Recommendation four

Improve nutrition for the chronically hungry and vulnerable

Adequate nutrition lies at the heart of the fight against hunger. According to the International Conference on Nutrition, household food security, health services and a healthy environment, and care for women and young children are the underlying determinants of sound nutrition (FAO and WHO 1992). None is sufficient by itself, and all three are necessary for improving nutrition outcomes (Sethuraman, Shekar, and Kurz 2003).

The Task Force on Hunger recommendations in this chapter focus on improving the nutrition of vulnerable groups facing chronic hunger and micronutrient deficiencies. The interventions constitute a targeted life-cycle approach designed to reduce the prevalence of underweight children, reduce stunting, and ensure adequate micronutrients for those suffering from vitamin and mineral deficiencies (UN ACC/SCN 2000). We place special emphasis on reducing malnutrition among children under two years of age and among pregnant and lactating women. We also emphasize the need to address other nutritionally vulnerable groups, such as children between two and five, school-age children and adolescents, and those affected by HIV/AIDS.

Few of the interventions are new in themselves. What is new is the priority attention accorded them in this global development agenda. While best practices in targeted nutrition interventions are well established, poor implementation in nutrition programs remains a key constraint. This is in large part because nutrition is a multi-sectoral concern that needs to be addressed by more than one line ministry and at more than one level. As mentioned in chapter 2, at least 38 countries are unlikely to achieve the hunger Goal. To reach the hunger target, these countries must reduce malnutrition.

Nutrition must thus be placed at the heart of national poverty reduction strategies, which implies finding a central place in those strategies and, where

A life-cycle approach emphasizes critical "windows of vulnerability"

applicable, in poverty reduction strategies and poverty reduction credits. Nutrition should also be a priority in policy statements and investment strategies. This needs to be reflected in targeted activities on the ground at community level. All these elements are critical to ensuring satisfactory progress.

This chapter puts forward five interventions to improve nutrition among vulnerable groups:

1. Promote mother and infant nutrition.
2. Reduce malnutrition among children under five years of age.
3. Reduce malnutrition among school-age children and adolescents.
4. Reduce vitamin and mineral deficiencies.
5. Reduce the prevalence of infectious diseases that contribute to malnutrition.

In all cases, much depends on increasing local capacity to improve nutrition and health at the community level, including both formal networks of paraprofessional nutrition extension workers and informal self-help and mother-to-mother groups of nutrition and health volunteers. Much depends, too, on the ability of governments to pay greater attention to quality nutrition education (through media campaigns and school curricula) that gives parents information on locally feasible but internationally recognized best practices in achieving maternal and child well-being.[1]

Background

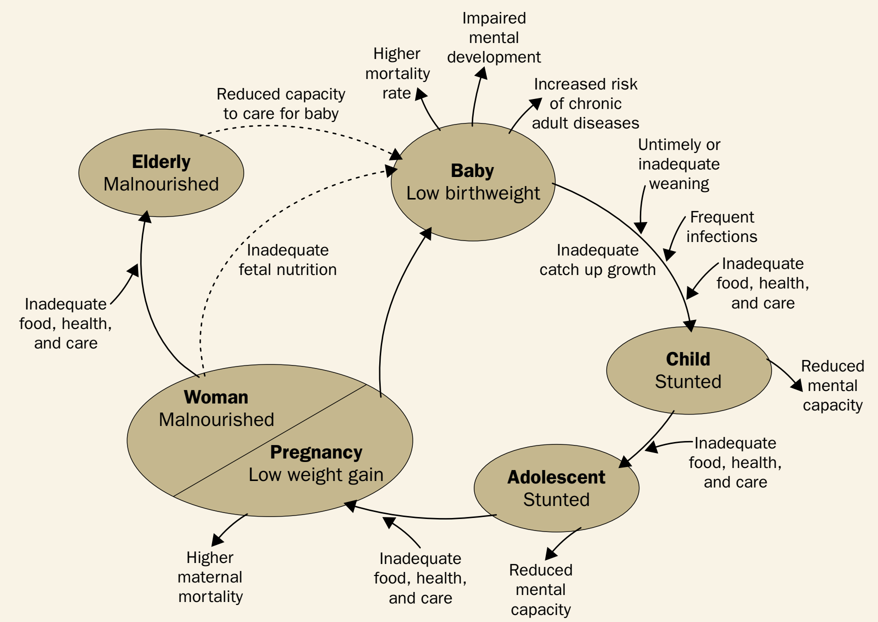
Sound nutrition underlies the achievement of all the Millennium Development Goals, not just halving hunger. Levels of malnutrition continue to be high throughout most of the developing world and nutritional interventions are required almost everywhere, but especially where significant numbers of poor and vulnerable people live. These interventions will vary from place to place, depending on geography, socioeconomic status, cultural practices, and the stage in life of those most affected. A life-cycle approach emphasizes critical "windows of vulnerability"—times in life when the prevalence of malnutrition tends to be higher and the consequences more severe (see figure 7.1).

Pregnancy, lactation, and early childhood (up to two years) are periods of rapid physical and cognitive development that require higher nutrient requirements than other stages of life. Ill-timed pregnancies, specifically short birth intervals, place even greater stress on women and their newborns during these critical years. Women giving birth at shorter intervals are more likely to experience anemia, third-trimester bleeding, and possibly death. Likewise, their children are more likely to suffer low birthweights and are at higher risk of dying by the age of five. These same women often have less opportunity to breastfeed their children, further worsening the poor nutritional status of newborns (Johns Hopkins University 2002). Inadequate feeding and care practices at an early age contribute to immature immune systems that increase the incidence

Figure 7.1

The life-cycle of malnourishment

Source: UN ACC/SCN 2000.



and severity of infection throughout life. For most of the children who are underweight and stunted today, the majority of the damage was done before they reached the age of two.

Malnutrition has multiple causes and is related to the abnormal physiological condition caused by deficiencies, excesses, or imbalances in energy, protein, and other nutrients. It involves both undernutrition (insufficient food intake to meet continuous dietary energy requirements) and overnutrition (excess food intake to meet continuous dietary energy requirements). Although obesity is becoming a major health risk in many rich and some poor countries, the Task Force on Hunger's primary focus is on undernutrition, which has devastating social as well as economic impacts at both the individual and national levels (see chapter 1).

For children under five, malnutrition is often caused by the interaction between a lack of nutritious food, the prevalence of common childhood illnesses such as diarrhea and pneumonia, and the impaired ability of parents to nurture their children because of resource or knowledge constraints. Goiter, scurvy, anemia, and xerophthalmia are forms of malnutrition caused by inadequate intake of iodine, vitamin C, iron, and vitamin A respectively (FAO 2003). And when siblings are close in age, they compete for these constrained resources as well as for maternal care, further increasing the likelihood of malnutrition in this high-risk group (Johns Hopkins University 2002). In 2005, despite abundant global food supplies, at least 130 million children under five will suffer various forms of malnutrition. The devastating results include underweight children, stunted growth, more severe infections, physical and

The key to long-term nutritional improvement lies in family and community action

cognitive disabilities, and the premature death of nearly 6 million children each year.

Malnutrition is also closely linked with HIV, tuberculosis, and malaria. For example, nearly 57 percent of malaria deaths are attributable to malnutrition (Pelletier and others 1995; UN SCN 2004). Research also shows a clear link between malnutrition and poor cognitive function (Gratham-McGregor and Ani 2001). Links between anemia, cognitive function, and school performance are becoming more evident. Iodine-deficient children have been shown to have, on average, 13 fewer IQ points than iodine-sufficient children (Sethuraman, Shekar, and Kurz 2003).

Promote mother and infant nutrition

The key to long-term nutritional improvement lies in family and community action to prevent malnutrition. This requires harnessing the resources of governments, civil society, and the private sector to empower individuals, families, and communities with knowledge and to support them with services, including universal access to reproductive health services. It also requires much greater emphasis on enhancing nutrition knowledge at the household level. This means increasing people's access to both formal and informal sources of nutrition information. It also means standardizing messages based on best practice, tailoring the communication method to local cultural norms, investing in the measurement of impacts, and systematizing the use of information across all aspects of nutrition programming. Public action should include strong community initiatives to support breastfeeding and specific action by employers.

As the primary care providers for children and families, women can improve nutrition outcomes and break the cycle of malnutrition. A focus on pregnant women and infants under two is critical for reducing child malnutrition, child mortality, and maternal mortality. And as the Task Force on Education and Gender Equality points out, recent research is also pointing to the preconception period, because women who are underweight prior to pregnancy have as much risk of a poor pregnancy outcome as those who are underweight during pregnancy (Allen and Gillespie 2001).

Ensuring universal access to reproductive health services is essential to improving the nutritional status of pregnant women and their children. Malnourished women have weaker immune systems and are more susceptible to infection during pregnancy. Likewise, poor reproductive health, especially closely spaced births, leads to the worsening nutritional status of women and their children.

Increasing women's income and their control over family assets is also extremely important for improving nutrition outcomes in their children (Engle 1993). When women are involved in household decisionmaking, they are better able to care for themselves and their children. Protecting women's and

Box 7.1

The South Asian enigma—high rates of child malnutrition despite economic and agricultural gains

Source: Ramalingaswami, Jonsson, and Rohde 1996; UNICEF 2004; UN Millennium Project 2003a.

South Asians have higher levels of economic growth, agricultural production, infrastructure, and public services than those who live in Sub-Saharan Africa. Yet South Asia has by far the highest prevalence of underweight children of any region as a whole. In 2002 nearly half (47 percent) of South Asian children under five were underweight, compared with 31 percent in Sub-Saharan Africa. The question of why this region has the world's highest rates and numbers of underweight children, despite a growing economy and food supply, has been called the South Asian enigma (Ramalingaswami, Jonsson, and Rohde 1996). One factor that may explain the differing status between poor women in Sub-Saharan Africa and those in South Asia is one of social inequalities. Poor women in Sub-Saharan Africa have greater opportunities and freedoms than poor women in South Asia. The exceptionally high rates of malnutrition in South Asia are thought to be deeply rooted in the inequality between men and women. These social inequalities affect mothers and children's nutrition in several ways:

High rates of low birthweight. South Asian women's health status is lower than that of Sub-Saharan women on a number of counts, including anemia rates, average weight gains during pregnancy, and life expectancy in relation to men. The result: 30 percent of babies in South Asia were born with low birthweight, compared with 14 percent in Sub-Saharan Africa during 1998–2002 (UNICEF 2004). Low birthweight indicates that a baby's mother was malnourished before or during pregnancy.

Differences in infant and child feeding. In South Asia the health of infants receiving exclusive breastfeeding often falters at four months, possibly due to suboptimal breastfeeding practices or conditions. The quality of child care in South Asia is reduced by women's lack of education, economic opportunity, and freedom outside the home—all restricting knowledge transmission, self-esteem, and income generation.

Poor sanitation and hygiene. A lack of adequate sanitation facilities affects 66 percent of South Asia's population, compared with 47 percent of Sub-Saharan Africa's (UN Millennium Project 2003a). The combination of poor hygiene and overcrowding greatly heightens the incidence of infectious disease—creating a vicious cycle of malnutrition and illness among young children.

These factors, among others, present a series of setbacks to children's health status from gestation through the first crucial years of development. Actions to address them include increasing girls' education, promoting the rights and opportunities of women, expanding adequate sanitation facilities, and empowering communities by taking a rights approach to nutrition.

girl's rights, including their access to education and productive assets, is also critical for the sustainable elimination of malnutrition (box 7.1).[2]

But to support the empowerment of families, particularly women, it is clear that greater capacity—knowledge, institutions, resources, and motivation—needs to be built and sustained at the local level. The task force recommends increasing the number of community nutrition extension workers in villages. Without additional workers in the community—serving as a conduit for nutrition information, the distribution of micronutrient supplements, the referral of serious cases (of malnutrition or ill health), and the training of trainers—it will remain extremely difficult to reach all the Goals. Close

There is now a broad consensus on the fundamental need for achieving interventions together rather than separately

collaboration is required between government and networks of communities; neither will succeed alone.

