

# Improving nutrition through agriculture





## Good nutrition for increased productivity, reduced poverty and better lives

Improving the livelihoods of the rural poor is at the heart of IFAD's work, and maximizing agriculture's contribution to improving nutrition is an essential part of that mission. Of course, other sectors have roles to play, but good nutrition begins with food and agriculture.

Malnutrition takes many forms: undernutrition, micronutrient deficiencies, and obesity and being overweight.<sup>1</sup> Undernutrition is the largest contributor to child mortality worldwide, and nearly 25 per cent of children under 5 are chronically malnourished. However, in South Asia and sub-Saharan Africa, home to three quarters of these children, the figure is 40 per cent. More than 2 billion people suffer from micronutrient malnutrition. And it should be remembered that three quarters of the world's hungry people live in rural areas, and, paradoxically, many of them are smallholder farmers.

Malnutrition blights lives and undercuts social and economic development. Children who are chronically malnourished in the critical first thousand days beginning at conception can suffer irreversible damage to their physical and mental development.

Over their lifetimes, malnourished individuals can earn 10 per cent less than well-nourished ones. One study found that undernutrition in Africa causes economic losses that vary by country from 1.9 to 16.5 per cent of GDP. In addition, governments end up spending billions of dollars on programmes in order to deal with poor nutrition and its effects.

Good nutrition is thus not just an outcome of economic growth and social development but an essential input as well. Investing in nutrition through agriculture is more than a social good. It is sound development policy and good economics.

The challenges of achieving good nutrition, however, are increasingly complex. The consumption of processed foods and the more sedentary lives of an increasingly urban population are amplifying the prevalence of overweight, obesity and diet-related illnesses, such as heart disease and diabetes, even in the low- and middle-income countries where IFAD works. At the same time, in many of these same countries, adult undernutrition and micronutrient deficiencies persist.

IFAD's work brings the benefits of agriculture to bear on the problem of malnutrition. IFAD supports projects that help shape agriculture and food systems in ways that improve the nutrition, incomes and productivity of smallholders and the rural poor. By affecting food systems as a whole, these efforts benefit the entire population – rural and urban alike.

<sup>1</sup> Malnutrition is caused by inadequate, excessive or imbalanced intake of carbohydrates, protein, or fats (macronutrients) and vitamins and minerals (micronutrients). Undernutrition results from deficiencies in adequate nutrition, whereas overweight and obesity result from an excess of certain food components, such as fats and sugars, relative to levels of activity. Micronutrient malnutrition results from deficiencies or excesses of specific vitamins and minerals.



## IFAD's renewed focus on nutrition

At IFAD, nutrition has always been a concern. The 1977 Agreement Establishing IFAD called for improving the nutritional status of the poorest populations, and IFAD's lending policy underscores improved nutrition as a key principle of poverty reduction.

With the recent emergence of nutrition-focused initiatives such as the UN Scaling Up Nutrition Movement (SUN) and the commitments resulting from the 2013 Nutrition for Growth meeting,<sup>2</sup> nutrition has become a prominent global development issue. Nutrition is also a highlight of discussions around the post-2015 development agenda, to which IFAD has provided important input on issues that matter to smallholders and other rural people.

## How can nutrition be improved through agriculture?

In addressing malnutrition, agriculture's essential and singular role is to ensure that diverse, nutritious foods, adequate to meet the needs of people of all ages, are available and accessible at all times, either from the market or from farmers' own production.

Traditionally, agricultural interventions have focused on increasing food production and raising incomes to reduce malnutrition, hunger and poverty. Although this remains part of a valid approach, it is now recognized that higher levels of production and income alone have limited impact on improving nutrition.

A more comprehensive approach is necessary to optimize agriculture's contribution to good nutrition and make agriculture nutrition sensitive. Such an approach identifies constraints and opportunities to leverage agriculture for better nutrition throughout a food system, without detracting from the agricultural sector's conventional goals. It *explicitly* takes

<sup>2</sup> In June 2013, world leaders came together in London to endorse a global Compact on Nutrition for Growth that will prevent at least 20 million children from being stunted and save at least 1.7 million lives by 2020.

