



Social Protection Discussion Paper Series

Food-Based Safety Nets and Related Programs

Beatrice Lorge Rogers, Ph.D. and Jennifer Coates, M.S.

September 2002

Social Protection Unit
Human Development Network
The World Bank

Social Protection Discussion Papers are not formal publications of the World Bank. They present preliminary and unpolished results of analysis that are circulated to encourage discussion and comment; citation and the use of such a paper should take account of its provisional character. The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations or to members of its Board of Executive Directors or the countries they represent.

For free copies of this paper, please contact the Social Protection Advisory Service, The World Bank, 1818 H Street, N.W., MSN G8-802, Washington, D.C. 20433 USA. Telephone: (202) 458-5267, Fax: (202) 614-0471, E-mail: socialprotection@worldbank.org. Or visit the Social Protection website at <http://www.worldbank.org/sp>.

Social Safety Net Primer Series

Food-Based Safety Nets and Related Programs

Beatrice Lorge Rogers, Ph.D. and Jennifer Coates, M.S.

September 2002

WORLD BANK INSTITUTE
Promoting knowledge and learning for a better world



The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations or to members of its Board of Executive Directors or the countries they represent.

Social Safety Net Primer Series

The World Bank Social Safety Nets Primer is intended to provide a practical resource for those engaged in the design and implementation of safety net programs around the world. Readers will find information on good practices for a variety of types of interventions, country contexts, themes and target groups, as well as current thinking of specialists and practitioners on the role of social safety nets in the broader development agenda. Primer papers are designed to reflect a high standard of quality as well as a degree of consensus among the World Bank safety nets team and general practitioners on good practice and policy. Primer topics are initially reviewed by a steering committee composed of both World Bank and outside specialists, and draft papers are subject to peer review for quality control. Yet the format of the series is flexible enough to reflect important developments in the field in a timely fashion.

The primer series contributes to the teaching materials covered in the annual Social Safety Nets course offered in Washington DC as well as various other Bank-sponsored courses. The Social Safety Nets Primer and the annual course are jointly supported by the Social Protection unit of the Human Development Network and by the World Bank Institute. The World Bank Institute also offers customized regional courses through Distance Learning on a regular basis.

For more information on the primer paper series and papers on other safety nets topics, please contact the Social Protection Advisory Service; telephone (202) 458-5267; fax (202) 614-0471; email: socialprotection@worldbank.org. Copies of related safety nets papers, including the Social Safety Nets Primer series, are available in electronic form at www.worldbank.org/safetynets. The website also contains translated versions of the papers as they become available. An ambitious translation plan is underway (especially for Spanish and French, some in Russian). For more information about WBI courses on social safety nets, please visit the website www.worldbank.org/wbi/socialsafetynets.

Recent and Forthcoming Papers in the Safety Nets Primer as of August 2002¹

<i>Theme</i>	<i>Author</i>
<i>Program Interventions</i>	
Cash transfers	Tabor
Food related programs	Rogers and Coates
Price and tax subsidies	Alderman
Fee waivers in health	Bitran and Giedion
Fee waivers in housing	Katsura and Romanik
Public works	Subbarao
Micro credit and informal insurance	Sharma and Morduch
<i>Cross-cutting Issues</i>	
Overview	Grosh, Blomquist and Ouerghi
Institutions	de Neubourg
Targeting	Coady, Grosh and Hoddinott
Evaluation	Blomquist
Political Economy	Graham
Gender	Ezemenari, Chaudhury and Owens
Community Based Targeting	Conning and Kevane
<i>Country Setting/Target Group</i>	
Very Low Income Countries	Smith and Subbarao
Transition Economies	Fox
Non-contributory pensions	Grosh and Schwarz

1. Papers may be added or deleted from the series from time to time.

Abstract

Food-based safety net programs support adequate consumption and contribute to assuring livelihoods. They differ from other safety net programs in that they are tied to the provision of food, either directly, or through cash-like instruments (food stamps, coupons) that may be used to purchase food. Since food provided through a safety net program may be substituted for a household's current consumption, freeing up income for other uses, food-based transfers represent a contribution to household real income or purchasing power. Because food is often seen as the domain of women, women in a household are likely to have control over the use of transfers of food, and of cash-like instruments tied to food. The fact that women control food-related transfers is one possible explanation of the fact, widely documented, that transfers in the form of food or tied to food are more likely to increase households' net food consumption than are equivalent cash transfers.

Food-based programs can be designed to be self-targeting to the poor. Because food-linked coupons or stamps are restricted in use, they are likely to be less desirable than cash. If the use of coupons is restricted to inferior, less-preferred foods, the self-targeting effect will be greater. Direct provision of food may be self-targeting because of the limited choice of commodities; because the foods may be inferior in terms of consumption patterns (though not nutritionally inferior); and because there may be inconvenience associated with receiving bulky commodities. Ordinarily, cash is considered preferable to food, but in crisis situations when food supply is disrupted, food may be preferred. Providing cash or cash-like stamps or coupons in situations where supply is limited and (in the short run) unresponsive to increased demand will only drive up prices. Public provision of food is generally more politically acceptable than cash transfers, because food is a merit good.

The commonest types of food-based transfers are *supplementary feeding programs*, *food for work programs*, and *food stamp programs*. Supplementary feeding programs provide a direct transfer of food to target households or individuals. The commonest forms are maternal and child feeding and school feeding. The food may be prepared and eaten on-site (e.g., in child feeding centers or school feeding programs), or given as a "dry ration" to take home. Even if targeted to an individual (child, pregnant or lactating mother), supplementary food is shared among household members. In the case of on-site feeding, the meal eaten on site may be substituted for a home-prepared meal. Supplementary feeding is often provided as an incentive for participation in public services such as primary health care (pre- and post-natal and well-baby care) and education. To achieve nutritional improvement, supplementary food needs to be provided in the context of a more comprehensive program of health care and health and nutrition education. In school feeding programs, food provided on site may contribute to improved learning by alleviating short-term hunger, in addition to its effects as a food supplement and as an incentive to attend school.

Food for work programs provide wages in the form of food for public works. Because they provide a source of guaranteed employment, they constitute a true safety net, but only households with able-bodied members can benefit. Effective food for work programs can build infrastructure that contributes to long term food security.

Food stamp programs provide stamps or coupons that may be used for the purchase of food, or of particular foods. The stamps may be denominated in value terms or in terms of quantities of specific foods. Food stamps may be used in local stores, so they are more convenient to use than bulk commodities; they are less distorting than direct food distribution; and they can strengthen local retail establishments. Use of stamps requires a reliable system for printing and distributing the stamps, and a good banking system to assure that retailers can redeem the stamps for cash. As with supplementary feeding, food stamps are often provided in conjunction with primary health care or schooling, as an incentive for participation, though there are also stand-alone food stamp programs that function more like cash transfers.

Food-based transfers in emergency situations include direct provision of family rations, supplementary feeding of vulnerable groups such as infants, children, and pregnant or lactating women, and therapeutic feeding of acutely malnourished individuals in a hospital-like setting. In many emergency situations, such as refugee or IDP camps, food transfers are the only source of food, and may constitute the only resources a household receives.

The purposes of food-based transfer programs vary widely, and include income support, guarantee of a minimum level of consumption, improved participation in socially beneficial programs, and nutritional improvement. Costs also vary widely depending on the size of the transfer, the size of the target group, and the logistical difficulty of distribution. Cost-effectiveness depends on the specific objective(s); cost-effectiveness comparisons are difficult because of the multiple objectives often served by a single program. The multiple types of food-based transfer programs should be viewed as complements to each other, rather than alternatives, because they serve different populations and have distinct goals.

Table of Contents

I. Introduction.....	1
Food Transfers as Safety Net Programs	1
Operation of Food-based Transfers	3
Public versus Private Sector Responsibilities	8
Political Economy Considerations	8
II. Cross-cutting Issues of Program Design.....	9
Cash-based versus Food-based Programs	9
Targeting.....	9
Substitution versus Additionality	11
III. Supplementary Feeding Programs	12
Economic Rationale for Supplementary Feeding Programs	13
Effectiveness of Supplementary Feeding Programs	15
Appropriate Circumstances for the Use of Supplementary Feeding Programs	17
Program Design Issues	19
Criteria for Program Evaluation	25
IV. Food for Work Programs	26
Economic Rationale for Food for Work	26
Program Design	26
Criteria for Program Evaluation	28
V. Food Stamp Programs	29
Economic Rationale for Food Stamp Programs	30
Appropriate Circumstances for the Use of Food Stamps	33
Design Issues	34
Suitability for Adapting to a Crisis	36
Implementation of Food Stamp Programs	36
Criteria for Evaluating Programs	40
VI. Emergency Feeding	40
Rationale for World Bank Involvement with Emergency Feeding Programs	41
The Purpose of Emergency Feeding	41
Timing the Transfer to Support Both Objectives	42
Program Types	42
Appropriate Conditions for Emergency Feeding.....	43

VII. Cost and Cost-Effectiveness of Food-based Safety Net Programs	44
---	-----------

VIII. Combining and Sequencing Multiple Programs	45
---	-----------

References.....	46
------------------------	-----------

Boxes

1: The Cost-Effectiveness of Cash or Food Depends on the Program's Objective	2
--	---

2: Food Commodities are Not Always More Difficult to Manage than Cash.....	9
--	---

3: Transfers Tied to Food are Politically More Acceptable than Cash Transfers	31
---	----

Food-Based Safety Nets and Related Programs

*Beatrice Lorge Rogers, Ph.D. and Jennifer Coates, M.S.
Tufts University School of Nutrition Science and Policy,
Medford, Massachusetts¹*

I. Introduction

According to the World Bank, safety nets are “formal and informal mechanisms that protect people against the adverse outcomes of poverty. The social policy aspect of safety nets is concerned primarily with formal programs meant to provide or substitute for income. These include cash and in-kind transfer programs, subsidies, and labor-intensive public works programs, among others. Also included are mechanisms to ensure access to essential public services, such as school vouchers or scholarships and fee waivers for health care services or for heating in cold climates” (World Bank Institute, n.d.). These instruments are usually intended to benefit individuals and households who are chronically unable to work, as well as those who experience sudden, transitory declines in their purchasing power (Subbarao et al, 1997).

Haddad and Zeller (1996) distinguish between the “social assistance” and the “social insurance” functions of safety net programs. Safety nets with an assistance function seek to *increase* the livelihoods of those who lack resources by relieving deprivation, whether or not they are designed to have a long-term impact on physical, human, or social capital and, thus, on development. By contrast, safety nets with an insurance function aim to protect people against risks by guaranteeing that the *status quo* will be retained (or regained) in the event of a shock. One economic rationale for safety net spending, which is empirically difficult to confirm, is that minimizing household and individual risk will increase national production and investment by enabling households to maximize (increase) rather than stabilize (insure) their average income (Alderman and Paxson, 1992 and Bardhan and Udry, 1999).

Food Transfers as Safety Net Programs

Food-based safety nets represent a subset of possible safety net programs. They are designed to ensure livelihoods (for example, through the provision of public works employment paid in food), increase purchasing power (through the provision of food stamps, coupons, or vouchers), and relieve deprivation (through the direct provision of food to households or individuals). They differ from cash-based programs—public employment or cash transfers—in that they are tied to food as a resource. All have in common the fact that they increase the

¹ This work was done under contract with the World Bank for the HDNSP Social Safety Nets Primer and WBI core course on Safety Nets. The work has benefited from helpful comments by Margaret Grosh, Harold Alderman, and Judy McGuire.

household's real income but in the form of food or cash-equivalents associated with food. The degree to which the food provided in food-based safety nets is convertible to cash depends on the design of the program. In all cases, the possibility that households may substitute food received for food already being consumed or may sell the food that they receive means that these programs increase their real income. However, they vary in the extent to which they are tightly tied to food and to specific nutritional objectives; for example, food stamps function like cash in the market and are similar to cash transfers, while food provided directly to individuals in school or health care settings is less fungible.

If the goal of a safety net program is simply to transfer purchasing power (that is, income), then providing food is quite inefficient because of the complicated logistics involved in managing the distribution of bulk commodities. Distributing food free of charge (as a transfer) may also distort local food markets. Food stamps are less costly than food to store and transport, but they entail the costs involved in printing, distributing, and redeeming what is essentially a parallel currency, and they distort the market, intentionally, by limiting the use of the transfer to food. Providing cash is probably the most efficient way of delivering an income increase to a household, if that is the sole objective, since providing food in a safety net program involves not only logistical costs but also the risk of distorting the market. There are, however, legitimate reasons for adopting food or food-linked benefits such as food stamps for use in a safety net program. Food may be used in a safety net program because it is available from international donors when cash is not, because it may in some circumstances be self-targeted to needy households, and because food, but not cash, may fall under the control of women in the household, with possible benefits for children's health and nutrition. If a safety net program is to be tied to food, program designers should carefully consider whether to choose a food-based or a cash-based program (see box 1).

Box 1: The Cost-Effectiveness of Cash or Food Depends on the Program's Objective

In a maternal-child health program in Honduras, it cost 1.03 lempiras to deliver 1 lempira of income transfer in the form of a cash-like coupon, while it cost 5.69 lempiras to deliver the same income transfer in the form of food. However, the cash transfer had no effect on child's calorie consumption nor on use of the health centers, while the food transfer increased both (Sanghvi et al, 1995).

Food-based safety net programs vary in terms of how much choice is given to the beneficiary. Cash transfers, of course, allow recipients to purchase anything they wish, thus maximizing consumer choice. Food stamps can either be restricted only to food, though allowing complete free choice as to the kind of food purchased, or they can be restricted only to particular foods, thus restricting consumer choice. At the other extreme, direct provision of food limits the consumer's immediate choice (either to accept the food offered or to refuse it), yet the consumer may still sell the food s/he receives or choose to substitute one commodity for another.

Many of the food-based safety nets in place in developing countries were instituted as a temporary response to a short-term crisis, such as the economic shock of structural adjustment measures, yet they have remained in place as a result of permanent structural change (Vivian, 1994). For example, safety net programs have been created in direct response to devaluation, hyperinflation, or cuts in public social spending that threatened to have adverse social and political effects. Other safety nets were reformed during structural adjustment to supplant social policies that were considered economically unsustainable, such

as Sri Lanka's replacement of untargeted consumer food price subsidies with a targeted food stamp program (which has since been replaced with a program of cash transfers and consumer subsidies). Safety net programs of any kind, including those that are food-based, are highly visible and, if they provide significant benefits, popular as well. This makes them difficult to remove once an emergency situation is over.

Any safety net program must be designed to include mechanisms for determining when the need no longer exists, whether at the national level or at the level of the beneficiary household, when food availability returns to normal after a famine or when a household becomes economically secure. However, social safety nets are not only needed after transitory shocks. Even when an acute situation is resolved, there will continue to be vulnerable households in need of social support. Safety nets need to be seen as a permanent, planned means of assisting the chronic or transitory poor population that exists in any country. A safety net program can, therefore, also be a long-term public sector intervention, although flexibility is of course needed to allow the program to expand and contract according to the level of need and to be capable of responding to economic crises (Ferreira et al, 1999).

This paper discusses the range of food-based transfers that are typically used in social safety net programs. We have tried to provide guidance as to the appropriate context for different kinds of programs, the necessary operational considerations in implementing them, and reasonable expectations for their effectiveness in achieving a variety of objectives. Safety net programs have the goal of assuring household income, either directly or through the provision of goods and services. However, food-based programs are usually implemented with other goals in mind, related to dietary adequacy, nutrition and health and to the increased use of social services that contribute to human capital formation. The programs discussed here include the direct provision of food and the provision of benefits that are linked to food. Because of the potential costs and distortions involved in using food-based programs, cash-based programs may be considered as the benchmark against which food-based programs should be judged. It is very difficult to generalize about the effectiveness or cost-effectiveness of different kinds of food-based safety net programs because the details of implementation—such as the size of the transfer or wage, its specific composition, the target group reached, and the severity of the problem addressed—vary so widely. It is these details, not only the choice of program, that determine both cost and impact.

Operation of Food-based Transfers

Developing countries rely heavily on a few types of food-based interventions such as food stamps, consumer food price subsidies, and direct supplementary feeding as key tools in their safety net toolkit. Consumer food price subsidies and food stamp programs are targeted to households to increase their purchasing power by raising their real incomes or by lowering food prices (Hoddinot, 1999). Food-for-work programs are also targeted to households, in that the food is used as a wage that adds to households' access to food. Using subsidies and food stamps rather than cash transfers directs households towards food consumption because of the transaction costs involved for the household in converting the food to cash and possibly because intra-household control over food as opposed to cash may differ. Within a given household, women tend to have more control over food as a resource while men have more control over cash, and women tend to be more aware of the family's nutritional needs than men. For example, several studies have found that children's nutritional status is better in poor households headed by women than in male-headed households, presumably because

women place a higher priority on nutritional needs as opposed to other types of consumption (Rogers, 1996; Johnson and Rogers, 1993; Kennedy, 1992).

We have been discussing the use of food-based programs as a mechanism for transferring income. However, food-based programs also serve nutritional and other social objectives. If cash transfers are the benchmark, then it is important to understand the relationship between household income on the one hand and food consumption and nutritional status on the other. The effect of income on food consumption is measured by the household's income elasticity of demand—the degree to which consumption of food responds to changes in household income. A household's income is, of course, a major determinant of its ability to obtain adequate food. However, several recent studies have suggested that both food consumption and nutritional status may be relatively unresponsive to changes in income. In the case of food consumption, individual decisionmakers may have priorities for consumption other than food. In the case of nutritional status, individual household members may have limited access to the household's food supply, or their nutritional status may be determined more by non-dietary factors such as infection and low birth weight (Alderman, 1993).

Demand for food is more responsive to income increases (and to price decreases) in lower-income households than in well-off households (Timmer 1981). Estimates of the income elasticity of demand for food generally measure demand either as food expenditure or as total calorie consumption. The income elasticity of demand for calories is lower than that for food expenditure—about half, according to one review of the evidence (Alderman, 1986). This suggests that, as household incomes increase, households increase not only the *quantity* of food that they consumed but also the *quality*. (That is, if a household's calorie consumption increases more slowly than its food expenditure, higher quality foods, or at least foods that cost more per calorie, are being consumed.) Among low-income households, increasing the quality of their diet is probably nutritionally beneficial; it may indicate rising consumption of fruits and vegetables that are dense in micronutrients but not in calories, or of animal products that are rich in protein and micronutrients. Alderman (1986) found calorie elasticities for low-income families in a range of studies to average 0.48 +/- 0.26, while the elasticities of demand for food as measured by expenditure averaged 0.82 +/- 0.12. These figures suggest the range of effect on household food consumption that might be expected from a cash transfer.

