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Editorial

For more than 50 years, FAO has worked to help create the conditions in which all individuals and families can secure the food they need for active, healthy lives. To achieve food security, adequate national and community-level food supplies must be available year-round; households must have both physical and economic access to a sufficient quantity, quality and variety of foods; and primary household providers and care-givers must have the time, knowledge and motivation to ensure that the nutritional needs of all household members are met.

Achieving these objectives requires the combined efforts of many people working in agriculture, health, education and other sectors at the international, national, regional and local levels. In most low-income food-deficit countries, accelerated development of

the agriculture sector and associated food systems is of fundamental importance. More effective development of local food and agricultural resources will have multiple benefits, including expansion and diversification of food supplies; generation of employment opportunities in the food production, processing and marketing sectors; and creation of the community and national wealth needed for investments in health, education, social services and physical infrastructure.

In recent years it has become increasingly clear that the equitable participation of community members in decisions that affect their ability to acquire and utilize food effectively is crucial for achieving and sustaining improvements in their lives. The activities described in this issue of Food, Nutrition and Agriculture illustrate strategies to facilitate such participation and improve nutritional status, enhance household food security and raise incomes of rural families, with examples from Africa and Asia. Articles from Zambia and Nigeria explain how communities may express their development priorities and how institutions involved in development activities can work together more effectively.

Other articles demonstrate the capacity of food-based strategies to prevent and control micronutrient deficiencies. One of these strategies is home gardening, which helps to diversify diets and provide a source of income to poor households. Experiences with gardening projects throughout the world are reviewed and key lessons for successful projects are suggested. Gardening projects are shown to have had a positive impact on nutrition and health status. Several articles discuss methods for educating the public, especially young people, about nutrition.

There are many opportunities for working to enhance the potential of communities to achieve food security for all their members. We hope that through this issue of Food, Nutrition and Agriculture readers will be stimulated to carry out activities in their countries to improve nutrition.

Summaries

Building on traditional gardening to improve household food security

Family food production systems are found in most regions of most countries worldwide. Traditional tropical gardens have a great diversity of crops, are well adapted to local microclimates and require a minimum of purchased inputs. Field crops provide the bulk of energy needed by the household, while the garden supplements the diet with vitamin-rich vegetables and fruits, energy-rich vegetable staples, animal sources of protein and herbs and condiments.

The many potential benefits of home gardening have led to numerous gardening projects sponsored by non-governmental organizations, governments and United Nations agencies. Nevertheless, promotion of gardening as a nutrition or community development strategy is controversial. Many believe that disappointing results of gardening projects stem from a failure to understand the existing garden system in the context of changing household objectives. If improved gardens could build upon the characteristics and objectives of traditional gardens, many problems could be avoided.

Home gardening contributes to household food security and nutrition by providing direct access to diverse foods that can be harvested, prepared and fed to family members, often on a daily basis. Even very poor and landless people can practice gardening since it may be done with virtually no economic resources. Homestead production is also an important source of supplementary income for poor rural and urban households around the world. The garden may become the principal source of household food and income during periods of stress.

Experiences of gardening projects around the world illustrate the importance of building on indigenous knowledge; reducing biophysical, agronomic and economic constraints; integrating nutrition education and social marketing in gardening projects; promoting the economic benefits of gardening; understanding the roles of women and children; and working towards an integrated food security strategy.

[Complete article available in English](#) - PDF 877 K

CORRIGENDUM the photo caption on p. 9 should read "A small garden in Dar-es-Salaam, United Republic of Tanzania".

A community nutrition project in Viet Nam: effects on child morbidity

A nutrition improvement project benefiting 5 588 households with 3 716 young children was implemented in four communes of Viet Nam. The project sought to reduce vitamin A deficiency by raising household garden production, particularly for carotene-rich fruits and vegetables, and by providing nutrition education for mothers of young children. The project collected data to monitor vitamin A status, household garden production, food intake and growth patterns of young children. The project was followed by significant increases in the production of fruits, vegetables and other foods from family gardens; increased intake of nutrients including iron, vitamin C, carotene and protein among households with young children; and improvements in the nutritional status of young children and the nutritional knowledge of mothers.

The data from the nutrition improvement project provided a rare opportunity for monitoring the effects of community nutrition education and family gardening on morbidity in young children. Acute respiratory and diarrhoeal infections are the major causes of mortality in infants and young children in Viet Nam. A morbidity survey showed a highly significant reduction in the incidence and severity of both illnesses in a project commune but no statistically significant change in a control commune in the same district.