In **Guatemala**, through an IFAD-supported project more than 13,000 coffee-growing families benefited from introduction of low-cost irrigation technology. In addition, the project provided water purifiers to 5,000 families, which helped reduce the prevalence of diarrhoeal disease, a major contributor to malnutrition in young children. The project also promoted nutrition education and vegetable gardens at the household level and through schools. The combination of nutrition education and gardens encouraged households to start consuming new local varieties of vegetables, channelling increases in incomes to improvements in diets.

nutrition outcomes into account in the design and implementation of agricultural interventions to ensure that impacts on nutrition are positive and significant.

For example, certain targeted actions can promote the availability, accessibility and consumption of nutritious foods, including by increasing the nutritional value of the foods themselves. Increases in production and productivity can raise incomes, which can be used to purchase food. Biofortification and improvements in soil health can raise the nutrient value of crops, as can better storage, preservation and processing. Improved production, processing or marketing efficiency, as well as reduction of waste, can reduce the relative prices or the amount of time it takes to prepare more nutritious foods, making them more attractive as part of the diet. Diversification of production can be achieved through adoption of new crops or new production systems. Agricultural technologies and production systems can increase the diversity and nutritional value of production.

At the macroeconomic level, policies, including trade, and public investments guided by agricultural and rural development strategies can affect prices of more nutritious foods and also shape food systems.

Education and information are essential to ensuring that expanded and more diverse production translates into healthier diets and better nutrition, particularly for smallholders. Without social and behavioural changes, food storage and preparation and diets may stay the same, even if incomes, production and productivity increase.

Given that the causes of malnutrition cut across sectors, multisectoral action is essential. Agriculture must partner with other sectors, particularly health, water and sanitation, and education. But there also has to be convergence – that is, actions in various sectors have to take place in a coordinated way so they arrive at the same place at the same time.

## The role of women and good nutrition

Women make up a large percentage of the workforce in agriculture and food systems in developing countries. Along with productive and reproductive gender roles, women's education, social status, health and nutritional status, and control over resources are key factors that influence outcomes on nutrition. Gender-sensitive agricultural projects can ensure that women retain greater control over resources and that they have a say in choice of crops. Preparing and cooking meals, carrying water, working in the fields or at the family business, as well as multiple other

In **Laos**, IFAD is working with the national government, UNICEF and WFP to develop the country's first coordinated multisectoral response to undernutrition. The plan embraces a set of priority interventions from the Ministries of Agriculture, Health and Education. The government plans to pilot the approach in three provinces. Rather than reducing undernutrition by 1 percentage point per year (Laos's experience over the past decade), this approach is expected to quadruple that figure, for a reduction in stunting of 4 percentage points per year.

## Smallholder farmers – at the heart of food security, nutrition and rural transformation

The estimated 500 million smallholder farms in the developing world support the livelihoods of almost 2 billion people. These smallholder farms are responsible for about 80 per cent of the food produced in sub-Saharan Africa and parts of Asia. Yet, smallholder farmers themselves are often in a permanent state of food and nutrition insecurity. They suffer from poor quality diets and malnutrition due to inadequate consumption out of their own production and lack of access to other food. The role of smallholders in improving nutrition must consider that they provide food for themselves and also for their communities and a growing urban population. Nutrition-sensitive programmes can reduce poverty and malnutrition among smallholder farmers in their roles as both producers and consumers and help them to optimize their contribution to agricultural production and to food systems as a whole.







## How can an agricultural project be made more nutrition sensitive?

- As a first step, explicitly incorporate improved nutrition as an objective of the project and identify specific actions that will make project components nutrition sensitive. For example, in a project to increase crop production, choose to promote a nutrient-dense biofortified crop such as orange-fleshed sweet potato (OFSP).
- To ensure the project has an impact on nutrition, trace the steps from production to consumption needed for this intervention to improve nutrition – the “impact pathway.” Factor those actions into design and implementation. For example, determine if a change in dietary habits is needed to encourage the consumption of OFSP or, on the production side, if a vine distribution system needs to be established.
- Through actions such as policy dialogue and partnerships, address opportunities and constraints that can affect the impact pathway and the effectiveness of the intervention, such as the institutional environment, gender or environmental sustainability. For example, determine how promotion of OFSP affects women in terms of their time or income; how production affects the environment, or how climate change affects the crop; and what other actors need to be involved so that the activity improves nutrition.