Establish prenatal nutrition and supplementary feeding programs

Many low-income women have been malnourished from childhood. They tend to marry early, typically having their first child in adolescence, and have closely spaced births. Malnourished girls become malnourished mothers and give birth to low birthweight babies (less than 2.5 kilograms at birth) who fail to thrive as infants. To break this cycle of malnutrition, the task force recommends direct actions focused on supplemental feeding for underweight pregnant and nursing mothers—in conjunction with synergistic actions to promote education, improve health, and reduce the prevalence of intestinal worms. Priority should go to improving the nutritional quality as well as increasing the quantity and diversity of food consumed during pregnancy. The following points from the literature highlight the importance of programs for pregnant women (Allen and Gillespie 2001; LoPriore, Webb, and Van Nieuwenhuyse 2004):

- Maternal supplementation can increase maternal weight gain—and when there is a serious food energy shortage, the length of the newborn infant.
- Undernourished women can improve their pregnancy outcomes by eating more of their normal diet and appropriate energy-containing supplements.
- When the normal diet is low in protein or micronutrients, it is important to ensure that they are provided as supplements or in micronutrient-fortified foods.
- Young maternal age at conception is a risk factor for poor pregnancy outcome, so encouraging later and well spaced pregnancies is important.
- In areas of endemic iodine deficiency, adequate maternal iodine status is critical to prevent neonatal deaths, low birthweight, and cognitive or physical abnormalities.
- Other interventions that improve pregnancy outcomes include reducing physical energy expenditure, reducing teenage pregnancies, protecting against malaria, enhancing health and nutrition knowledge, and not smoking.

Interventions for overcoming low birthweight

The main interventions recommended for addressing low birthweight include breastfeeding and, where necessary, complementary feeding promotion, supplementary feeding, and micronutrient supplementation. None of this is new—but there is now a broad consensus on the fundamental need for achieving these interventions together rather than separately. In other words, sound nutrition depends on reaching the most vulnerable demographic groups

Exclusive breastfeeding is strongly recommended for the first six months of life

(pregnant women and infants under two years) with all the essential inputs and services they need, not just some of them.

Children born with low birthweight face increased risk of mortality and morbidity and are more likely to become malnourished in childhood.[3] They may also be more susceptible to chronic diseases in adulthood. Factors underlying low birthweight are high workloads for pregnant women, closely spaced births, infections during pregnancy (such as malaria), and inadequate pregnancy weight-gain. These conditions are created by inadequate food consumption, inequitable patterns of food and care allocation within the household, inadequate access to reproductive health services, a lack of knowledge about promoting the nutrition of adolescent girls, and feeding behavior during pregnancy (eating less, due to cultural factors or in response to inadequate birthing facilities—smaller babies are easier to deliver without complications). The risk of low birthweight is compounded if pregnant women themselves are stunted or undernourished at the time of conception—or if their first pregnancy occurs before they are fully grown.

For optimum nutrition, babies up to the age of six months should only be breastfed. Breastfeeding should then be continued up to the age of two years, during which time the child is gradually weaned onto solid foods. Currently, only about 40 percent of infants worldwide are exclusively breastfed, signaling the need for more information dissemination, nutrition education, and direct support to mothers from community-level nutrition extension workers.

Exclusive breastfeeding is inhibited due to lack of knowledge of its importance, poor nutrition status of the mother, and a lack of time or opportunity. Systems therefore need to be in place (through public education and community-level nutrition extension workers) to communicate the following key points:

- Exclusive breastfeeding is strongly recommended for the first six months of life.
- Breastfeeding should be continued as other foods are added to the diet, since the quality of complementary foods is often poorer than breast milk.
- Encouraging the consumption of animal products by young children can also improve micronutrient intake. The consumption of animal milk, for example, was associated with better growth and micronutrient status in several studies.
- Even where breast milk intake is relatively low, the amount of protein in complementary foods will, in most situations, be more than adequate. Adding protein alone or improving protein quality will seldom improve growth.
- Micronutrient fortification of cereal staples is especially important where these are major constituents of complementary foods.

Micronutrient fortification of cereal staples is especially important

Box 7.2 describes improvements in maternal and infant health by enhancing the nutritional content of food rations in Nepal.

The links between breastfeeding and the transmission of HIV from mother to infant have been the subject of considerable research over the past decade. On average, 63 percent of children of HIV-positive mothers will not be infected by HIV, while 7 percent will be infected during pregnancy, 15 percent during delivery, and 15 percent during the first two years of breastfeeding (WHO 2001). The risk of transmitting HIV through breast milk seriously complicates the options that women have to ensure good nutrition for their young babies.

A large proportion of infant deaths have been associated with poor infant feeding (Caulfield and others 2002). Shifting from a regime of breastfeeding because of the risk of HIV infection thus incurs other risks. WHO (2001) recommends that HIV-positive mothers should give up breastfeeding only when replacement feeding is acceptable, feasible, affordable, sustainable, and safe. This is rarely the case. Indeed, replacement feeding in developing countries carries such risks for young children that it might be less risky for HIV-positive mothers to breastfeed (Coutsoudis and Rollins 2003). The decision remains difficult.

A global strategy on infant and young child feeding was developed jointly by the United Nations Children's Fund and WHO and approved by

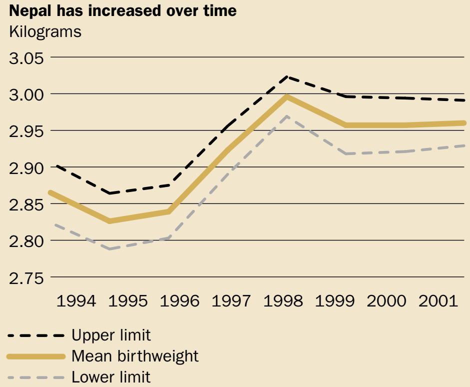
Box 7.2

Improved birthweight among refugees in Nepal

Source: Shrimpton, Tripp, and Thorne-Lynn 2002.

In 2003 birthweight data collected at antenatal clinics in Bhutanese refugee camps in Nepal revealed that the incidence of low birthweight had fallen from about 18 percent in 1995 to as low as 8 percent in 1998—a lower rate than the 30 percent observed in hospitals in Nepal. The average birthweight in the camps significantly improved from 2.8 kilograms in 1996 to 3.0 kilograms in 1998, a period that coincided with improvements in the nutritional content of the general ration, including the addition of fortified blended foods.

Figure 1 The average birthweight in refugee camps in Nepal has increased over time



It is important not to treat malnourished individuals in isolation

the World Health Assembly in May 2002. All developing countries should develop national policies in line with this strategy. It is also essential to ensure implementation and monitoring of the International Code for Marketing of Breast Milk Substitutes (WHO 1981).

Reduce malnutrition among children under age five

Childhood malnutrition is in part the outcome of low birthweight. But many children with low or normal birthweights become malnourished in infancy for reasons that include the lack of health services, clean water, good sanitation, or nutritious foods. Once past 18 to 24 months, the opportunities for children to catch up are greatly diminished. The one-time loss in physical and cognitive development becomes a permanent burden carried throughout life.

To reduce malnutrition among children under five years of age, the task force recommends the following three actions: complementary feeding at home, with continued breastfeeding until two years of age; providing malnourished children with appropriate complementary foods, including fortified and blended foods; and providing necessary therapeutic care to all seriously malnourished children and women, especially in remote rural areas.

For more details on infant and young child feeding, see the *Global Strategy for Infant and Young Child Feeding* (UNICEF and WHO 2003). In addition to improving feeding practices directly, more attention should go to controlling infections and providing a healthy environment, safe water, and adequate sanitation, since these measures indirectly improve the nutritional status of preschool children, especially in the first two years of life.[4] This includes immunizations, de-worming, healthcare, and nutritional education.

In dealing with chronic malnutrition, it is important to consider better links with actions to overcome acute malnutrition, usually in the context of major humanitarian crises. Paradoxically, humanitarian work to treat acute malnutrition is often more successful than development work focused on preventing long-term chronic conditions. For example, refugees settled in camps sometimes enjoy better nutritional status than surrounding host communities—mainly because of the professionalism of relief agencies and partly because of the sharp focus and concentration of resources on a clearly defined, usually geographically confined problem (WFP 2004a).

A major challenge is to find ways of scaling up these successes so that best practices can be maintained in emergency situations and replicated in post-emergency contexts. Curing acute conditions and resolving underlying chronic conditions need to be better coordinated as mutually reinforcing aims. All too often, therapeutic feeding centers close down once a crisis has passed, even though the processes that led to widespread malnutrition and loss of life have not substantially changed. It is important not to treat malnourished individuals in isolation from the rest of the population.

Direct access to nutritious food should be increased among today's school-age children and adolescents

One novel approach to bringing knowledge and responsibility to mothers at home is "community therapeutic care," originally developed by Valid International and now piloted in a dozen countries by Concern and other NGOs (Grobler-Tanner and Collins 2004). This approach offers a potential bridge between curative and preventive approaches. It aims to mobilize communities, support local health systems where they exist, and manage severe malnutrition by treating the majority of acutely malnourished children at home rather than taking them away to rehabilitation centers.

Moving children to rehabilitation centers usually requires the mother to spend significant amounts of time away from home, work, and the family's other children. Community therapeutic care instead emphasizes outreach and community mobilization to promote participation, self-identification of problems, and longer term behavioral change. Also central to the approach is the use of appropriate therapeutic foods containing appropriate mixes of nutrients needed to aid treatment and rehabilitation.

This and other innovative approaches that seek to raise survival rates by expanding the coverage of services—and maximizing the impact of treatment by transferring major responsibility to the mother and to community support systems—should be explored and extended wherever possible. Local nutrition programs should always seek to enhance community-level institutional capacity and establish systems that can persist into the recovery and development period (Webb and Rogers 2003).

Reduce malnutrition among school-age children and adolescents

The chances of survival increase for children after they reach the age of five. But their diet continues to be inadequate right up to the adolescent years, when there are increased nutritional needs to support the growth spurt (Nestel 2000). What is essential for school-age children and adolescents is adequate diet rich in energy and micronutrients in both quantity and quality, as well as frequent deworming and if necessary micronutrient supplementation. In addition, the links between anemia, cognitive functions, and school performance are becoming more evident (Sethuraman, Shekar, and Kurz 2003). The task force recommends that direct access to nutritious food, combined with health and nutrition interventions, should be increased among today's school-age children and adolescents.

To do this, we place a high priority on nutrient-rich meal programs offered through schools to eliminate short-term hunger and increase children's attentiveness at school. This should be linked with other school-based health and nutrition interventions, such as water and sanitary latrines, deworming, health, hygiene, and nutrition education, HIV/AIDS prevention and awareness, and school gardens (Del Rosso and Marek 1996). A comprehensive school-based health and feeding program can also serve as a community-based vehicle for reaching preschool children (under five) and pregnant and lactating mothers with similar resources and services.

Although the task force does not view school feeding as a direct nutritional intervention, it can reduce a child's hunger during the school day. A comprehensive food-for-schooling program can also ensure that children who attend school are given food rations to bring home, offering economic incentives for poor families to release children from household or labor obligations so that they can attend school (WFP 2004b). Such programs broaden the reach of feeding programs to the entire family, using the school as the epicenter of community nutrition (box 7.3).

Combining school feeding programs with health interventions can have a strong synergistic impact. For example, new research by the World Bank on the effects of de-worming demonstrates a 15 percent reduction in underweight among Ugandan children receiving two doses per year of the drug Albenzadole compared with a control group who received none (Behrman, Alderman, and

Box 7.3

School-based feeding reduces short-term hunger and improves education in Mexico

Source: ECLAC 2004.

