

6. Policies and Programmes for Improving Nutrition

International Initiatives

For nearly two decades, the international community has repeatedly reaffirmed its commitment to eradicating malnutrition and assuring food security for all at high-level meetings attended by heads of state and government. These have issued declarations and detailed plans of action, setting goals and timetables for achieving significant improvements. The 1992 International Conference on Nutrition, sponsored by FAO and the World Health Organization (WHO), met in Rome to discuss ways to eradicate hunger and malnutrition and unanimously adopted a World Declaration and Plan of Action for Nutrition (FAO, 1992). Subsequently, the World Food Summit (FAO, 1996) and its follow-up, the World Food Summit: *five years later* (FAO, 2002), affirmed the ICN goals and adopted the Rome Declaration on World Food Security and the World Food Summit Plan of Action, which pledged concerted efforts towards eradicating hunger and as an essential first step, set a target of reducing the number of hungry people by half by 2015. The Millennium Summit (2000) and a series of follow-up meetings have repeated the commitments to achieve food security and good nutrition for all. A major milestone was the unanimous adoption, after two years of negotiations, of the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security (Right to Food Guidelines) by FAO's Council in 2004 (FAO, 2005b).

All of these declarations and plans of action strongly endorsed a rights-based approach to food security and nutrition. This entails a change in perspective: steps to achieve food security are no longer a matter of policy discretion but a legal obligation. Moreover, a rights-based perspective proceeds from the understanding that the realisation of the right to food is not only a function of improving the availability of key livelihood assets such as food or the means to procure it. It also requires institutions and processes that empower people, increase transparency and accountability and ensure access to those assets for poorer and more vulnerable groups. This has implications for the formulation of policies, laws and programmes – in terms of both content and process. This approach views the achievement of food security and good nutrition as part and parcel of the state's efforts to protect and promote internationally recognized human rights, including the right to life, the right to adequate food, the fundamental right of everyone to be free from hunger and the right to the highest attainable standard of health. A rights-based framework considers states the primary duty-bearers with regard to human rights and it empowers citizens – as the holders of rights – to hold states accountable for their actions. In particular, this framework stresses the importance of empowering mothers to nourish themselves and their children with support from their families and communities, as well as their governments.

Despite the repeated agreement of the world's leaders on the urgent need to reduce hunger and malnutrition, progress in achieving the internationally endorsed goals and targets has been extremely disappointing, notwithstanding great strides in a number of individual countries (see Chapter 3, above).

On the positive side, since the 1990s, widespread consensus has developed on the causes and consequences of malnutrition and therefore on the tools necessary to overcome it. The conceptual framework used by the Food Insecurity and Vulnerability Information and Mapping System, managed by FAO (see Figure 1) and the closely related UNICEF

conceptual framework (SCN 2004: 65) reflect this consensus. In particular, this framework insists that the ultimate causes of food insecurity and undernutrition are social, economic, cultural and political. Therefore, although technical nutrition considerations and direct nutrition interventions remain crucial to devising solutions, it is also absolutely essential that efforts to achieve food security and good nutrition address these ultimate causes. Among other things, this requires policies that treat poor, food-insecure and malnourished people as primary actors in creating and implementing the solutions, not mere passive vessels into which technical quick-fixes are to be poured. This perspective is consistent with the rights-based approach.

There are also regional food security and nutrition initiatives. For example, the African Union (AU) has adopted the New Partnership for Africa's Development (NEPAD) as a vision and framework for development on the continent. NEPAD includes a Comprehensive Africa Agricultural Development Programme (CAADP) and one of its strategic pillars focuses on increasing food supply and reducing hunger, with a nutrition component. The AU has devised a regional nutrition strategy under this framework. However, implementation has suffered from inadequate leadership, lack of capacity within the region (including at the AU Commission and in the regional offices of international organizations, as well as within national governments) and inadequate financial resources.¹⁰

At the national level, many developing countries have issued national policies and plans of action on nutrition. Moreover, a recent review of Poverty Reduction Strategy Papers (PRSPs) for 40 developing countries, half of them in Sub-Saharan Africa, found that most of the papers identify nutrition as a key development issue and many propose strategies to address nutrition problems. However, most of the papers do not prioritize nutrition actions or propose processes to assure adequate budgetary allocations and many of the PRSPs reviewed do not incorporate appropriate specific actions to address the problems identified even if they do include a nutrition strategy (Shekar and Lee, 2006). This analysis (which is preliminary) is significant, since PRSPs, developed through multi-stakeholder processes that include developing-country governments, civil society and donors (particularly the international financial institutions) have become a key device for planning and executing development cooperation. At the local level, community-centred food-based strategies for alleviating and preventing malnutrition in which communities are empowered to take action through a process of social mobilisation to translate the nutrition improvement strategies into action are considered a best bet for improving nutrition (Thompson, 2004).

Accelerated progress against food insecurity and malnutrition requires that governments put appropriate policy responses much higher on their agendas, with adequate resources provided. Donors must provide technical and financial support to these efforts. The potential impacts of climate change and bioenergy demand, discussed in Chapters 4 and 5 above, increase the urgency of action. The remainder of this chapter will examine promising policies and programmes to reduce food insecurity and malnutrition, both in general and in light of the likely impacts of climate change and bioenergy demand.

¹⁰ The discussion of regional initiatives in Africa is drawn from the draft report of the Africa regional meeting held at the 35th Annual Session of the Standing Committee on Nutrition of the U.N. System, Hanoi, Vietnam, March 3-6, 2008.

Policies and Programmes

There is broad consensus on the strategies for ending hunger. These have emerged from a number of international conferences and summits referred to above. The Millennium Summit processes, FAO's Anti-Hunger Programme, the report of the UN Millennium Project Hunger Task Force (2005) and NEPAD's CAADP all point in the same direction. Harmonised large-scale multi-component programmes are required if we are to make a difference. Harmonisation means that aid agencies and donors must work together to reinforce national programmes built around PRSPs, national Anti-Hunger Programmes, or equivalent national MDG programmes. The key elements of such programmes are:

- create an enabling environment to promote peace, eradicate poverty and remove gender inequality;
- promote a fair and market-oriented world trade system;
- increase investments in human resources, sustainable food production systems and rural development;
- implement policies to improve physical and economic access by all to sufficient, nutritionally adequate, wholesome and safe food and its effective utilization;
- focus on participatory and sustainable agriculture, recognising the multifunctional nature of agriculture;
- use a “nutrition lens” to direct multi-sectoral actions to improve household food security; improve food quality and safety; prevent, control and manage infectious diseases and micronutrient deficiencies; promote appropriate diets, including breast-feeding and healthy lifestyles; provide care for the vulnerable, including people living with HIV/ AIDS; introduce productive safety nets; and provide direct assistance;
- prevent and prepare for emergencies; and
- build anti-hunger alliances.