Supplementary feeding programs, including maternal and child health (MCH) feeding, school feeding, and emergency feeding programs, target vulnerable individuals with large nutritional deficits. These feeding programs are intended to reduce the nutrient gap between individuals' food consumption and their nutritional needs (Rogers, 1995). However, the food, though targeted to an individual, enters the household's food supply and is shared. Emergency feeding programs typically include both family rations and special supplements for vulnerable individuals. The common element in these programs is that they provide food. Safety net programs increase household purchasing power; food may simply function as a resource transfer, but often, food-based programs also explicitly incorporate nutritional goals as well.

Food-based safety net interventions are also often implemented to serve purposes other than improving nutritional status or increasing household food security. For example, generalized food subsidies may make it possible to keep urban wages low, control inflation, and gain or maintain political support for the government (Cornia and Stewart, 1995). Food supplementation programs that distribute a ration through an MCH clinic or school may act

as an incentive for individuals to increase their use of these services. School feeding programs may also be designed to increase attendance and enrollment or to improve learning by improving children's cognitive function, as well as by alleviating their short-term hunger. By tying feeding to complementary components such as health or nutrition education, such programs attempt to improve nutrition not only by giving food but also by promoting better health, caring practices, and food choices.

The wide range of potential uses for food-based safety net interventions suggests that policymakers must identify the problem they seek to address and its causes in order to select the appropriate intervention. This applies both to selecting among different types of food-based interventions and to choosing the relative strength of food-based and other safety net programs.

Maternal and Child Health (MCH) Feeding Programs. MCH programs are a common type of intervention (Kennedy and Alderman, 1987), implemented in all regions of the world. MCH feeding programs are typically developed as supplementary interventions to prevent or alleviate malnutrition in certain physiologically vulnerable subgroups of a population (in other words, where infant or child anthropometric status is low and where pregnant mothers exhibit poor nutritional status or inadequate weight gain or have low birth-weight babies). Such programs typically provide a ration, consumed on-site or taken home, that is intended to add to each beneficiary's daily dietary intake. As the name implies, this type of intervention is usually delivered via a country's primary health infrastructure with the intention of attacking simultaneously both illness and consumption-related manifestations of malnutrition in infants, children, and (sometimes) pregnant and lactating women.

MCH feeding programs have been criticized as being largely therapeutic, since in many programs only those who are already malnourished are eligible for feeding (Beaton, 1993). Targeting only children who are malnourished is a design flaw, since it fails to prevent the developmental damage due to malnutrition and because it provides a perverse incentive to households if they believe they will receive a transfer only if they have malnourished members. Some programs target all children under the age of two and all pregnant or lactating women in target (low-income) communities, and these may provide a sizeable benefit that can be redistributed within the household as well as integrating nutrition education and other primary health care measures. Such programs can serve a preventive function. However, their positive effect is not sustainable if they are not used as a way to provide maternal or caretaker education to encourage changes in nutritional, health, and caring practices, since food can reasonably be provided only for a fixed period of time in most cases.

If safety nets are seen as programs to assure a minimum level of household welfare and economic security, then MCH feeding, aimed at vulnerable individuals and intended to deal with elevated nutritional needs of particular individuals, is really an adjunct to basic safety net programs. When a household has the resources and when household members have the knowledge and skills to obtain an adequate diet and ensure that members are fed appropriately for their age, physiological status, and activity level, then direct food transfers should not be needed.

School Feeding Programs. School feeding programs use schools as the distribution point for providing a ration to school-age children (and sometimes their families as well via take-

home rations). School feeding programs often aim to reduce the prevalence of malnutrition among school-age children by providing nutrient-dense meals or snacks, but they also can address short-term hunger, which may interfere with children's attention span and learning ability. School feeding has been criticized as a poor nutrition intervention because school-aged children have passed the period of greatest developmental vulnerability to the effects of malnutrition. However, older children also may have nutritional deficits affecting their health, development, and cognitive abilities that can be addressed through adequate nutrition (del Rosso and Marek, 1996). School feeding programs are often designed with academic as much as nutritional goals in mind—to increase school attendance and enrollment and to improve academic performance and cognitive development. The underlying logic suggests that the function of encouraging enrollment and attendance is best served in cases where school services are available but under-used—where enrollment or continuation are significantly below 100 percent, drop-out is high, and attendance is low (especially among girls). School feeding, like MCH feeding, is a very inefficient way simply to transfer income; it should be considered only in the context of the additional objectives it can serve.

Food-for-Work Programs. Food-for-work (FFW) programs have long been used to protect households against the decline in purchasing power that often accompanies seasonal unemployment, climate-induced famine, or other periodic disruptions by providing them with employment. In situations where FFW provides a guaranteed source of employment, it is truly a “safety net,” assuring a minimum level of income for households with members who can work. It is not an income transfer but an opportunity for employment. In terms of cost per unit of cash benefit delivered, FFW may be less “efficient” than a cash transfer because FFW requires management and other resources in order for work to be productive. However, one goal of FFW is to allow household members to work for their benefits rather than receive them as handouts. Often, FFW is used as a way to protect or promote household food security while simultaneously contributing to a country or region's long-term development by creating or improving infrastructure, such as roads, wells, or irrigation systems, that is constructed using FFW labor. Because the FFW wage is typically set just below the amount that the lowest-wage worker would earn in the private sector and because the pay is in-kind, FFW programs are often self-targeted to the neediest households. However, participation in such programs depends on the household having a member who is physically capable of working (von Braun, 1995).

Food Stamps, Vouchers, and Coupons. Food stamps, vouchers, or coupons are another mechanism used to deliver an income transfer to a target population. Because they are linked to food, they also tend to increase food consumption more than a cash transfer (Fraker, 1990 and Fraker et al, 1995). Such instruments may restrict beneficiaries to buying only a few specific foods or they may allow them to purchase any food in the market. The vouchers or stamps may be denominated in cash value or in terms of quantities. Because food stamp programs can only be implemented in countries with a well-developed commercial retail sector, a solid banking system, and public faith in the government's ability to back the value of the stamp, only a few countries (for example, Jamaica, Honduras, Sri Lanka, Mexico, Colombia, and the US) have tried to implement them. In some cases, food stamp programs have been designed to increase use of other social programs by using those programs as the distribution channels for the stamps as in Honduras and Colombia. In other places (such as the US), the stamps are administered like a cash transfer as a stand-alone program.

Consumer Food Price Subsidies. Consumer food subsidies operate by either implicitly or explicitly lowering the price of certain foodstuffs, ideally inferior foods (that is, foods consumed by the poor but not by better-off households). In theory, the resulting real income transfer augments the household food budget so that freed up money can be devoted to purchasing a greater quantity and/or variety of food or other goods. Untargeted food subsidies place no restriction on who may benefit. Some subsidy programs ration the quantity that may be purchased at the subsidized price to control costs, with additional quantities available on the open market at higher prices. This approach also reduces the incentive for a black market in the subsidized food to emerge. Untargeted subsidies are often criticized for being regressive (in other words, the rich often purchase more of the subsidized food than the poor) and costly; for example, in Sri Lanka in 1979, subsidies to food accounted for a full 5 percent of the country's GDP (see Subbarao et al, 1997). Consumer food price subsidies are discussed in a separate paper, and so are not treated further here.

Emergency Feeding Programs. Emergency feeding programs are implemented to protect lives and (sometimes) livelihoods when food entitlements (that is, household access to food) decline following the disruption of production and markets due to armed conflict, natural disasters, or other causes of acute food insecurity. Although emergency supplementary food should ideally be distributed at the community level to prevent distress migration, it is most often disbursed from a centralized distribution point to populations who have already disposed of their productive assets and migrated as a last resort. When provided in camps for refugees or internally displaced persons (IDPs), emergency feeding may replace rather than supplement the household diet. In this case, food is delivered as a "general ration" designed to meet average age-specific energy, protein, and micronutrient requirements that will sustain individuals at a given minimum energy level. The physiologically vulnerable (usually children and pregnant women) may also be specifically targeted to receive an additional, supplemental ration, while the most severely malnourished may enter therapeutic nutritional rehabilitation resembling a medical intervention.

These programs are diverse in their goals and operation. What they have in common is that they are food-based. They have not historically been seen as a coherent set of options that could be applied individually or collectively as a safety net. Rather, the evolution of each program was distinct. For example, many of the subsidized ration programs were created during World War II as a provisioning mechanism rather than as anti-poverty programs. In the United States, both the Food Stamp Program and direct food distribution originated as outlets for surplus disposal during the Depression. MCH supplementary feeding was designed more as a therapeutic intervention than as part of a safety net. Food-for-Work programs evolved as a way of using food in situations where governments lacked cash and food aid was available (as in the Maharashtra Employment Guarantee Scheme in India) or where constraints on the supply response meant that increasing income would drive up prices rather than attract more food into the market. In this sense, food-for-work is a true safety net program, providing employment for those whom otherwise would not have it. The concept of food-based safety nets represents a convergence of these objectives based on economists' recognition of the fungibility of resources. All these interventions actually represent different ways of increasing a household's food supply, though they are not equivalent in terms of their effectiveness as safety nets according to our initial definition.

Public versus Private Sector Responsibilities

One of the ongoing debates surrounding food-based welfare programs is whether or not governments should fund and administer such programs. Some economists claim that this responsibility falls on the public sector by default, as it is the failure of private sector markets from which the need for food-based safety nets arises in the first place, and only government has the reach and the resources to implement a safety net effectively. Others maintain that individuals should draw on their own resources such as social capital networks and other informal coping mechanisms such as reciprocity, labor migration, and diversification of income to mitigate the effects of market failure. Ultimately, the safety net is likely to be made up of a mix of market, government, and non-governmental mechanisms that coexist with community, household, and individual means of insuring against risk (Barrett, forthcoming). A challenge for governments is to design food-based transfers that complement rather than “crowd out” or displace private support systems. In practice, however, crowding out and additionality effects have been difficult to measure in developing countries and have not been explicitly accounted for in national-level programs (Ezemenari, 1997). Nonetheless, safety nets are implemented with the understanding that the nation has a responsibility to ensure the survival and welfare of its citizens.

Political Economy Considerations

The design of food-based interventions is often dictated as much by political economy as by economic analysis. Food is a merit good, implying that public policy towards food has a special character. As a result, it is easier for politicians to generate popular support for food-based programs than for other types of transfers.

A corollary is that food-linked interventions are difficult to remove or reform because of their political support. Reducing food benefits has toppled political regimes. Riots over food prices and food shortages have been documented throughout modern history, from the West of England in 1586 to the “golden age” of rioting in late 17th to 18th century England and France, where two-thirds of all popular uprisings were associated with food (Walton and Seddon, 1994). By the late 20th century, food riots had become a common expression of discontent over the worldwide dismantling of general food subsidies under global economic restructuring, which has meant that even the threat of social unrest can be effective in influencing policy.

In addition to domestic political considerations, the external environment is also influential in decisions related to the design of food-based safety net programs. Agricultural surpluses in the United States and other OECD economies are commonly channeled into food assistance to developing countries in order to support domestic food prices while stimulating tastes and preferences for developed country commodities among consumers in the recipient countries. The best interests of the beneficiaries are only one consideration in programs that simultaneously serve the commercial interests of the farm lobby and the geopolitical interests of donor countries, and the domestic political interests of recipient countries. The common types of food aid—MCH supplementary feeding, school feeding, and FFW—have often been implemented in response to the availability of food rather than as the optimum response to a nutritional or food entitlement shortfall.

II. Cross-cutting Issues of Program Design

There are several key issues to consider when designing any kind of food-based safety net program.

Cash-based versus Food-based Programs

All the interventions discussed here are linked to food in some way. There are several justifications for providing an in-kind, food-based transfer rather than one in cash. One is that it is often easier to gain political support for transfers in the form of food (although a corollary is that it is difficult to dismantle such programs). Food has the potential to be self-targeting, especially if the foods provided through the transfer are inferior goods, whereas the same does not hold for cash. Providing the transfer in the form of food makes it more likely to be consumed as food because there are transaction costs involved in converting food to cash (Bryson et al, 1991). Another argument for providing food is that it is not subject to inflation to the same extent as cash. Providing food or stamps denominated in quantity terms prevents the erosion of benefits due to inflation. Furthermore, providing food in the context of a program targeted at mothers or children means that the program can include education about the importance of ensuring that the food should be consumed by the vulnerable individual for whom it was intended. Finally, if food is scarce and the supply response is limited (that is, if the market is disrupted so that food is not available even if people have cash to buy it), the value of cash is limited. In such cases, increasing effective demand only raises food prices locally without increasing consumption (Webb and von Braun, 1994). While the logistics of managing food would seem to be more complex than managing cash transfers, this is not always the case (see box 2).

Box 2: Food Commodities are Not Always More Difficult to Manage than Cash

In a public works program in Honduras, the responsible ministry was so concerned about the possibility of theft that only two people were authorized to distribute cash wages, which typically meant that payments were delayed by several months. The food-for-work program, however, delivered payments on time (author's personal observation, 1994).

Although there are some advantages to using food in specific situations, there are certainly drawbacks, not the least of which is the significant cost of transporting, handling, and storing the food, as well as the institutional and human capital needed to store, distribute, and manage food effectively (Peppiatt and Mitchell, 1997). Food is subject to pilferage; in contrast many “cash” transfer programs provide not cash but some form of check that is personalized and, therefore, difficult to transfer to non-beneficiaries.

Targeting

Targeting is the process of identifying who is eligible to receive program benefits based on a program's specific objectives (Grosh, 1994). Although targeting is only one aspect of program design, better targeting is often promoted as the key means by which to increase a program's cost-effectiveness. The logic of targeting suggests that it is ideal to transfer the maximum benefit to targeted beneficiaries while minimizing leakage, but there are two caveats to this assertion. First, narrow targeting carries a cost; there are tradeoffs between optimal targeting and its administrative, disincentive, and political implications. Second, some leakage may actually contribute to achieving the program's objectives if the “leaked”

portion of the benefit is either reapportioned to other household members who are also likely to be malnourished or is traded for additional household necessities. Those making targeting decisions should weigh the benefit of perfect targeting against these associated costs (Besley and Kanbur, 1990).

Nutrition programs are often targeted on the basis of *nutritional risk*. Identifying those who are nutritionally at risk is based on the assumption that certain age or sex groups, such as pregnant and lactating women and children under the age of two, are more physiologically vulnerable to malnutrition because of their elevated nutritional needs at their stage in the life cycle. Sometimes, nutritional risk is defined according to a family's health history or socioeconomic background. For example, in the U.S. Special Supplemental Feeding Program for Women, Infants, and Children (WIC), income-eligible beneficiaries must undergo a medical exam and give details of their health history so that program workers can identify conditions that would predispose the woman or her children to malnutrition (USDA, 2000).

Nutritional supplementation programs often use *anthropometric screening* techniques to identify individuals who are already malnourished. The more common techniques include estimating weight-for-age or height-for-age, weight-for-height, mid-upper arm-circumference, and a body mass index against a reference standard. This approach has been criticized for being overly therapeutic; in other words, if the intervention is withheld until an individual has become malnourished, some irreversible harm may be done before the supplement is provided. Furthermore, anthropometric status—height- and weight-for-age and weight-for-height—can be a misleading indicator of individual nutritional status since these indicators were developed to assess populations rather than individuals (Bessenecker, 1999). For children, a better indicator of nutritional risk is growth failure, indicated by the change in their height or weight between two points in time. A child who is falling off his growth trajectory is at nutritional risk whether or not he falls below a fixed weight or height criterion.

Food-based interventions are also targeted on the basis of actual or proxied *household income or wealth*. Known as means testing or proxy means testing, this type of targeting is common to food stamp or voucher programs. A means test requires defining what constitutes the “household,” valuing all of that household's income (including that derived from informal sector or home-produced goods), and adjusting for seasonally irregular income streams and local price variations (Grosh, 1994). Except in the case of the most basic means tests, it also requires the verification of the household's reported income, which can be a difficult task in countries without formal tax or employment records. A proxy means test, on the other hand, uses certain household characteristics as indicators of economic status to identify eligible households. This method can be used when income is difficult to measure or verify or when the income criterion may serve as a labor disincentive (Grosh, 1994). Regardless of its form, means testing is burdensome for the beneficiary and for the government, and it requires a cadre of literate, numerate eligibility workers. In countries with low literacy and numeracy, this may be an unproductive use of scarce human resources.

Geographic targeting or targeting to units such as schools or health clinics is another common mechanism for determining eligible beneficiaries. Programs can be targeted geographically by state, district, municipality, or community in the expectation that these areas are relatively homogeneous according to wealth, income, or other indicator of vulnerability. Within each area, program planners identify schools or health clinics through which supplemental food rations, food stamps, or food vouchers can be delivered to eligible

beneficiaries. A modification of geographic targeting is the *Food Economy* method developed by Save the Children (U.K.), which maps vulnerable groups by food economic zone rather than administrative unit (Boudreau, 1998).

Self-targeting relies on individuals to identify themselves as beneficiaries. In-kind transfer programs can be designed to provide an *inferior good*. An inferior good is one of which the poor will demand more in response to a fall in price or an increase in income but that the rich choose not to consume due to taste, cultural preference, difficulty of preparation, or marketing presentation. Inferior foods are not necessarily inferior in nutritional quality, only in perception. Delivering food transfers through public health clinics or public schools may be self-targeting in places where the relatively well off use private clinics and schools. There are cases in which a food is deliberately made inferior in order to achieve self-targeting. For example, in Thailand in the 1970s, a subsidized rice was distributed consisting of 25 percent sticky rice and 75 percent ordinary rice, a mixture that was less preferable to consumers than either alone (author's personal observation). In the US, commodities for distribution are packaged by commercial companies but identified differently by their labels, which makes them appear less desirable.

Benefits may also be targeted by means of the time costs involved or if receiving a transfer is socially stigmatizing. These self-targeting methods may have psychological and well as practical disincentive effects, and they may eliminate eligible beneficiaries as well as those outside the target group. For example, high time costs may prevent very needy households from participating in a program. Even very poor households may refuse a benefit (such as school meals) that stigmatizes them as being poor.

Substitution versus Additionality

Any transfer, whether of food or cash, increases a household's resources. The effect of a food transfer in increasing a household's dietary intake and, thus, improving its nutritional status depends on what food is being added to the household's current consumption. If food received in a program is substituted for food that the household would have consumed anyway, the nutritional benefit is less than it could be.² The degree of likely substitution is associated with the degree to which the transfer is fungible, meaning the extent to which the transfer can be used to meet investment and consumption priorities already established by the household (Rogers, 1995). Food stamps that can be used like cash for the purchase of food or of specific foods can easily be substituted for food expenditures that the household would have made out of its own income. Even though direct food distribution is less fungible due to the transaction costs entailed in converting food to cash, the food can still be sold. And if it is consumed, it may still substitute for food that the beneficiary would have consumed in any case, while the beneficiary can use for other purposes the resources that were not needed to buy that food.