The Programa de Educación, Salud, y Alimentación (Progresa) in Mexico, targeted directly to rural people living in extreme poverty, provides monetary and in-kind benefits to mothers who keep their children in school. The program offers nutritional supplements for children under five and for pregnant and lactating women—plus monetary incentives tied to mandatory healthcare visits to public clinics. Its main intent is to induce households to make more intensive use of educational and health facilities.

Operational since 1997, Progresa covered about 2.6 million families, or 40 percent of all rural families in Mexico, in 50,000 localities by the end of 1999, with an annual budget of $77 million, or 0.2 percent of Mexico's GDP. Now covering urban households as well, under the name Oportunidades, it is a model for other Latin American countries, including Honduras, Nicaragua, and Argentina.

Box 7.4

School-based systems for systematic deworming

Source: Stoltzfus and others 1997; WHO 2002.

Intestinal parasitic helminth infections are a major public health problem throughout the world. The infection is long term and chronic, leading to malnutrition, greater vulnerability to other infections and decreased mental capacity, as well as retarded growth. School-age children are the most heavily infected group for many helminthes infections, both in terms of prevalence and intensity of infection. Helminth infections (particularly hookworm) have been shown to cause iron deficiency anemia, reduce growth, and may negatively affect cognition (Stoltzfus and others 1997).

Highly effective drugs, safe and easily administered, are available. The prices of drugs that control schistosomiasis and soil-transmitted helminthes have plummeted in the last three to four years. By using the school system as a platform for delivery, the cost of treating a school-age child is usually less than $0.50 a year for both schistosomiasis and common intestinal worms. For only worms, the cost is $0.20 a year. This price covers the cost of the drugs, their delivery, equipment, health education materials, training for implementing personnel (teachers), and monitoring and evaluation (WHO 2002).

The treatment of micronutrient deficiencies is one of the most cost-effective nutritional interventions

Hoddinott 2004). In other words, de-worming through school programs can have a significant effect not only on reducing anemia but also on improving child growth, as manifest in their weight-for-age (box 7.4).

The Task Force on Hunger recommends locally produced foods rather than imported food aid for school feeding programs, based ideally on locally produced staple crops, complemented by fortified blended foods, vitamin, and mineral supplements. This will ensure the provision of meals that are culturally acceptable as well as nutritionally balanced (see chapter 11 for a more detailed description of a "homegrown school feeding program").

Reduce vitamin and mineral deficiencies

Deficiencies of vitamins and minerals are the world's most common form of malnutrition, affecting more than 2 billion people worldwide (MI and UNICEF 2004). Over half these people consume adequate amounts of calories and protein and so do not fall into the category of food-insecure. Deficiencies usually occur when the habitual diet lacks diversity and does not include sufficient quantities of the fruits, vegetables, dairy products, meat, and fish, the best sources of micronutrients. But deficiencies are also associated with low caloric intakes. Micronutrient deficiencies can reduce productivity, health, and life expectancy—and lead to significant mortality. Inadequate infant and young child feeding practices and infectious diseases also cause micronutrient malnutrition. Each year, about 1 million children under five lose their lives to vitamin A deficiency, and more than 60,000 women die from severe anemia during pregnancy (MI and UNICEF 2004).

The treatment of micronutrient deficiencies is one of the most cost-effective nutritional interventions available (Copenhagen Consensus 2004). To increase vitamin and mineral intake, the task force recommends three actions: increase the consumption of micronutrient-rich foods, improve food fortification, and increase micronutrient supplementation when necessary. Although these options are mutually reinforcing, we advocate the use of all three to address chronic hunger and micronutrient deficiencies. And we urge that they should be promoted vigorously by village nutrition and agricultural extension services—and through social marketing campaigns at national and district scales.

All countries should place a high priority on promoting the local production and consumption of affordable and culturally appropriate foods rich in micronutrients, such as local fruits and vegetables. Overcoming vitamin A, iron, and zinc deficiencies can readily be accomplished at the village level by consuming fruits high in vitamin A, such as mangoes, and vegetables high in iron, such as kale *(Brassica oleracea cv acephala),* as well as indigenous vegetables, such as amaranths. Where adequate distribution systems exist, it is fairly easy and highly cost-effective to add micronutrients to staple foods such as flour, salt, sugar, and milk. The private sector can play an important role in this (box 7.5).

Box 7.5

The private sector and food fortification

Source: Unilever Health Institute Symposium, Vlaardingen, April 21–22, 2003.

Private companies are becoming partners in the fight against hunger. Unilever created the *Annapurna* brand of iodized salt to address the serious problem of iodine deficiency disorder (IDD), which affects 50 million children worldwide. IDD is the most common cause of preventable mental retardation. Children born to iodine-deficient mothers often have a lower than average IQ. In Ghana Unilever forged a partnership with the United Nations Children's Fund and the Ghana Health Service to promote Annapurna iodized salt through advertising and education. Advertisements were needed to raise awareness of the importance of iodine in the diet, but did not refer to any specific brand of salt.

Teams then went into schools to educate children about the need to raise their iodine levels. Children were invited to bring salt in from home, which was then tested with a special kit to find out if it was iodized. Iodized salt consumption by Ghanaians now stands at 50 percent, up from just 28 percent in 1998. The program has been extended to cover consumption of vitamin A, zinc, and protein as well. Unilever's fortified foods business in Ghana is being extended to Mozambique, Malawi, and Kenya. The company has announced that it is at an advanced stage of negotiations with the United Nations Children's Fund on a global partnership to reduce child mortality.

The Ghana experience and the global partnership are examples of how the private sector can, through its own commercial programs, deliver the kinds of food needed to improve nutrition.

The cost of fortified foods need not be high. Iodized salt, for example, costs as little as $0.05 per person a year, while iodine supplementation costs about $0.50 per household a year.

Local production of fortified foods is highly cost-effective and can have considerable impact (box 7.6). The task force recommends that governments encourage private sector capacity to produce local fortified blended foods, which should then be bought and distributed under government contracts, through schools and other community-based programs. Successful models exist in India, Zambia, and Senegal. Over time the aim would be for such industries to become fully self-sustaining.

Agriculture and nutrition extension workers should work in tandem to provide information to small farmers on the crop and quality requirements of food fortification industries—as well as technical support to help them meet quality and reliability standards.

To allow farmers to fortify foods locally, suppliers of fortification ingredients to farmers will need to work with governments to reduce the cost of premixes or even subsidize their use. There is also a need for simple mixing equipment at the local level that will guarantee homogenous distribution and dosing of micronutrients in the finished product.

Another option is the biofortification of food crops through research. This involves breeding food crop varieties to increase their micronutrient content (see chapter 6). Biofortified crops can provide higher levels of micronutrients in the foods that the poorest people grow and consume daily. It can also comple-

Box 7.6

Village-level fortification of wheat flour in Bangladesh

Source: USAID/MOST 2003; Rahman and others 2002.

The Vulnerable Group Development program run by NGOs in Bangladesh reaches more than 500,000 very poor women. In 2002 a pilot project to fortify whole-meal wheat flour *(atta)* was introduced to tackle micronutrient deficiencies, while reducing milling costs to beneficiaries and providing new employment opportunities. Working on a "no-loss and no-profit" basis, the NGOs, with the help of the United Nations World Food Programme, set in place four small hammer mills, each equipped with novel "fail-safe" devices that prevent overfortification, and each staffed by beneficiaries. The four units provide 28,000 families with 25 kilograms of milled, fortified flour each month at a total processing cost of less than $20 per metric ton, around half the cost previously paid for unfortified flour.

Studies by USAID/MOST (2003) show that beneficiaries recognize this cost saving, and a study by Rahman and others (2002) confirms the beneficial impact on their vitamin A status. According to the second, "Six months after the start of the study, mean serum retinol in the fortified group [villagers consuming the fortified *atta* flour] was significantly higher than in the control group. Separate analyses showed that membership in the fortified group substantially reduced children's risk of having inadequate retinol. Overall the study provides clear evidence that the use of even modest amounts of fortified wheat flour markedly improves vitamin A status in a period as short as six months." The project is to expand to 20 units in 2006.

ment other approaches by reducing the number of people requiring treatment through supplementation and commercial fortification (CGIAR 2002).

The task force thus recommends giving more attention to the emerging field of biofortification. The CGIAR system is making major investments in biofortification through an international, interdisciplinary research program that will cover such crops as rice, sweet potato, cassava, and maize. Similar research is being done to develop a variety of oil palm that produces vegetable oil rich in vitamin A. In all cases, appropriate public education (social marketing) will be essential to the effective dissemination of fortified products.

Reduce infectious diseases that contribute to malnutrition

The protection and promotion of health is an essential complement to food security strategies in preventing malnutrition. The task force recommends that governments ensure that all children are fully immunized and receive prompt treatment for common infections such as diarrhea, pneumonia, malaria, and helminths. School-age children are particularly vulnerable to intestinal parasites and, in endemic areas, should receive de-worming medications. In addition, malaria is a leading cause of low birthweight, and innovative measures to combat it need to be considered. These include distributing insecticide-treated bed-nets in the course of antenatal care.

Also of growing importance are the links between nutrition, food security, and HIV/AIDS. Projections are that AIDS will claim 20 percent of the agricultural labor force in Sub-Saharan Africa by the year 2020, with devastating consequences for food security and nutrition. Today, there are 11 million

The task force recommends the increased coverage and quality of HIV/AIDS prevention and treatment programs

orphans in the region (UNICEF 2003), and millions more vulnerable children are caring for infected family members, dropping out of school due to a lack of financial support, and going hungry (Kadiyala and Gillespie 2003).

Interventions that enhance the immune function may reduce both the transmission of HIV/AIDS and prenatal mortality caused by a range of diseases. Micronutrient supplements, when given to HIV-positive women, improve their health and the health of their children—and can reduce the incidence of life-threatening conditions associated with the disease (Kumwenda and others 2002; Fawzi and others 1998; Fawzi 2003). In general, however, there is little hard evidence that vitamins reduce mother-to-child transmission of HIV before or during childbirth (Kumwenda and others 2002). In Tanzania, supplementation with vitamins B, C, and E provided to breastfeeding mothers modestly reduced transmission of the virus through breastfeeding. In addition, HIV-free survival was significantly prolonged among children born to HIV-infected mothers, even when the women already had compromised immune systems (Fawzi and others 2000).

Good nutrition does have the potential to prolong the asymptomatic phase of HIV infection, to forestall the onset of opportunistic diseases, and so to prolong life (WHO 2003a). Offering vitamin B, C, and E supplements to HIV-positive pregnant women in Tanzania increased lymphocyte (cells associated with immune responses) and hemoglobin levels (Fawzi and others 1998). An enhanced regime of vitamin A over one year led to average height and weight increases of one inch and two pounds among children in Tanzania, particularly among those who were HIV-positive (Villamor and others 2002).

The use of antiretroviral drugs on a large scale is only beginning in developing countries. Evidence from developed countries shows a high level of interaction between nutrition and drug efficacy. Children undergoing antiretroviral drug therapy show weight gain, linear growth, and less anaemia (Verweel and others 2002; Semba and others 2001). There is not yet much experience of interactions between antiretroviral drugs and nutrition in the developing world, but it is certain that, unaided, poor people will be unable to get the quality and quantity of food needed to combat the effects of HIV.

The Task Force on Hunger fully supports the recommendations of the Task Force on HIV/AIDS and recommends the increased coverage and quality of HIV/AIDS prevention and treatment programs, which should be combined with measures to ensure appropriate nutritional care for people living with (or affected by) HIV/AIDS.

Actions needed to implement recommendation four

Promote mother and infant nutrition

Focus nutrition interventions on young women, pregnant and nursing mothers, and children under two years of age, creating "mother and baby-friendly communities." Empower communities with knowledge about the benefits of birth spacing, delaying first pregnancy, antenatal and postnatal care, good birth outcomes, and relevant nutrition knowledge. Empower women through access to universal access to reproductive health services, increased control over productive and family assets, and increased decision-making power in the home.