Governance Issues

A number of governance issues have a considerable bearing on food security and nutrition. First, in many developing countries, there is a serious problem of institutional design. Both food security and nutrition are multi-sectoral issues, but developing country governments are almost always composed of sectoral ministries that frequently view budgetary allocation as a zero-sum game. In such an environment, it is difficult to achieve cross-sectoral collaboration. In the case of nutrition, whether responsibility falls to an inter-ministerial committee or a single ministry, it is seldom the top priority at the ministerial level. Nor do senior policy-makers tend to recognize the costs of undernutrition. In many developing countries, a lack of adequate human resources and “nutrition champions” complicates these problems (Benson, 2008).

The problems are worsened by an international nutrition system (UN and bilateral donor agencies, academic institutions, civil society organizations and private firms) that is “fragmented and dysfunctional.” Normative guidance is therefore incoherent and programme evaluation is weak (Morris, Cogill and Uauy, 2008: 608).

Secondly and not surprising, given these institutional issues, donors and developing-country governments have failed to make food security and nutrition high policy priorities, despite repeated pledges to do so. Annual donor funding for basic nutrition in low- and middle-income countries has run at less than US\$300 million during the present decade, compared to

US\$2.2 billion per year for HIV/AIDS and several billion dollars annually in food aid (Morris, Cogill and Uauy, 2008). In real terms, aid to agriculture is about half the level of 25 years ago (FAO, 2006b). Governments of low-income countries devote 19 percent of their budgets to military expenditures, compared to less than 5 percent for agriculture. Military expenditures account for 2.6 percent of GDP in low-income countries, compared to one percent for public health spending (World Bank, 2007; FAO, 2001). However, there are some indications that priorities are changing. CAADP seeks to boost African government expenditures on agriculture to 10 of their budgets and to bring agricultural growth rates to 6 percent per year. The World Bank is putting renewed stress on agriculture as a development priority after years of relative neglect and has also put greater emphasis on nutrition in recent years (World Bank, 2006, 2008). Box 6.1 illustrates the difference it makes when a government puts food security and nutrition high on its policy agenda.

Thirdly, the current rise in food prices offers an important rationale for developed-country governments to eliminate trade barriers and domestic farm subsidies that depress world market prices. A fair global trading system can help advance food security and nutrition (von Braun, 2007a).

Lastly, there is an urgent need to reform global humanitarian response. Addressing hunger crises depends in part on more effective global peace-making and conflict resolution, as well as more timely response to early warnings of natural disasters. The current system depends on the *ad hoc* willingness of donors to meet appeals for assistance. Moving towards a more insurance-oriented approach that guarantees a response to emergency needs would protect the right to food in emergency situations.

Box 6.1: Cutting Hunger in Brazil

Nearly one of every five Brazilians lives in poverty and 8 percent of the population (14 million people) is undernourished. The country is characterized by extreme income inequality. People in rural areas, the northern and north-eastern parts of the country, periurban zones, indigenous people, descendants of escaped slaves, homeless urban dwellers and the 24 million Brazilians living in semi-arid parts of the country all experience higher rates of poverty than the national average.

According to a 1996 survey, 11 percent of Brazilian children were stunted, but the figure rose to 34 percent in the north-east and 55 percent among indigenous children. High rates of micronutrient malnutrition are found among children in the north and north-east and among indigenous children.

Beginning in the early 1990s, Brazilian civil society and the Catholic Church (to which 75 percent of Brazilians belong) began to engage in a combination of hunger relief activities and food security advocacy. Civil society remains actively engaged in food security policy.

Since the election of President Luiz Inácio Lula da Silva in 2002, the Brazilian Government has made its *Fome Zero* (Zero Hunger) programme a top policy priority and has emphasized achieving the progressive realization of the right to adequate food. The Government has taken many of the steps recommended in the Right to Food Guidelines (FAO, 2005c). The centrepiece of *Fome Zero* is *Bolsa Familia*, a conditional cash transfer programme that benefits 42 million low-income Brazilians and encourages them to send their children to clinics and school. Recipient families report access to increased quantities of food and more diverse diets. *Fome Zero* includes both direct assistance and long-term poverty alleviation. It requires coordinated action by all areas of government at federal, state and municipal levels as well as extensive participation of civil society.

The government devotes 6 percent of its expenditures to health and another 6 percent to education, compared to just 3 percent for the military.

Brazil has one of the largest school feeding programmes in the world and provides free meals in all public schools. The programme emphasizes the use of locally produced fruits and vegetables and tries as much as possible to purchase food from local smallholders, in order to bolster small farmers' incomes as well as school enrolments and the nutrition of school-aged children.

The government has also set ambitious anaemia control targets. Since April 2004, all wheat and corn flour in Brazil is by law fortified with iron and folic acid.

The combination of this high-priority targeted effort to reduce poverty and hunger and strong economic growth has paid dividends in Brazil. Inequality and poverty have declined, while food security has increased.

A Revitalised Twin-Track Approach

At the International Conference on Financing for Development held in Monterrey, Mexico, in 2002, FAO, the International Fund for Agricultural Development and the World Food Programme agreed upon a practical and affordable “twin-track approach” for combating hunger and poverty and for reaching the World Food Summit goals and the MDG targets. Track one is to strengthen the productivity and incomes of hungry and poor people, targeting the rural areas where the vast majority of them live and the agriculture sector on which their livelihoods depend (see IFAD, 2001; von Braun *et al.*, 2005; Ahmed *et al.*, 2007). Track two meanwhile provides direct and immediate access to food by hungry people and social safety nets for the neediest.

Track one involves improving agricultural productivity through investing in agriculture and encouraging the expansion of domestic agricultural production, improving infrastructure, distribution, preservation, processing and storage systems. It includes:

- simple, inexpensive technology packages (water management, soil fertility management, use of green and animal manures, cover crops, crop rotation including legumes, agroforestry and conservation tillage);
- rural infrastructure (roads, water, etc.);
- improved small-scale irrigation and soil quality;
- sustainable natural resource use and management (including forestry and fisheries);
- market and private sector development;
- food safety and quality; and
- Farmer Field Schools, participatory training.

Track two involves the putting in place of mechanisms to ensure that vulnerable population groups – the hungry and malnourished, the landless, marginalised, smallholders, fisher-folk and urban poor – are protected from falling further into poverty/food insecurity. It includes:

- unemployment and pension benefits;
- targeted conditional cash transfers or food voucher programmes for the most vulnerable, perhaps in exchange for a socially desirable activity such as children attending school or visiting health centres and receiving vaccinations;
- food-for-work or food-for-education using locally sourced food where possible;
- mother-and-infant feeding programmes (including nutritional supplements) using locally sourced food where possible;
- school gardens and school meals, ensuring school attendance especially of the girl child;
- feeding and other support programmes for people living with HIV/AIDS, their families and orphans; and
- emergency rations.