In **Sudan**, the IFAD-supported Gash Sustainable Livelihoods Project focused on irrigation and infrastructure rehabilitation and governance of land and water resources. Increasing project effectiveness also meant providing training in life and vocational skills and raising awareness among women and men about the importance of including women in social and economic life. In sessions on nutrition and food processing, women learned about the nutritional benefits of foods not commonly consumed, like vegetables, eggs and milk. They learned how to prepare a variety of dishes with high nutritional value and about the importance of good hygiene. Diets became more diverse, and the training sessions allowed women to socialize among themselves more frequently, when earlier they had met only for special occasions such as weddings and funerals. Seeing the positive results of the training on their families, men also became less resistant to allowing their wives to participate.

activities create significant demands on a woman's time and energy and her ability to care for herself and her family. Making sure agricultural investments are designed to empower women and achieve gender equality, allow women time to take care of their children and other family members, and improve their nutritional knowledge and dietary and hygiene behaviours can help reduce undernutrition.

Because inputs from multiple sectors are needed, agriculture cannot be solely responsible for fostering a child's growth and development. But through its contribution to nutritious diets for mothers and children, especially the use of nutrient-dense food-based complementary foods, and its impact on women's time and equality, agriculture has a significant role to play.

## Climate change and good nutrition

Changes in temperature and rainfall patterns affect production and productivity, as well as storage, packing and transport. This in turn affects the kinds of crops that can be grown or animals that can be raised or captured and their nutritional content. Since many smallholders eat what they produce, this directly affects diets and nutrition and disease patterns. Integrating measures into investments to address climate change and nutrition can be achieved by promoting diversified food systems that are more resilient and have benefits in terms of more stable income and dietary quality.

## IFAD moving forward

IFAD's approach draws on the broad understanding of the ways agriculture can improve nutrition, beyond increased production and productivity.

IFAD seeks to mainstream nutrition into agricultural and rural development activities, rather than designing a stand-alone intervention.

The specific adjustments to policies, investments and programmes needed to improve nutrition will depend on the dynamics, context and the nutrition problem at hand. But the main nutritional objective is the same: to improve diets for all individuals throughout their lives and to create more supportive, nutrition-sensitive agriculture and food systems.

Mainstreaming nutrition requires applying a nutrition lens at each stage of a project from the outset, so that the project is designed, implemented, managed, monitored and measured to maximize impact on nutrition. In this way, IFAD also ensures that the project does not have unintended negative effects on nutrition (for example, an agricultural intervention that increases the burden on women's time). Relevant, specific nutrition objectives and actions can be incorporated into projects and country strategies, as is done for gender and environmental sustainability. IFAD will work closely with local partners to ensure that design and operation reflect the country context.

In the **Sahel**, IFAD is promoting agroforestry systems. Farmers increasingly plant, protect and manage woody species. The management of trees brings multiple benefits, including nutritional benefits achieved by growing trees such as *Adansonia digitata*, or Baobab, whose leaves and fruit offer high-quality nutrition, and *Vitellaria paradoxa*, which provides highly nutritious fruit that boosts food supply in the lean period.





In **India**, IFAD is mainstreaming nutrition into a new project to improve living conditions of tribal communities in Odisha. Nutrition experts on the design team have carried out field visits to understand community needs and possibilities, and discussed with the state government how to link project activities with ongoing programmes in health, thus ensuring programmatic convergence. Under the project, improved land and water management can extend the growing season and allow additional, more nutritious crops, such as fruits and vegetables and iron-rich millet, to be grown. Links can be established with national agricultural research centres to determine optimal, potentially biofortified, varieties for production. Development of the value chain for these crops will increase producer incomes. The integration of home extension activities will ensure that increased production diversity also increases dietary diversity and, through attention to preservation and storage, increases the foods that families have available throughout the year.

IFAD has already taken significant steps in advancing its commitment to nutrition-sensitive agriculture and rural development:

- **Investments.** IFAD loans and grants finance and support specific actions that can re-shape agriculture and food systems to improve nutrition. Working with country partners, IFAD supports the process from concept and design to implementation, supervision and evaluation.
- **Partnership and policy dialogue.** IFAD promotes dialogue among concerned partners, including ministries of agriculture and health as well as other parts of government and society. This can strengthen understanding, broker collaboration and convergence, and promote operational links for nutrition-sensitive agriculture. Partnerships are an essential part of IFAD's scaling-up strategy. By working with partners, IFAD leverages the impact of its investments and enhances their sustainability.
- **Knowledge.** IFAD is building the knowledge base around policies and programmes for nutrition-sensitive agriculture, including learning from monitoring and evaluation of its own investments. IFAD uses this evidence to improve project design and management, policy dialogue and results. IFAD is also tapping other reservoirs of knowledge, and commissions or collaborates with other institutions with specialized research skills, such as national agricultural research centres or international institutes, including those of the Consultative Group on International Agricultural Research (CGIAR). With funding from the German government, IFAD is developing a tool for the design of nutrition-sensitive value chains in two middle-income countries, expanding its expertise and enhancing South-South cooperation.