Offer supplementary feeding for underweight pregnant and nursing women, distribute iron and folic acid through community health workers to all pregnant and lactating women, and promote additional fortification of cereals with folic acid. Markets and dealers should supply and distribute locally produced supplements, while adhering to international policies on breast milk substitutes.

Create education programs on the benefits of exclusive breastfeeding for the first six months, followed by complementary feeding at home, with continued breastfeeding after until two years of age.

Train and assign paraprofessional nutrition extension workers at the village level; train local community groups and local women to become nutrition knowledge workers. By 2010, 50 percent of communities with high hunger prevalence should be formally recognized as mother and baby-friendly communities; and existing international commitments on raising rates of exclusive breastfeeding should be achieved.

Reduce malnutrition among children under five years of age

Provide undernourished children with appropriate complementary foods, including fortified and blended foods. Provide necessary therapeutic care to all seriously undernourished children and women, particularly in remote areas, with the goal of extending care to 25 percent of them by 2008.

Strengthen the nutritional status of small children by providing access to sanitation and clean water through investments in rural infrastructure. Provide regular deworming, appropriate immunizations, and access to healthcare and nutrition education services. Support the creation of community-based growth promotion programs.

Train nutrition extension workers and extend health services into remote areas, where they can support home-based therapeutic care programs. Work with all stakeholders, including all levels of government, national and international experts on nutrition, and community-based groups. Encourage local production of fortified and blended foods, with the goal of 50 percent being bought locally by 2010.

Reduce malnutrition among school-age children and adolescents	Provide nutritionally balanced and micronutrient-fortified school meals to all elementary and secondary school children by 2010. Source from locally produced foods as much as possible, to stimulate local agricultural production and incomes. Provide take-home rations as an incentive for school attendance. Combine with other school-based interventions including deworming, education on nutrition, hygiene, and health including HIV/AIDS prevention, and provision of safe drinking water and sanitary latrines. Programs should include outreach and nutritional education to adolescent girls and mothers in the community, monitored by local health facilitators.
Reduce vitamin and mineral deficiencies	Increase consumption of micronutrient-rich foods by expanding local production of affordable and culturally appropriate micronutrient-rich foods, particularly local fruits and vegetables. Promote their consumption through village nutrition and agricultural extension services, as well as local and national educational campaigns. Where possible, combine outreach on supplementation with existing programs for immunization, antenatal care, schools, literacy, and income generation programs. Improve food fortification by supporting local private industry to produce fortified foods, including informational and technical support to producers to assist them in meeting quality standards. Foster coalitions of government, the private sector, and civil society to conduct public awareness campaigns and ensure that fortified foods are affordable and widely available to food-insecure households. Provide direct micronutrient supplements to young children, adolescents, and pregnant and lactating women as appropriate.
Reduce the prevalence of infectious diseases that contribute to malnutrition	Ensure that all children are fully immunized. Increase the coverage and quality of health services, particularly in areas with high prevalence of malnutrition, to prevent and treat common childhood illnesses such as diarrhea, pneumonia and malaria. Provide semiannual deworming medications in areas where helminth infections are endemic. Link these programs to antenatal care, preschool, and school programs wherever possible. In areas where malaria is endemic, integrate malaria prevention and control activities with antenatal care. Ensure appropriate nutritional care for people living with or affected by HIV/AIDS, including orphans. The ministry of health should coordinate these interventions with district health officers, nutrition extension workers, NGOs, and schools.

Recommendation five

Reduce the vulnerability of the acutely hungry through productive safety nets

People who are hungry and prone to undernutrition are vulnerable to events and influences that they are unable to control. These range from natural disasters, to sudden fluctuations in commodity prices, to catastrophic illness. Droughts, floods, armed conflicts, and political and economic instability aggravate the risks facing food-insecure communities, particularly for people already malnourished. While investing in agricultural productivity, education, and health remains critical to achieving long-term food security, past gains can be threatened if people's vulnerability to short-term disasters and shocks is not tackled head on.

The Task Force on Hunger recommends the following interventions to protect vulnerable people made acutely hungry by natural disasters and economic shocks:

1. Build and strengthen national and local early warning systems.
2. Build and strengthen the capacity to respond to emergencies.
3. Invest in productive safety nets to protect the poorest from short-term shocks and to reduce longer term food insecurity.

Background

Vulnerability to shocks and disasters is a cross-cutting issue that affects all efforts to reduce poverty and hunger. Vulnerability makes people risk-averse, leading to low investment and low output. Under these circumstances it is difficult for people to accumulate assets and climb out of poverty. Resilience cannot be achieved by reducing exposure to shocks and disasters. Most naturally occurring disasters (earthquakes, floods, and droughts) cannot be prevented, and many experts argue that their frequency is increasing as climate changes. Reducing vulnerability rests on helping communities better predict

"Shock-spots" will overlap with hotspots in some countries

and manage the risks they face—and on enhancing their nutritional status so that they can better resist shocks and disasters when they occur.

Households are most vulnerable when they have few options for earning a living. A family that has members earning an income off the farm, or that receives income through remittances and public safety nets, is more likely to survive a shock than households that depend entirely on farm income. The communities most at risk are those having most people involved in identical livelihood activities.

A prime responsibility of government, therefore, is to formulate and implement policies that reduce the effects of catastrophic shocks and disasters, as well as longer term threats such as HIV/AIDS. In the short term, poor and hungry communities will remain highly vulnerable. And even in the longer term, shocks and disasters will still occur, but their effects should be felt less keenly, and it should become easier to recover from them quickly. It is necessary not only to focus on the needs of vulnerable people in defined hunger hotspots, but also to enhance the analysis of risks, and the preparation of contingency plans, in places prone to periodic disasters—what might be called "shock-spots." These will overlap with hotspots in some countries, but they are not necessarily coincident, and they require focused attention in their own right.

For malnourished, vulnerable people, the risk of shocks and disasters, and their long-lasting effects, curb their efforts to escape food insecurity and mire them in hunger and poverty (Webb and Harinarayan 1999). Development policies and actions need to be reframed so that the vulnerability of food-insecure households and communities is addressed more directly. As individual and family coping capacities become stretched, there will be greater need for broad-based, locally managed social security systems. Carefully targeted interventions, including safety nets, can reduce the susceptibility of people to infection by HIV by making it unnecessary to adopt risky behavior to earn money (Kadiyala and Gillespie 2003).

This calls for operations that not only enhance farm productivity, reduce the risks of crop failure, or offer succor during crises. It also calls for enabling food-insecure households to withstand shocks better, enhancing people's capacity to grow out of insecurity, by investing in the assets they need to enhance their labor productivity, and empowering people to make better informed choices.

In sum, mainstreaming the management of vulnerability to shocks and disasters will allow governments to protect and perhaps even enhance their investments in long-term development. That means increasing the ability to predict shocks and disasters—and to respond to them quickly when they occur. It also means managing post-crisis investments better. These should maintain the stability of consumption and generate assets that will take the population beyond where they were before the crisis—that is, they should buffer them from future shocks and disasters. Even emergency nutrition interventions, such

The scale of humanitarian action needed continues to grow

as therapeutic feeding to rehabilitate severely malnourished children, should whenever possible be linked with ongoing community outreach and home-based care systems (as in the community therapeutic care activities described in chapter 7). Marginal communities stand to benefit greatly from development investments that have a "risk dimension" embedded in them.

Build and strengthen national and local early warning systems

Recurring food crises in poor countries are among the most formidable challenges facing the world community today. Extreme weather conditions, armed conflict, failed economic policies, and the devastating impacts of HIV/AIDS have combined to create massive needs requiring urgent action. It is not necessarily that there are more extreme events today, compared with previous decades—though this may well be the case. It is that the scale of humanitarian action needed today is considerably higher and continues to grow. The reason is that vulnerable people are increasingly concentrated in places where a single disruptive event can affect huge numbers of them, causing massive disruption.

The task force recommends that governments build on existing data collection and analysis efforts to identify at-risk groups in defined shock-spots, with a view to enhancing their capacity to build early warning systems against shocks.[1] Early warning systems already exist in some developing countries, but not all regions of these countries are covered (often a country's hotspot locations have the least coverage). More effective nutritional surveillance would provide critical information in "normal" years and early warning in times of impending crisis. A relatively small investment would allow national governments to establish and maintain nutritional surveillance, with reputable national institutes and universities as potential collaborators.

Early warning systems need to be fairly sophisticated to be effective. Capacities need to be developed for strong central and district coordination—while strong local capacities are needed to identify and monitor local parameters. Field monitoring can provide regular flows of information on water availability, crop production, livestock sales, and market prices. Remote sensing can complement field monitoring and help meteorologists and others to predict weather and its likely effects on vegetation and livelihoods. With more understanding of global atmospherics, especially El Niño phenomena, longer term prediction of weather is becoming possible (Hansen and others 2004).

Early warning of crop and livestock failure needs to be carried out within an understanding of the livelihood systems used by the people affected. Some communities may have sophisticated coping strategies that allow them to ride out a drought of moderate severity, while others may have less well developed strategies or strategies that have been weakened by past disasters. In other cases, the disaster—again taking drought as an example—may be so severe or prolonged that external assistance suddenly becomes necessary. Pastoralists often

There is an urgent need to strengthen early warning systems

suffer considerably during droughts of two years or more, and early warning systems seldom serve their needs (box 8.1).

There is an urgent need to strengthen early warning systems—and to build capacities at all levels to understand the interactions between disaster onset, disaster preparedness, and the socioeconomic measures that can transform vulnerable societies into resilient ones (Barrett, Reardon, and Webb 2001). Only through detailed contextual analysis will programs be able to identify both the potentials and the limitations of humanitarian aid. Relief programming will always have an impact on prospects for recovery (for example, ISDR 2003). Just as good warnings are not always met with rapid responses, so effective relief is not invariably followed by effective transition into reconstruction and development. Part of the disconnect is due to a lack of attention to contingency planning, and part to a continuing lack of knowledge of best practices for when and how to make the transition. More investment is needed to review recent experience in this area.

Some interagency efforts currently under way merit further support. The Food Insecurity and Vulnerability Information and Mapping Systems is an international network of UN agencies, Bretton Woods organizations, OECD governments, international NGOs, and relief agencies. It works at the international level to improve awareness and understanding, together with the quality of information related to food security, and helps countries to strengthen their early warning capacities (FIVIMS 2004). The progressive adoption of standards for humanitarian responses to early warnings and crises has also been a positive development of the 1990s (Sphere 2004).[2] Further developments

Box 8.1

Early warning systems—knowing when to intervene

Source: Buchanan-Smith and Davies 1995; Sommer 1998; Toulmin 1995.

The first early warning systems were established to assist the planning of donors and relief agencies. Most still monitor trends in food crop production with a view to identifying probable shortfalls that will need to be covered through commercial imports and food aid. Few extend to the rangeland areas that lie beyond cropland, where droughts are most serious.

Pastoralists respond to drought in a number of ways. They move animals to areas where forage is available. They sell and slaughter animals. They take advantage of kin and family ties by lodging animals with other pastoralists. And they supplement their incomes and diets through hunting, gathering, or selling their labor. All these coping strategies can significantly reduce the need for food aid, even during a moderately serious drought.

But if the drought is prolonged or recurrent, people's capacity for recovery can be fatally impaired. Families that have sold their animals are often unable to build up their herds and recover their livelihoods, even when rainfall improves. Poorer households may have to continue to sell their assets. Under these conditions, they can sink into destitution.

There is thus a need not only to extend early warning systems so that these cover pastoral areas but also to refine understanding of the dynamics of pastoral systems under stress—to know when and how to intervene.

Developing countries need to build their own humanitarian relief institutions

include the Standardized Monitoring and Assessment of Relief and Transitions initiative, which seeks to standardize methods and approaches for measuring and documenting the effectiveness of humanitarian responses by measuring child malnutrition and mortality, as well as food security indicators, against benchmarks. Such initiatives, aimed at raising transparency and enhancing the effectiveness of international action, should similarly inform and assist national action.