Although the twin-track approach was proposed primarily as a way to combat hunger, many of its key elements contribute to several MDGs simultaneously. Introducing improved water management, use of green manures, agroforestry and other low-cost, simple technologies, for example, not only enhances the productivity and incomes of small farmers, but also their role as custodians of land, water, forests and biodiversity. Similarly, investing in rural

infrastructure such as roads and improved water facilities can reduce the lethal impact of water-borne illnesses, improve access to health care, prevent thousands of needless child and maternal deaths and open links to markets where farmers can sell surplus produce and acquire fertilizer and other inputs at reasonable prices. Measures to provide direct access to food for the neediest families such as feeding programmes for mothers and infants target the hub of the vicious cycle that perpetuates hunger and malnutrition from one generation to the next, undermining maternal health, stunting children's physical and cognitive growth, impairing school attendance and performance and impeding progress towards gender equality and the empowerment of women.

However given the unacceptably slow progress in reducing hunger and malnutrition referred to in Chapter 3 and the recent unprecedented sharp increases in staple food prices, unless targeted direct action is taken to ease the constraint of low purchasing power of consumers and improve diets, malnutrition levels are unlikely to fall and may even rise in some regions.

High food prices exacerbate food insecurity and create social tensions, but high agricultural commodity prices also present a potential opportunity for re-financing agriculture, especially for developing countries. To ensure that small farmers and rural households benefit from higher food prices, a favourable policy environment is needed that relaxes the constraints facing the private sector, farmers and traders. This means reversing the decline in the level of public resources spent on agriculture and rural development and investing more in agriculture. Investments by the private sector in agriculture and related sectors would be forthcoming if appropriate investments in public goods are put in place. With the rise in food prices, now is the time to invest in irrigation and agricultural research and set the stage for rapid productivity growth targeted to lift millions out of poverty and hunger, particularly in Sub-Saharan Africa.

In light of the alarming decline in cereal stocks, policies should emphasise the rebuilding of stocks at a national and regional level. Such food security stocks can not only help manage price volatility, but can help address humanitarian emergencies. Governments could consider holding a mix of cash and commodities in reserves. In addition, the development of commodity exchanges and future markets, as in Ethiopia, may likewise offer a means to moderate price volatility. Establishing such exchanges requires a transparent system of accounting.

The development of well-functioning and well-integrated markets for agricultural inputs, commodities and processed goods, especially in rural areas, will contribute enormously to poverty alleviation, food security and the overall quality of life in developing countries. Market performance improves and marketing costs fall when the government no longer monopolizes trade and a competitive private sector emerges. Yet even as the government reduces its role, competent and honest public administration will remain essential to assure that:

- contracts are enforced;
- grading and quality control standards are enacted and implemented (especially for export crops);
- market conduct and investment are appropriately and fairly regulated; and
- public health and safety are maintained.

If developing-country governments implement credible and sustainable macroeconomic policies, these will provide a favourable environment for savings and investment and accurate and transparent incentives for consumers and producers alike (Kherallah *et al.*, 2002).

The international community needs to take immediate action to defuse the current world food emergency and to seize the opportunities offered by higher food prices for re-investing in agriculture and thereby prevent similar dramatic situations occurring in the future. More food needs to be produced where it is urgently needed to contain the impact of soaring prices on poor consumers and simultaneously boost productivity and expand production to create more income and employment opportunities for rural poor people. Smallholder farmers need to be specifically targeted as beneficiaries to ensure they have proper access to land, water resources, credit, essential inputs such as seeds and fertilizers and services such as research, extension and training. In some instances, subsidies targeted to poor farmers may be a cost-effective way to assure access to inputs. In many developing countries, access to land and other productive resources is extremely disparate. In such countries, agrarian reforms will not only boost food production, but can help reduce poverty by expanding livelihood options for landless rural people. When smallholders have access to resources, services and infrastructure, they are better able to increase their supply response to higher prices, boosting their incomes and improving their livelihoods.

Broad-based, sustainable agricultural development requires public investment in agricultural research aimed at enhancing smallholder productivity. Such research can generate scale-neutral technologies that smallholders can readily adapt to address their current constraints. Developing country governments and donors both need to increase investment in public agricultural research beyond current stagnant levels (von Braun, 2007a). Agricultural research also needs to enhance its focus on mitigation of and adaptation to climate change and on pro-poor biofuel development.

Increased agricultural productivity can improve food availability, rural employment and access to food by reducing prices, which will benefit consumers. Even if farm-gate prices fall, farmers may still enjoy increased incomes (which will allow them to diversify their own diets beyond subsistence staples) if productivity enhancements lower production costs. In low-income countries, where agriculture and related activities account for a high percentage of the overall economy and employment, agricultural growth will stimulate growth in other sectors (Adato and Meinzen-Dick, 2007). If policies ensure that growth is broad-based, incomes are likely to rise for poor people, allowing them to invest in improved nutrition, health and other aspects of wellbeing. Policies can also encourage diversification of production, to increase availability of non-staple foods, both for farmers' own consumption and as an income-earning strategy (Hawkes and Ruel, 2006a). Policies should ensure that smallholders are able to participate in new agricultural opportunities, including production of biofuel crops.

A number of policies and institutions can help facilitate smallholder participation in value chains on a fair basis. Promoting organization and collective action, for example by encouraging farmers to form co-operatives and associations, can also help improve access to inputs, credit, services and markets. Other mechanisms to facilitate participation in value chains include improved access to information, weather and price risk management and contract farming (Minot and Hill, 2007). Despite the constraints, in parts of East Africa, Southeast Asia and Central America, smallholders have succeeded in getting a foothold in export markets for fresh fruits and vegetables. In Uganda and Vietnam, this had important poverty-reducing effects and has gone hand-in-hand with increased production of staples for

local consumption. In Guatemala, cooperatives have enabled small farmers to gain income from the global value chain, improve their access to healthcare and enhance the nutritional status of their children (Watkins and von Braun, 2003; von Braun *et al.*, 1989).

Agricultural and rural development strategies must recognize the important roles that women play in food security and nutrition, as farmers, marketing agents, stewards of natural resources, providers of childcare and chief preparers of meals within the household. In Kenya, for example, a programme to promote production of orange-flesh sweet potatoes (a good source of pro-vitamin A) among women farmers had a substantial impact on nutrition because it also included strategies to promote appropriate child feeding and caring practices (Hawkes and Ruel, 2006a).

Attention to sustainability is important not only for sound management of the natural resource base upon which agriculture depends, but also to maintain human health and nutrition. Agricultural practices, such as poor irrigation management and inappropriate use of synthetic pesticides, can have adverse effects on human health (e.g., by expanding malarial mosquito habitat or poisoning water with pesticides) (Hawkes and Ruel, 2006b).

Member Governments and FAO need to retain their focus on a twin-track approach, where improving agricultural productivity and promoting better nutritional practices at all levels takes place while, at the same time, promoting programmes that enhance direct and immediate access to food by the neediest. This now needs to be made more explicit to ensure that policies and programmes are put into effect to boost supply, not only by the larger commercial farmers but also by smallholders, while at the same time designing social protection and safety nets that protect the vulnerable. The revitalised twin-track approach should continue to provide emergency assistance to the poorest and help developing-world farmers take advantage of the new situation, but would also ensure that smallholder farmers and those involved in local food systems are specifically targeted to benefit from efforts in boosting supply. Indeed the inclusion of such groups through policies and support programmes for agricultural development acts as an effective safety net assisting millions of poor people whose livelihoods are at risk.

