique in 1992/93; availability of staples in informal markets can be prioritized, which provides low-cost processing options (in-home or in small hammer mills) to households; financing windows can be created to facilitate private imports; transport subsidies can be applied along specific routes to encourage lower cost movement of food to affected areas; and government or donors can create incentives for private sector stock-holding in key supply areas to assure neighboring governments that private imports will occur.[11]

Second, data and analytical information to make a fully informed decision on the proper mix and sequencing of responses are often lacking, making it likely (and rational from a short-run organizational perspective) that business as usual – a program dominated by direct provision of food aid – will prevail. Third, building new approaches into the standard repertoire of emergency responses may initially require increased planning and monitoring expenses (as in cash transfer schemes in Zambia in 2005), with the result that such approaches may not initially be more cost effective than food distribution; more definitive assessment of the cost effectiveness of new approaches will only be possible after more extensive experience with them. Finally, market-mediated approaches may involve more uncertainty for the implementer

[11] Such an approach could be especially useful in northern Mozambique, to assure the government of Malawi that private imports will respond to domestic need.

and more risk for the beneficiaries. For example, the value in use of cash or vouchers, and the cost of self-targeted commodities, may depend on price movements which are not fully predictable.[12] Similarly, steps to encourage private sector import response may be ineffective if other barriers (including uncertainty due to government statements and past behavior) remain, or if market power among a small number of importers results in high prices to consumers. In principle, this increased risk can often be (more than) offset if cost savings are large enough or if the new approaches have stronger spillover effects than direct food distribution[13]; in practice, however, these observations suggest once again that in many cases, the most effective strategy will be a mix of approaches.

This mixing of resources in the response can appropriately occur at a given point in time, as in Malawi and Zambia in 2005/06, when households were provided with a basket of food and cash (see Devereux 2006b). Mixing of resources can also reflect a sequencing of responses, as in the case of a sudden flood or hurricane, when direct provision of food and other physical resources may initially take precedence, followed later by cash transfers; see the next section for further discussion of this issue.

[12] Vouchers may be based on quantity rather than value, in which case the implementer absorbs the risk; self-targeted commodities could be sold at fixed prices, but doing so requires substantial management and monitoring.
[13] An example of spillover effects from market mediated approaches is increased or maintained profits in the commercial production and trading system, making it more able to respond to future demand.

Table 1. Assessment of Alternative Responses Related to Food, for Severe Transitory Emergencies

Instrumental Goal	General Response Option or Resource	Specific Approach	Cost/Benefit/Risk	Other Comments
Directly increase the food or other crucial resources available to affected households (delivery of some essential good to targeted households or individuals)	In-kind	**Food aid** Direct distribution School feeding Mother and child feeding Food for work	Tends to be costly, so total benefit reduced on a given budget; Less perceived risk, as recipients not subject to price movements; Financial risk for implementer if food procured locally	Source of food makes a difference in cost, appropriateness, and timeliness. Food could be procured locally or regionally, or received in-kind from donor; Targeting crucial, many different approaches
		Seed aid Direct distribution	Comparable to above	Many issues of appropriate varieties, quality, sustainability
	Market-based	**Vouchers** Specific food commodity or food basket; Seed, other goods Fixed value/fixed quantities	Potentially less costly than in-kind, though requires different institutional skills and so savings may not initially be realized; more administratively complex than cash; Greater flexibility than in-kind allows households to derive greater benefit	Voucher with fixed value (rather than quantity) and more flexibility on type of food more closely approximates cash, and thus allows households to more closely approximate normal strategies.
		Cash Direct transfer Cash for work	Cash transfers can be the least costly, depending on available delivery mechanisms; CFW (Cash for Work) has much higher administrative costs; Higher monitoring costs than in-kind, at least in initial pilot phases; Maximal flexibility means benefit high if markets work effectively; Recipients bear risk of price inflation; implementer can bear risk if multiple rounds of delivery.	Both allow households to more closely approximate "normal" behavior if food markets are functioning well; Ability of markets to satisfy increased demand must be assessed; Need to evaluate intra-household decision-making; Many delivery and other design options; Wage rate crucial in targeting of CFW