Build and strengthen the capacity to respond to emergencies

Developing countries need to build their own humanitarian relief institutions and networks to protect against extreme hunger in timely, effective, and professional ways. Some countries and regions (Ethiopia and southern Africa) have established reasonably efficient early warning systems for famine, while others (Bangladesh, Indonesia, and Thailand) possess good nutrition surveillance systems. Some NGOs (as in Sudan and Ethiopia) have made strides toward developing community-based early warning systems. But these need to be better linked with contingency planning and with multiyear budgeting of national resources for immediate use during times of crisis.

Multiyear budgeting is also needed at the international level to ensure that major emergency needs are met as quickly as possible. The task force recommends that funding for organizations such as the UN's Immediate Response Account, which sets aside cash for rapid response to major emergencies, should be increased to a level more consistent with the growing humanitarian needs of recent years.

While there has recently been progress in mobilizing resources for humanitarian responses to crises through the Consolidated Appeals Process, problems remain.[3] Although food aid appeals have (by and large) been met, nonfood requirements remain substantially underfunded. And emergency resources, while large and significantly greater than 10 years ago, are still insufficient to meet demand. Huge amounts of direct food aid are still needed every year. In 2003 the United Nations World Food Programme delivered 10.2 million tons of food, of which 8.9 million tons were cereals. Emergency food deliveries reached a record level of 6.8 million tons (67 percent of total deliveries).

Too many emergencies still seem to take national and international institutions by surprise. More investment in the assessment of risks is needed, particularly in areas of high hunger prevalence. This should be supported by:

- Precrisis investments in community planning for local disaster response.
- Insurance functions of microfinance programs (flexibility in repayment, savings, support for consumption credit).
- Community-level buffers (such as emergency grain reserves maintained as revolving credit funds).
- Identifying and protecting emergency grazing reserves.

More flexibility is needed to allow for the rapid release of funds

- Crop insurance.
- Employment guarantee schemes (building labor-intensive assets).
- Financing humanitarian resources for rapid distribution in times of urgent need.

As much targeted food assistance as possible should come from local or at least regional purchases, again supporting local or regional agricultural and marketing systems. In 2003 the United Nations World Food Programme purchased almost 2 million tons of food from developing countries and transition countries. But there are difficulties in doing this. Developing country markets are often unstable or unable to provide the required food every year. Food must also be delivered at international quality standards, and local markets often cannot do that.

The debate on food aid is often contentious, ranging from disputes on trade, issues over genetically modified foods, and determining the effects on local agricultural production and market functions. In the absence of adequate local insurance, food assistance can act as an insurance policy, giving communities time to invest and recover. During acute emergencies, when local food production and commercial imports are insufficient, food aid can fill an important gap in food availability. And if used properly, it can contribute to economic development and the protection of basic human rights (Barrett and Maxwell 2004). But if used inappropriately or managed poorly, it can undermine agricultural production, market development, and international trade, thus countering the benefits.

Food aid dependency is most likely to build when food is continually delivered as part of bilateral government-to-government assistance. Used inappropriately, program food aid can substitute for local production and remove incentives from the local economy, although the proof of this remains contentious. It is argued that such negative effects can be avoided through carefully targeting low-income or acutely food-insecure people—in ways that would enhance food demand in addition to increasing supplies (Barrett and Maxwell 2004). Indeed, former regular recipients of food aid over many decades (such as India, Viet Nam, and Bangladesh) have now become food exporters. Used appropriately, food aid has the potential benefit of providing targeted assistance in instances of acute shock where food is insufficient and markets cannot deliver food reliably and quickly enough to protect the vulnerable.

More flexibility is needed to allow for the rapid release of funds to launch rescue efforts rapidly. This would require policy changes by the donor governments and by the agencies that distribute the aid. This involves situating food aid within agricultural and development policies and programs—and ascertaining when and where food aid can become an effective instrument to promote income and productivity as well as humanitarian preparedness and response (Barrett and Maxwell 2004). Implementing such a strategy will

The task force recommends the substitution of cash for program food aid

require concerted efforts to restrict the abuse of food aid and to concentrate its use on the most effective procurement and distribution modes.

The task force recommends the substitution of cash for program food aid, so that governments can invest more flexibly in reducing hunger among people at risk. As previously stated, the UN funding mechanisms for emergency hunger response should be increased to a level more consistent with the growing humanitarian needs of recent years—to roughly 10 percent of total humanitarian relief over the previous three years, on a rolling average basis. The most significant current UN fund for this purpose—the World Food Programme's $70 million Immediate Response Account—would cover only four weeks worth of food in a large operation, such as the response to the southern Africa drought in 2002–03, which reached more than 10 million people. A fund of $300 million would be more appropriate, providing fast access to cash at the outset of food crises. This would vastly increase the response time of humanitarian agencies, allowing more food to be purchased locally or regionally, local transport to be hired, communication lines to be set up, and breaks in food aid pipelines to be filled. New or existing funding mechanisms could also be expanded to cover certain immediate nonfood needs, such as medicines or seeds, for which funding tends to materialize at an even slower rate than for food.

The task force recommends that the additional resources to reduce vulnerability to shocks must not draw funds away from support for long-term development. Instead, an increase in overall official development aid is required. A relatively new idea is to twin donor resources with those of developing countries—to make both more effective. The G8 and other donors could help developing countries become donors by establishing a fund that would match commodity contributions from India, China, or South Africa, for example, with cash to cover transportation, storage, distribution, and management in such countries as Nepal, Afghanistan, or Haiti.

Cash contributions made this way could attract considerably more assistance for hungry people through relationships among developing countries—supported by donor countries. For example, a cash contribution of $20 million in 2002 attracted a donation of 100,000 metric tons of food from South Africa—destined for drought victims in Zambia. The same transaction through developed countries alone would have cost around $40 million.

Invest in productive social safety nets to protect the poorest from short-term shocks

More developing countries are building pension and other social security schemes to protect the elderly and the unemployed (often only in urban areas) from destitution or temporary economic setbacks. These countries also have traditional community-based systems of social solidarity. But in the poorest, these systems are already stretched by the progressive erosion of livelihoods and

Synergistic interventions are a guiding principle in the design of productive safety nets

by multiple shocks. In areas of high and growing HIV prevalence, people are unable to earn a living and have become dependent on other families or the state for survival.

Today most developed countries, and a growing number of developing ones, have accepted the political duty to protect vulnerable citizens. Public opinion no longer tolerates government inaction in the face of widespread humanitarian need. But if the lives and livelihoods of poor people are to be effectively safeguarded during times of crisis, investments in safety nets must be made before crises occur.

The benefits delivered through regular safety nets can make the difference between life and death when shocks or disasters occur. Timely humanitarian response often depends on a prior institutional presence in rural regions and the pretargeting of risky communities and demographic groups. In other words, public action should seek to combine longer term economic growth with initiatives that protect the assets of hungry people—to achieve larger net reductions in aggregate poverty. Making safety nets effective during shocks and more economically productive during noncrisis years is the goal. In other words, safety nets should be a means to protect multidimensional assets, to ensure that the vulnerable are not faced with a choice of selling off livestock, land, or even themselves or their children (through high-risk occupations such as prostitution).

This involves investing in community activities that reduce vulnerability while increasing productive potential. Such activities include operating community food banks, rehabilitating degraded environments (through food-for-work or cash-for-work schemes), and protecting natural assets. Other interventions include employment guarantees (regular public works with a stronger employment guarantee element), rural financial systems that offer consumption credit, microfinance schemes that focus on the hungry, the protection of livestock-based livelihoods, and seasonal food market interventions to stabilize prices.

Synergistic interventions are a guiding principle in the design of productive safety nets. For example, food-for-work schemes, which increase immediate food access through interventions in the labor market, can simultaneously raise productivity and income flows through such activities as road building and watershed management. And new income-generating activities and microfinance schemes help smooth short-term consumption while supporting longer term income flows through the accumulation of productive assets.

In other words, there are upstream and downstream complementarities associated with the individual parts of productive safety nets. For example, village food banks work best when there is a regular rotation of stocks—with drawdown and replenishment carefully monitored. This can be facilitated if stored food is used as part of a local food-for-work activity that creates food banks or rural roads.

Donations of food or cash should be used as an investment in future development

Rural roads can help improve access to markets for new or value-added food products. Such products generated through local food processing industries (such as drying fruits or making blended foods or biscuits) can be stimulated in the early start-up stages with rural microcredit schemes. Locally blended micronutrient-fortified foods can support community-level maternal and preschool nutrition activities. Schools and clinics can be constructed as part of food-for-work schemes using food on rotation from the village food bank.

The key here is to identify mutually supportive interventions that enhance many sectors of economic activity for many groups of local people—and to ensure that no one falls through the cracks.

Whenever possible, donations of food or cash should be used as an investment in future development. For example, food-for-work schemes pay people in food for work on infrastructure development, either to restore lost assets or to build new ones. But any large injection of food or cash into a region in which markets are malfunctioning can have a distorting effect on the local economy. There is also a risk that benefits may not flow to the communities' neediest people but will rather be diverted by those who do the actual work. There is, however, a considerable body of knowledge about how food-for-work schemes can function, and agencies have drawn up strict guidelines for their design.

Actions needed to implement recommendation five

Build and strengthen national and local early warning systems

Ensure that every country has effective systems in place to monitor food insecurity and identify the most appropriate national and international responses to evolving crises. Monitor and analyze conditions in areas of high hunger prevalence to identify potential shocks and risks that will compromise other hunger reduction actions.

Increased development, dissemination, and uptake of standardized monitoring techniques, and greater integration with monitoring of nutrition indicators. Governments should work with Food Insecurity and Vulnerability Information and Mapping Systems to strengthen their early warning capacity, in coordination with national and international groups undertaking relief and rehabilitation programs.

Build and strengthen the capacity to respond to emergencies

Governments, local stakeholders, and international partners should establish contingency plans, technical capacity, logistical capacity, and funds to ensure timely and effective national response to food crises. Improved risk assessment is needed, together with precrisis investments in community planning, insurance, buffers (such as grain or grazing reserves), and prelocating or financing humanitarian resources.

Resources needed for emergency responses should be available as needed. The UN's Immediate Response Account should be consistently funded at

	the level of 10 percent of total humanitarian assistance, or $300 million a year. Food aid should be used only in emergencies, not in an ongoing manner that can undermine local economies. Donor countries should facilitate assistance among developing countries in the form of food donations. Appropriate transitions should be provided from emergency relief to long-term development assistance. Improve ongoing and transparent monitoring of relief operations, including their appropriateness, timeliness, and effectiveness. Strengthen capacity among all responders including governments, UN agencies, NGOs, donors, and communities.
Invest in productive safety nets to protect the poorest from short-term shocks and to reduce longer term food insecurity	Invest in community activities to reduce vulnerability through improved credit and savings arrangements, diversified livelihoods, and shared community action. Create the enabling conditions for community ownership. Invest in developing safety nets during times of noncrisis. This includes restoring degraded environments, creating community food banks, and protecting community assets. Use food-for-work schemes to build community assets while providing immediate relief. Establish new income-generating activities and microfinance schemes to smooth short-term consumption while supportive long-term income and asset accumulation. When possible, use emergency food or cash donations as investments in future development. National and local governments should partner with civil society and community groups to plan for and provide relief during crises.

Chapter 9

Recommendation six

Increase incomes and make markets work for the poor

The food-insecure suffer from the inaccessibility of food, either because they cannot produce enough themselves or because they cannot afford to buy or equitably exchange for it in markets. Rural populations in many developing countries—especially poor smallholder farmers in remote areas and in landlocked countries—are often inadequately served by input and output markets. As a result, farm-gate prices are higher for inputs and lower for outputs than they would be if markets operated efficiently. Well functioning markets can ensure that people earn an income, sell their products and services at fair prices, and have reliable access to affordable, nutritious food to feed their families.