Improvements in the productivity of agriculture and related sectors directly increase farm and rural incomes and household food security. At the same time, targeted agricultural growth focused on small farmers promotes overall rural and non-farm employment and has a strong poverty-reducing effect. Emergency relief and rehabilitation operations aim to reduce the vulnerability of those affected by natural and human-induced disasters. By facilitating better access to the skills, tools, services and rights that help the rural poor make lasting improvements in their own livelihoods, programmes addressing this overarching goal increase the impact of work directly targeted to other goals.

Pro-poor agricultural growth alone will not eliminate malnutrition and its public health consequences. Some of the additional policies and programs that are needed are discussed below. Unless specific and direct action is taken to improve nutrition, the MDGs which aim to reduce the numbers of the undernourished by half by the year 2015 will not be achieved.

Income and Employment Generation for Nutritional Improvement

In low-income developing countries, landless rural dwellers and most urban poor people rely on income from secure employment or business ownership to access food, health care and other necessities. Policies and programmes, therefore, need to create employment and

microenterprise opportunities. Policies that support agricultural productivity should provide incentives for technologies that will create jobs for landless people rather than those that reduce employment. Likewise policies aimed at stimulating private investment – both foreign and domestic – should provide incentives for investment in labour-intensive ventures rather than capital intensive projects.

Safety Net Programmes

“Safety nets” are government programmes aimed at transferring resources to poor and food-insecure people or people who are vulnerable to poverty, food insecurity and shocks. In addition to providing immediate resources that boost purchasing power, these programs help poor people to manage risk, cope with dislocations resulting from policy reforms such as structural adjustment or trade liberalization, boost their livelihoods (for example by providing public works employment or microcredit) and invest in the next generation’s human capital, thereby breaking the inter-generational transmission of poverty.¹¹ Some common forms of safety net programmes are food transfer programmes, cash transfers (which may or may not include conditions) and public works employment. Programmes may be targeted on the basis of such criteria as geographic location, occupation (e.g., targeting smallholders, artisanal fisherfolk, landless rural labourers and unemployed and underemployed people in both the countryside and cities), income, assets, nutritional status, gender, or membership in a socially excluded group; or they may be universal.

Universal programmes such as untargeted food subsidies or controls on the price of food may prove extremely costly to governments, but they also tend to enjoy a much more powerful political constituency than targeted programmes, as wealthier citizens may resent having to pay tax to support the latter schemes (Pinstrup-Andersen, 1993). Even targeted income or food transfers may place a substantial charge on the treasury. Mexico’s *Oportunidades* cash transfer programme,¹² for example, benefits 5 million families (one of every four Mexican households) at a cost of nearly \$4 billion annually. Nevertheless, such safety net programmes may be the most cost-effective interventions to improve nutrition. One reason that *conditional* cash transfer (CCT) programmes have become popular is that the conditions help gain political support from non-poor citizens. In a rights-based approach to development, the state has a duty to protect the vulnerable, who, in turn, have a right to social security. Any government subsidies to powerful urban elites should not be at the expense of low-income and food-insecure citizens.

Oportunidades (previously known as *Progresa*) is the oldest CCT programme in the developing world and the template for many others; numerous governments in the Western hemisphere and beyond have adopted similar schemes. The programme transfers funds to female caregivers in low-income households with children, based on research findings that women are more likely than men to invest in the wellbeing of their children. In exchange for the funds (which they may use as they please), families are expected to regularly send their children to health clinics and enrol them in school. The programme also includes mandatory nutrition and hygiene education for recipient parents and provides supplemental food to malnourished beneficiary children. The Mexican Government strictly enforces the conditions,

¹¹ For more detail, see WWW.WORLDBANK.ORG/SAFETYNETS.

¹² Unless otherwise noted, the discussion of cash transfers which follows is drawn from Cohen *et al.* (2008 forthcoming).

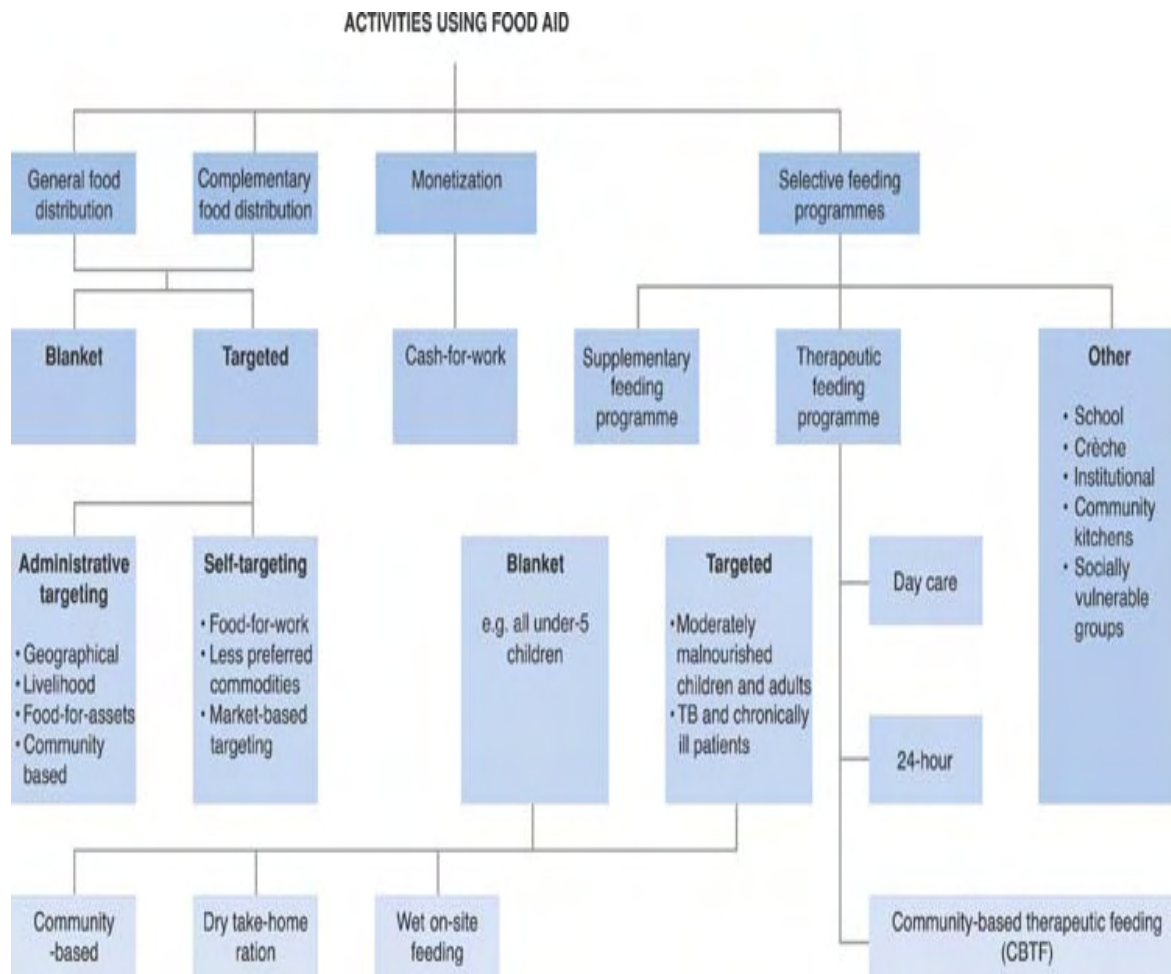
although such enforcement is more lax in some other countries. Evaluations have shown that the programme has boosted schooling and improved health and nutrition (Skoufias, 2005).