Instrumental Goal	General Response Option or Resource	Specific Approach	Cost/Benefit/Risk	Other Comments
Reduce the cost of food and other basic items for individuals and households in economically vulnerable groups (market price reductions, or subsidies, for targeted households or individuals)	Fee reductions for non-food public services	Health clinic fees School fees	Very low administrative cost: $1 budget cost ~ $1 benefit to households using the service; Very low risk.	A complement to more direct measures; Targeting likely based on geographical criteria
	Promote seed fairs for trading of existing and improved seed stocks		Longer term benefits	Targeting likely based on geographical criteria
	Food-based	Promote self-targeting foods through market channels, such as coarse grains, yellow maize, or whole maize meal;	Design, management, and monitoring costs can be high; Benefit can also be high if the food is taken-up by the local food system and provided on a market basis over time;	Done under C-SAFE in southern Africa in 2002/03; yellow maize in southern Africa (especially Mozambique)
		Monetize food aid into commercial market channels;	Substantially cheaper than direct distribution; Potentially large benefits for many hhs if quantity monetized is significant part of total demand; Difficult to predict impact on market prices, so some risk	Appropriate if availability from commercial imports is likely to be insufficient, as in southern Africa in 1992; potential tool for maintaining supplies of staples in informal markets;
		Transport subsidies from supply points to critically affected regions	No track record that we know of	Requires well publicized effort and confidence that a competitive private sector response will emerge
Ensure vigorous positive private sector response so that food and other items are available in markets and their prices remain relatively stable (untargeted improvement in market performance)	Reduce or eliminate trade barriers	Reduce or eliminate tariffs Simplify import licensing procedures and border post requirements	Very low cost, especially if imports would not have occurred in the absence of these measures; Benefit (price reduction for millions of hhs) can vastly exceed cost; Benefit depends in part on competitiveness of the import trade - risk of lesser price reduction if trade not competitive.	Government needs to be confident that private sector will respond and will offer competitive prices (del Ninno, Dorosh, and Subbarao 2004 Bangladesh/Madagascar comparison)

Instrumental Goal	General Response Option or Resource	Specific Approach	Cost/Benefit/Risk	Other Comments
	Reduce uncertainty for private trade	Ensure clear and transparent communications regarding government intentions Government limits itself to food aid imports and, if relevant, commercial imports for its reserve	No direct cost, and very high potential benefit; Benefit depends in part on competitiveness of the import trade - risk of lesser price reduction if trade not competitive.	Lack of clarity regarding government intentions, combined with past history of unpredictable behavior, is a major constraint to private sector import response on Zambia and Malawi.
	Ensure staple availability in small-scale marketing system	Open market sales of publicly held staples into informal marketing system Reduce (temporarily?) all administrative requirements for small-scale border trade	Cost/benefit comparable to food aid monetization (see above) Very low cost, very high potential benefit; risks comparable to other market-based approaches, depends on competitiveness of trade	In southern and eastern Africa, results in greater availability of maize grain and whole meal (the cheapest options for poor consumers) in markets; Such imports likely to flow into informal system rather than to large-scale millers, resulting in lower cost food (grain and whole meal) for poor consumers; Mozambique-Malawi an example of how important such trade can be.

5. CHOOSING RESPONSES

We first examine droughts, the most common example of a slow-onset shock, and then look at rapid-onset shocks such as floods, hurricanes, and earthquakes.

5.1. Droughts

Droughts exhibit two key characteristics. First, early warning systems generally provide advance notice of impending problems; appropriate goals and responses will vary depending on the stage of the crisis. Second, assets needed for market functioning are generally not affected, but household real incomes and returns to assets can be dramatically reduced: returns to cropping and animal husbandry activities fall, wage labor and business opportunities may dry-up, and real prices of food will almost certainly rise. Thus, to meet the primary goal of saving lives now and protecting or improving people's food security now and in the future, emergency response in droughts must help households avoid coping strategies that deplete critical assets.

During the early phases of a drought (prior to the harvest), a key instrumental goal should be to ensure that private market response will be sufficient to maintain relatively stable prices of food staples. Appropriate responses at this point include removing barriers to trade, communicating clearly and credibly to reduce uncertainty about potential government imports and management of public food reserves, being transparent in the planning of food aid distribution programs, and, if the drought is geographically widespread and severe, providing foreign exchange import credit facilities and considering the sale of food aid. Other measures, such as transport subsidies along particular routes, could also be considered. Of course, plans for food aid distribution and market-mediated targeted responses should also begin at this point.

The historical record in southern and eastern Africa suggests that government and donors give far too little attention to measures to enhance market performance during crises, and often take measures that may worsen market response and which therefore increase the magnitude of emergency response that is needed[14]. In Malawi, prices reached extremely high levels in 2001/02 due to a series of missteps by government. The social and political dynamic unleashed by that experience made government and donors especially sensitive about potential future crises (House of Commons 2003, p. 29). Thus, when decision makers in Malawi were presented with a forecasted maize deficit of 433,000 metric tons for the 2002/03 season, they promptly arranged to import 253,000 metric tons of maize grain entirely through government channels, and to receive 151,000 metric tons of food aid. The total inflow of more than 400,000 metric tons essentially covered the forecasted deficit. Unfortunately, decision makers did not take into account the very large informal flows of white maize from Mozambique into southern Malawi in 1997/98, 1998/99, and 2001/02. Best estimates are that, during the 2002/03 season, 150,000-250,000 metric tons of maize entered Malawi informally from Mozambique, leaving Malawi with a maize surplus of about the same amount (Whiteside 2003). In March 2003, facing a good incoming harvest and the prospect of storing maize for over a year, the government decided to

[14] This section draws heavily on Tschirley, Abdula, and Weber 2006.

sell some of its stock at very low prices. Thus, over the course of two years, the country went from extreme price spikes during a hungry season to heavily depressed prices during a harvest season, alternately harming consumers and damaging production incentives for farmers.[15]