Data on household food production, the nutritional knowledge of mothers, dietary intakes of households and the nutritional status of young children were compared to explain the significant differences in morbidity trends between the project and control communes. Children in the project commune consumed significantly more vegetables and fruit and more foods providing energy, protein, vitamin A and iron. In terms of growth, the project commune had witnessed an increase in the number of children defined as normal and a significant decrease in those defined as stunted (low height for age) in the project commune. There was no significant change in the proportion of children wasted (low weight for height) or both stunted and wasted. Mothers who had participated in the pilot nutrition education programme demonstrated a highly significantly better understanding of good nutrition and of vitamin A than those in the control commune. In the project commune there were major increases in food available for consumption or for sale and in food intake.

[Complete article available in English](#) - PDF 322 K

Household food security and nutrition in the Luapula Valley, Zambia

In the Luapula Valley of northern Zambia, rates of chronic malnutrition and micronutrient deficiencies are unacceptably high. Preliminary survey results indicate that the majority of children under five years of age are stunted because of chronic protein-energy malnutrition. A participatory rural appraisal found that nutritional vulnerability is a result of chronic household food insecurity; poor access to adequate health care, water and sanitation facilities; inadequate care for vulnerable people; and lack of essential knowledge and basic skills because of poor education and communication.

Household food insecurity results from insufficient access to agricultural land, lack of diversity of food crop production and poor postharvest practices. Agricultural extension, credit and marketing infrastructure are poor. Household food security is impeded by income, labour and time constraints. Women are responsible for almost all food production activities, apart from land clearing, in addition to their other household chores such as food processing and preparation and child care.

In April 1997, an integrated five-year project focusing on household food security and nutrition was initiated with the aim of improving year-round access to a balanced diet that is adequate in energy, vitamin A, iron and other macro- and micronutrients. The project's training programme includes gender analysis, participatory approaches and various technical subjects. It reaches community members; staff from agriculture, education, community development and health organizations; and technical personnel and district project coordinators.

The project follows a "community action planning" strategy in which the community members fully participate in the planning process and take the lead in determining needs, identifying solutions, initiating actions and monitoring progress. After setting priorities and plans of action, the communities develop microprojects, which have included, for example, community-managed oil-palm nurseries, seed multiplication groups, farmers' field schools, small-scale irrigation and dry-season vegetable gardening, school gardening in conjunction with nutrition education and water user groups. To date more than 100 communities have started microprojects and many more are ready to begin implementation. An active dialogue has begun, and people are taking action to improve their nutrition situation with assistance from the community support services and the project. Through the process, farmers and extension workers have come to understand that nutrition problems have many aspects and that they should think about solutions in an integrated manner.

[Complete article available in English](#) - PDF 664 K

The household livelihood security concept

Much progress has been made in understanding the processes leading to food insecure situations for households. In the 1970s food security was mostly considered in terms of national and global food supplies. In the mid-1980s it became clear that adequate food availability at the national level did not automatically translate into food security at the individual and household levels. Food insecurity occurred in situations where food was available but not accessible because of an

erosion in people's ability to obtain food from their own production, income, gathering of wild foods, community support, assets, migration, etc. The household food security approach that evolved in the late 1980s emphasized both availability of and stable access to food. Interest centred on understanding food systems, production systems and households' access to the food supply over time. It was recognized that food is only one factor in the malnutrition equation; dietary intake and diversity, health and disease, and maternal and child care are also important.

In the past decade, it has been realized that food is only one of many competing interests which poor households must finely balance in order to subsist in the short and longer term. It is misleading to treat food security as a fundamental need independent of wider livelihood considerations. The concept of household livelihood security allows for a more comprehensive understanding of poverty, malnutrition and the dynamic and complex strategies that the poor use for survival. Household livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs, which include adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration. The risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional insecurity. Therefore, livelihoods are secure when households have secure ownership of, or access to, resources, including reserves and assets, and income-earning activities to offset risks, ease shocks and meet contingencies.

Household food, nutrition and income security can be enhanced by following three intervention strategies: livelihood promotion (improving households' resilience for meeting food and other basic needs on a sustainable basis), livelihood protection (preventing an erosion of productive assets or assisting in their recovery) and livelihood provisioning (meeting food and other essential needs to maintain nutritional levels and save lives). This three-pronged approach should be seen as a whole rather than as separate parts, since the ultimate goal of any development intervention is to promote sustainable livelihood systems in intervention areas.

[Complete article available in English](#) - PDF 238 K

Participatory development of a household food security and nutrition improvement programme in Kano State, Nigeria

Programme design and extension methodologies have shifted from the top-down approach to active community involvement in problem identification and planning interventions. The participatory approach in development programmes has brought with it the need to modify the practices and attitudes of the experts and extension workers towards the community and the challenge of encouraging people to express openly their views on issues pertaining to their community's development. It also entails strengthening people's analytical and planning skills.