Some developing-country governments, particularly in Sub-Saharan Africa, have implemented unconditional cash transfers. In general, these are much less complex to administer and focus on improving food security and nutrition rather than investment in human capital. Also, if low-income people do not have ready access to health and education, then *Oportunidades*-type conditions make little sense. Evaluations have found South Africa's unconditional child support grant programme to be effective in improving child nutrition.

Food transfer programmes include food aid (drawing on either local supplies or external, in-kind resources; Figure 13 indicates some of the many possible uses of food aid), supplementary feeding, targeted subsidies for the most vulnerable households, food stamps or coupons (or, where feasible, electronic benefit transfer cards similar to a debit card), etc. For example, India's main Public Distribution System in theory makes subsidized food available to all citizens, but in effect targets the food to lower-income and disadvantaged Indians by offering less preferred commodities and grades of commodities. In addition, the Targeted Public Distribution System offers additional subsidised cereal grains only to low-income families (Viswanathan, 2006). Food stamps and vouchers are easier to administer and less expensive than subsidies.

Public works programmes offer citizens who have lost their jobs or suffered a crop failure government-paid employment, usually for a limited period of time. Such schemes help people affected by shocks to maintain their purchasing power while developing publicly funded infrastructure, such as roads, or common pool assets, such as replanted forests, rehabilitated rangeland, or water harvesting structures. Employees may receive wages in the form of food, cash, or a combination. A large-scale example of such a programme is Ethiopia's Productive Safety Nets Programme, which utilizes substantial locally generated resources as well as donor funds and emphasises the use of cash payments (although payment is sometimes in food as well) as part of an effort to move the country away from dependence on external food aid (UNDP, 2007).

Figure 13



Source: FAO.¹³

Insurance to Preserve Assets against Shocks

Agriculture is a risky business, due to variable weather and fluctuating prices. Whereas farmers in developed countries can rely on well-established crop insurance mechanisms, as well as government subsidies in many countries, to insulate them from the catastrophic effects of shocks, smallholders in developing countries usually lack such protections, as insurance markets are largely missing, especially in rural areas. A shock may result from extreme weather, such as drought or flooding, another natural disaster, such as an earthquake or tsunami, or human-induced events, such as war. Because of high levels of risk and lack of insurance, poor farmers are often reluctant to adopt innovative technologies. Risk management and mitigation can help reduce this aversion (Dercon, 2004).

In order to maintain minimal levels of consumption of food and other necessities, poor people often respond by selling off their productive assets, such as land, tools and implements, livestock, labour, children and property (jewellery, homes, building materials, land), or by consuming seeds, the migration of some family members for remittances, or even prostitution.

¹³ Protecting and promoting good nutrition in crisis and recovery, Resource Guide. FAO/AGN, 2005.

Such coping behaviours frequently make it much more difficult to resume previous livelihoods once the shock has passed. As a result, such shocks often lead to increased malnutrition, with long-lasting impacts on children. In the absence of insurance, safety-net programmes may help with risk mitigation. There are some simple forms of insurance that governments and aid agencies could implement in poor rural areas in developing countries. Saving schemes would permit poor people to engage in a certain measure of self-insurance. In addition, many developing countries have developed rainfall insurance (often in the form of lottery tickets), where there is an exceedingly low premium and a payout if rainfall is below a certain level deemed “normal” (Dercon, 2004). The World Food Programme carried out a more elaborate version of this with a pilot drought insurance scheme in Ethiopia in 2006; WFP in effect served as the insurer, backed up by commercial reinsurance (WFP, 2007). Such an approach overcomes some of the deficiencies of the current humanitarian response system by eliminating the need to appeal to donors and speeding up the provision of aid. Enhanced response to shocks will be important in the future, given the likelihood that climate change will lead to more frequent and severe extreme weather events.

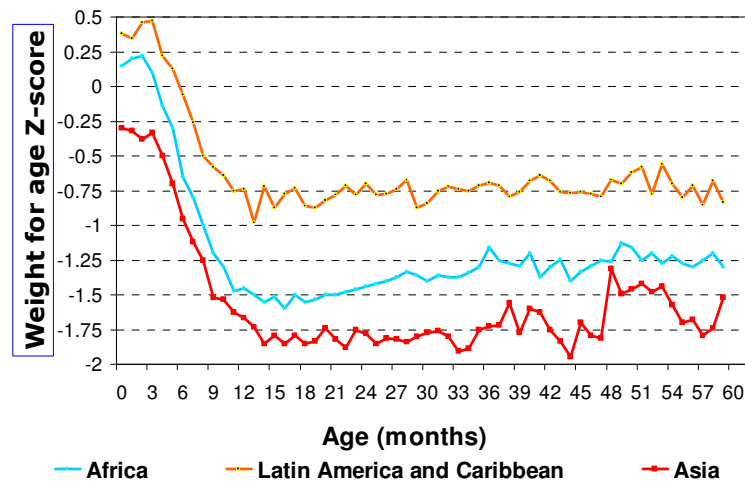
Direct Nutrition Interventions

Direct nutrition interventions play a key role in improving nutrition as part of the comprehensive approach outlined above.

With regard to malnutrition among preschool children, a strong consensus has emerged that there is a crucial and narrow, “window of opportunity” for action: from conception through the first 18-24 months of a child’s life (Figure 14). The damage that malnutrition causes to a child’s physical and mental development during this time is likely to be considerable and irreversible and possibly fatal. Therefore, interventions should focus on this period (World Bank, 2006) while not neglecting other age groups, other family members, or low-income childless households who may equally be in need of support. In addition, the care of adolescent girls and pregnant women is vital for protecting their own health and that of their future children. Especially because of the importance of good maternal nutrition in achieving normal birth weights and good child health and nutrition, nutrition interventions should also take a life-cycle approach (Figure 4).

A recent study in Guatemala provides the first direct evidence that providing infants and very young children with adequate quantities and a variety of safe, good quality food enhances their productivity and incomes as adults. Previous studies provided substantial, but indirect evidence of this. Hence, investments in early childhood nutrition are an excellent use of scarce public resources in developing countries. The study in Guatemala tracked children who received food supplements fortified with micronutrients between 1969 and 1977. Follow-up research during 2002-2004 found that boys who received the supplements between 6 and 24 months of age on average earned wages 46 percent higher than those of non-recipients. For girls, the supplement seems to have improved school performance, although not adult incomes, probably because of gender differences in labour force participation and work activities. Significantly, children who first received the supplement after age three did not experience any economic gain (Hoddinott *et al.*, 2008; see also Victora *et al.*, 2008).