Although on-site feeding may seem to offer less opportunity for substitution than take-home rations, leakage in one on-site program (measured as caloric content of the ration versus net increase in caloric intake by the child) was between 37 and 53 percent of calories

² If program food is more nutrient-dense than the food that the household normally consumes, then there may still be some nutritional benefit. For example, if oil fortified with vitamin A fully substitutes for oil that the household normally buys in the market, then consumption of vitamin A will increase, though there will be no net increase in calorie consumption.

provided (Anderson et al, 1981). As long as the transfer is infra-marginal, that is, less than the amount that the household is already consuming, the possibility exists that it can be fully substituted for the household's current consumption. Empirical studies suggest, though, that food-based transfers are more effective in increasing food consumption than is cash.

III. Supplementary Feeding Programs

Supplementary feeding programs (SFP) are defined in one World Bank document as programs that distribute food “for the purpose of supplementing energy and other nutrients missing from the diets of those who have special nutritional requirements” (Gillespie, 1999). The commonest types of SFPs are: (i) supplementary feeding of pregnant and post-partum women and of infants and children, usually in conjunction with the provision of health services (maternal-child health or *MCH feeding*); (ii) *rehabilitation feeding* of severely malnourished children; and (iii) *school feeding*, which is the provision of a meal or snack to children at school.³ The common element in SFPs is supplementation of individuals' dietary intake, but SFPs serve a wide variety of purposes. They can act as an incentive for attendance at health clinics or schools, and, in the case of school feeding, they can alleviate children's short-term hunger during the day to enhance their attention and learning capacity. They can also serve as an income-transfer mechanism (though, as we have mentioned, supplementary feeding is an inefficient way simply to transfer income). These objectives are certainly compatible with one another, but the appropriate design of a SFP varies depending on the priority given to one objective or another. Among SFPs that have so far been implemented, no consistent priority has been assigned to the nutritional, incentive, or learning-enhancement objectives.

Supplementary feeding programs do represent a real income transfer to those households whose members receive the supplement, but as income transfer programs they are relatively inefficient per unit of value transferred, since the logistics of procuring, transporting, storing, managing, and delivering food add significantly to the cost of the programs. Compared with a cash or cash-like (for example, coupons or food stamps) transfer, the cost of delivering a unit of value in an SFP may be several times higher (Rogers et al, 1995; Sanghvi et al, 1995; and Horton, 1992). However, income transfer is only one of the objectives of SFPs and not usually the major one, so costs need to be assessed not only in terms of the amount of income transferred but also in terms of the improvements in health and in schooling that should result from these programs. Supplementary feeding programs are appropriately considered part of a set of safety nets, but they are complementary rather than alternative to strategies aimed at increasing household income and basic food security. As the name suggests, they are intended to be supplementary, addressing the particular additional nutritional needs of specific target groups within the general population.

The multiple purposes of SFPs imply that they incur costs beyond those incurred by cash income transfers. There is clear evidence that supplementary food distribution alone does not produce sustainable reductions in malnutrition (Beaton and Ghassemi, 1982 and Anderson et al, 1981). Therefore, if sustainable improvements in nutrition are a goal of an SFP, then other services besides food need to be included in the program, such as maternal or

³Food-for-work, which is sometimes considered under the rubric of supplementary feeding, is discussed in a later section of this paper. Emergency feeding, such as the general rations provided in refugee camps, is also considered separately since it not only encompasses supplementary feeding of vulnerable groups but also the provision of family food for subsistence.

caretaker education about caring practices; health services (for example, immunization, deworming, and preventive care); and possibly education on how to increase household resources through home gardens, poultry production, and microenterprise development.

Economic Rationale for Supplementary Feeding Programs

The primary purposes of SFPs are to prevent or to alleviate malnutrition and to provide people with an incentive to participate in socially beneficial programs. As income transfer programs, they are not cost-effective. They are safety nets only in the sense that they provide a source of food specifically for nutritionally vulnerable household members. The economic rationale for the first objective is that early malnutrition is a constraint on individuals' later productivity through the well-recognized negative effects of malnutrition on growth, physical capacity, and health and on cognitive capacity and school performance. (See Berg, 1987; Ravallion, 1990; Behrman, 1993; and Pollitt, 1993 and 1995 for reviews of the evidence on these effects.) Improved nutrition, especially combined with better health and higher levels of schooling, should contribute to breaking the cycle of malnutrition, low productivity, and poverty.

For the second objective, increasing the use of health care and schooling services, there are several economic rationales. First, the social benefits of participation in such services may exceed private benefits; incentives are needed so that participation reaches more socially optimal levels. Second, household members may be unaware of the benefits that they could gain from these services. Therefore, they need an incentive to participate so that they can experience the benefits and then be motivated to continue to take advantage of them. Finally, even if household members are fully aware of the benefits of such services and even if they could theoretically capture all the benefits of better health care and increased schooling, they may still be too poor to pay the costs of participating in the short run. In most developing countries, there is no "credit market" that would allow parents, for example, to borrow money to pay for current school fees or transportation costs to a clinic against the presumed future earning capacity of their healthier, better educated children. Attendance at even a free public health clinic may involve transportation costs and certainly involves a cost in terms of time not spent on other household or market production activities (which may result in forgone income or in the need to pay someone to carry out those activities). Children's school attendance involves not only the cost of school fees in many cases but also other direct costs such as transportation, school materials, and appropriate clothes and the probably more important opportunity cost of the loss of children's labor to the household. Supplementary feeding provides a real transfer of value to a household that can offset the costs of participation in health or education services by altering the household's own cost/benefit calculation. Of course, some SFPs involve their own costs of participation. For example, parents may be asked to provide food or labor to school feeding programs or women may be required to attend education sessions if they wish to receive MCH food supplements.

If the only purpose of supplementary feeding were to be an incentive, then there would be no particular benefit to offering it in the form of food; the incentive effect might be just as great or even greater if the transfer were in the form of cash or other goods. Income transfers, of course, increase household food consumption consistent with the household's income elasticity of demand for food. However, the income effect alone may have a limited impact on the food consumption or nutrient intake of a particular vulnerable household member. The

household may use the income transfer to buy more expensive but not necessarily more nutritious food; thus, the pattern of distribution of that food within the household may result in only a small fraction of the additional food consumption going to the targeted individual. Whether the incentive is provided as food, cash, or other goods, education is needed to promote changes in household behavior that will improve the health and nutrition of vulnerable individuals. Providing food, food stamps, or other incentives in the context of a program targeted at mothers or children means that the program can include such education.

Economic theory suggests that inframarginal transfers of food—that is, quantities of food that are less than the household is already consuming—are the equivalent of a cash transfer because the household can fully substitute the food it receives for the food that it was previously purchasing or consuming from other sources. The household can, if its decisionmakers wish, keep its level of food consumption exactly as it was before the transfer, freeing up the resources that it previously spent on food to be spent on other consumption goods. This is called full substitution. Providing the transfer in the form of food makes it more likely to be consumed as food, because there are transaction costs involved in converting that food into cash. Also, transfers in the form of food, even if infra-marginal, are more likely to be consumed as food because food that enters the household (unlike cash) is likely to fall under the control of the woman of the household, since the acquisition and preparation of food are generally the woman's sphere of activity. This may also be true of non-food transfers provided to women in a health care context. One study in Honduras found that almost all women who received a cash transfer (*bono* or coupon) through the MCH clinic said that they had the authority from other household members, including their husbands, to use it as they wished, possibly because it was distributed directly to women and was given through the health care system (Sanghvi et al, 1995). Providing food and using the public clinics probably also make the incentive more self-targeting to low-income households.

Another reason why many programs provide the transfer in supplementary feeding programs in the form of food is that such programs are often funded by food aid from the World Food Programme or from USAID. In some cases, the implementation of SFPs has been driven by the availability of this resource; as one unnamed conference participant put it, “food aid is a solution in search of a problem.” One reason for targeting this externally provided food to poor consumers in a way that makes it additional to the food they already consume is that it minimizes the degree to which food demand is reduced in local markets as a result of the provision of free food. Both the World Food Programme and USAID place restrictions on the degree to which the food aid that they provide may be monetized, that is, sold by the recipient governments for cash that can then be used to fund development or social welfare programs. School feeding, MCH supplementary feeding, and food-for-work are all interventions that make use of aid in the form of food.

Not all SFPs are targeted to the poor, however. Poor populations are more likely to be malnourished, and the barriers that they face to clinic use and school attendance are great, but in some cases the program goal is to increase participation, which may be low for other reasons. For example, in the US, one goal of the School Breakfast Program (SBP) is to ensure that all children have breakfast before beginning the school day. The children may not necessarily be poor; it may be that their working parents have too little time to prepare breakfast in the morning or that the children themselves cannot eat immediately after waking up.

Effectiveness of Supplementary Feeding Programs

Judgments about a program's effectiveness depend, of course, on the objective being assessed. In terms of their nutritional objectives—alleviating or preventing malnutrition—the record of those SFPs that have been implemented so far is mixed. Controlled trials have provided ample evidence that such programs *can* be effective in improving nutritional status under ideal conditions. Nutritional supplementation of pregnant women with calories and protein and with micronutrients can improve birth outcomes, resulting in higher birth weight, fewer birth complications, lower perinatal morbidity and mortality, and better growth rates (Mora, 1983 and Prentice et al, 1987). Supplementing the diets of children at the appropriate age (between six months to about 24 to 30 months old) can improve children's growth rates (Rivera et al, 1991; Mora et al, 1981; Rivera et al, 1995; and Rao and Naidu, 1977), can reduce the negative effects of illness, especially diarrheal disease (Beaton and Ghassemi, 1982; Kielman et al, 1978; Gopalan et al, 1973; Gopaldas, 1976; Husaini et al, 1991; Lutter et al, 1989; and Martorell et al, 1990), and can increase resistance to disease (McKeown, 1988 and Scrimshaw and Gordon, 1968). Micronutrient-dense foods can improve the micronutrient status of pregnant and post-partum women and of children and improve children's growth rates (Kusim et al, 1992; Mora et al, 1981; and Mardones-Santander, 1988). Nutritional supplementation for lactating women has not been consistently shown to increase milk production, though it may help the woman herself recover from the nutritional challenges of pregnancy (Gillespie, 1999). (See WHO, 1997 and Gillespie, 1999 for comprehensive reviews of the evidence on these effects.)

However, programs that are operating at scale in the community, SFPs have had a less consistent record of effectiveness in improving nutritional outcomes. The nutritional outcomes assessed are typically measures of anthropometric status: children's height-for-age, their weight for age where height is too difficult to measure, young children's growth in height, and the weight gain of children and pregnant women.⁴ Rates of anemia and vitamin A deficiency are less commonly used because they are too difficult to measure. Some SFPs do have an impressive record of reducing rates of malnutrition (Berg, 1987 and WHO, 1997). For example, the area covered by the Tamil Nadu Integrated Nutrition Program (TINP) showed rates of malnutrition 40 percent below those in villages that were not covered by the program (Berg, 1987). However, reviews by Anderson et al (1981) and Beaton and Ghassemi (1982) concluded that supplementary feeding alone, without complementary health and education/behavior change interventions, was largely ineffective in improving birth outcomes or children's growth.

One correlate of effectiveness in addressing undernutrition is the severity of the nutritional problem. Programs are more effective where nutritional problems are more severe. Furthermore, SFPs vary widely in terms of the size, composition, and nutrient-density of the supplement provided, the duration of supplementation, the regularity with which it is

⁴ Height-for-age is considered to be a measure of long-term nutritional status, while weight-for-height measures current nutritional intake as thinness/fatness. Weight-for-age is used to assess nutritional programs only when data on height are not available, since it is difficult to know whether low weight for age is due to stunting in height or due to excessive thinness or wasting. The problems indicated by these two measures are quite different. Many nutritionists suggest that data on weight *gain* or growth over time are more reliable measures of nutritional status than a one-time measure. Children who fall off their growth trajectory may be suffering from undernutrition even if they have not yet fallen below the cut-off for low weight or height for age (typically -2 standard deviations). See Bessenecker (1999) for a thoughtful discussion of the use of anthropometric criteria in SFPs.

delivered, and the degree to which it may be shared among household members, traded or sold. These variations make it difficult to generalize about SFPs. Clearly, large rations delivered to more poorly nourished individuals reliably and over a long period of time are most likely to have a measurable nutritional effect. (See Rogers, 1995 for a discussion of factors influencing the costs and effectiveness of food-based transfers.) The impact of providing supplementation to pregnant women on their children's birth weight is greater the earlier supplementation is started. Age is also critical. Many SFPs provide food supplements to children up to the age of five, but any effect on growth in height is unlikely to be manifested after about 24 to 30 months of age, though there may be other nutritional benefits that are more difficult to measure (Beaton, 1993). Improving the nutritional status of pre-adolescent and adolescent girls may help them to have healthier pregnancies and babies later in life, but few programs target adolescents, unless they are pregnant or lactating. Thus, programs that provide supplements to older children have a poor overall record of effectiveness in terms of the criterion of improved growth, even if their effect on children under age the age of two is significant. Impact on growth is even more difficult to document in school feeding programs, since school children are already past the age at which nutritional supplementation can have a significant effect on height, though other beneficial nutritional effects are possible (del Rosso and Marek, 1996).

An important potential nutritional contribution made by SFPs is to provide food that is more nutrient-dense than the foods that the household would have consumed out of its own food supply. Even if the household substitutes some of its food transfer for family food, the greater nutrient density can provide nutritional benefits in school feeding and in maternal and child health SFPs, especially when the SFP is combined with micronutrient supplementation and the provision of medication such as de-worming treatments.

The evidence cited above about the importance of nutritional (particularly anthropometric) outcomes could be seen as an argument in favor of targeting SFPs only to pregnant women (to prevent intrauterine growth retardation) and to children under 30 months of age. However, children have nutritional needs well beyond the critical period for growth in height (del Rosso and Marek, 1996) that may be met by nutrient-dense food supplementation, whether administered through clinics or schools. The critical period during which nutrition can affect cognitive development may extend beyond the critical period for growth in height (Beaton, 1993). Also, there is increasing evidence that birth outcomes are affected by women's nutritional status well before the women become pregnant. Supplementation during pregnancy does improve birth outcomes, but women who are well nourished throughout their lives (as indicated by height) have better outcomes still. In one study, women who received a high calorie/protein supplement as children not only showed higher than average growth rates at the time but also had babies with higher than average birth weights, even though the supplement had been discontinued while they were still children (Ramakrishnan et al, 1997). This suggests that there may be nutritional benefits to improving dietary intake at any age, even though the effect is not immediately measurable in anthropometric terms.

Supplementary feeding programs have been shown to be effective as an incentive for enrollment and attendance in school (Rogers et al, 1995; WFP, 1995; Ahmed and Billar, 1994; and Devadas, 1983) and for seeking prenatal and well-baby health care (Sanghvi et al, 1995). In the US, a School Breakfast Program was associated with improvements in attendance and tardiness (Meyers et al, 1989). The same study in the US found that the School Breakfast Program increased the net nutrient intakes of low-income children

compared to those who ate at home or did not eat breakfast (Sampson et al, 1995). A MCH food transfer delivered as take-home or on-site feeding in Honduras resulted in a significant net increase in the consumption of calories, protein, and vitamin A,⁵ while cash-like incentives did not increase dietary intake (Sanghvi et al, 1995).

School feeding programs have been criticized because they provide nutritional supplements to children who are past the critical period for growth and because they reach only those children who are well off enough to be in school (Berg, 1973). Nevertheless, schooling is now recognized as a critical input into both human development and national economic development (World Bank, 1999). Any input that can increase enrollment, attendance, and school completion should be assessed on those grounds alone, without necessarily referring to nutritional outcomes. The World Food Programme has recently announced an initiative to implement universal school feeding in the countries in which it works (WFP, 2000) to address both nutritional and schooling-related goals. Of course, the effectiveness of school meals in achieving these goals must still be assessed in comparison with other means of achieving the same objectives. Both school snacks and cash-like transfers were found to increase children's progress through school in Honduras. The effect of the cash transfer was almost three times that of the snack and its cost-effectiveness was higher, but the snack also had positive effects on children's dietary intake, while no such effect was seen with the cash transfer (Rogers et al, 1995).

In many countries, it is no longer the case that only elites attend school. For example, the initial enrollment rate in Honduras is now over 95 percent, though many children drop out before completing elementary school. To encourage children's continuation in school, it would be most cost-effective to target any incentive (meals or cash) to the grades where dropout is highest—third grade and above in Honduras, for example. However, in some countries, enrollment even in the earliest grades is still very low. School feeding is now being used in some countries specifically to encourage the enrollment of girls. In Pakistan, in-school meals are provided to all children, but girls receive an additional take-home ration as a means of reducing parental and societal resistance to girls' education (WFP, 1995 and 1996). A similar program has been implemented in Ghana (CRS, 1993).

It is extremely difficult to demonstrate directly the effect of school feeding on attention and learning in school because of the difficulty of conducting rigorous experiments and because judgments about children's attention and behavior are rather subjective. Some studies have shown an effect on test performance (Meyers et al, 1989), but others have found no difference (Rogers et al, 1995 and Dixit, 1994). Given the wide variety of SFP designs and the contexts in which they operate, it should not be surprising that their effectiveness has been shown to be variable.

Appropriate Circumstances for the Use of Supplementary Feeding Programs

Supplementary feeding programs require a well-functioning infrastructure of clinics or schools as distribution mechanisms. To have the greatest effect, the distribution network should be widespread and reach into the poorest regions and neighborhoods. SFPs depend on the ability of the implementing agency to handle the logistics of transporting, storing,

⁵ The substantial increase in vitamin A consumption was no doubt due in part to the fact that the food supplement provided included a blended food fortified with vitamins.

managing, and distributing food. This is not a trivial requirement. SFPs do not depend, as food stamp programs do, on a reliable and well-functioning banking system or private market for food. However, most SFPs, particularly those that rely on externally provided food aid, do require a sound transportation and storage infrastructure. There must be mechanisms for warehousing food and for transporting it to clinics or schools throughout the country.

The management and tracking of the food supplies is also a demanding task. One of the considerations in implementing a SFP is to ensure that schoolteachers or health care staff are not unduly burdened by this management task. In many countries, private NGOs both perform the function and provide training to clinic and school staff to ensure adequate management and control. SFPs that are locally managed and run could avoid some of the need for warehousing and transportation from a central location or port, but the management task remains of keeping track of large volumes of food commodities to ensure that they are properly used, not stolen or diverted, and not wasted or allowed to spoil.