The sources of income to purchase food in the poorest households can be surprisingly varied: off-farm work, sales of natural or processed products, and remittances. To earn an income, food-insecure people must have access to input and output markets and financial and labor markets. Input markets are needed so that farmers can buy fertilizer, seeds, tools, and other necessities. Output markets are vital to allow farmers to sell their harvest and earn income. A lack of functioning markets is one of the main reasons that agricultural productivity for the poor smallholder farmer may stagnate or decline, reducing income and increasing the food insecurity of millions of poor people.

This chapter addresses a major dimension of food insecurity—the lack of income to buy food. The following eight interventions deal with strengthening input, output, labor, and financial markets in ways that will increase income for the food-insecure:

1. Invest in and maintain market-related infrastructure.
2. Develop networks of small rural input traders.
3. Improve access to financial services for the poor and food-insecure.

Well functioning markets can create a significant increase in real incomes

4. Provide and enforce a sound legal and regulatory framework.
5. Strengthen the bargaining power of rural and urban poor in the labor market.
6. Ensure access to market information for the poor.
7. Promote and strengthen farmer and community associations.
8. Promote alternative sources of employment and income.

Background

It is estimated that close to 75 percent of the world's poor live in rural areas, with agriculture making up their largest economic activity (Majid 2004). A growing rural economy is vital to provide employment opportunities for the landless poor and for food-insecure farming households. A thriving agricultural sector can be the engine of economic growth, generating on-farm and off-farm employment for the rural landless and creating opportunities for smallholder farmers to get into other economic activities. But if markets do not work efficiently for the poor, they can become a major obstacle for rural economic growth.

Many food-insecure regions experience a "hungry season," when farm food stocks are depleted and families lack the income or savings that would enable them to buy food from elsewhere. Such seasonal hunger is most common in small rainfed farming systems that are poorly linked to markets and that require people to maintain home-grown food stocks through the dry season and into the next growing season, until the new harvest becomes available. Increased productivity, improved connections to markets, and community-based safety nets such as food banks can help overcome this seasonal hunger.

The links between increased production, income, and food security are complex. But increased production and functioning markets are fundamental for food-insecure farm households. Increasing agricultural productivity and linking producers to markets are practical ways of enabling poor rural families to enter the broader economy and so break their dependence on seasonally produced food. Well functioning markets can also create a significant increase in real incomes if surpluses produced in rural areas are delivered quickly and efficiently to urban areas. Linking poor producers to efficient marketing systems can also reduce food prices for the urban food-insecure, who spend a large part of their income on food.

There are three explanations for why markets may not "work for the poor."

First, markets may not exist or do not function properly due to lack of infrastructure, leaving few opportunities for the poor to gain from voluntary exchanges of goods and services. For example, in many parts of Africa, input and output markets fail to exist or operate effectively because of poor transportation and communication infrastructure, undefined property rights, and inadequate storage facilities. In this stage investments should focus on developing

Markets will not develop without adequate public investment in transport and other infrastructure

better transportation, communication, and storage infrastructure—as well as creating innovative marketing arrangements for the poor, such as networks of small rural traders for fertilizers, seeds, and other inputs.

Second, markets might exist but the poor are shut out of participating due to lack of productive assets and collateral. In most of Sub-Saharan Africa, smallholder farmers cannot use land, machinery, or property as collateral because legally recognized titles to land and housing do not exist (de Soto 2000). The poor may also be shut out of markets because they lack the capital required to enter transactions (for example, licenses to trade in grain often require the licensee to provide a deposit), or because social attitudes may bar women from controlling assets and from participating in lucrative markets. In this stage interventions should focus on improving access to financial services for the poor, advancing gender-focused policies and measures that empower women's access to and control of assets, and providing a sound legal and regulatory environment.

Third, markets exist and the poor can participate but suffer from unfavorable terms of trade in the marketplace. In South Asia it is difficult for laborers to demand higher wages because they do not have assets or savings to fall back on if they should reject a wage offer (Lanjouw and Stern 1998; Ravallion and Datt 1999). In this stage interventions should focus on increasing access to market information, building farmer and community associations and cooperatives, strengthening labor markets and unions, increasing access to financial markets, and promoting alternative sources of rural employment and income.

Barriers to functioning markets for the poor and food-insecure include the low density of dispersed rural households, poor rural roads, lack of market information, weak financial markets, gender inequalities, weak application of contract law, formal and informal barriers to regional trade, restricted access to markets in both OECD and other developing countries, and subsidized production by OECD farmers, especially in the European Union, Japan, and the United States. Policy responses that remove these barriers are very much needed and must be suited to the specific conditions of the local food-insecure people.

But integrated policies alone are not sufficient to bring about competitive markets that are accessible to the food-insecure and that quickly and efficiently transmit economic signals of relative scarcity. Supporting institutions and policies that enable the poor to gain access to markets—plus investments in technical and educational training and physical infrastructure—are equally important. The appropriate sequencing of market reforms is important to ensure pro-poor market development.

Invest in and maintain market-related infrastructure

Markets will not develop without adequate public investment in transport and other infrastructure. The low density and quality of road and rail systems in

Road building is needed in many remote areas where the density of hunger is high

many developing countries greatly increases the transport costs in both input and output markets. This reduces farmer competitiveness and greatly increases urban food prices.

Major efforts in road building are needed in many remote areas where the density of hunger is high. Improving rural roads would break the isolation of the rural poor from markets, reduce the time spent by the poor in getting to markets, lower the cost of supplying agricultural inputs to rural areas, and improve opportunities for migration and the development of rural nonfarm sectors. Government should give much higher budgetary priority to the construction and maintenance of primary and secondary roads, and in some instances should revisit the cost-effectiveness of upgrading or building rail systems, particularly in Africa (box 9.1).

The task force recommends that road networks should be developed to enable farmers, pastoralists, fishers, rural entrepreneurs, and traders to gain access to markets. The task force further recommends that, in addition to roads, programs be put in place to ensure that each village of roughly 5,000 people has access to vehicles to transport inputs and outputs to and from markets, as well as provide important services such as taking sick people to the hospital.

Box 9.1
The challenge of rural infrastructure in Africa

Source: World Bank 2003; Spencer 1994.

Africa's lack of rural infrastructure severely constrains not only access to markets but also the ability to engage in production in the first place. Much of the region is landlocked, with very poor road and rail infrastructure, resulting in extremely high transport costs. The lack of transport, energy, water supply, sanitation, and telecommunications infrastructure is a substantial barrier to development, which if left unaddressed will constrain regional growth for decades. By contrast, improved infrastructure can be a springboard for growth: India's road density after independence, for example, was significantly higher than Africa's is now (see table). A massive program of investment over several decades will be needed to close the gap.

Table 1. Road density comparisons

	Road density (kilometers/ 1,000 square kilometers), early 1990s	Density required to match India in 1950
Benin	36	291
Cameroon	38	168
Côte d'Ivoire	94	258
Ghana	17	429
Mozambique	17	135
Nigeria	97	718
Sierra Leone	80	391
Tanzania	66	181
Zambia	36	110
Madagascar	67	137

Local governments and the private sector should develop essential market infrastructure

To minimize environmental damage, new roads should be planned jointly by agricultural and environment ministries through a transparent and participatory process involving all stakeholders, in accordance with international standards for environmental and social impact evaluation and compensation. Special emphasis should go to road building in areas where agricultural extension and other investments are also being introduced. Evidence from the International Food Policy Research Institute suggests that road building in China and India has been the single most effective public investment for poverty reduction. In China, $1 million spent on roads moves 7,000 people out of poverty (IFPRI 2002b). Roads and market infrastructure are not only necessary public investments but are also essential to attract private-sector investment.

In addition to roads, local governments and the private sector should jointly develop other essential market infrastructure, including local storage facilities for crop surpluses. A common problem facing smallholders is their inability to sell their produce at a fair price. The lack of local storage capacity often means that farmers must sell at harvest time, when prices are low, only to have to buy food back later in the season, when prices are high. Investment is needed in storage facilities for farms, cooperatives, and marketing centers. Special attention must ensure that these storage capacities are equally accessible by men and women farmers.

Storage has implications for the profitability of farming and the marketability and safety of farm produce for consumers. Owing to poor storage facilities, high proportions of farm harvests are lost to fungi, rats, and other pests. The losses vary depending on the product. Losses of properly dried durable products such as grains and pulses can be quite low, but they may reach 20 percent or more if insect infestation becomes severe. Poorly dried grain can suffer devastating fungal damage. And even where visible damage is light, highly dangerous toxins can build up as a result of infection by certain fungi. Perishable commodities can suffer a total loss if they do not get to market quickly enough or if there are no cold or cool facilities to preserve them.

The strategic value of stored food to a family often leads each household to store and protect its own grain. This increases unit costs and reduces the cost-effectiveness of introducing better storage technology in communities. But community storage produces economies of scale and becomes feasible where strong community or trading associations and cooperatives exist.

Investment is needed in small processing facilities, to allow value to be added to produce before sale. These investments should quickly yield benefits in greater employment opportunities at the local level. Access to electricity is pivotal in spurring a viable and growing rural nonfarm sector. It is also vital to engage the rural poor in processing. Because establishing a rural electric infrastructure is capital-intensive, small community-managed power units should be considered whenever feasible.

Three-way partnerships among communities, traders, and companies accelerate the supply of inputs

Develop networks of small rural input traders

Across the length and breadth of rural Africa, it is possible to buy Coca-Cola, yet in many places poor farmers cannot find the seeds and fertilizers they need for their survival. If rural shops have provided the basis for market penetration by Coca-Cola, efforts should be made to use them as the keys for opening up rural markets for the supply of seeds, fertilizers, and other inputs.

Unlike selling soft drinks, selling agricultural inputs requires knowledge of what inputs are available, of farmers' needs at different stages of the cropping season, and of how to store and handle chemicals safely. Storekeepers should also be able to advise buyers on how to use products. Private suppliers often lack working capital to buy and store large quantities of a commodity with a largely seasonal demand, such as fertilizers. They also lack technical knowledge about the proper use of fertilizers. Yet with proper training and support on the proper use of fertilizers and other agricultural inputs, many rural entrepreneurs could become the means of reaching the remotest parts of Africa with agricultural inputs. The Rockefeller Foundation has carried out a project on the feasibility of supplying fertilizer, seeds, and agrochemicals through small rural traders who stock small quantities of these agricultural inputs and sell them along with other articles of daily use (box 9.2).

Through this innovative approach, three-way partnerships among communities, traders, and companies have emerged to accelerate the supply of inputs to poor farmers in rural areas of Malawi, Zimbabwe, Uganda, and Kenya. So far, about 300 agrodealers have been trained across Malawi. All the major seed, fertilizer, and agrochemical companies in the country are working with these agrodealers, using them to channel inputs into rural areas. In less than two years, the agrodealers have become the major suppliers of hybrid seed, chemical fertilizer, and pesticides to the rural poor. Along with these approaches, various interventions have reduced the costs of inputs to poor farmers, including targeted voucher schemes to subsidize inputs to the most needy without risking the corruption and excesses of early subsidy schemes (see chapter 11).

The task force recommends that governments, donors, the World Bank, and the regional development banks—in partnership with private sector companies dealing with agricultural inputs—develop networks of small input dealers by:

- Establishing mechanisms to link agrodealers with input supply companies and accelerate the access of the rural poor to agricultural inputs.
- Training small input suppliers about seeds for food and cover crops, agroforestry trees, and green manures, as well as chemical fertilizers, rainfall harvesters, drip irrigation, and agrochemicals. These suppliers can then serve as extension nodes to provide vital information on new technologies and products.

Box 9.2
Creating agrodealers in Africa

Source: Adesina 2004.

The Rockefeller Foundation has used an innovative approach to develop a network of rural input traders, or "agrodealers." The approach tackles five constraints that hinder the development of viable input markets in rural areas.