Figure 14: Growth Faltering by Age



Source: Shrimpton et al. (2001).

Recent research suggests that there are a number of preventive and curative interventions that are effective in reducing maternal and child undernutrition. These are shown in Table 2 (Bhutta *et al.*, 2008).

A number of initiatives have helped to promote exclusive breastfeeding during the first six months of life and continued breastfeeding with complementary foods through age 1 to 2 years. The International Code of Marketing of Breast-milk Substitutes, which includes voluntary industry cooperation with global norms and binding national legislation, is of particular importance in this regard. This legal instrument supports the realisation of the right to food through the promotion and protection of breastfeeding and the informed use of substitutes (where necessary). The UN Children's Programme has also worked to encourage hospitals to promote breastfeeding to new mothers through its baby-friendly hospital initiative.¹⁴

Community-based maternal and child health programs often provide vitamin A and iron supplements along with immunizations, growth monitoring and, frequently, supplemental feeding (World Bank, 2006). Research in Haiti found that such programmes are more effective if they target children between six and 24 months of age and provide health and nutrition services to all low-income children in the community, not just those whose growth has faltered. Such a preventive approach results in greater reductions of stunting, underweight and wasting than the more commonly used recuperative approach, which targets children up to five years of age (Ruel *et al.*, 2008).

In order to assure that working mothers in urban settings are able to provide care to their children, policies and programs need to facilitate the availability of low-cost amenities for the care of preschool children. These could be community based (Ruel and Quisumbing, 2006) or

¹⁴ See [HTTP://WWW.UNICEF.ORG/NUTRITION/INDEX_24806.HTML](http://www.unicef.org/nutrition/index_24806.html).

Table 2: Some Effective Interventions to Reduce Maternal and Child Undernutrition

Generally Effective	Effective in Situational Contexts
Maternal and birth outcomes	
Iron folate supplementation	Maternal supplements of balanced energy and protein
Maternal supplements of multiple micronutrients	Maternal iodine supplements
Maternal iodine through iodisation of salt	Maternal deworming in pregnancy
Maternal calcium supplementation	Intermittent preventive treatment for malaria
Interventions to reduce tobacco consumption or indoor air pollution	Insecticide-treated bednets
Newborn babies	
Promotion of breastfeeding (individual and group counselling)	Neonatal vitamin A supplementation
	Delayed cord clamping
Infants and children	
Promotion of breastfeeding (individual and group counselling)	Conditional cash transfer programmes (with nutritional education)
Behaviour change communication for improved complementary feeding*	
Zinc supplementation	Deworming
Zinc in management of diarrhoea	Iron fortification and supplementation programmes
Vitamin A fortification or supplementation	Insecticide-treated bednets
Universal salt iodisation	
Handwashing or hygiene interventions	
Treatment of severe acute malnutrition	
*Additional food supplements in food-insecure populations.	

Source: Bhutta *et al.* (2008).

based at workplaces, although the latter approach is less common in the urban areas of most developing countries.

Micronutrient malnutrition may be tackled through improving dietary diversity, supplementation, or food fortification. The latter two approaches are frequently implemented through public-private partnerships. A new form of fortification is “biofortification,” which involves the use of conventional plant breeding or agricultural biotechnology to develop crops high in nutrients such as iron, zinc and pro-vitamin A. Farmers have not yet widely planted such crops in their fields, but breeding efforts also aim to develop varieties with agronomically desirable traits, such as higher yield. Biofortification may be more sustainable than supplementation or standard fortification, as it has lower recurrent costs.¹⁵ Deployment of genetically modified crops in developing countries requires the establishment of sound biosafety systems, including the capacity to assess environmental risks that may indirectly affect human health and development (WHO, 2005b).

In the case of children who are severely wasted, if there are no medical complications, community-based therapeutic care is preferable to treatment in a hospital or clinic. Low-income families often cannot readily reach such in-patient facilities. Ready to use therapeutic foods (RUTFs) play an important role in community-based treatment. Children with moderate

¹⁵ See [HTTP://WWW.HARVESTPLUS.ORG](http://www.harvestplus.org) for more information.

acute malnutrition may be provided with traditional blended and fortified food aid, such as corn-soya blend (Bhutta *et al.*, 2008; Wiesmann *et al.*, 2007).

For refugees and internally displaced people in camp settings, fortification of rations, frequently using enterprises located in the host countries, has helped reduce “hidden hunger” (UNHCR, 2005).

Nutrition interventions should encourage health-seeking and health promoting behaviours through policy support, capacity building and advocacy – information, education and communication. Efforts to improve access to health services should include support for the production and use of acceptable traditional medicines and practices and indigenous health knowledge.

Nutrition education can promote nutritional knowledge and appropriate attitudes of caregivers about foods, social and dietary customs, family/child care and feeding practices, household hygiene and the competing demands on women’s and other caregivers’ time that may constrain their ability to secure, prepare and serve food. Even though poor households may not be able to afford to increase the amount of food they consume, with enhanced nutritional knowledge they may be able to change the way it is allocated among household members, the type of food that is consumed, or the way that it is prepared and served, in ways that can enhance nutrition.

Access to clean water and safe sanitation is crucial for both good health and good nutrition. Rapid urbanization in developing countries presents new challenges to governments to assure clean and safe environments, particularly in low-income communities. Climate change stiffens this challenge as it contributes to water scarcity and also will lead to more frequent flooding and therefore increased risk of contaminated urban water sources.

For those living with the disease, better nutrition can postpone HIV/AIDS-related illnesses, such as diarrhoea, pneumonia and tuberculosis and prolong life. Nutrition policies can provide incentives for improving diets, for strengthening the nutrition focus of health services (particularly in the context of anti-retroviral therapy and home-based care) and for ensuring nutritionally balanced food aid as a safety net for people who are acutely food-insecure or at risk of becoming so, such as households hosting AIDS orphans (Gillespie and Kadiyala, 2005). There is evidence that community-based therapeutic care, using RUTFs, may be helpful in the treatment of HIV/AIDS in both children and adults (Wiesmann *et al.*, 2007).