The use of food in MCH centers is a subject of some controversy. There are those who feel that the use of food risks creating dependency among recipients because the food is seen as a handout. They argue that health services should be of sufficient quality that people value them without needing the additional incentive of food provision. Further, there is a risk, they say, that providing food as an incentive where it was previously unavailable creates an expectation of material reward for participation, so that, when it is no longer available, participation may fall below its original level. This is a plausible, though unproven, hypothesis. Another risk is that food may become the exclusive focus of a program, when it should be only one of many tools for improving health outcomes. Also, the management challenges may divert staff's attention from their other duties, and the offer of valuable food commodities may capture the full attention of beneficiaries to the exclusion of other health and nutrition inputs.⁶

The argument is also made that SFPs are unsustainable because they depend on the availability of food from outside the country. This is often true, but governments or local health or school systems can also organize feeding programs; there are many school feeding programs that make use of volunteer labor and accept contributions of food from parents. Some maternal and child health SFPs use weaning foods that are locally prepared from locally available ingredients. Many of these programs also use food that is provided by donors or by the national government, but these programs could conceivably be locally run if financing, technical assistance, and training were available.

On the other side of the argument are those who contend that, if food is available from donor agencies, then poor countries should make use of it. The food is not a "reward" but rather an offset for the real costs of participating in the programs. If a program is carefully designed and implemented, then the nutritional benefit may be sustainable by changing recipients' behavior and attitudes to nutrition. Thus, the food "hand-outs" are only the original motivation. Food may also be used therapeutically in a short-term way, again with appropriate education and other services. In the case of school feeding, the sustainable

⁶ In Honduras, the provision of MCH supplementary feeding was associated not with a decrease but with an increase in the quality of care provided as measured by direct observation. In the MCH programs that offered cash-like incentives, the quality of care was no different from that in programs offering no incentives for participation. This might be attributable to the fact that the NGO providing the food also provided close supervision of MCH program staff, while those in charge of the cash-like transfer did not (Sanghvi et al, 1995).

benefit is the long-run improvement in productivity expected from a better-educated populace. Finally, the use of food to rehabilitate malnourished children or to prevent malnutrition is seen as no different from the provision of iron supplements to cure anemia or of vitamin A supplements to prevent deficiency. The underlying causes of nutritional problems may indeed need to be addressed by changing the economic and political structures of a country, but in the meantime, supplementary food can assist poor households in avoiding or addressing malnutrition at times when the household contains members with acute nutritional needs.

If the underlying concept of SFPs is acceptable to policymakers, then maternal and child health SFPs are appropriate in circumstances where undernutrition is prevalent—where there is a high rate of poor weight gain in pregnant women, low birth weight infants, and stunted or underweight infants and toddlers and where the underlying cause is poverty. To be effective, these MCH supplementary feeding programs can only operate if there is a functioning and accessible network of fully operational health clinics or outposts. In the case of school feeding programs, the underlying logic suggests that their function of encouraging enrollment and attendance is best served in cases where the school system is widely accessible but under-used—where enrollment or continuation are significantly below 100 percent, drop-out rates are high, and attendance is low. Finally, both kinds of SFPs can be useful vehicles for providing nutrient-dense foods to needy households if the health or school systems are widely accessible.

School feeding programs are politically very attractive and enjoy wide support among governments and among beneficiaries. The concept of providing food to children in school is attractive and easily understandable and the benefits are intuitively clear, even in those cases where the benefits have not been scientifically proven. Eliminating existing school feeding programs is politically risky, and implementing such programs is a visible way for governments to show support for children, for education, and for health and nutrition in one single step.

Program Design Issues

Program planners must address a range of key issues when designing food-based safety net programs.

Substitution. Economists and policymakers recognize that households (or individuals) can substitute any food transfer for food that they were originally consuming, thus reducing the net *nutritional* effect of the transfer. Substitution is a major design concern. There are ways to raise the proportion of transfer that is additional to the household's current food consumption, but some substitution is inevitable. Recognition of the likelihood of substitution should be built into the design of the SFP by providing a large enough transfer so that at least some of it will be additional to the current consumption of the household and of the targeted individual. For example, the U.S. Special Supplemental Feeding Program for Women, Infants and Children (WIC) provides very large quantities of food for a pregnant or lactating woman (for example, 28 quarts of milk, 28 quarts of orange juice, and four dozen eggs per month and more) in the expectation that at least some of that will be additional to what the woman would otherwise consume. If the milk, orange juice and eggs substitute for soft drinks and breakfast pastries, there will be a net nutritional benefit to the woman even with substitution.

Substitution is simply the household's way of asserting its own priorities in the face of a transfer provided according to the priorities of the donor. The difficulty is that the household's "own priorities" may not reflect the needs of all of its members equitably. Depending on how household decisions are taken (a question far beyond the scope of this paper), the needs of vulnerable members such as children and women may not be accorded the high priority that planners concerned with child health and long-term productivity (or the women and children themselves) would choose. It was mentioned above that the very fact that the transfer is in the form of food reduces the probable degree of substitution, in part because food is often perceived as a woman's domain, so that any food entering the household falls under her control.

Leakage. Leakage occurs when members of non-target groups benefit from the SFP. There are two kinds of leakage: the kind which occurs when other members of the target household share supplementary food intended for one individual and the kind which occurs when ineligible households receive the benefit. Leakage within the household is virtually unavoidable. It is simply not reasonable to expect households receiving a food supplement on behalf of one child to deny it to the other children in the household. Recipients of MCH supplementary food often freely acknowledge that the food is shared within their households (author's personal observation in Bolivia, 1999). One widely cited experimental program provided acidified milk to children in the Chilean milk program, and it was found that this reduced the likelihood that adults would consume it (Harbert and Scandizzo, 1982). Other than weaning foods, there are few foods that can be self-targeted to individual household members. Furthermore, in high-risk households, leakage to other children is likely to provide a benefit that they need (Beaton, 1993). In this sense, the target child or mother may be seen as an entry point into the household; thus, the benefits that are provided should be set with the recognition that they may be used to meet the needs of the entire household.

Corruption, Diversion, and Losses. Whenever a program involves large quantities of a valuable commodity, there is a risk that the commodity will be diverted and put to unauthorized uses. At any level of the program's management chain from the highest down, there is a risk that commodities may be stolen and sold. This is a management issue and is no more or less serious a problem in food programs than in programs dealing in food stamps, coupons, or cash. However, with food, there is a higher risk that it will spoil due to improper storage and handling, which means that appropriate management and control procedures are essential to SFPs. Inappropriate targeting, or lack of enforcement of targeting criteria, is also a risk in any transfer program, but this is not a question of corruption unless the program staff either steal the food themselves or accept payment for it from those who would not otherwise receive it.

On-site versus Take-home Feeding. MCH SFPs may offer on-site feeding (also called "wet feeding") or take-home food ("dry rations"). On-site feeding appears to offer the advantage that targeted children are actually the ones receiving the food, but of course the possibility of substitution of the on-site meal for a meal that the child would have consumed at home means that there is no assurance of additionality. On-site feeding has very high costs of participation for beneficiaries; they must attend the clinic every day to receive the meal, incurring both travel costs and the loss of their time that would otherwise have been spent on other household or market activities. For this reason, on-site feeding has been observed to have higher drop-out rate than take-home feeding (WHO, 1997). Often, on-site feeding programs serve only families living within a few minutes walk of the feeding site (author's

personal observation in Honduras, 1993). On-site feeding makes high management demands as well. Program staff or volunteers must be available to prepare, serve, and clean up after meals on a daily basis. One advantage of on-site feeding is that, because it requires daily attendance, it provides an opportunity to educate participants about appropriate cooking and feeding behavior. Take-home feeding is often structured so that beneficiaries are required to participate in educational activities, albeit only on an occasional basis.

Take-home feeding greatly reduces costs of participation to the beneficiaries since distribution is much less frequent than in on-site feeding—often monthly or tied to the recommended frequency of clinic visits. This means that more households can be reached for a given level of administration. The quantities provided probably need to be larger for a given benefit to the targeted child because of the likelihood that the food will be shared with other children in the household, but the larger quantities probably offer a larger benefit as well. However, beneficiaries may have to collect large and bulky quantities of food and may need to pay for assistance to transport it home. Because take-home food must be non-perishable, it is easier to sell or trade if the beneficiaries choose to do so. Food taken home is very likely to be shared, so the quantity provided must exceed the amount needed by the targeted individual (see below).

Of course, school feeding is by definition on-site feeding. The educational benefits of the school meal associated with alleviating children's immediate hunger are not achieved if the food is taken home. However, the incentive function of the food may be equally well served by take-home food or even by cash. In Honduras, a household transfer in the form of a cash-like coupon distributed through the school system had three times the effect of a small school snack on children's completion of years of schooling. Neither the snack nor the coupon was associated with improved standardized test performance (Rogers et al., 1995). Similarly, schools have been used as a vehicle for distributing household food in the form of dry rations as an incentive for families to allow girls to attend school (WFP, 1995 and CRS, 1993).

Eligibility Criteria and Targeting. Most MCH feeding programs are targeted at several levels. First, they operate in clinics that serve low-income areas; second, they are targeted based on the age (of children) and the physiological status (such as pregnancy or lactation) of women; and third, they are often targeted to children who fall below a certain criterion of growth. Household income is seldom an explicit criterion because this is so difficult to measure, but public clinics do not generally attract the affluent, so geographic targeting and the self-targeted nature of public clinics may be sufficient to ensure that low-income populations are reached. Among programs that use growth as a criterion, some use a fixed standard. Children who fall more than two standard deviations below the mean of height-for-age or weight-for-age, for example, may be deemed to be malnourished and, therefore, in need of supplementary feeding. It is preferable to use the growth rate, that is, to target children whose growth falls off the recommended trajectory or pregnant women whose weight gain per month is below recommended levels. If the purpose of the SFP is to cure undernutrition, using the growth rate is preferable to using a fixed standard of achieved growth because it can catch growth failure early, possibly before permanent damage is done. The growth charts used to calculate height-for-age, weight-for-age, and weight-for-height were developed for use in assessing populations rather than individuals. While it is quite likely that an individual falling below -2 standard deviations is malnourished (whether due to lack of food or to illness or other cause), this criterion is likely to miss many children who are *becoming* malnourished (Bessenecker, 1999).

Targeting based on anthropometric status is a questionable practice if the goal of MCH supplementary feeding programs is to prevent rather than to cure undernutrition. To meet the goal of prevention, targeting should be based on risk—on socioeconomic status (as indicated by location) and age/pregnancy status. As mentioned earlier, supplementary feeding that starts earlier in a pregnancy is more effective at preventing low birth weight babies; therefore, supplementary feeding should be provided to women as soon as pregnancy is identified. The availability of food can thus be an incentive for women to seek early prenatal care. Supplementary feeding of children should be targeted to children between the ages of six months and about 30 months old. Children younger than six months old should be receiving only breast milk; their mothers should be receiving the supplement to compensate for the additional nutritional burdens of lactation. Above the age of about 30 months, the effect of a nutritional supplement on children's height is much less likely to be observed because children's growth rate slows after this point. Targeting based on risk criteria rather than on anthropometry also avoids the possible problem, often cited but never documented, of perverse incentives, in other words, that mothers may deliberately try to keep their children malnourished in order to continue to qualify for the food supplement. Providing the supplement for a fixed period of time may also avoid this problem—that is, once children are deemed eligible for the supplement, they receive the supplement for a fixed period of time that is not contingent on their anthropometric status.

MCH supplementary feeding may also be made contingent on compliance with norms for prenatal, postpartum, and well-baby care. This conditionality, of course, requires that the food be withheld if mothers do not comply—a difficult thing for health clinic staff to do. However, even the threat of conditionality may be sufficient to induce mothers to comply.

If school feeding programs are targeted, they should be targeted by school rather than by class or individual students. There are good reasons for offering school meals on a universal basis as children may become hungry during the day irrespective of their economic status. If universal school feeding is too expensive an option, as it is in most countries given competing priorities, schools that serve low-income populations should be targeted. Targeting poor children within a school or a class should be avoided, because it creates a stigma that is likely to discourage needy children from taking advantage of the program. Furthermore, compliance with such within-class targeting is low; in many cases, the teacher or staff person managing the program will simply divide the food into smaller portions so all of the children can participate (Sahn et al, 1981).

In the U.S., all children in schools that offer the school breakfast and lunch programs are eligible to participate, but non-poor children must pay while poor children receive the meals free. In 1977, regulations were passed requiring schools to develop systems to prevent the identification of children receiving free or reduced-price meals. For example, parents of non-poor children may pay for lunch or breakfast using coupons that are mailed to their houses; poor children receive the identical coupons without paying. Therefore, in the classroom or cafeteria, it is not clear which children are paying and which are non-paying. This level of bureaucracy is probably not feasible in most developing country schools.

Recently, the World Food Programme has moved to target school feeding programs to areas in which girls' enrollment is notably lower than boys' enrollment, thus using the program as an incentive to increase girls' attendance. It has also moved away from supporting school feeding in all schools in a given country and moved towards giving

assistance only to schools in poor, food-insecure regions and in elementary grades only (WFP, 1995).

Exit Criteria. Most MCH feeding programs continue to provide food to pregnant women for a fixed period (often six months) after their baby has been delivered. The rationale for this is that the mother needs additional food to support the nutritional demands upon her of breastfeeding. MCH programs often provide food for children until they have reached a satisfactory level of growth and maintained it for a given period of time. Making supplementary feeding contingent on continued poor growth rates seems to create perverse incentives, as discussed above. If supplementary feeding is provided based not on anthropometric but on risk criteria, then the appropriate exit criterion is that the beneficiaries are no longer in the target group. If the supplementary feeding is intended to treat undernutrition, then it is appropriate to suspend feeding after adequate growth has been reached, with a period of several months added to assure that adequate growth is maintained. Beneficiaries should not be withdrawn from the program the first time they achieve an adequate growth rate. To avoid any suggestion of perverse incentives, it may be preferable to provide the food for a fixed period of time. In any case, children who do not improve during that period are likely to need some input besides the additional food. Meanwhile, the MCH program should be providing education and other means to assure that the target beneficiary will not simply revert to his or her undernourished status once the supplementary food is no longer made available.

There are logically no exit criteria for children participating in school feeding programs; if the program is deemed desirable in the national context, then meals should be provided to children in eligible schools whenever they are in school. Because of the popularity of school feeding programs, it is difficult to withdraw such programs once they have been implemented.

Timing. All evaluations of SFPs agree that reliability is critical to their effectiveness. Once a program has been started, suspensions and disruptions are damaging to their incentive effect. Beneficiaries may become disaffected, and participation may even fall. However, if participants are aware of expected disruptions and know that they are temporary, they may continue to participate. Any nutritional effect is also dependent on the regular supply of food; one common reason cited for the lack of measurable effect in MCH feeding programs is irregular supply (Rogers, 1995; Gillespie, 1999; and Kennedy and Alderman, 1987).

In the case of take-home rations, one consideration to bear in mind in deciding on the frequency of distribution is simply the amount of food that a person can transport. The weight and bulk of a single distribution should be manageable. Also, if the food is distributed in smaller quantities more frequently, it is probably more likely to be consumed rather than sold or traded. Increased frequency of distribution, however, also increases the time costs of beneficiaries and the management burden on program staff. The more distant the target population is from the clinic, the greater the time costs that will be involved in frequent food distribution. Most MCH programs distribute dry rations either every month or every three months. Linking distribution of food to clinic visits made by beneficiaries for other purposes is conceptually appealing and reduces the time cost to the beneficiary. However, this imposes a management burden on clinic staff, who may prefer to devote one day a month to distributing food, a day on which they do not have to attend to other tasks.

School meals programs are usually structured as breakfast, lunch, or a mid-morning snack. The argument for providing breakfast is that children may arrive at school hungry, particularly if they travel long distances, and they can concentrate better if they eat before the school day starts. The argument for providing lunch is that children who last ate in the morning need a mid-day meal in order to work through to the end of the school day. It is often asserted that nutrient-dense snacks provided between mealtimes are more likely to be additional to the child's food consumption than are regular meals. The logic is that parents will provide breakfast and lunch for children if the school does not provide it, but snacks may be seen as "extra." We found no study that explicitly addresses the question of optimum timing of school meals, but one study in Honduras found that over 98 percent of children reported eating breakfast, whether or not a mid-morning snack was offered in their school (Rogers et al, 1995).

Size and Composition of the Food Supplement. In take-home feeding, the key consideration is to provide sufficient food to allow it to be shared within the household. The World Food Programme recommends providing more food to the household in take-home feeding programs than in on-site feeding programs, though this recommendation is not based on empirical studies. A recent USAID report recommends providing one-third of the caloric and protein needs of the entire household in MCH feeding programs that are aimed at preventing the undernutrition of children under the age of three. Of course, larger quantities have a greater effect (WHO, 1997).

The provision of nutrient-dense foods can make an important contribution to SFPs. Giving out value-added foods such as fortified wheat-soy blend or corn-soy blend can provide recipients with valuable micronutrients even though beneficiaries probably do not value these foods any more than comparable foods without fortification. In the case of on-site feeding, substitution is quite likely so the micro- and macronutrient density of the meal is important. One meal should provide more than the equivalent meal at home, at least one-third of a person's daily calorie and protein needs and as much of the child's micronutrient needs as feasible. Some on-site feeding programs make use of food donated by participating parents; this is true of both school meal programs and MCH on-site programs. One advantage of this is that the programs can serve nutritious meals that the participants can then replicate using foods they can buy themselves as opposed to foods such as fortified wheat-soy blend or corn-soy blend that are unfamiliar and unlikely to be available to them if the program is stopped.

Donated rations typically consist of grain (rice, maize, and wheat flour), a pulse such as beans or lentils, oil, and a fortified blended food. Donations from the World Food Programme sometimes include canned fish, and there have been programs that distributed nonfat dried milk as well. In some cases, the acceptability of the donated foods has been a problem. Often recipients in given regions have shown strong preferences for one kind of pulse or for white maize in preference to yellow, for example. With local foods, issues of acceptability do not arise.

Foods that have very high value (such as fortified vegetable oils) are more subject to diversion (pilferage) or to being sold by the beneficiaries for cash. For example, in one MCH feeding program in India, the only losses experienced from shipments were of nonfat dried milk (author's personal communication, 1979). Also, in a food distribution program in the U.S., several different foods were stored in a fire station in between weekly distributions but only the butter disappeared (author's personal observation, 1972). If beneficiaries sell very

high-value foods such as milk and oil, they may well use the money to buy food of lower monetary value but of greater total nutritional value to the household. Of course, the higher the income transfer component is, the higher will be the value of the commodity. This last point does not apply to unfamiliar foods such as fortified wheat-soy blend or corn-soy blend because the local population will not recognize them; they will be valued according to the price of the closest local market substitute.