- **Advocacy.** By participating in SUN and other initiatives and through collaboration with other organizations, IFAD connects global advocacy, strategic alignment and partnerships to country action and takes an active role in the issue of nutrition-sensitive agriculture at global and local levels. IFAD participated in the ground-breaking Nutrition for Growth Summit in 2013 and recently collaborated with the Rome-based UN agencies to develop technical recommendations on targets and indicators around food, nutrition and sustainability for the post-2015 development agenda.

## Measuring results and enabling actions on nutrition

IFAD is serious about delivering results. IFAD requires every project to apply a common assessment framework, its Results and Impact Management System (RIMS), which uses chronic malnutrition as an anchor indicator. Work is under way to revise RIMS to measure household dietary diversity as well, a contributor to good nutrition that reflects IFAD's work in agriculture and food systems. Many projects carry out additional studies and evaluations that provide further insights into how to improve project design, management and impact.

An increased commitment to nutrition requires a corresponding increase in capacity. Supported by a multi-year grant from the Government of Canada specifically earmarked for mainstreaming nutrition into IFAD's work, IFAD is strengthening its technical capacity to support integration of nutrition into design and supervision of operations. IFAD has committed to introducing nutrition-specific designs in 20 per cent of its new projects and making 30 per cent of all new results-based country strategic opportunities programmes (COSOPs) nutrition sensitive. With this grant, IFAD can provide additional resources and support to

country programme managers and others in the organization to integrate nutrition into their work more effectively.

Additional resources will be needed to support country actions at national and local levels to make agriculture more nutrition sensitive, to improve capacity for analysis, design, coordination, implementation and evaluation, and to fund the investments themselves.

In its renewed focus on nutrition, IFAD is deepening its commitment to its mission while building on its own experience, expertise and areas of comparative advantage. The challenges are great, but the benefits are greater. Making agriculture and food systems more nutrition sensitive will contribute to improving the livelihoods and nutrition of smallholder farmers and the rural poor, and thus to the achievement of IFAD's core mission. But this effort has ramifications that go far beyond the smallholder farms of the developing world: investment in nutrition-sensitive agriculture pays dividends for all of society, whether in urban or rural areas, and contributes to the stability, health, and social and economic growth and development of all countries.

In **Bangladesh**, IFAD provided a grant to the World Fish Centre to explore the potential of farming nutrient-rich small fish to increase household incomes and improve nutrition. This meant overcoming beliefs that production would suffer by raising large and small fish in the same ponds. The World Fish studies found that technologies to raise small and large fish together actually increase total fish production. Promotion of these technologies in wetlands and ponds, when combined with education, can increase consumption of fish and micronutrients, especially in women and children. Raising the nutrient-rich small fish, mola, in the 4 million small, seasonal ponds in Bangladesh has the potential to meet the annual recommended vitamin A intake for over 6 million children. This approach is now being considered for expansion into other countries in the region.



IFAD is an international financial institution and a specialized United Nations agency dedicated to enabling poor rural people to improve their food and nutrition security and escape poverty. IFAD champions smallholder farmers and rural entrepreneurs in international forums, providing a global platform to spur discussion of rural policy issues and increase awareness of why greater investment in agriculture and rural development is essential.

The Fund provides low-interest loans and grants to developing countries to finance innovative agricultural and rural development projects. It is among the top three multilateral institutions working in agriculture in Africa. Since its creation in 1977 it has:

- Mobilized over US\$22 billion in cofinancing and funding from domestic sources for rural development, in addition to IFAD's own contribution of about US\$15.8 billion in loans and grants
- Empowered some 430 million people to grow more food, learn new skills, start small businesses, build strong organizations and gain a voice in the decisions that affect their lives



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