Education for All

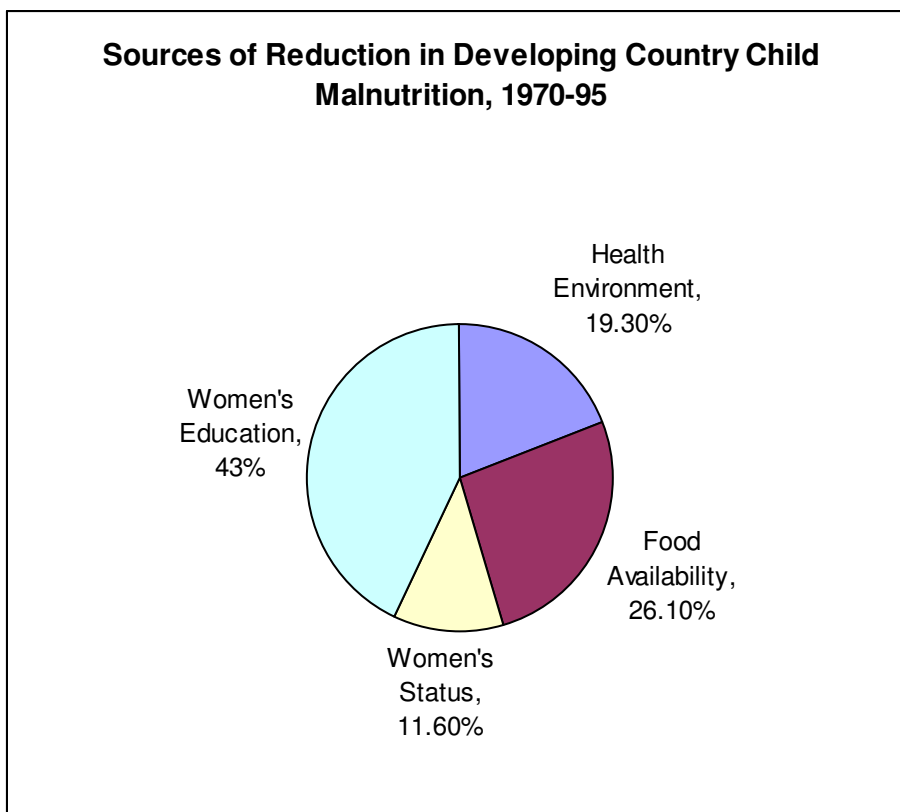
IFPRI research has shown that there were four drivers of the reductions in child malnutrition achieved in developing countries during 1970-95 (Figure 15). Improvements in female education had the biggest impact, followed by increases in food availability, improvements in the health environment and improvements in women’s social status relative to that of men. This means that accelerating progress against child malnutrition will require changes in policy and practices that discriminate against women, as well as increased public expenditures to assure access to health services and universal primary education.

Educating girls has beneficial effects on family size, birth spacing, child care practices and household income, as well as child nutrition, particularly when education promotes good nutrition, use of preventive health care facilities and other caring practices. Yet the

international community has failed to deliver on its commitment to universal primary education, first made at the 1990 World Conference on Education for All and more recently included in the MDGs. At present, 100 million primary school-aged children are not enrolled, accounting for 13 percent of the children in that age group. A sizeable majority, 57 percent, of the primary level out-of-school children are girls (UNESCO, 2008). School meals and food-for-education programs can help achieve full enrolments, educational gender equality and improved food security.

One can also look at this educational gender gap through the lens of outcomes. The adult literacy rates for all low- and middle-income countries are 85 percent for men and 72 percent for women. In Sub-Saharan Africa, the figures are 70 and 53 percent and in South Asia, 70 and 45 percent (World Bank, 2007).

Figure 15



Source: Smith and Haddad (2000).

Priorities and Approaches for Responding to Threats to Nutrition from Climate Change and Biofuel Demand

Need for serious global governance with regard to climate change

A combination of adaptation and mitigation measures, sustainable development and research to enhance both adaptation and mitigation can diminish the threats to nutrition from climate change. The human rights framework offers the means to explicitly link environmental concerns to good governance and the inherent emphasis of human rights on “humans.” The

rights-based approach to climate change can trigger the development of national normative frameworks and tools.

There are multiple adaptation options that imply different costs, ranging from changing practices in place to changing locations of food, fibre, forestry and fishery activities. The potential effectiveness of the adaptations varies from only marginally reducing negative impacts to, in some cases, changing a negative impact into a positive impact. On average, cereal cropping system adaptations such as changing varieties and planting times enable avoidance of a 10-15 percent reduction in yield corresponding to a 1-2°C local temperature increase (Easterling *et al.*, 2007). The benefits of adaptation tend to increase with the degree of climate change up to a point; adaptive capacity in low latitudes is exceeded at 3°C local temperature increase (Easterling *et al.*, 2007).

Changes in policies and institutions will be needed to facilitate adaptation for food security to climate change. Adaptation measures should be integrated with development strategies and programmes, country programmes and Poverty Reduction Strategies.

Adaptation is “shared responsibility,” and stakeholders represent a variety of sectoral interests, including agriculture, human health, water supply, coastal management, urban planning and nature conservation.

With regard to mitigation, financial incentives can help promote improved land management, maintenance of soil carbon content and efficient use of fertilizers and irrigation. This could encourage synergy with sustainable development and reducing vulnerability to climate change. It can also help improve the health environment. Incentives to improved waste and wastewater management, as well as stronger regulation, would improve the sanitary environment (Metz *et al.*, 2007). Both outcomes will contribute to better nutrition.

Policies for Responding to Rising Bioenergy Demand

Biofuel development in developing countries should be carefully designed, so as not to crowd out investments in roads, more general agricultural development, health, nutrition and other efforts aimed at climate change mitigation and adaptation. Policy should ensure that smallholders, including women farmers, have access to resources, infrastructure, services and organizations so that they can participate in biofuel production on a fair basis. Policies need to examine the environmental consequences of biofuel development and avoid unsustainable practices.

Increased investment in agricultural productivity for developing countries will help them both to increase their own food production and be able to engage in the biofuel market. It may even be possible for developing country farmers to leap-frog to second generation cellulosic biofuel technologies, creating energy and emission efficiency gains. Therefore, donors and developing-country governments must reverse the neglect of agriculture and rural development of the past 25 years (von Braun, 2008).

Creating a biofuels industry that helps the neediest people improve their lives and livelihoods will require careful management at all levels. This management includes taking the necessary steps to develop a global market and trade regime with transparent standards for biofuels (von Braun and Pachauri, 2006). Developed-country governments should move rapidly towards

market-oriented biofuel production and processing, removing subsidies and ending trade barriers to developing-country biofuels.

Global cooperation is needed on R&D to bring technologies on line that will allow production of biofuels from non-food crops, thereby avoiding tradeoffs among food, feed, fibre and fuel uses of staple crops.

Participatory decision-making and cross-sectoral policy coordination should be institutionalized in the area of bioenergy. The clear allocation of the roles of duty-bearers and rights-holders may also increase government responsiveness, as well as accountability and transparency.

To protect the poor and food- insecure people from adverse effects of the rapid growth of the biofuel sector there is a need to develop policies for food and fuel to be linked to safeguard food security, to assist those negatively impacted by climate change and the expansion of biofuels production and to raise awareness among policymakers to provide for integration of local, regional or international policies that affect the agricultural sector and the rural economy (FAO, 2008f).

7. Conclusions and Recommendations

Efforts to assure food security and good nutrition in the face of current challenges, including climate change and rising bioenergy demand, must continue to place the achievement of the MDGS, as internationally agreed-upon development targets, at the centre of human endeavour. In particular, it remains essential to accelerate progress in reducing poverty, hunger and malnutrition while mitigating risk and protecting the environment. A rights-based approach engages affected stakeholders – particularly smallholder farmers, including women and poor rural and urban consumers – as active participants in this process. Civil society organizations have a key role to play.