- The storekeepers are trained to improve their knowledge of improved seeds and other planting materials—at the end of which they qualify as certified "agrodealers."
- The agrodealers are linked with the commercial input supply companies using a credit guarantee scheme to lower their marketing risks.
- Commercial trust is gradually developed between the agrodealers, the farmers, and the companies, with all participants trained to respect normal terms of trade and contracts between buyers and sellers.
- National Input Credit Guarantee Funds are established to accelerate the access of the rural poor to agricultural inputs.
- Extension services use the agrodealers as extension nodes to reach poor farmers with vital information on new technologies.

Three problems have to be solved for this approach to succeed. First, these traders require working capital to carry stocks of agricultural inputs, as there can be a gap between the time they are acquired by the trader and the time they are sold. One possibility is to set up a risk-sharing fund. For example, prospective dealers in agricultural inputs might be asked to put up 30 percent of the value of the stock of inputs, receiving a loan from a commercial bank for the remaining 70 percent using warehouse collateral. The other 30 percent could come from the risk-sharing fund.

Second, input buyers need credit and may not be in a position to provide collateral if they are small farmers. Solutions include promoting well functioning rural financial markets, a system of vouchers to be used for buying fertilizers which would be targeted to small farmers, and information sharing (and thus necessarily some collusion) among traders to ensure repayment of loans. As the latter conflicts with the need to promote competition, it brings up once again the central importance of well functioning rural financial markets that provide savings, credit, and insurance services.

Third, poor farmers may lack technical skills. Since it is in the interests of the lender to ensure that the credit they provide is put to good use, one would expect the lender to provide this technical assistance. There is little evidence that this is generally provided by private dealers for whom the opportunity cost of acquiring and passing on these skills may easily exceed the expected benefit from a higher probability of repayment since these skills are relevant to only a small part of their inventory of goods and services. In this situation, good extension services assume particular importance.

Improve access to financial services for the poor and food-insecure

Market failure often leads to a lack of credit for food-insecure farmers, who incur high interest-bearing debts to meet their minimum consumption requirements between production cycles. Barriers to these markets for the rural poor include:

- Information asymmetries in financial markets that create a demand for collateral since lenders have a limited ability to assess a borrower's creditworthiness.

Loan guarantees could provide an incentive for poor people to take the risk of borrowing

- The large transaction costs associated with sparsely populated or remote rural communities.
- The transaction costs associated with the risks of rural production, notably natural calamities that can strike a large number of borrowers simultaneously in a particular area.

Women face specific barriers to obtaining access to financial services, including lack of collateral, low levels of literacy, and less time to make the journey to a credit institution. Due to existing social bias, banks and moneylenders are hesitant to lend to women. Rural banking needs to be reoriented to meet their needs through awareness campaigns and the design of new programs that target women borrowers. Banks should be encouraged to establish microcredit programs for groups of women farmers. And governments should create environments that encourage women farmers to establish cooperatives, giving them greater power in negotiations with middlemen and greater access to credit.

Collective action or community associations can substitute to some extent for the missing collateral. The loan is made to the group, which decides which of its members will receive it, thus performing a screening function on behalf of the lender. If that individual defaults, the group will be held collectively responsible. Self-help groups and other mutual insurance mechanisms are prime examples of substitutes for markets in financial services, including savings, credit, and insurance (Zeller and Meyer 2002). Such community-based microfinance programs allow poor people to substitute their social capital (good reputation and connections to others) for more tangible forms of assets (land or jewelry) as a form of collateral. In such cases, collective action can have the double benefit of substituting for a missing market and allowing poor people to build assets through access to credit. But even here, care must be taken to ensure that extremely poor people who are thought to be a "bad risk" are not excluded (Morduch 1999).

Access to credit is particularly problematic for small food-insecure farmers, as they are perceived to be more vulnerable to shocks caused by poor weather or fluctuating prices. A system of loan guarantees could provide an incentive for poor people to take the risk of borrowing and for financial institutions to lend to poor people. Community groups that take on loans on behalf of their members can mitigate risk and make lending more attractive to financial institutions. The Grameen Bank in Bangladesh, self-help groups in India, and the rotating savings and credit associations in West Africa have demonstrated the feasibility of group borrowing schemes, especially when combined with saving schemes. To move beyond microloans, strengthening of landownership and property rights are essential.

Microfinance, still used mainly for short-term investments, is generally too expensive to allow borrowing over a whole cropping season. Yet other forms of finance are seldom available, again because poor borrowers are perceived as

Ensuring a high level of impact from loans is indispensable for scaling up finance schemes

risky, despite evidence from microfinance experiences throughout the developing world that poor households do repay their loans. A promising possibility is to integrate loans with saving services, which allow members to save in small amounts every day or every week. Not only are these savings available to members to serve as collateral when they apply for a loan, but members will also be more willing to undertake risky but profitable investments because they no longer fear becoming destitute if the investments should fail.

Ensuring a high level of impact from loans is, therefore, indispensable for scaling up finance schemes in developing countries. If returns to investments are low or negative, this will almost certainly result in unstable repayments. Like other investments, those in microfinance have the greatest returns only when there are also investments in complementary sectors. Public investments in communications infrastructure, roads, and storage can reduce transaction costs and increase the returns and repayment rates on loans. Transaction costs can be reduced by attaining some economies of scale, by focusing on high volumes of loans and using standardized procedures to lend products. It is now recognized that the high returns on loans in Bangladesh (compared with neighboring countries) reflect complementary investments in rural infrastructure. This is an important lesson to bear in mind when planning to launch or scale up microfinance schemes.

An effective means of increasing the availability of credit for farmers and others is for borrowing groups to take on loans on behalf of their members. A group can negotiate for larger loans than those available to the individual and provide management and accounting services.

Agrodealers are another source of credit for communities. Local storekeepers often extend credit to their customers. They know them, so the need for reliability is mutually accepted, and they can lend with minimum formality. Linking agrodealers with financial institutions could provide them with a source of funds for lending on to the community. NGOs and community groups are other principal actors in ensuring credit availability.

Measures to reduce the riskiness of agricultural production by making investments in complementary sectors will assist in overcoming the barriers to financial institutions by poor farmers. Public investments in irrigation infrastructure that reduce the likelihood of a crop failure—or investments in roads that reduce transportation costs—will increase the returns and repayment rates on loans. Well functioning financial markets will allow individuals to borrow and save to smooth consumption and make productive investments—and to insure themselves against unanticipated shocks such as drought or illness.

Provide and enforce a sound legal and regulatory framework

Markets for smallholders require an enabling environment, with a sound, honest judicial system in which the sanctity of contracts is protected—and private invest-

Government control over markets should be relaxed

ment promoted. Eliminating the barriers that prevent producers from entering markets could have a profound impact on poor consumers as well as producers. Reducing the excessive regulatory burden on entrepreneurs in relation to permits, inspections, and environmental protection among others is essential to reduce the risks and increase the returns to small farms and agribusinesses. Smallholders should be free to sell their products to any buyers at the best price—and to sell directly to any consumers without being threatened. Simplifying the procedures for obtaining import and export licenses and dropping minimum volume rules would greatly encourage small production for external markets.

Contract law, vital for markets to function well, should be enforced, preferably at the community level with community mediation and arbitration. Although contract laws exist in most developing countries, they are often not well adapted to the needs of poorly educated rural populations—and for group transactions they are often applied inequitably. Unequal bargaining power between producers and traders, exploitative behavior by traders and companies, and uncertainties over the quality standards required of farmers complicate the transition from subsistence to commercial farming for small producers. A properly enforced grades and standards system, particularly for such major food grains as maize and rice and for other staples, is especially important for reducing transaction costs while ensuring quality for the consumer. Most transactions involving poor farmers are conducted in spot markets on a cash and carry basis, leaving farmers vulnerable. Poorly organized farmers generally have to absorb the high risks in commercial markets.

The government's primary responsibility is to provide a business-friendly legal and regulatory framework together with the public goods that will create the incentives for private traders and businesses to establish and operate. The task force recommends that government investments in developing markets be made in ways that do not directly involve the government in the supply of goods and services that can be more efficiently supplied by the private sector. Short-term market responses by government have undermined long-run market development and have led to continuing dependence on government intervention. Government control over markets should be relaxed, allowing more competition among suppliers and encouraging the movement of food from surplus to deficit areas. To be retained, however, is the necessary degree of regulation to ensure food safety and access to regional and global markets.

Strengthen the bargaining power of the rural and urban poor in labor markets

Large numbers of landless hungry people depend on labor markets to earn their livelihoods. Yet labor markets often function poorly in rural areas, where alternatives to farming may be scarce and the poor have limited education and training. Many more opportunities to earn income are needed. The large numbers of landless laborers in South Asia, for example, lack productive assets and

Governments should strengthen the position of the poor in labor markets

alternative decent employment opportunities—and are thus obliged to take on farm work at low wage rates.

The Task Force on Hunger recommends that programs and organizations that empower the rural landless and urban poor in labor markets be strengthened and promote the freedom to organize. For example, the creation of labor organizations is one way for the hungry to increase their bargaining power in the labor market. Certainly the case with large urban trade unions, this could also apply at the local level within rural villages. Labor cooperatives may be able to negotiate higher wages, particularly when they are needed to perform time-critical jobs, such as harvesting, and can save farmers the time and trouble they would have to take to recruit many individual laborers.

Both the rural and urban poor usually lack tradable skills. A variety of interventions, such as training, capacity building, and providing access to productive resources, will be required to promote the nonfarm sector, each tailored to specific local conditions (Lanjouw 1999). Primary education and skills training focused on men and women are vital for preparing community members to join the competitive labor market. Yet there are other household labor constraints—ill health, premature death, or other causes that preclude entry into the labor market or new programs intended to benefit the poor. So, policies must also address the health and welfare of poor laborers to break this cycle of hunger, poverty, and lost productivity. Laws that regulate the labor market are also important and should be reinforced. For instance, government should regulate overtime compensation and ensure safety in the workplace.

The Task Force on Hunger recommends that governments strengthen the position of the poor in labor markets by investing in education and vocational training as well as by enacting legislation that permits workers to organize and allows for the movement of labor across borders

Ensure access to market information for the poor

All farmers require access to price information to make good decisions about what to grow and when and where to sell it. Remote rural dwellers are at a major disadvantage if they do not know what price their produce will fetch in urban centers. Lack of market information reduces the terms of trade for poor farmers and raises market transaction costs. A common problem facing smallholders is that they cannot sell their produce at a fair price. They typically lack information on prices beyond their own communities, and as a result often sell at much lower than market value. Middlemen (and women) typically control the terms of trade, leaving farmers with little opportunity but to sell at harvest when prices are low (box 9.3).

Farmers can be enabled to participate in markets on more equal terms. Improving infrastructure, particularly roads, can reduce the isolation of many farms and allow farmers to get their produce to areas where it will be in demand. In addition, the provision of market information, now more possible

Box 9.3

Farmers who must sell low and buy high

Source: Earth Institute 2004.

Chronically hungry farmers in the Bar Sauri village of western Kenya usually harvest their maize crop at the end of the rainy season, in August. Lack of information and storage facilities, weak local markets, and the urgent need for cash force them to sell most of the crop to middlemen at about $120 a ton. When these same poor farmers have eaten the maize they have retained for personal consumption, they must then buy back their maize from the market at $264 a ton, more than twice the price they received for it. Although the cost of stored grain normally rises with time, poor farmers are placed at a severe disadvantage due to their weak bargaining power, lack of information, and insufficient access to more distant markets.

Box 9.4

Reaching the unreached—rural knowledge centers in India

Source: M.S. Swaminathan 2004.

The M.S. Swaminathan Research Foundation has linked 10 villages in India in a network consisting of personal computers, telephones, VHF radio, dial-up email, satellite communications, public address systems, and community newspapers. The network enables information to be passed to all villagers—and for local information to be generated, stored, and disseminated. It has significantly increased the exchange of information on such subjects as daily market prices, women's health, how to protect crops from diseases, and local weather forecasts. The project has yielded significant success. For example, fishermen now use mobile phones to seek the best prices from dealers before deciding where to sell their catch.

using mobile telephones and radios, can improve the ability of smallholders and small traders to respond quickly to new opportunities.