Perishable foods are more likely to be consumed and less likely to be sold than dry rations, but distributing perishable food raises the cost of a program because of the difficulties of transporting and storing it. Planners of programs that aim to distribute perishable foods must be conscious of the need to practice safe handling and to dispose of the food before it spoils.

Criteria for Program Evaluation

MCH supplementary feeding programs can be evaluated based on their multiple objectives. In terms of their nutrition and health objectives, they should be evaluated according to the following criteria—whether women who received supplements while pregnant had babies of higher than average birthweight and length, whether they had lower than average rates of low birthweight, whether there were lower rates of maternal and perinatal mortality and of maternal anemia. The criteria for evaluating the program associated with the children who received supplementary feeding should be: improved rates of growth in height and weight among children in the first two years of their life and lower prevalence of undernutrition as measured by their anthropometric status and biochemical measures (for example, anemia).

In terms of the incentive objective, criteria for evaluating a SFP should include greater compliance with the norms of prenatal, post-partum, and well-baby care and higher rates of immunization. If the MCH program is comprehensive, one effect of increased clinic attendance should be an improvement in the child caring and feeding practices of the mothers participating in the program.

Since children in school feeding programs are already over the age of six, they are unlikely to exhibit any improvements in height and weight for age except in those areas where serious undernutrition is widespread. By the time they reach school age, children's growth has slowed. Catch-up growth may be possible but is less likely to be observed. School-aged children may benefit from increased food consumption in terms of an increasing in their activity levels and an improvement in their cognitive development, which are both outcomes that are notoriously difficult to measure. However, as mentioned above, some studies have found school meals to be associated with improved performance on standardized tests given in school (Meyers et al, 1989). One set of criteria for evaluating school feeding programs is an increase in enrollment, a reduction in drop-out and retention rates, and an increase in the number of children completing school. Regular attendance during the school year should also increase. In programs that specifically target girls, an increase in the enrollment of girls and a better balance between girls' and boys' enrollment are criteria for success.

IV. Food for Work Programs

Food-for-work programs are employment-generating programs in which food is provided as a wage or a work incentive instead of cash. Food has also been used in programs that compensate participants for their time while learning job-related technical skills or as group remuneration (to a community as a whole) for such tasks as digging a community pond, constructing schoolrooms, or maintaining sections of public roads. Public works programs can function as crisis safety net programs where they employ workers when other sources of employment fail (as an employer of last resort). Alternatively, they act as a complement to other income-generating activities for poor households (as a safety net).

Economic Rationale for Food for Work

Using food as a wage is appropriate when the market for food is disrupted or fails due to conflict or famine or when increased local demand will result in higher prices rather than an inflow of food from outside the area. Payment in the form of food can also have nutritional benefits if food that enters the household falls under women's control, since food preparation is typically the woman's domain, as women tend to use the food for home consumption rather than selling or exchanging it. Providing food as a wage to households that are in absolute poverty should not affect market prices since the bulk of the food that they receive (if handled and delivered appropriately prior to distribution) will be an addition rather than a substitute for food that they would otherwise have purchased. However, if food is widely distributed as a wage rather than being narrowly targeted to the ultra poor, there is risk that local prices for food will be suppressed due to the sudden increase in the local supply of food.

If the market for food is functioning adequately, then a public works program that pays its workers cash should work as well as a food-for-work program. Yet food may be more self-targeted to the needy if the non-poor prefer to be paid in cash. Where there is inflation, recipients may prefer food as payment since a quantity of food will hold its value while a cash wage will not (von Braun et al, 1999). Generally, though, food is used in food-for-work programs because food is available from international donors whereas equivalent amounts of cash would need to come from the government's own budget.

Program Design

Food-for-work programs (FFW) hire unskilled and semi-skilled laborers for specific projects (building roads, digging irrigation ditches or wells, building schools or clinics, or creating similar infrastructure). A key issue in FFWs is to make the projects as meaningful to society as possible (in addition to tackling immediate household food insecurity). Such projects require engineering or other skilled technical input, and they require resources—tools, equipment, and supplies—that must be paid for in cash. Most donors of food aid permit a certain percentage of the food provided to the program to be sold for cash (monetized) to cover these costs. However, it is a lack of these non-food items that typically underlies the failure of many FFW projects (Webb and Moyo, 1993).

A key design issue is whether the food provided should be given as a true wage or treated more as it would be in a nutrition program. If it were to be given as a wage, the program would provide workers with a specific amount of food per unit of time worked or work accomplished irrespective of their household size and composition. If it were to be given out as it would in a nutrition program, the program would calibrate what size of ration

that the beneficiary needs in return for a specified amount of work. The latter system might result in a wage that is significantly higher than the going wage for unskilled labor in the area, thus eliminating the self-targeted nature of the program and creating problems in the private sector labor market. Calibrating wages to workers' different household sizes would result in unequal pay for equal work, possibly creating resentment among the workers. Thus, most FFW programs fix the food wages by time worked or output with reference to prevailing wage rates.

Setting the value of the food wage poses ethical and legal problems. Setting the wage just below the unskilled labor wage that prevails in the area will prevent market distortions and allow for self-selection but may not be sufficient to support a household, if that is the primary goal of the program. There continues to be disagreement between major implementing agencies such as World Food Programme (WFP) and the International Labour Organisation (ILO) about minimum wage requirements and international labor standards. The ILO argues that nationally set minimum wages must be adhered to, while the implementers of many FFW programs argue that the ration value should be set at or below prevailing market rates for piece work or set according to some notional nutrition goal for longer-term seasonal employment. Of course, where the work is arduous (which is common) and the wage low (by design), there is a risk that the calories spent by workers on the job will exceed the calorie content of the food wage. This was apparently observed in Bolivia (Schlossman, 1993) where women worked on road construction in order to be able to feed their families at the cost of their own nutritional well-being. There is practically no empirical documentation of such net losses to individuals who participate voluntarily in FFW activities. It is unlikely that prevailing wage rates would fall below one person's subsistence level, although it is possible that workers may choose to share their food wages with their family members to their own net nutritional detriment.

The timing of the payment is also important. Small daily or weekly payments are desirable from a nutritional point of view because larger quantities are easier for recipients to trade or sell. However, making frequent payments in the form of food can be logistically difficult because of the need to transport and distribute this bulky commodity. Bi-weekly or monthly payments are, therefore, the norm.

The composition of the ration affects the program's impact, as households will figure this information into their economic calculation of whether to keep and consume or sell the food that they receive. Non-perishable and relatively high-value foods, such as oil in tins or dry beans and rice in bags, are highly marketable and function more like a cash wage. Certainly, selling an expensive food for cash to buy larger quantities of cheaper foods can be both economically rational and nutritionally beneficial and should not be discouraged. However, if the beneficiaries receive and sell nutrient-fortified foods, such as vitamin-A-fortified oil or fortified corn-soy blends, the nutritional benefit of fortification is lost as the recipient may not recognize the value of the added nutrient when setting its price. If, on the other hand, the blended foods are not commonly consumed or culturally acceptable, then this will discourage recipients from trying to sell them as setting a price will be difficult.

Eligibility for FFW programs is usually determined by willingness to work as it is assumed that geographic targeting and the self-targeted nature of the work will ensure that programs benefit only the needy. However, this may not be the case. If work is scarce, even the non-poor may see any work as highly desirable, and there is a risk that relatively less

needy households may influence the project managers to hire their members in preference to those who are most in need, possibly even through bribes or kickbacks. Unfortunately, setting a cap on the number of workers enrolled in a given project can also end up excluding the most needy since wealthier households can often force their way onto the official lists ahead of the poor.

Not all needy households are able to participate in FFW programs as they must have a member who is physically capable of doing the work. This excludes households containing only elderly or disabled members or very small children. In some places, women are most likely to seek FFW jobs. In many labor markets, women earn less than men so it is economically rational for the man in the household to take a cash-wage job while the woman takes the FFW job where her wage is the equal of what a man would be paid. If, by contrast, wages are based on work output, then, in the case of heavy labor (such as earth moving), a woman's net pay in an FFW program is likely to be lower than a man's. In some areas, men are physically absent on long-term migration and many households are, therefore, *de facto* headed by a woman. It has been suggested that a woman's absence from her home due to her work for an FFW program may have a negative impact on their children (due to a lack of childcare and supervision). However, studies in West Africa suggest that this is not the case, since the net additionality of food and the presence of other caregivers (in polygamous households) still results in nutritional gains for the children of women who participate in FFWs (Brown et al, 1994).

The potential conflict between the availability of an FFW (or indeed of any paid work outside the home) and the need for child care suggests the value of developing programs that provide crèches—childcare that is available at or close to the work site. Such programs offer employment to women who provide childcare as well as making it possible for other women to participate in FFW or other work.

A FFW program can be made available only for a particular length of time, for example, only as long as a climate-induced famine exists. Those public works programs that are ongoing (such as the Maharashtra Guaranteed Employment Scheme in India) have no explicit exit criterion; in other words, beneficiaries work until they find other work in the private sector. In fact, they often join in and drop out of FFW activities several times over successive years according to what other opportunities are available to them (Webb and von Braun, 1994). In a few cases, FFW projects are implemented during a time of crisis and end when the crisis is over. In still other cases, the FFW project ends when the work is completed, leaving communities without a source of employment when the project ends. In such cases, a FFW program is only a temporary safety net, as its availability is based on the duration of the construction project rather than on the social insurance needs of the community.

Criteria for Program Evaluation

The criteria for evaluating FFW programs are their impact on the incomes, employment rates, dietary adequacy, and nutritional indicators of the communities in which the projects were implemented as compared to equivalent communities without FFW projects and to the situation prior to the implementation of the FFW program. If the FFW program is implemented during periods of crisis, then maintaining a constant rather than increasing rate of malnutrition may be considered a success. In fact, the multifunctionality of FFW activities is both one of its main attractions and its main constraint. There remains a lack of consensus

about what priority to assign to various FFW goals and, thus, about how to measure its success or failure. Indeed, few projects clearly identify their highest priority. The result is uncertainty over which activity is being stressed and which indicators of success need to be collected. For example, the strength of a well-designed project aimed at soil and water management may achieve its environmental aims by mobilizing a lot of workers who are paid in food. However, if those workers were not among the poor or if the food was all sold, then evaluating the project on welfare grounds would lead to the conclusion that it was a failure. Conversely, FFW activities located in the most marginal, vulnerable regions of the world and employing only the most nutritionally impaired people can also fail in terms of generating only activities that are neither meaningful nor sustainable. This can occur because the non-food resources, institutions, and human capital required for successful projects are often not available in those places where food insecurity is most acute and where food rations can make the greatest positive difference to sustaining people's lives (Webb, 1992).

Planners of potential FFW programs should note the danger of reverse causality in the evaluation of such projects. Where FFW activities explicitly favor targeting or self-targeting of food-insecure households, the presence of higher rates of malnutrition within participating households can be an indicator that the program has successfully reached its intended target group or that the project has failed to reduce malnutrition within such households. Thus, the expected impact of food rations *on nutritional status* should be clarified before the program is put in place, and time dimensions (the duration of the program and any likely lag effects) must be carefully considered.

V. Food Stamp Programs

Food stamp programs provide a cash-like transfer of purchasing power to households, given in the form of a coupon or voucher that may be used for the purchase of food or, occasionally, to receive a discounted price. Food stamps can be restricted to the purchase of certain specific foods or they may permit the purchase of any food. There are some programs, nominally referred to as food stamp programs, that provide a check or voucher that can be converted directly into cash. The organizers of such programs may say that the transfer is intended to be used for food (or, as in the case of Honduras, for food, medicine, and school supplies), but any food stamp that is convertible to cash is actually an unrestricted cash transfer.

Food stamps are usually denominated in terms of cash value, but they may also be denominated in quantity terms (in other words, each coupon is good for a specified quantity of a given food rather than for a specified value). Food stamp programs can operate like straightforward transfer programs targeted to low-income households or they can operate in conjunction with the provision of other services, such as schooling or health care, with receipt of the transfer contingent upon the recipient participating in those services. In this, they are similar to supplementary feeding programs, but it is more common to see stand-alone food stamp programs than stand-alone supplementary feeding programs.

Castañeda (1999) distinguishes among stamps, vouchers, and coupons as each having distinct program design characteristics, but the literature in general does not use these terms consistently to mean different things. A food stamp, coupon, or voucher is any cash-like instrument that can be used by the beneficiary to purchase food or to exchange it for cash intended to be used to purchase food. The retailer who accepts the stamp can redeem it for

cash through the banking system, with the value of the stamp backed by the government's commitment to pay. Some programs, including the U.S. Food Stamp Program, pay a small premium to retailers above the face value of the stamps.

Economic Rationale for Food Stamp Programs

Food stamp programs are intended to alleviate the budget constraint that prevents poor households from obtaining adequate food. A secondary goal is to encourage households to shift their consumption toward food, or toward specific nutritious foods, in order for presumptive nutritional benefits to accrue to household members. Food stamps may also be used as an incentive for recipients to participate in other socially beneficial programs. The economic rationale for investing in improved nutrition and increased participation in schooling and health care was discussed above in relation to supplementary feeding programs. Food stamp programs have often been implemented with the intention of alleviating the short-term economic hardships associated with the macroeconomic reforms of structural adjustment, specifically the reduction or elimination of general subsidies on food commodities or a currency devaluation that reduces purchasing power. However, such programs are very visible and popular, and in many cases they have not been phased out but have persisted past the period of structural adjustment. This is not necessarily a disadvantage if the programs truly function as safety nets for poor households as not all poverty is due to structural adjustment.

Food Stamps Compared with Cash Transfers. Food stamps are a distinct class of interventions from in-kind supplementary feeding on the one hand and from direct cash transfers on the other. Unlike general food price subsidies, food stamps do not affect food prices so produce fewer distortions in the market. Stamps, if their use is restricted, may increase demand for certain specific foods, but they do not otherwise alter the market.

Economic theory suggests that if the value of the food stamps provided to a household is less than the household is already spending on food (that is, if the amount of the transfer is infra-marginal), the effect on household food consumption should be equivalent to that of a cash transfer since a household has the option of fully substituting the food stamp transfer for the household's own expenditure on food. Strictly speaking, therefore, the economic rationale for giving food stamps instead of cash is weak. However, empirical research has demonstrated that households do not treat food stamps the same as cash; cash transfers have a smaller effect on household food consumption than do food stamps in many cases (Fraker, 1990 and Fraker et al, 1995).

If the food stamp transfer is extra-marginal, that is, if it is greater than the household's current expenditure on food, then the household must increase its food consumption in order to take full advantage of the benefit. However, the household can still substitute the food stamps fully for its previous food expenditure. In this case, the household receives, in effect, an income transfer equal to its previous food expenditure; only the additional amount of the transfer over and above the household's food expenditure represents additional consumption. To the extent that income transfer is a goal of the program, such substitution is not a disadvantage, but if improving dietary intake is a goal, then greater additionality is desirable.

In the U.S. prior to 1979, food stamps were provided with a *purchase requirement* intended to ensure additionality. Households were eligible for stamps if one-third of their

income was less than the estimated cost of an adequate diet for the size of their household (the Thrifty Food Plan). Households received stamps equal to the value of the Thrifty Food Plan but had to pay one-third of their income for the stamps. This requirement was intended to assure that food stamps would result in increased food consumption—which was an important objective since the U.S. farm lobby was an important source of political support for the program. When the purchase requirement was eliminated in 1979, four million new beneficiaries entered the program. It was estimated that three-quarters of the new beneficiaries had such low incomes that they could not afford the purchase requirement and that one-quarter were of high enough income that they had not wanted to restrict their own expenditure choices for the small benefit that they would receive.

Numerous studies have shown that even an infra-marginal transfer in the form of food stamps results in a greater increase in household food expenditure than a cash transfer would produce. Thus, food stamps yield at least twice as great a marginal propensity to consume food as a cash transfer (Fraker, 1990). One possible reason for this is that food stamps may fall under the control of either the female head of the household or the wife of the male head and, as discussed above, many studies suggest that women disproportionately favor expenditures on food and other basic needs. Also, food stamp programs emphasize the importance of increasing food consumption, even in cases where the transfer is not contingent on health care visits or school attendance, and thus households may become more aware that the purpose of the food stamp is specifically to increase their food consumption.

Food stamps are restricted in their use, as compared with cash; this may make them self-targeted to a degree since they are seen as being less desirable (because they are less flexible) than a cash transfer would be. Similarly, providing commodities is more self-targeted than providing food stamps, because that gives households no choice about what to consume. If the use of food stamps is restricted to inferior foods (foods consumed by the poor but not by better-off households) and if this restriction is enforced, the self-targeting effect will be greater. If food stamps are strongly associated with poverty, then the receipt and use of food stamps may be stigmatizing in some cultures, so that the non-poor may choose not to acquire them. The more food stamps function like cash, the less distorting they are, and the more desirable they are not only to eligible beneficiaries but also to those who are ineligible.

Politically, food stamps are more acceptable than cash transfers; food, because of its association with children's health and with families' basic needs, is a merit good. A program that provides cash may be perceived as encouraging wasteful or irresponsible consumption, while food stamps are seen as promoting a worthwhile type of consumption and improving nutrition (See box 3). Taxpayers prefer to see publicly provided benefits devoted to such goods.

Box 3: Transfers Tied to Food are Politically More Acceptable than Cash Transfers

In the same year that a cash transfer program called the Family Assistance Plan was rejected by the U.S. legislature as being too generous, Food Stamp Program benefits were expanded beyond the value of the proposed FAP.

Food Stamps Compared with the Direct Distribution of Food. The logic of providing food stamps rather than commodities is that stamps are much easier to manage logistically. Food distribution depends on the capacity to store, transport, and inventory the food. Food

stamps are much easier to transport, but it would be a mistake to assume that food stamps are simple to manage. Food stamps depend on the government's ability to print a parallel currency that is difficult to forge. Systems must be in place to distribute them safely, and they may be more subject to theft or diversion than commodities to the extent that they are like cash and, therefore, desirable to non-beneficiaries. The country must have a widely accessible and reliable banking system to enable retailers to redeem the stamps for cash. Furthermore, food stamps, while not as desirable as cash, may be more subject to theft than food is and, therefore, may require more security provisions than food would.

Another rationale for providing food stamps is that it strengthens the private sector food market. Direct distribution of food commodities establishes a parallel marketing system that draws some demand away from the private sector. Food stamps give purchasing power to poor consumers that they can use in private sector food stores, adding to overall demand. However, if the private food retailing system is inaccessible or thin in certain areas, a food stamp program may provide the demand needed to strengthen and improve the system, but until this happens, beneficiaries will need to incur the costs of traveling to places where stores are available.