Responding to Climate Change

Climate change is projected to affect the health status of millions of people, particularly those with low adaptive capacity, through increases in malnutrition and consequent disorders, with implications for child growth and development, as well as through an increase in diarrhoeal disease. The 4th IPCC assessment report has concluded that, due to the very large number of people that may be affected, malnutrition linked to extreme climatic events may be one of the most important health consequences of climate change.

Agricultural production, including access to food, is projected to be severely compromised by climate variability and change in many African countries and Southeast Asia. This would further adversely affect food security and exacerbate malnutrition.

Agriculture, food and nutrition issues need to be placed onto national and international climate change agendas, in order to devise effective and pro-poor policies. The expiration of the Kyoto Protocol in 2012 offers an opportunity to bring these issues to the table as a new agreement is negotiated.

Sustainable economic development and poverty reduction remain top priorities for developing countries. Climate change could exacerbate climate-sensitive impediments to sustainable development faced by developing countries. To address this challenge requires integrated approaches for adaptation, mitigation and sustainable development. Strategies should include measures that would simultaneously reduce pressures on biodiversity and food security and contribute to carbon sequestration.

Adaptation is a key factor to address the impacts climate change will have on food production and food insecurity. Early impacts of climate change can be effectively addressed through adaptation; however, options for successful adaptation diminish and associated costs increase, with increasing climate change impacts. Prioritization of investment needs aimed at improving adaptation of food security to climate change is crucial. The development of adaptation strategies should consider that adaptation capacity depends on geographical situation, economic development, natural resources, social context, institutions, governance and technology of the countries.

Sustainable development can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience. Plans for sustainable development should promote adaptive and mitigation strategies, for example, by including adaptation and mitigation measures in

land-use planning and infrastructure design or including measures to reduce vulnerability in existing disaster risk reduction plans.

Mitigation in agriculture has a significant potential and uses technologies which can be implemented immediately. Agricultural mitigation measures often have synergy with sustainable development policies and many influence social, economic and environmental aspects of sustainability. In order to improve the mitigation potential in this sector, synergies between climate change policies, sustainable development and improvement of environmental quality should be promoted.

Adaptation and mitigation measures should be developed as part of overall and country-specific development programmes such as Poverty Reduction Strategy Papers, pro-poor strategies and national Food and Nutrition Action Plans. In this framework, FAO and other international organizations should assist countries to assess their capacity building needs for the development of integrated adaptation, mitigation and sustainable development strategies to address food security and nutrition challenges from climate change and biofuel demand.

Adopting a human rights' perspective when tackling the challenge of climate change puts people at the centre of attention of decision-making. Sustaining and protecting the environment against degradation will be enhanced through the protection and promotion of human rights. At the same time, human rights cannot be fully realized without securing the environmental dimensions of ecosystem services essential to the right to life, the right to food and all other human rights.

Priority research needs for the assessment of climate change impacts on food, fibre, forestry and fisheries have been identified in the 4th IPCC assessment report. Attribution of current and future climate-change-related malnutrition burdens is problematic because the determinants of malnutrition are complex. Research and information on the links between climate change-related food insecurity and malnutrition are necessary.

Assuring Pro-Poor and Sustainable Biofuel Development

A number of steps must be taken in order to assure that biofuel development is pro-poor, environment friendly and supports food security and nutrition:

- developed-country governments should remove trade barriers to developing-country biofuel exports;
- developed-country governments and international organizations such as FAO and the international financial institutions should also provide financial and technical assistance to pro-poor, sustainable biofuel projects in developing countries;
- developing-country governments need to conduct food security and nutrition impact assessments before launching biofuel development projects;
- developing-country government policies should make opportunities available to smallholders, including women farmers, to participate in biofuel production, such as incentives to encourage outgrower schemes and labour-intensive processing plants;
- policies should also encourage technology spillovers from biofuel production that can enhance food crop production;
- research is needed on non-food crop sources of bioenergy, e.g., cellulosic biofuels, to minimize food-feed-fuel tradeoffs; and

- policies should favour production of biofuel crops with a small environmental footprint that can contribute to climate change adaptation and mitigation strategies.

Making Nutrition a Development Priority

Direct nutrition improvement programmes have a unique, essential role to play in efforts to reach the MDGs. Good nutrition makes an essential contribution to the fight against poverty. It protects and promotes health; reduces mortality, especially among mothers and children; encourages and enables children to attend and benefit from school; and enhances productivity and incomes in adulthood. By indirectly strengthening communities and local economies, good nutrition contributes to the achievement of other development objectives which, in turn, impact upon the MDGs. For example, the increased participation of poor and vulnerable people and of women in the development process that may arise from effective community nutrition programmes will likely lead to more effective demands for improved services and to better use of existing resources. The use of nutritional goals and indicators and of participatory community nutrition approaches to design and monitor interventions would facilitate the development and implementation of such interventions. It is also essential to recognize and address the social, economic, cultural and political determinants of undernutrition. National nutrition data should be disaggregated with regard to groups presumed to be vulnerable, in order to establish whether and to what extent nutritional discrepancies exist and to inform policies towards realizing the right to food and the highest attainable standard of health.

Developing-country governments should give high priority to implementing proven nutrition interventions on a national scale. Donors should substantially increase support for efforts to improve nutrition. Improved policy coherence and international cooperation are required to eradicate malnutrition in all its forms (Morris, Cogill and Uauy, 2008). Key elements of an intervention strategy for making nutrition a development priority include:

- setting targets, agreeing on coordinated actions in each country and mobilizing resources;
- using participatory approaches that build local institutions and skills, strengthen legal rights and access to resources and empower women, indigenous people and other vulnerable groups;
- giving priority to “hot spots” where a high proportion of the population suffers from malnutrition, hunger and extreme poverty and often also from illiteracy, disease, social marginalization and child and maternal mortality;
- using food assistance to develop and enhance skills or to create physical assets, such as food storage facilities or soil and water conservation structures that will help communities weather crises and build the foundation for longer-term development;
- focusing people-centred policies and investments in rural areas and on agriculture in ways that promote sustainable use of natural resources, improve rural infrastructure, facilitate the functioning of markets and enhance rural institutions;
- supporting dynamic rural growth by improving the productivity of smallholder agriculture and by diversifying into rural non-farm activities and strengthening micro-enterprises in which rural women play a major role;
- strengthening poor urban livelihoods with an urban twin-track approach that combines pro-poor employment and asset generation programmes with measures to help the poor meet their basic needs for food, shelter, water, health and education; and

- accelerating progress towards an open and fair international trading system, with special attention to improving market access and reducing export subsidies and trade-distorting domestic support in agriculture (FAO, 2005a).

All of these approaches are proven, practical and affordable. All can be effectively adapted and applied to meet local requirements, monitored to ensure that they are effective and scaled up as they prove successful and sufficient resources are mobilized. If developing countries gear up their efforts to revitalize agricultural and rural development and ensure that hungry people have access to food and if donor countries fulfil their pledges to increase development assistance substantially, we can reach the WFS and MDG hunger reduction targets and by doing so, shift progress towards reaching all of the other MDGs into high gear.