Farmers who have access to timely and accurate information can respond to price signals, resulting in more efficient and profitable farming systems. Market information also reduces farmers' risks by improving their knowledge of market prices and alternative buyers, enabling them to store grain to sell when prices are higher, and allowing them to organize with fellow farmers to buy inputs and sell outputs.

Smallholders seldom have access to modern information technology. Even if they have a radio, and can afford the batteries to run it, the programs they can tune into seldom meet their needs. Internet technology barely penetrates most rural areas. But things are changing rapidly: new technology is making wireless digital connectivity a reality in rural areas. Solar power can keep a radio going all day. A wind-up radio generates its own electricity.

Governments and donors are investing in Internet technology and making it available to rural communities. Brazil, for example, has begun to pursue innovative polices to address this need with very positive results, even in the remotest regions of the country. Combinations of technology—mobile telephone, landline telephone, radio, and Internet—can be assembled to bring valuable information to farmers (box 9.4). It is important that extension services become major users and suppliers of rural information services, helping farmers get the information they need.[1] The task force recommends that

Making markets work for the poor must be seen as a long-term goal

partnerships among governments, the private sector, and NGOs be created to improve radio, cellphone, and Internet access for poor people.

Promote and strengthen community and farmer associations

Making markets work for the poor must be seen as a long-term goal that depends greatly on building capacity among individual farmers, farmer associations, NGOs, researchers, and policy analysts. Associations, like individuals, also need capacity and skills development if they are to function effectively. People who are remote from markets lack knowledge of how markets work, especially finance and credit. They may need training in contract negotiation and technical assistance to meet quality standards. They may also require technical training in handling, storing, and processing food. Increased investment is needed in vocational skills training at the local level and for the adaptation of training to local needs.

By forming groups and associations, the poor can gain a stronger voice in market transactions. Investment is needed to promote and strengthen farmers' associations, women's groups, and traders' associations. Groups can pool their resources, bargain for better prices, hire transport and equipment, and borrow money with better protection against losses. Governments need to encourage the formation of groups by devolving decisionmaking and financial authority to the local level and providing support for the basic establishment costs.

Another method to gain a stronger voice is to establish savings schemes, including "cereal banks," managed by groups that undertake collective storage, safeguard grain quality, negotiate prices, and seek out new markets (Adesina 2004). Cereal banks are proving effective in raising the prices of crops such as maize—in the districts where food-insecure farmers live. Governments should support such initiatives at the local level and scale them up, linking them to marketing parastatals.

Marketing cooperatives have provided inputs and credit to farmers and purchased and aggregated the output of many farms. There have been notable successes, such as milk cooperatives in India, which have stimulated substantial increases in the production and availability of dairy products throughout the country—collecting milk from more than 10 million producers, 60 percent of them small-scale farmers or landless laborers. A three-tiered cooperative structure employing professional staff links local collection with processing plants and marketing channels to distribute the milk to consumers, returning the profits to the cooperative members rather than middlemen (Candler and Kumar 1998). Dairy cooperatives in Kenya have achieved similar results, if on a smaller scale (Staal, Delgado, and Nicholson 1997). But political interference in both India and Kenya has been associated with less efficient outcomes than would otherwise have been the case.

The Task Force on Hunger recommends that governments put in place policies that encourage the formation of community and farmer groups, devolve

Smallholder farmers can compete successfully with large producers

decisionmaking and financial authority to the local level, and provide support for the basic costs of organizing associations, for example by providing publicly funded meeting places with essential equipment. Ministries of education, local governments, and NGOs should be active in these efforts.

Promote alternative sources of employment and income

Since most of the world's poor and hungry people live in rural areas and are already engaged in agriculture, there are significant opportunities for increasing their income by encouraging them to diversify food crops into higher value outputs such as livestock products—and by adding value to their produce through processing. Processing activities range from simple procedures such as cleaning, grading, and bagging through to fairly complex agro-industries that process and distribute fruits, vegetables, and livestock products.

Many poor smallholder farmers face daunting challenges when they try to shift to high-value outputs. First, they have to learn how to grow the new crop or feed the new animal. They may not get much help in this from the extension system, which is likely to be underresourced and largely ineffective. Second, they have to enter a market that assures them adequate returns. Third, they may face competition from larger producers who are often better equipped to meet the quality demands of the high-value market.

A further set of challenges faces poor farmers seeking to enter export markets. Yet numerous schemes around the world have demonstrated that smallholder farmers can compete successfully with large producers in these markets, if they can obtain the knowledge and skills and gain access to the necessary specialized services. For example, the Kenyan tea industry is controlled by a parastatal organization that permits smallholders to deliver tea for processing at local centers. Tea that has been carefully tended by Kenyan smallholders consistently fetches premium prices at auction because of its high quality.

There are numerous out-grower schemes around the world whereby farmers grow crops for large-scale producers. Often, the large-scale producers find it more cost-effective to increase output by contracting smallholders than by expanding their own capacities. In these cases, the large producer provides inputs and technical advice—and pockets most of the proceeds. In other out-grower models, however, associations of smallholders have created the critical mass of production capacity and knowledge to enter the high-value market without working under contract to a large producer. These agro-industries can increase the share of the final price obtained by small-scale farmers. Even if owned and operated externally, out-grower schemes can provide important employment opportunities for the poor by using labor-intensive techniques in poor rural areas.

Governments have an important role in creating the enabling environment for smallholders to enter high-value markets. They should ensure the provision of inputs, processing capacity, and technical assistance through the private

Cooperatives can help smallholders meet quality standards

sector, with the collaboration of marketing bodies. They should also ensure the provision of information and technical support. High-value production is extremely knowledge-intensive. For example, EU phytosanitary regulations have recently expanded and are now very complex. Farmers need considerable advice on how to achieve the standards to enter the European market.

Supermarkets are also becoming dominant buyers in many parts of the world. Governments must provide a sound regulatory system that ensures and stimulates competition, prevents the formation of monopolies, and ensures socially responsible policies. With the growing penetration of supermarkets in developing countries, smallholders are excluded because of difficulties in meeting the quality standards set by supermarket purchasers (Reardon and Berdegué 2002). Small-scale farmers face additional difficulties in producing for supermarket chains due to their inability to guarantee the year-round supply of produce. As for milk marketing, cooperatives can help smallholders meet quality standards.

Diversifying into high-value production and ensuring quality standards becomes even more important when one considers that between now and 2015, the number of people living in cities in the developing world will likely rise by 50 percent or more. Urban demand for food will rise rapidly, requiring increased investment not merely in the infrastructure needed to produce and deliver primary produce but also in the capacity to add value through processing under hygienic conditions. City and local authorities should rely on four strategic principles when formulating policies to provide an enabling environment for such developments:

- Adopt an approach that is participatory, alliance-seeking, and technically sound.
- Promote competition and reduce the influence of a few large intermediaries.
- Involve the private sector in the provision of facilities and services that can be run as businesses.
- Encourage development that lowers the cost of living and stimulates employment growth in the city.

Beyond just meeting the standards set by companies, farmer associations should initiate a dialogue with the government and with traders over such issues as grades and standards, the provision of market information, and the institutional culture in regulatory bodies—to make sure that small-scale farmers' voices are heard and they are taken seriously as market participants (Kheralla and others 2000). National farmers' unions in such countries as Kenya, Uganda, and India provide farmers with a voice in national policymaking. The International Federation of Agricultural Producers (IFAP) even represents farmers in such international forums as the World Trade Organization (www.ifap.org).

Key ingredients for increasing employment and income through diversification include good market intelligence, increased skills training, switching to appropriate high-value crops, having access to credit, providing roads and other infrastructure, and observing contractual obligations. Extension services, farmers, agrodealers, ministries of commerce, and the private sector all have a role.

Actions needed to implement recommendation six

Invest in and maintain market-related infrastructure

Build, upgrade, and maintain transport infrastructure (ports, railways, feeder and other roads), transportation services, and storage facilities. Build and operate electricity grids and alternative or renewable generating systems. Build and operate communication systems (phone, radio, Internet). Develop small processing facilities for agricultural products. Governments should use competitive and transparent bidding systems; donors should not tie aid.

Develop networks of small rural input traders

Train and certify agrodealers in business management skills and in the handling and use of such inputs as seeds and fertilizers. Use agrodealers as extension nodes to provide vital information on new technologies. Investments and policies for establishing agrodealer networks should be coordinated by national governments, in coordination with the private sector (input suppliers, banks), donors, NGOs, and extension agencies. Establish input credit guarantee funds, enforceable contracts, and transportation and communication networks to help link agrodealers with input supply companies and customers.

Use "targeted vouchers" and microcredit to assist poor farmers—particularly women—in purchasing inputs at local agrodealer stores. Vouchers should have a built-in "sunset clause," reducing the subsidy level after five years and eliminating it entirely after 10 years.

Improve access to financial services for the poor and food-insecure

Encourage microfinance institutions to provide credit to agrodealers, who then lend to farmers. Establish group lending programs, allowing the food-insecure and poor to increase credit access through self-selected groups. Link group lending with complementary interventions made in rural infrastructure, health, and education. Ensure that women are fully included and target at least 50 percent of credit to them. Encourage well managed community groups to take out loans on behalf of their members, and facilitate group savings schemes.

Governments can help scale up group lending programs by providing a legal framework for farmer associations and women's groups, investing in infrastructure to reduce transaction costs, and building group capacity.

Provide and enforce a sound legal and regulatory framework	Establish an enabling environment for the development of markets, including contract enforcement and private investment. Reform contract laws and define and enforce product grades and standards. Reduce barriers to market entry, including relaxing and simplifying regulatory requirements where possible—without compromising safety or quality standards.
Strengthen the bargaining power of rural and urban poor in the labor market	Invest in building skilled labor, including universal primary education and vocational training. Form labor cooperatives and placement agencies to aid in job placement, strengthen bargaining power, and improve working conditions. Enact legislation that allows for organizing labor. Establish government agreements allowing the movement of labor across borders. Invest in regional economic zones. The ministries of education, labor, and foreign affairs will have a role in these interventions, as will local governments, NGOs, and workers' unions.
Ensure access to market information for the poor	Establish rural market information points in open air markets, where market price information for crops, livestock, and agricultural inputs is provided daily for farmers, processors, middlemen, and traders. Develop and test radio-based market information systems. The goal of these programs will be to transition into a self-sustaining pay-per-use system. Invest in communications infrastructure, organizing information around groups with common interests, and maintaining a profit motive for service suppliers. Partnerships to achieve this are needed among governments, the private sector, and NGOs. Community groups can assist villages in obtaining access and sharing information. Extension services should become major suppliers and users of rural information services, helping farmers to get the information they need.
Promote and strengthen farmer and community associations	Governments should support farmer and community associations by providing legal status to farmer associations, training group members in business management and internal governance, and devolving decisionmaking and financial authority to the local level. They can support the basic costs of organizing associations—for example, by providing publicly funded meeting places with essential equipment. NGOs can facilitate the formation and training of farmer groups.
Promote alternative sources of employment and income	Diversify crop mixes to include high-value crops in the farming system and links to reliable market channels (such as supermarkets or export markets). Encourage the formation of associations of smallholders to contract with and supply goods to large producers, often using labor-intensive techniques that create employment.

Governments should encourage supermarkets to adopt socially responsible practices and contract with smallholder cooperatives. Invest in urban processing and delivery systems and in expanded urban employment. Create the necessary incentives to train and maintain skilled people at the community level. Creating opportunities for nonfarm employment on a broad scale will require research to develop locally adapted high value crops, good market information, and adequate infrastructure as well as the necessary legal and regulatory frameworks, skills training, and access to credit.