Direct distribution of food can cause problems for the beneficiaries in transporting the bulky foodstuffs home. This problem is avoided with food stamps. Beneficiaries can purchase manageable quantities as needed (assuming the stamps are in small denominations) in conveniently located stores rather than at centralized distribution points.

Food stamps can be denominated in either value or quantity terms. If they are in quantity terms, then they are similar to direct distribution in the sense that their value is not eroded by inflation as the quantities will remain stable, irrespective of a change in price. The majority of food stamp programs, though, provide stamps denominated in value terms, which can be a problem in circumstances where there is rapid inflation. The face value of food stamps can erode over time with inflation to the point where the benefit is not worth the trouble of participating in the program to receive the stamps. For example, in Sri Lanka, the value of the food stamp benefit fell by 40 percent in just 10 years and was not adjusted for inflation (World Bank, 1996), making it a truly transitional program. On the other hand, in Jamaica, the value of the food stamp transfer was raised three times in six years to three times its original benefit (Grosh, 1992).

Effectiveness of Food Stamp Programs. Food stamp programs have been shown to be effective ways of transferring income, increasing household income by as much as 20 to 25 percent (Castaneda, 1999). In the U.S., since cutbacks were made in cash transfer programs in 1996, the Food Stamp Program is recognized as the major safety net program providing income support (Gunderson et al, 1999). Food stamps have been shown to increase household food consumption, measured in value terms, more than an equivalent cash transfer (Fraker, 1990). Food stamp use has been associated with increased consumption of protein and of micronutrients (Butler and Raymond, 1996) compared with the consumption of eligible non-participants. Their effect on the nutritional status of beneficiaries is much harder to demonstrate because the programs are often implemented without any attention to changing consumption behavior such as the intra-household allocation of food. The size of the transfer is quite variable and, in some cases, is probably not sufficient to make any nutritional impact. For example, the value of Sri Lanka's food stamps was eroded by inflation to a point where the size of the transfer was trivial. In Jamaica, the value of the

stamps fell from about 7 percent to under 3 percent of the cost of the basic family food basket between 1991 and 1996 (Castaneda, 1999).

Food stamps have been shown to be an effective incentive to get recipients to participate in other services. For example, the Honduras *bono* program significantly increased school attendance and the number of completed years of school (Rogers et al., 1995). Also, the *Progresa* program in Mexico successfully increased use of prenatal and well-baby services (Castaneda, 1999).

Appropriate Circumstances for the Use of Food Stamps

As a safety net program, food stamps are most appropriate when the binding constraint on household food security is purchasing power. The effectiveness of the program in ensuring adequate food consumption depends on the availability of food in the marketplace and on the responsiveness of market supply to increased demand. If there are serious constraints on supply, as during a famine or when transport is disrupted due to conflict, then increased purchasing power will simply increase the demand in the face of a fixed supply and prices will rise. It may be appropriate in such circumstances to issue ration coupons to distribute scarce supplies, but this is a different intervention from food stamps.

As mentioned above, food stamps may also shift decisionmaking control to the female household head since women are clearly associated with food and basic needs. Programs can be designed to ensure that the food stamps are transferred explicitly to adult females in the household. In the case of the Honduras *bono* program, over 90 percent of women reported that they had responsibility for the use of the *bono*, without interference from their husbands (Sanghvi et al, 1995).

Nature of the Economy. Because food stamps operate through the private food retail system, they are effective only in places where a significant portion of food consumed is purchased (as opposed to cultivated at home) and where the retail system works adequately. Food stamps depend not only on the accessibility of the banking system to retailers, so that they can easily redeem the stamps that they accept, but also on retailers' confidence in the government's ability and willingness to back the stamps with cash. If retailers find themselves unable to trade stamps for cash even once, the system will fall apart as they will refuse to accept them again.

While food stamps may be considered slightly less desirable than cash, such programs cannot count on self-targeting to assure that only the needy receive the benefit unless the stamps are only valid for selected inferior foods and the limitation is enforced. Food stamp systems must be administratively targeted, that is, individuals must apply (on behalf of themselves or their households) and be certified. Administrative targeting depends on the country having a cadre of literate and numerate eligibility workers who can perform the task. In countries where rates of literacy are very low, administrative targeting of a food stamp program may be a low-return use of these scarce human resources. However, in countries (such as Sri Lanka) where there is a substantial population of educated underemployed, bureaucratic targeting is a feasible and appropriate means of employing skilled workers.

The printing, distribution, and redemption of food stamps may impose a significant budgetary cost. Even in the U.S., the Special Supplemental Feeding Program for Women,

Infants and Children (WIC) in one state decided to combine some of the separate vouchers, which were denominated in given quantities of specific foods, explicitly to reduce program administrative costs.

Political Economy. It was mentioned above that food stamps are more politically acceptable to government decisionmakers and to the (non-poor) public because food is a merit good and because food stamps can be linked to a health or nutritional objective. Another political strength of food stamp programs is that they often have the support of the agriculture sector and the private sector food industry, because they expand demand for food. Support is likely to be broader the more widely the food stamps can be used. In the U.S., food stamps can be used for any food or drink (other than alcohol), regardless of nutritional quality. WIC coupons, by contrast, are for a very specific, limited range of nutritious foods. The WIC program is constantly under pressure from the food industry to permit other foods, such as non-fortified breakfast cereals and cereals with a higher sugar content than is currently allowed by the program.

Design Issues

As with any other kind of program, there are important design issues associated with food stamp programs.

Targeting Mechanisms and Leakage of Benefits. As mentioned above, the more food stamps may be used like cash, the more difficult it is to enforce targeting criteria. Food stamps are slightly self-targeted because they limit consumer choices. The higher the proportion of household expenditure devoted to food, the less this limitation is binding and, therefore, the less self-targeting the food stamps will be. If food stamps are limited to inferior foods, that is, to foods that poor consumers buy but wealthier consumers do not, then the food stamps may be self-targeted in the same way that the inferior foods themselves would be. However, this self-targeting effect depends on whether the restriction on food stamp use is strongly enforced. It is difficult to be sure that the stamps were truly used only for the specific permitted foods in a store selling a wide variety of commodities as long as the retailer sells enough of those foods to justify his claiming the reimbursement. The difficulty of such enforcement underlay the decision of the Government of Honduras to make its food stamp program into a cash-like voucher (*bono*) program. It was felt that creating such an easily violated restriction would invite people to ignore the regulation and that it would be better simply to encourage people to use the *bono* appropriately. This seems to have worked. Early evaluations suggest that 80 percent of the benefit was used for food, and most of the rest went for other basic household needs, though the rest of the household budget was not studied (World Bank, 1992).

If food stamp benefits are tied to recipients having to participate in other services or programs, then there may be a degree of self-targeting if the linked services are not used by the wealthy. For example, public health clinics and, often, public schools may be disproportionately underused by the well off, who may prefer private health care or schooling. Thus, benefits linked to public services may be self-targeting in this way.

Administrative targeting requires that applicants be able to document their income or at least to document some measure of economic need. Households with documentable income (for example, those with members employed in the formal sector of the economy) may be at

a disadvantage in applying for food stamps, because their reports of their income can easily be verified, while those who work in the informal sector may be able to disguise or underreport their incomes in order to qualify. Land ownership or other wealth indicators may also be used to determine eligibility. Another means of targeting food stamps is to use some other program with income-based eligibility as a means for identifying those who are eligible for food stamps. For example, in Jamaica, food stamps are available to all persons receiving Poor Relief and Public Assistance, as well as other categories of eligibility based on age, handicap, and physiological status.

Eligibility for a food stamp program could in theory be based on a particular individual. For example, food stamps have been targeted to pregnant or lactating women and to infants and young children (as in the U.S. WIC program and the Jamaica Food Stamp program) or to school children (for example, the Honduras *bono* program). However, in practice, food stamps operate as a transfer to the household. Targeting food stamp benefits to individuals within the household is not a realistic objective for a food stamp program, except if the program is linked to a strong educational component that may attempt to alter the intra-household allocation of food. If food stamps are restricted in use to certain foods that are disproportionately consumed by children, then it is theoretically possible that the benefit will be somewhat skewed toward them, but this has not been documented. *Substitution versus Additionality.* Issues of substitution and additionality were discussed above. As has already been mentioned, a food stamp transfer that is extra-marginal constrains households to increase their food consumption (in value terms) in order to gain the maximum benefit. If the transfer amount is infra-marginal (less than the household was previously spending on food), then full substitution is possible, with no increase in food consumption except as a result of increased income. Empirically, food stamps have been shown to increase food consumption significantly more than an equivalent cash transfer for reasons that may relate to intra-household control over the resource or to the context in which it is provided. If food stamps are restricted to particular nutritious foods, then even with full substitution there may be a nutritional effect since the nutrient-dense foods may substitute for less healthful foods.

Intrahousehold Distribution Effects. Food stamps may be more likely than cash to fall under the control of the person responsible for food procurement and preparation—usually the woman of the household. Many food stamp programs, particularly those associated with participation in other social services, are designed so that the transfer is delivered directly to the woman head of household to increase the likelihood that she will decide how to use the transfer.

Issues of Corruption and Fraud. As with any other program, fraud in the food stamp program may result from false documentation of eligibility or from the transfer of the stamps to ineligible individuals. In cases where the stamps are convertible for cash (as in Honduras), it is not clear that such a transfer is against the law, but in other cases, such as the U.S. Food Stamp and WIC programs, transferring the benefit to others is clearly illegal. Other sources of fraud are the use of the stamps for food or for other goods and services not authorized for purchase with the stamps. A relatively recent innovation is the use of Electronic Benefit Transfer (EBT) cards, which work like credit cards in that they have a magnetic strip that is programmed to be accepted only for authorized foods. These cards can control such fraud, but of course their use depends on the availability of the machines to read them. EBT cards

have been used quite successfully in the U.S., where most stores have the appropriate machines; they have also been used successfully in Mexico (Castaneda, 1999).

In some programs, such as the U.S. Food Stamp Program, vendors are entitled to receive a small premium above the value of the stamps that they accept. However, it would be fraud if a vendor charged a fee to consumers for using stamps in place of cash or if they increased their prices to food stamp users. When stamps are denominated in quantity rather than value terms, the possibility exists of vendors claiming inflated prices when seeking reimbursement, especially if the economy is such that prices are unstable or rapidly rising. This proved to be an intractable problem in Mozambique in the 1980s when Alderman (1991) recommended a quantity-denominated food stamp program precisely to ensure that consumers' benefits would be stable in the face of rising prices. However, no method could be devised to verify vendors' reimbursement claims. In the U.S. WIC program, which does provide quantity-denominated food vouchers, there has been no such problem because retail prices are relatively stable and easy to verify.

Suitability for Adapting to a Crisis

Food stamps can be used as a means to provide purchasing power to displaced persons in a crisis so that they can obtain food in the existing local marketing system. This can work only if the local market is functioning well and if supplies can flow into the local area in response to the increased purchasing power represented by the stamps. The use of stamps in such situations may avoid the need for the direct distribution of food. The advantage of stamps over cash transfers in such settings may be the moderate self-targeting effect of stamps because of their restricted use.

Implementation of Food Stamp Programs

Food stamp programs represent a transfer of real purchasing power and must be backed by government or donor funds. In the U.S., the food stamp program is counter-cyclical; food stamp expenditures increase during periods of economic downturn and unemployment. This is because recipients move on and off the food stamp rolls in response to short-term changes in their employment and income. This feature, which is important in making food stamps an effective social safety net program, means that the total cost of the food stamp program cannot be fully predicted or controlled. Programs that restrict new entrants, such as the food stamp program in Sri Lanka, can control costs but are much less effective as safety net programs because they do not protect recipients against short-term fluctuations in household income.

A variety of distribution mechanisms have been used to get food stamps to recipients. In the U.S., the program used to require recipients to purchase food stamps (with an authorization certificate) at specific government outlets including welfare offices and post offices. However, the purchase requirement has since been eliminated, and stamps and EBT cards are now distributed through the mail. Many programs require recipients to collect the stamps in person at welfare offices or at health clinics, where receipt of the stamps may be tied to their use of the health care services. In all such cases, the effectiveness of the distribution system depends on how widely accessible the distribution points are. For example, in Jamaica, 95 percent of households are located within 10 miles of a health clinic (Grosh, 1992), so access to these distribution outlets is not a barrier to participation.

The effectiveness of a food stamp system depends on having a system in place for redeeming the stamps, either directly through banks or through a government office. In either case, retailers must be reimbursed in a reliable and timely way or they will refuse to accept the stamps. A certain degree of oversight of retailers is necessary to ensure compliance with program regulations, but the costs of such oversight must be balanced against the benefit of reducing program fraud. Mechanisms for oversight might include periodic visits to stores to ensure that they sell the commodities authorized and that they do not charge extra for the use of stamps. Technologies such as EBT cards have been used to ensure that benefits are used only for authorized foods. If the cards include an electronic identification number, then this will prevent them from being used if stolen but not if voluntarily transferred by the beneficiary to an unauthorized user.

Determining Eligibility. Eligibility for food stamps and similar transfers is based on low income, which can be measured directly through self-reporting or can be determined by assessing the assets of the household. In Sri Lanka, for example, ownership of land and consumer durables, assessed by means of a home visit by an assessor, is used as a criterion for eligibility along with reported income (World Bank, 1996). Eligibility for the Mexican “*tortibono*” program is based on income but also on the quality of housing and the availability of basic sanitation services (Castaneda, 1999). In the U.S., household income is determined through an application process in which the applicant must show some documentary proof of his or her wage level, and there is a limit on how many assets he or she may own as well. U.S. eligibility is based on a sliding scale; benefits vary depending on the size of the household as well as on household income. Other programs have variable eligibility criteria as well. For example, the Jamaica program has a two-tier income eligibility criterion, one for single-person households and a higher one with higher benefits for larger households.

In addition to income, eligibility can be based on use of public services such as schooling or health care. The Honduran maternal-child health voucher, or *bono*, is provided through health clinics in low-income areas of the country. Household income is not assessed, but eligibility is based on age (children under the age of three) and physiological status (for example, pregnant or lactating women). Receipt of the *bono* is contingent on the woman complying with norms of pre-natal, post-partum, and well-baby care. In this program, eligibility is not intended to be based on the nutritional status of the child, but some clinics do use anthropometric status of young children as an eligibility criterion, consistent with the practice that used to be followed when supplementary food was distributed (author’s personal observation, 1994). The Jamaican program also distributes food stamps to pregnant and lactating women and to children under the age of five who use public-sector health clinics (Grosh, 1992). Also, in a pilot program in Campeche, Mexico, the transfer (in the form of an EBT card) is contingent on the recipient participating in health monitoring (Castaneda, 1999).

Like any transfer program, food stamp programs must have criteria for being brought to an end if they are to continue to be effective. This means that eligibility must be established for a limited time period, with re-certification required. If this is not the case, then households that move out of poverty will not be removed from the program, and newly poor households may be unable to benefit. In Sri Lanka, for example, eligibility was determined once, at the start of the food stamp program in 1979. No new entrants were permitted nor were any households removed from the program until a new, more targeted program replaced the original program in 1989. In 1991, a new screening effort added 132,000 new beneficiaries but did not remove the 345,000 determined to be ineligible (World Bank, 1996).

The result is that benefits are spread too thin among too many beneficiaries, rather than providing a large enough transfer to make a difference to the neediest.

Some programs depend on beneficiaries making a formal application; in others, eligibility is determined at the community level, by local groups such as Parish Committees as in Jamaica (Grosh, 1992), schoolteachers as in Venezuela (Castaneda, 1999), or political block leaders as in Mozambique (author's personal observation, 1994). There are arguments to be made in favor of having local people determine eligibility. In a small community, poor households tend to be known and easy to identify. However, the risk is that subjective criteria may be used inappropriately to include or exclude applicants. If informal community-based eligibility determination is used, it is probably important to have some official oversight or monitoring to ensure fairness.

The formal application process should not pose a barrier to eligible participants. If an application is required, care should be taken to ensure that the program's offices are accessible at appropriate hours and that, in multilingual settings, the appropriate languages are represented. Language has been found to be a barrier for non-English speakers applying to the U.S. Food Stamp Program, for example.

Size, Composition, and Frequency of the Transfer. Ideally, the size of the food stamp transfer should be based on the level of need of the household; that is, the amount should be sufficient to allow a poor household to obtain an adequate diet. In the U.S. Food Stamp Program, this objective is achieved by offering benefits on a sliding scale. The cost of a low-cost, nutritionally adequate, culturally acceptable diet called the Thrifty Food Plan (TFP) is estimated for households of different sizes at current prices (updated annually). It is assumed that households can afford to spend 30 percent of their incomes on food, so the amount of benefit provided is equal to the difference between the cost of the Thrifty Food Plan and that share of household income. If the difference is \$10 per month or less, the household is not eligible for benefits.⁷ Because the size of the benefit is tied to the value of the TFP in current prices, the food stamp benefit must be adjusted for inflation. This means that both the benefit amount and eligibility are determined on a sliding scale calibrated to household income. This is a very information-intensive method of determining the size of the benefit. More important, perhaps, from a developing country perspective, using this approach makes it difficult to control the cost of the program in an inflationary context. The automatic adjustment of the program in response to inflation protects the level of benefit to the participant but makes it difficult to control total program costs.

Most food stamp programs offer a fixed level of benefit or perhaps a few benefit levels depending on a household's size and income. In many programs, the benefit is quite small compared to the level of need, and often its value is seriously eroded by inflation before being adjusted. The effectiveness of food stamp programs as a safety net depends, of course, on the amount of benefit that they provide in relation to need. In most developing countries, the proportion of income devoted to food far exceeds the U.S. estimate of 30 percent; it is

⁷ The Thrifty Food Plan (TFP) is constructed by applying a dollar amount constraint to detailed food consumption information obtained from household surveys. That is, the value of the benefit is determined in advance, and the foods in the TFP are chosen to fit that budget constraint while meeting close to 100 percent of selected nutrient requirements. Households are not required to purchase the foods in the TFP; U.S. Food Stamps may be used for any food. Most households' consumption patterns depart significantly from the TFP.

more common to observe averages above 50 percent, and higher budget shares devoted to food in the lower income groups. It is appropriate to estimate the size of the transfer needed based on some estimate of the gap between household income and the cost of a basic food basket, but this method is likely to keep program costs high. However, applying this logic makes clear the trade-off between providing small benefits for many households or substantial benefits for the neediest.