Government in Zambia has in the past frustrated private imports during food shortages by sending confusing signals to markets. Such confusion was evident during the 2001/02 food crisis. During that year, government announced its intention to import 200,000 metric tons of maize grain to cover a national deficit, and to sell that grain at below market prices directly to a small number of selected large millers. As a result, other potential private importers stayed out of the market. When government instead imported only 130,000 metric tons and did so very late in the season (December and January), prices rose steeply (Nijhoff et al. 2003; see also Nijhoff et al. 2002). Because grain was channeled to large millers, consumers also had to pay the high price of refined meal rather than having the option of purchasing less expensive grain and milling in a local hammer mill. During the 2002/03 season, government worked more effectively with the private trade, which imported only 100,000 metric tons. Government made no commercial imports, but did arrange for more than 100,000 metric tons of food aid. Overall, the experience in 2002/03 showed that the private sector could import substantial quantities of grain when needed, but better operational mechanisms between public and private sectors still need to be designed if the government is to be assured in future crises that private sector will be able to import the quantities needed to keep prices stable.

Mozambique provides evidence that this can happen on a regular basis when government simply stays entirely out of the import business. The south of Mozambique holds the largest urban population in the country and is structurally in deficit in the production of staples, while the center is typically but not always in surplus (it was affected to some degree by the 1992, 1995, 2001, and 2002 droughts). The north produces a surplus every year. In response to this production pattern and to the long distances and high costs of transporting maize from the north to the south, Mozambique has maintained open borders to maize and other trade, regularly exporting from the north and importing to the south. Largely for this reason, prices in Mozambique remained relatively stable during the 2002/03 crisis, and well below those in Zambia and Malawi.

During the acute phase of a drought (during the late post-harvest and hungry periods after the drought-affected harvest), goals need to focus more heavily on minimizing the risk of consumption shortfalls and of irreversible asset depletion by households. Response options should include a mix of direct provision, market-mediated targeting, and continued policies to encourage vigorous private market response.

In-kind food distributions and cash transfers can assist households to avoid harmful coping strategies; the relative mix of each in any response should be based on the extent to which households traditionally rely on food markets, judgments about the ability of markets to respond

[15] The actions also reduced prices received by Mozambican farmers, thus, reducing their incentive to produce for the Malawi market. Since Mozambican farmers could be the most reliable suppliers of maize to Malawian consumers for many years to come, reducing their production incentives runs counter to Malawi's long-term interests.

during the current emergency, and the size of any potential cash distribution relative to total market demand. If households traditionally rely on food markets during hungry seasons, if the size of a potential cash distribution is small relative to the overall market, and if emergency response implementers have mechanisms to effectively deliver cash to intended beneficiaries, cash should be included as an important component in the response.

A concern frequently raised about cash transfers is that they may be more easily siphoned off through corruption than are in-kind resources, given the greater fungiblity of cash. Thus, fungibility, which is the advantage of cash for recipients, may potentially be a hindrance to the efficiency of cash transfers. Whether, in practice, cash is subject to greater diversion than food is not yet established; like research on food aid, emerging research on cash transfers suggests that local circumstances and program design have a major influence on the severity of this potential problem (see, for example, RHVP [Regional Hunger and Vulnerability Project] 2007).

Devereux (2006b) shows that a mix of cash transfers and in-kind food distribution substantially reduced the incidence of erosive coping strategies by beneficiary households in Malawi during the hungry season of 2005/06. He also stresses that cash distributions in Malawi and Zambia had no effect on food price inflation, due to their small size relative to the overall market.

5.2. Rapid Onset Emergencies

Key observations about rapid onset emergencies are that (1) they typically entail direct destruction of household assets and sudden disruption of their income earning opportunities, (2) they frequently destroy or disrupt market and transport infrastructure (especially bridges), and 3) they are more geographically limited than many droughts, so markets can often play an important role quite soon after the shock.[16]. The overriding instrumental goal in the immediate aftermath of the event should be rapidly and directly increasing the food, shelter, and health services, and other crucial resources available to affected households. Experience in the Asian tsunami suggests that cash transfers can also be helpful in these very early stages. Such direct resource transfers of both physical resources and cash (instrumental goal #1) will help to minimize the risk of consumption shortfalls, of health problems due to lack of shelter and basic health services, and of further asset depletion by households resulting in long-term declines in their welfare. As affected households settle into temporary lodging, much greater emphasis needs to be placed on strategies to replace lost assets; whether this should be done through direct provision or through cash grants depends in large measure on the cost at which markets will be able to provide goods of acceptable quality and safety (a major issue in home construction).

Employment activities could play a larger role than in a drought, for three reasons. First, such activities could be used to repair or replace destroyed public infrastructure. Second, households have not been exposed to prolonged stress, and so may be more physically able to engage in such work. Finally, the destruction of some households' crops in the field means that, unless replanting is possible, agriculture will place few demands on their time until the next planting season. Low-income households with limited access to remunerative off-farm employment could

[16] See, for example, analyses of the tsunami response in Indonesia and Sri Lanka.

especially benefit from these programs. Food for work would be most appropriate in the very early phases of the response, when rehabilitation of transport and other market infrastructure is still to be completed, and when employers are still not operating. As soon as transport and other market infrastructure begin operating, food wages could be replaced with cash wages.

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