In Jamaica, the size of the food stamp transfer was estimated by one household as “good for two or three meals per month, no more” (comment made to author, 1992). However, in this program, eligibility for food stamps is by individual, not by household; there may be more than one beneficiary per household, and the size of the benefit to the household would be increased accordingly. (There has been no study to determine whether individual eligibility translates into individuals receiving a disproportionate share of the food purchased.) The *Progresa* program in Mexico provides a voucher that can be spent on any kind of food. The value of the voucher is equivalent to 34 percent of the income of poor households, a very substantial transfer (Castaneda, 1999). Castaneda (1999) estimates that the Honduran *bono* provides about 20 percent of a household’s food needs, which is also quite significant. In the U.S., the variable benefit provides between 56 percent and 70 percent of households’ mean food expenditure. However, other programs have much smaller benefits. For example, the Colombian food stamp benefit was worth less than 1 percent of household income by the time the program ended in 1981 (Castaneda, 1999).

Many programs provide food stamps that are authorized for the purchase of certain specific foods. Ideally, these foods should be self-targeting, that is, they should be foods that are widely consumed by the poor but not by the non-poor. Many of these so-called “inferior” foods may be nutritionally superior to foods that are preferred by more consumers. For example sorghum has a higher protein content than rice, though rice is preferred in rice-eating countries. Nutritional content should be another criterion for selecting foods in the food stamp “basket” as well as low cost for the amount of nutritional value provided. The foods authorized for purchase in the Jamaican food stamp program include rice, cornmeal, skim milk, and wheat flour. These foods together account for 12.5 percent of the food budget of the lowest income quintile (Castaneda, 1999), and they were determined to be relatively efficient carriers of calories per unit of value. The Sri Lanka food stamp program covered rice, wheat and bread, pulses, and certain dairy products, which constitutes a basic local food basket (World Bank, 1996).

The vouchers in the U.S. WIC program are good for specific foods chosen not for their self-targeted nature but for their nutritional content, specifically to meet the extra nutritional needs of pregnant women and rapidly-growing small children. The foods include milk (protein and calcium), eggs (protein, iron, and vitamin A), orange juice (vitamin C), fortified low-sugar breakfast cereal (micronutrients), and peanut butter (protein). The quantities authorized in the program are very generous: 28 quarts of milk per month, for example. This ensures that, even with the expected degree of household sharing, some of the milk (and other foods) will reach the target individual. Because these foods are nutrient-dense, they are likely to improve the nutritional quality of the diet even if the foods substitute for those already being consumed in the household.

The frequency of distribution of stamps represents a trade-off between efficiency in administration and effectiveness in increasing food consumption. Generally, households are

more likely to use smaller, more frequent transfers for basic needs such as food. They may be more likely to divert large transfers to non-food uses, either by selling or trading them. However, frequent distribution increases administrative costs and the time burden on recipients. In the U.S. program, food stamps are distributed monthly. There is evidence that households increase their food expenditure in the first few days after receiving the stamps and that food consumption then stabilizes at a lower level, falling even further in the last week of the month in some households (Wilde and Ranney, 1998). In the Honduras *bono* program, vouchers associated with school attendance are distributed three times during the school year (at three-month intervals). Because of the time burden on school staff, more frequent distribution was not considered to be feasible. With the use of EBT cards, it may be possible to vary the period for which benefits are provided to as little as a week, but there has been no empirical study of the relative effectiveness of shorter time periods for distributing food stamp benefits.

Criteria for Evaluating Programs

The basis for evaluating food stamp programs depends on the purposes for which the specific food stamp program was designed. If the food stamp program is seen primarily as an income transfer program, then the key criteria for evaluation would be efficiency in delivering a given benefit for a low cost, effectiveness in targeting the neediest households, high coverage of the poor, and low leakage to the non-poor. An effective income transfer program should reduce the share of the household's budget that is devoted to food while raising its total food expenditure.

Food stamp programs also serve nutritional goals. Many evaluations of the U.S. Food Stamp Program have looked at its impact on household food expenditure as a measure of its success, but of course food expenditure is a poor proxy for the quantity of food consumed by the household or for its nutritional quality. Measures of dietary quality such as calorie and protein adequacy per adult-equivalent in the household, adequate consumption of micronutrients, and dietary variety are better measures of success in achieving nutritional goals. Because food stamps are not well suited to targeting individuals within a household, direct measures of nutritional status such as anthropometric status are seldom used as outcome measures except in programs that are linked to maternal-child health and nutrition education programs that are specifically targeted to young children.

One possible benefit of food stamp programs is to increase total demand for food at the farm and retail levels and to improve the functioning of the food retail system as indicated by increased accessibility and possibly greater competition among outlets.

The effective functioning of a food stamp system is indicated if retailers promptly redeem a large proportion of the stamps and if they are equally promptly reimbursed, and if the rate of food stamp losses in the program is low.

VI. Emergency Feeding

Emergency operations now consume a larger proportion of overseas development assistance (ODA) than ever before. The percentage of total ODA devoted to humanitarian emergencies has risen substantially, reaching 10 percent in recent years (OECD/DAC, 2001). Only two decades ago the bulk of multilateral food aid resources supported development programming,

but now the majority is channeled to assist emergency-affected populations. In 1977, 75 percent of the World Food Programme's operational expenditures went to development and 22 percent to relief (WFP forthcoming), yet by 1998 this distribution was inverted, with 79% going to relief and only 21% to development (WFP 1998)

Emergency feeding programs distribute food and water to populations affected by natural or man-made disasters. Although relief operations may also provide health, shelter, or livelihood support, food distribution is the hallmark of an emergency response. On the ground, however, it is increasingly difficult to distinguish between "relief" and "development" purposes. Natural disaster researchers in the 1980s observed that emergencies follow a continuum from relief to rehabilitation to the resumption of development activities. Yet slow-onset emergencies (such as a drought that occurs across several growing seasons, permanent emergencies caused by structural poverty, or complex political emergencies) do not follow a similarly neat or predictable trajectory (Buchanan-Smith and Maxwell, 1994). Rather, the intensity of the situation, and corresponding relief needs, can wax and wane enormously over time.

Rationale for World Bank Involvement with Emergency Feeding Programs

The rise of protracted emergencies has been accompanied by an ideological and operational shift towards "development-oriented" relief interventions that are not confined to the distribution of food, blankets, and health supplies. This movement has been generated by organizations concerned about preventing long-term dependency on poorly targeted relief food, distorting the economy, and perpetuating a top-down relief response indefinitely. Developmental relief includes food-for-work programs that are implemented both as a safety net to protect against shock effects (loss of livelihoods) and as a means for individuals and communities to restore their assets once a shock has hit. School feeding can be maintained in an emergency to minimize the destruction of human and social capital caused by children leaving school during a crisis.

Some have criticized this movement to link relief to development during a crisis (Macrae et al, 1997), claiming that it unwittingly legitimizes a regime's public and political institutions and can draw attention away from the real need for emergency food. These debates have important implications for the World Bank's role in emergencies. As the World Bank's development and rehabilitation assistance becomes increasingly intermeshed with emergency food distribution, understanding the effects of emergencies and international response on population vulnerability over time is important to prevent or mitigate the negative effects of future crises.

The Purpose of Emergency Feeding

Emergency feeding is a safety net of last resort, in that its principal purpose is to save lives by preventing hunger and starvation in those cases where public and private institutions fail to protect individual entitlements to food. In theory, food-constrained individuals will use the transfer to reduce their nutrient gap; in the absence of a feeding intervention, populations are likely to curtail their consumption and suffer malnutrition, morbidity, and possibly death. Particularly when linked to comprehensive health and sanitation services, food rations enable people to resist disease and infection and increase their chances of surviving a crisis.

Emergency feeding can also transfer income to vulnerable groups in crisis situations. It is common for displaced populations receiving family rations to sell some of their food to acquire different foods and other goods. This method of income transfer is not economically efficient—there are costs involved in converting food to cash, and distress food sales suffer particularly poor terms of trade. However, in times of stress, people may regard relief food as another fungible resource, one element of their coping strategies. In managing their resources strategically, the affected population may consider their short-term need for food against the long-term imperative to protect their productive assets. In protracted conflict situations or in refugee camps where the population is almost entirely dependent on a general ration, beneficiaries are also likely to exchange at least a portion of their transfer for a wider variety of foods or other necessities. By complementing food distribution with other interventions to preserve livelihoods or by providing a large enough transfer to account for some “livelihood leakage,” relief organizations enable beneficiaries to select from a range of options to cope with the crisis. Used this way, relief food may help beneficiaries to preserve their assets, maintain their income, and improve their nutrition.

Timing the Transfer to Support Both Objectives

The timing of the transfer is important in ensuring that it meets the two objectives—saving lives and support livelihoods. Research has shown that people follow a predictable sequence of “coping behavior” when faced with a food crisis (Corbett et al, 1999). By monitoring changes in certain indicators, such as dietary shifts to wild foods, livestock sales, or migration, the food intervention can be timed to prevent people from adopting harmful coping strategies that threaten their lives and livelihoods. Too often, emergency food aid is provided after the acute phase of a crisis through feeding centers or in camps for displaced persons or refugees where people are much more vulnerable to morbidity and mortality from infections. Community-level food distribution can also be a critical factor in preventing households from disposing of their productive assets or migrating to find work, thus minimizing the long-term negative impacts of crisis on physical, human, and social capital.

Program Types

There are three broad categories of programs—general food distribution, supplementary feeding of vulnerable groups, and therapeutic feeding.

General Food Distribution. Much of the previous discussion pertains to general food distribution, in which a food ration is provided to meet the nutritional needs of the affected population as a whole. This process can be divided into several components, including establishing food assistance programs, procuring food (including local purchase), assessing needs, targeting, planning the ration, working out logistics, implementing the distribution, monitoring, and deciding when to stop the distribution (Jaspars and Young, 1995). Each of these phases is critical; when a population is almost entirely dependent on the general ration to meet all their nutritional needs, macro or micronutrient-deficient rations have resulted in undue malnutrition and mortality (ACC/SCN, 1994 cited in Jaspars and Young, 1995). However, in situations where the refugee population is able to trade, they may be able to obtain a more complete diet, including fresh foods, even if the emergency ration is nutritionally incomplete. In addition to the vitamin and mineral deficiencies that are endemic in most developing countries, other rare deficiencies—such as beriberi, scurvy, and pellagra—have surfaced in refugee situations (Toole, 1992).

Supplementary Feeding of Vulnerable Groups. Individuals who are malnourished or are at risk of malnutrition may require additional food that exceeds the general ration. Many NGOs address these special needs, usually of young children and pregnant and lactating women, through selective feeding programs that are integrated into primary health activities (WFP, 1999). Supplementary feeding programs may be either “blanket SFPs”, meaning that they are targeted to all members of a particular age or sex group (for example, all children under the age of two) or targeted SFPs, which focus on the moderately malnourished in order to prevent them from becoming severely malnourished and to improve their nutrition status. Such programs rely on anthropometric criteria to identify eligible beneficiaries.

Other program design variables, such as the choice between wet (on-site) rations or dry (take-home) rations, the process of determining ration size and composition, the frequency of distribution, and entry/exit criteria, are subject to similar considerations to those of other MCH supplementary feeding projects. Yet unlike in most development programs, relief organizations and agencies have developed specific protocols to guide the design of this kind of program. These guidelines are useful when program planning is hindered by the imperative to respond quickly and are also essential for preserving institutional learning. Similarly, the Sphere Standards for best practices in humanitarian relief, developed by a group of international agencies engaged in such work, represent an attempt by the international community to codify ideal practice in emergencies (Sphere, 2000)

Therapeutic feeding. Therapeutic feeding programs rely on intensive medical and nutrition rehabilitation to treat severely malnourished individuals. Typically, young children, low birth weight babies, orphans, and babies whose mothers cannot breastfeed are admitted into therapeutic feeding based on their anthropometric measurements or the presence of edema (WFP, 1999). Although in theory such programs can also minister to the needs of adolescents, adults, and the elderly, the standards for identifying and caring for severely malnourished members of these groups are not well established. As a result, their needs are often overlooked in emergencies (Salama and Collins, 1999; Collins et al., 2000; Woodruff and Duffield, 2000).

Appropriate Conditions for Emergency Feeding

The decision to undertake an emergency feeding operation should be made only following a thorough needs assessment, the first step of which is to confirm whether food assistance is actually the most appropriate response (Jaspars and Young, 1995). According to the UNICEF conceptual framework of the causes of malnutrition (UNICEF 1990), the factors directly leading to malnutrition and death are inadequate dietary intake and disease.

When food insecurity is found to be a significant cause of malnutrition, direct feeding may not be the optimal or only solution and may, in fact, do more harm than good. For example, in complex emergencies, civilians congregating at feeding sites can be targets of violence. Large quantities of food are not only logistically difficult to transport but can be diverted for illicit purposes. Warring factions can deliberately manipulate food for political ends. Such cases are common, prompting many to claim that food relief can exacerbate complex emergencies.

However, there are alternatives to emergency feeding that can accomplish similar objectives. For example, food aid monetization simplifies the logistics of getting benefits to

inaccessible populations or those far from a port. The World Food Program used a monetization strategy both in Somalia and Liberia where theft, security risks, and transport problems prevented the delivery of food aid (WFP, 1997). Food aid can be sold to traders who are better able to penetrate the market in some areas than international organizations (see also Maxwell and Templer, 1994). Similarly, food can be distributed through fair-price or ration shops, or people can be given coupons exchangeable at relief shops that offer a variety of basic items (Jaspars and Young, 1995). These types of intervention are discussed elsewhere in this volume.

Cash transfers may be more cost-effective and easier to operate than direct provision of food in an emergency. Yet where food is unavailable or overpriced due to market disruption or speculation and where food aid intervention will not improve market function, food must be used for relief. There are other considerations, discussed elsewhere in this paper, that point to instances where food may be the most effective way to achieve program objectives. Each case should be decided on a context-specific basis.

VII. Cost and Cost-Effectiveness of Food-based Safety Net Programs

The cost of a food-based safety net program is determined by the size of the benefit, the number of beneficiaries reached, and the administrative and logistic costs of delivering the benefit. The logistic costs of delivering food commodities are higher than the costs of delivering an equivalent value in the form of cash or a food stamp or voucher, but the benefits of the direct distribution of food are different. Most food-based safety nets serve purposes other than guaranteeing a minimum level of purchasing power (though that is a major goal of many food stamp programs). Cost-effectiveness comparisons are thus difficult to perform, since the programs being compared may share only some goals, with others being unique to each program.

It is no easy matter to determine the costs of food-based programs (supplementary feeding, food stamps, or vouchers) that work in conjunction with health clinics or schools. There may be real costs that are not reflected in the program budget as school or clinic personnel and resources are diverted from other tasks to distribute benefits. At the same time, the benefits of the food-based transfer are probably enhanced by synergies with the complementary services provided.

The cost-effectiveness of these programs is quite distinct from cost. As the cost of a program increases with the size of the benefit provided, so does its effectiveness. The cost of a program may be contained by reducing the number of beneficiaries, but the impact of the program will be reduced as well. Targeting is critical to cost-effectiveness. Cost-effectiveness can be increased, of course, by narrowly targeting the benefit to those in need and by excluding the non-needy. In Sri Lanka, it was estimated that 25 percent of the population was in need of the food stamp program, but targeting was poor. While 50 percent of the population participated, these were not the neediest; the size of the benefit was necessarily constrained, and cost-effectiveness was low (Castaneda 1999). By contrast, Jamaica's food stamp program was well targeted by income (Grosh 1992), but the small size of the transfer restricted its effectiveness. The program was not targeted based on nutritional need, and only a small percentage of malnourished children lived in households that received food stamps (Castaneda 1999), so the effect on reducing the prevalence of malnutrition was

limited. A program can be very costly and still be cost-effective if the population in need is large and the extent of the need is great.

Cost effectiveness, of course, depends on the anticipated effect. Food stamps, food for work programs, and emergency feeding of displaced populations are programs intended to provide a minimum level of consumption to individuals experiencing a failure of entitlement, whether due to individual circumstance (such as age, disability, or family structure) or local or national shocks. Supplementary feeding programs typically have different, or at least additional objectives, including the prevention or treatment of undernutrition and the increased use of social services. It is difficult to compare the cost-effectiveness of different food-based safety nets if they have different goals that only partially overlap.

VIII. Combining and Sequencing Multiple Programs

Because the various types of food-based safety nets address different needs in the population, they cannot be viewed as substitutes for each other. Food stamps, for example, can function almost exactly like a cash transfer as a guarantee of a minimum consumption level for needy households and individuals. In the US, the Food Stamp Program is the only program that is available to households irrespective of anything other than economic need. All other safety net programs are targeted to people in particular categories—Women, Infants and Children programs to pregnant or lactating women and children, cash transfers to families with dependent children, and school meals to children in school. A program that provides a basic level of consumption to all needy individuals, whether through cash transfers, food stamps, or the direct provision of services, is an essential component of a social safety net, and providing services directly is not a realistic way to address this need. Food-for-work is attractive as a safety net because it provides paid employment rather than a transfer, but it can serve that essential safety net function only for households with able-bodied working members, not for orphaned children, the elderly, or the disabled. It is quite appropriate to implement food-for-work programs as a safety net, but these do not replace direct transfers.

Supplementary feeding programs are targeted to particularly vulnerable individuals and may be used to promote participation in social services. They should be seen as additional to the basic minimum social safety net, aimed at addressing specific nutritional, health, or educational issues. Such programs can form part of a safety net since they do provide real income to households whose members are target beneficiaries, but they cannot be the major element in the safety net because their purposes are more specific and their target groups more narrowly defined.

Emergency feeding is a case apart. Where there are displaced populations with no means to earn a livelihood or where food is simply unavailable as a result of war, famine, or other disruption, emergency distribution of general family rations is essential -- not a safety net but a lifeline. In the broad context of safety net programs, emergency feeding is the ultimate safety net.

The programs described in this paper, therefore, complement each other, each type addressing a different population group and a different specific need. Once a basic livelihood guarantee is in place, then complementary programs should be considered, based on the particular consumption and nutritional needs of the population.

References

- ACC/SCN (United National Administrative Coordinating Committee/Sub-Committee on Nutrition). 1994. "Update on the Nutrition Situation, 1994: A Report Compiled from Information Available to the ACC/SCN."
- Ahmed, A.U. and K. Billah. 1994. "Food for Education Program in Bangladesh: An Early Assessment," International Food Policy Research Institute, Bangladesh Food Policy Project, Dhaka.
- Alderman, H. 1993. "New Research on Poverty and Malnutrition: What are the Implications for Policy?" in Lipton and van der Gaag (eds) *Including the Poor* Washington: World Bank.
- Alderman, H. 1986. *The Effect of Food Price and Income Changes on The Acquisition of Food by Low-Income Households*. Washington DC: International Food Policy Research Institute.
- Anderson, M.A., J.E.Austin, J.D.Wray, and M.F.Zeitlin. 1981. *Study I: Supplementary Feeding in Nutrition Interventions in Developing Countries*. Cambridge: Oelgeschlager, Gunn, and Hain, Inc. for the Harvard Institute for International Development.
- Bardhan, P, and C. Udry. 1999. *Development Microeconomics*. Oxford: Oxford University Press.
- Barrett C.B. (forthcoming). "Food Security and Food Assistance Programs," in Bruce L. Gardner and Gordon C. Rausser, eds., *Handbook of Agricultural Economics*, vol. 2 Amsterdam: Elsevier Science.
- Beaton, G. and H. Ghassemi. 1982. "Supplementary Feeding Programs for Young Children In Developing Countries," *The American Journal of Clinical Nutrition* 35 (4).
- Beaton, G. 1993. "Which Age Groups Should be Targeted for Supplementary Feeding?" *Nutrition Issues in Food Aid*. ACC/SCN Symposium Report, Nutrition Policy Discussion Paper No.12, 26-54.
- Behrman, J. 1993 "The Economic Rationale for Investing in Nutrition in Developing Countries" *World Development* 21 (11): 1749-71.
- Berg, A. 1973. *The Nutrition Factor* Washington, D.C.:Brookings Institution.
- _____. 1987. *Malnutrition: What Can Be Done? Lessons from World Bank Experience*. Baltimore: Johns Hopkins University Press for the World Bank.
- Besley, T., and R. Kanbur. 1990. "The Principals of Targeting," Policy, Research, and External Affairs Working Paper Series No. 385, Washington D.C.: World Bank.

- Bessenecker, C. 1999. "Addressing the Needs of The Food Insecure: A Position Paper on Food-Based Maternal Child Health and Nutrition Programs" San Diego: Project Concern International, June.
- Boudreau, T. 1998. "The Food Economy Approach: A Framework for Understanding Rural Livelihoods," Relief and Rehabilitation Network Paper No. 26, London: Overseas Development Institute.
- Brown, L., Y. Yohannes, and P. Webb. 1994. "Rural Labor-Intensive Public Works: Impacts of Participation on Preschooler Nutrition: Evidence from Niger," *American Journal of Agricultural Economics* 76:1213-18, December.
- Bryson, J.C., J.P.Chudy, and J.M. Pines. 1991. "Food for Work: A Review of the 1980s with Recommendations for the 1990s" Report to USAID, Washington, D.C. Mimeo.
- Buchannan-Smith M, and S. Maxwell. 1994. "Linking Relief and Development," *IDS Bulletin* 25:2-16.
- Butler, J.S., and J.E. Raymond. 1996. "The Effect of the Food Stamp Program on Nutrient Intake," *Economic Inquiry*, 34 (4): 781-788, October.
- Castaneda, T. 1999. "The Design, Implementation, and Impact of Food Stamp Programs in Developing Countries," Nutrition Toolkit No. 6, Washington, D.C.
- Catholic Relief Services (CRS). 1993. "Ghana Program: Multi-Year Operational Plan, 1994-1996" Baltimore.
- Collins, S. A. Duffield, and M. Myatt. 2000. "Adults: Assessment of Nutritional Status in Emergency-affected Populations," Refugee Nutrition Information System (RNIS) Supplemental Report, Geneva: United Nations System Standing Committee on Nutrition (SCN).
- Corbett, J. 1999. "Famine and Household Coping Strategies, " *World Development* 16(9): 1099-1112.
- Cornia, G.A., and F. Stewart. 1995. "Two Errors of Targeting," in D. Van de Walle and K. Nead (eds.), *Public Expenditures and the Poor: Theory and Evidence*. Baltimore and London: Johns Hopkins University Press for the World Bank.
- del Rosso, J. and T. Marek. 1996. "Class Action. Improving School Performance in the Developing World through Better Health and Nutrition," Directions in Development Series, Washington, D.C.: World Bank.
- Devadas, R.P. 1983. "The Honorable Chief Minister's Nutritious Meal Programme for Children of Tamil Nadu," Coimbatore, India: Sri Arinashilingam Home Science College.

- Dixit, S. 1994. "Dietary Intakes and their Determinants in Low Income Elementary School Children." Unpublished doctoral dissertation. Medford, Mass.: Tufts University School of Nutrition Science and Policy, August.
- Ezemenari, K. 1997. "The Link Between Public and Private Interhousehold Transfers: Implications for the Design of Safety Net Programs in Developing Countries," *American Journal of Agricultural Economics* 79(2): 666-71.
- Ferreira, F., G. Prehnusht, and M. Ravallion. 1999. "Protecting the Poor from Macroeconomic Shocks," Policy Research Working Paper 2160, Washington DC: World Bank.
- Fraker, T. 1990. "The Effects of Food Stamps on Food Consumption: A Review of the Literature," Mathematica Policy Research, Inc., prepared for the US Department of Agriculture, Washington, D.C., October.
- Fraker, T.M., A.P. Martini, J.C. Ohls, and M. Ponza. 1995. "The Effect of Cashing Out Food Stamps on Household Food Use and the Cost of Issuing Benefits. *Journal of Policy Analysis and Management* 14: 3, 372-92.
- Gillespie, S.R. 1999. "Toolkit Number 5: Supplementary Feeding for Women and Young Children," Human Development Network, Washington DC: World Bank.
- Gopalan, C., M.C. Swaminathan, V.K. Kumari, D.H. Rao, K. Vijayaraghavan. 1973. "Effects of Calorie Supplementation on the Growth of Under-nourished Children," *American Journal of Clinical Nutrition*, 26: 563-566.
- Gopaldas, T. 1976. "Project Poshak—An Integrated Health and Nutrition Large-scale Study for Rural Preschool Children, Central India. *Nihae Bulletin*, 9(1):37-40.
- Grosh, M. 1992. "The Jamaican Food Stamps Programme: A Case Study in Targeting." *Food Policy*, 17 (1): 23-40, February.
- Grosh, M. 1994. "Administering Targeted Social Programs in Latin America: From Platitudes to Practice" World Bank Regional and Sectoral Studies, Washington D.C.: World Bank.
- Gunderson, C., M. Le Blanc, and B. Kuhn. 1999. "The Changing Food Assistance Landscape: The Food Stamp Program in a Post-Welfare Reform Environment." Agricultural Economic Report No. 773, Washington, D.C.: Food and Rural Economics Division, Economics Research Service, U.S. Department of Agriculture.
- Haddad, L., and M. Zeller. 1996. "How Can Safety Nets Do More with Less? General Issues with Some Evidence From Southern Africa," FCND Discussion Paper No. 16, Washington D.C.: International Food Policy Research Institute.
- Harbert, L., and P.L. Scandizzo. 1982. "Food Distribution and Nutrition Intervention: The Case of Chile," World Bank Staff Working Paper No. 512, Washington DC: Agriculture and Rural Development Department, World Bank.

- Husaini, M.A., L. Karyadi, Y.K. Husaini, D. Karyadi, and E. Pollitt. 1991. "Developmental Effects of Short-term Supplementary Feeding in Nutritionally-at-risk Indonesian Infants" *American Journal of Clinical Nutrition* 54:799-804.
- Hoddinott, J. 1999. "Principles and Practice in the Design of Food-Based Targeted Assistance" downloaded from <http://wbln0018.worldbank.org>
- Horton, S. 1992. "Unit Cost, Cost-Effectiveness, and Financing of Nutrition Interventions," Policy Research Working Paper 952, Washington D.C.: World Bank.
- Jaspars, S., and H. Young. 1995. "General Food Distribution in Emergencies: from Nutritional Needs to Political Priorities," Relief and Rehabilitation Network Good Practice Review No 3, December.
- Johnson, F.C. and B.L. Rogers 1993. "Children's Nutritional Status in Female-Headed Households in the Dominican Republic," *Social Science and Medicine*, 37:11, 1293-1301.
- Kennedy, E., and H. Alderman. 1987. "Comparative Analyses of Nutritional Effectiveness of Food Subsidies and Other Food-Related Interventions," Washington D.C.: International Food Policy Research Institute.
- Kennedy, E. 1992. "Household Food Security and Child Nutrition: The Interaction of Income and Gender of Household Head." *World Development* 20:August, 1077-1985.
- Kielman, A.A., C.E. Taylor, and R.L. Parker. 1978. "The Narangwal Nutrition Study," *The American Journal of Clinical Nutrition*, 31:2040-2052.
- Kusim, J.A., S. Kardjati, J.M. Houtkeoper, and U.H. Renqvist. 1992. "Energy Supplementation During Pregnancy and Postnatal Growth," *Lancet* 340:623-626.
- Lutter CK., J.O. Mora, J.P. Habicht, K.M. Rasmussen, D.S. Robson, S.G. Sellers, C.M. Super, and M.G. Herrera. 1989. "Nutritional Supplementation: Effects on Childhood Stunting Because of Diarrhoea," *American Journal of Clinical Nutrition* 50:1-8.
- Macrae J., M. Bradbury, S. Jaspars, D. Johnson, and M. Duffield. 1997. "Conflict, the Continuum, and Chronic Emergencies: A Critical Analysis for Linking Relief, Rehabilitation, and Development Planning in Sudan," *Disasters*, 21:223-243.
- Mardones-Santander F., P. Rosso, A. Stekel, E. Ahumada, S. Llaguno, F. Pizarro, J. Salinas, I. Vial, and T. Walter. 1988. "Effect of a Milk-based Food Supplement on Maternal Nutritional Status and Fetal Growth in Underweight Chilean Women" *American Journal of Clinical Nutrition* 47: 413-19.
- Martorell, R., J. Rivera, and H. Kaplowitz. 1990. "Consequences of Stunting in Early Childhood for Adult Body Size in Rural Guatemala," *Annales Nestl*, 48:85-92.
- Maxwell, S., and G. Templer. 1994. "The Monetization of Project and Emergency Food Aid: Project-Level Efficiency First!" *Food Policy* 19(1): 9-15.

- McKeown, T. 1988. *The Origins of Human Disease*. Oxford: Blackwells.
- Meyers, A.F., A.E. Sampson, M. Weitzman, B.L. Rogers, and H. Kayne. 1989. "School Breakfast Program and School Performance" *American Journal of Diseases of Children* 143:1234-1239, October.
- Mora, J.O. 1983. "Supplementary Feeding During Pregnancy: Impact on Mother and Child in Bogota, Colombia," in B. Underwood ed. *Nutrition Intervention Strategies in National Development*. New York: Academic Press.
- Mora JO., M.G. Herrera, J. Suescun, L de Navarro, and M Wagner. 1981. "The Effects of Nutritional Supplementation on Physical Growth of Children at Risk of Malnutrition," *American Journal of Clinical Nutrition* 34: 1985-1992.
- Organisation for Economic Development/DAC. 2001. "Aid Activities in Least Developed Countries, 1999." Paris: Organisation for Economic Development.
- Peppiatt, D., and J. Mitchell. 1997. "Buying Power: the Case for a Cash-based Response to Famine" London: British Red Cross.
- Pollitt, E. 1995. "Nutrition in Early Life and the Fulfillment of Intellectual Potential" *Journal of Nutrition* 125(S): 1111S-1118S.
- Pollitt, E., KS Gorman, PL Engle, R. Martorell, and J. Rivera. 1993. "Early Supplementary Feeding and Cognition," Monographs of the Society for Research in Child Development, Serial No. 235, 58(7).
- Prentice, A.M., T.J. Cole, F.A. Foord, W.H. Lamb, and R.G. Whitehead. 1987. "Increased Birthweight after Prenatal Dietary Supplementation of Rural African Women" *American Journal of Clinical Nutrition* 46(6): 912-925.
- Ramakrishnan U, R. Martorell, J. Rivera, and P. Melgar. 1997. Inter-Generational Relationships in Birth Weight in Guatemala. *FASEB Journal*:11(3):A575.
- Rao, D.N., and A.N. Naidu. 1977. "Nutritional Supplementation: Whom Does it Benefit Most?" *American Journal of Clinical Nutrition* 26: 30:1612-1616.
- Ravallion, M. 1990. Income Effects on Undernutrition. *Economic Development and Cultural Change* (April):489-516.
- Rivera, S.A., J-P. Habicht, and D.S. Robson. 1991. "Effects of Supplementary Feeding on Recovery From Mild to Moderate Wasting in Preschool Children," *American Journal of Clinical Nutrition* 54:62-68, 1991.
- Rivera, J.A., R. Martorell, M.T. Ruel, J.P. Habicht, and J.D. Haas. 1995. "Nutritional Supplementation during the Preschool Years Influences Body Size and Composition of Guatemalan Adolescents" *Journal of Nutrition* 125 (4S): 1068S-1077S.

- Rogers, B. 1995. "Feeding Programs and Food-Related Income Transfers," in P. Pinstrip-Andersen, D. Pelletier, and H. Alderman (eds) *Child-Growth and Nutrition in Developing Countries: Priorities for Action*. Ithaca: Cornell University Press.
- Rogers, B.L., T. Sanghvi, P. Tatian, J. Behrman, M. Calderón, S. Creliá, and M. García. 1995. "Food and Income Subsidies and Primary Schooling in Rural Honduras: An Evaluation of the Impact of the Bonos and PL480 Title II School Feeding Programs". Bethesda, Md.: International Science and Technology Institute. Report prepared for USAID, LAC/HNS, Washington, D.C. September.
- Rogers, B.L. 1996. "The Implications of Female Household Headship for Food Consumption and Nutritional Status in the Dominican Republic." *World Development* 24:1, 113-128.
- Sahn, D.S., B.L. Rogers, and D. Nelson. 1981. "Assessing the Uses of Food Aid: PL 480 Title II in India" *The Ecology of Food and Nutrition*, Spring.
- Salama P. and S. Collins, 1999. "An Ongoing Omission: Adolescent and Adult Malnutrition in Famine Situations," *Emergency Nutrition Network Field Exchange*, 6: February.
- Sampson, A., S. Dixit, A.F.Meyers, and R.Houser. 1995. "The Nutritional Impact of a Newly Implemented School Breakfast Program (SBP) on the Diets of African-American Elementary School Children" *Ambulatory Child Health* 1: 14-22
- Sanghvi, T., B.L. Rogers, P. Tatian, J.Behrman, M. Calderón, S. Creliá, and M.García. 1995. *The Effect of Food Assistance and Cash Transfers on Health and Nutrition: An Evaluation of the Programs of Bonos and Supplementary Maternal and Child Feeding (PL 480 Title II)*. Bethesda, Md.: International Science and Technology Institute. Report prepared for USAID, LAC/HNS, Washington, D.C. September 18.
- Schlossman, N.P. 1993. "Enhancing Food Security in Urban Food for Work Programs: the Bolivia Initiative" *Food Forum*, 18, June.
- Scrimshaw, N., C. Taylor and J.Gordon .1968. *Interactions of Nutrition and Infection* Monograph 57. Geneva: World Health Organization.
- The Sphere Humanitarian Charter and Minimum Standards in Disaster Relief*. Herndon:Stylus Publishing LLC, 2000.
- Subbarao K., A Bonnerjee, K Ezemenari, J Braithwaite, C Graham, S Carvalho, and A Thompson. 1997. "Safety Net Programs and Poverty Reduction: Lessons from Cross-country Experience," Washington D.C.: World Bank.
- Timmer, Peter. 1981. "Is There Curvature in the Slutsky Matrix?" *Review of Economics and Statistics* 63:3, August, 395-402.
- Toole M. 1992. "Micronutrient Deficiencies in Refugees," *The Lancet* 339:1214-1216

- UNICEF .1990. *Strategy for Improved Nutrition of Children and Women in Developing Countries*. New York: UNICEF.
- United States Department of Agriculture (USDA). 2000. "WIC Eligibility Requirements," downloaded from www.fns.usda.gov/wic
- Vivian, J. 1994. "Social Safety Nets and Adjustment in Developing Countries," Occasional Paper No. 1 for World Summit for Social Development, United Nations Research Institute for Social Development, Geneva, July.
- von Braun J (ed.) 1995. *Employment for Poverty Reduction and Food Security*. Washington D.C: IFPRI.
- von Braun, J., T. Teklu, and P. Webb. 1999. *Famine in Africa: Causes, Responses and Prevention*. Baltimore: Johns Hopkins University.
- Walton, J. and D. Seddon. 1994. *Free Markets and Food Riots: The Politics of Global Adjustment*. Cambridge MA: Blackwell Publishers.
- Webb, P. and S. Moyo. 1993. "Food Security Through Employment: Experience with Labor-Intensive Public Works in Zimbabwe," report to German Technical Co-operation (GTZ), Washington, D.C.: IFPRI.
- Webb, P. and von Braun, J. 1994. *Famine and Food Security in Ethiopia: Lessons for Africa*. New York: John Wiley and Sons.
- Webb, P. 1992. "Food Security through Employment in the Sahel" Report to German Technical Co-operation (GTZ), Washington, D.C.: IFPRI
- Wilde, P. and C. Ranney, 1998 A Monthly Cycle in Food Expenditure and Intake by Participants in the U.S. Food Stamp Program. Madison, Wisconsin: Institute for Research on Poverty, Discussion Paper #1163-98, June.
- Woodruff B. and. A. Duffield. 2000. "Adolescents: Assessment of Nutritional Status in Emergency-affected Populations," Refugee Nutrition Information System (RNIS) Supplemental Report, Geneva: United Nations System Standing Committee on Nutrition (SCN).
- World Health Organization (WHO). 1997. "Protecting and Promoting the Health and Nutrition of Mothers and Children Through Supplementary Feeding" Geneva: Food Aid Programmes Unit, WHO.
- World Bank. 1999. *World Development Report 1998/99: Knowledge for Development*. Oxford: Oxford University Press for the World Bank.
- World Bank. 1996. "Sri Lanka in the Year 2000 - An Agenda for Action," Report No. 15455-CE, Washington, D.C.: World Bank Country Operations Division, South Asia Region.

World Bank. 1992. "Republic of Honduras, Review of the PRAF Food Coupon Programs," World Bank Report No 10488-HO. For official use only. Washington DC: World Bank Latin America and the Caribbean Regional Office.

World Bank Institute. n.d. Washington, D.C., Background information for Social Safety Nets course.

World Food Programme (WFP). 1995. "Operational Guidelines for WFP Assistance to Education: 15th Session SCP, 6-9 November 1995," Rome .

_____. 1996. "Report on Pilot School Feeding Program." Evaluation report, WFP/Malawi. (Unpublished).

_____. 1997. "Policies on the Use of WFP Food Aid in Relief and Development Activities: Monetization," Executive Board Annual Session, Rome.

_____. 1998. *World Food Programme in Statistics - 1998*. Rome: World Food Programme.

_____. 1999. "World Food Programme Statistics 1999," Downloaded from <http://www.wfp.org/reports/wfpstats/99>

_____. 2000. "WFP Hails Global School Feeding Initiative," WFP News Release, July 24.

_____. forthcoming. *2001 Food Aid Flows*. Rome: World Food Programme.