The Food-Based Action Programme for Household Food Security and Nutrition Improvement for Kano State was developed through participatory methods to respond to the high levels of malnutrition in the northern savannah zone of Nigeria. Technical officers from all government sectors participated in the programme's development, along with people from the community. FAO provided a multidisciplinary team of experts specialized in participatory rural appraisal (PRA), farming systems and agricultural extension, nutrition programmes and training, and nutrition-related health issues to facilitate the process.

PRAs were held to gain information on the communities' perceptions of household food security and common nutrition and health-related problems. Multidisciplinary teams were selected from the Ministries of Agriculture, Health, Education and Community Development, the Kano State Agricultural and Rural Development Authority and the Population Commission. The teams visited 12 villages in three agro-ecological zones. A total of 1 718 households provided information about farming, resources, nutrition and health.

The PRAs found that household food insecurity and malnutrition were widespread. Inadequate access to fertilizer, improved seed varieties, pesticides and labour-saving farm and food-processing implements were major constraints to improving household food security. An underlying cause of food insecurity was fragmentation of agricultural land resulting from population increases. Poor access to drinking water, reduced infant feedings and diseases contributed to malnutrition. Extension and health and nutrition services were insufficient.

The results of the appraisal of household food security and nutrition surprised many policy-makers and workers in the agriculture, health, education and community development sectors because Kano State is perceived as the grain basket of the nation. The activities sparked interest in the communities about nutrition, agricultural, health and other services. An intersectoral and interagency workshop reviewed the PRA results and agriculture and health programmes and analysed food production and the processing technologies available. The recommendations of the workshop participants formed the basis for the action programme. The recommendations were modified in participatory planning sessions with technical officers in each sector. This process led to a programme that builds on current realities and harnesses potentials and opportunities not adequately exploited before.

The action programme focuses on several issues: creating awareness of the magnitude and socio-economic consequences of household food insecurity and malnutrition and of ways to use existing food resources; raising food production through improved farming techniques; increasing farmers' access to agricultural inputs and extension services; preventing and managing communicable and parasitic diseases and diarrhoea; promoting environmental sanitation; improving access to potable water; and monitoring the implementation and impact of the action programme.

[Complete article available in English](#) - PDF 653 K

Social communication on nutrition through agricultural extension in Morocco

The State agricultural extension system in Morocco has a Department of Agricultural Extension at the central level and a number of decentralized structures. For a long time agricultural extension programmes were directed at increasing crop and animal production to match the overriding objective of agricultural policy, which was to cover the country's staple food needs (cereals, vegetable oils, milk and sugar) and raise farmers' income. These programmes, which essentially centred on technical aspects of agricultural extension, have gradually broadened to include concerns such as food quality, hygiene, nutrition and family planning, largely thanks to the recruitment of women extensionists.

A technical cooperation project was carried out under a framework of cooperation between FAO and the Ministry of Agriculture and Agricultural Development, as an integral component of the

National Plan of Nutrition which the Government of Morocco drew up in September 1993. The initial project objective was to develop teaching materials to help agricultural extensionists educate rural populations on subjects related to food and nutrition and food hygiene and quality.

It soon became apparent to the project's promoters that the project was broader in scope and that a communication strategy was needed. To meet the ultimate aim of enhancing the quality of certain locally produced foods, and accordingly the nutritional status of the local population, the intervention would have to mobilize agricultural extensionists to disseminate messages on nutrition and food quality. This project gave the Department of Agricultural Extension an opportunity to test methods of planning and evaluating activities for social communication on nutrition. Social communication on nutrition was manifestly promoted in the three project areas (Azilal, Tadla and Beni-Mellal) during the six months of the project's execution, and the key protagonists, the men and women farmers, expressed an interest in these matters and were ready to engage in dialogue with the extension workers.

Positive changes have already been noted, both in food consumption (in some households) and in the running of milk collection centres and processing mills. The model for social communication on nutrition was at least partially validated, showing that agricultural extension could also include elements of nutrition and food quality, traditionally the respective domains of health officials and fraud inspectors.

This innovatory process followed a logical step-by-step sequence - analysis of the problems, formulation of objectives and precise messages, design and pre-testing of support materials, training of field agents - before actual message delivery. To be instructive, evaluation of such innovation can be based on global, participatory methods (e.g. causal analysis) which permit an overview of the problems and their determining factors and the building of a dynamic model of intervention that will keep procedures closely aligned with inputs, results and outcomes. Such an evaluative approach can help unite the project team around common reference models, conceptual models based on the experience of all parties involved in the innovatory process.

[Complete article available in French](#) - PDF 692 K

Nutrition education in primary schools

FAO and the Netherlands Nutrition Centre prepared a questionnaire which was sent to 55 countries in Asia, Africa, Latin America and the Caribbean and the Near East. Eighty replies were received from 50 countries, from ministries of education and health, universities and national programmes and non-governmental organizations involved in nutrition education.

Countries with nutrition education policies reported these as part of their general education and health policies; nutrition was not a mandatory school subject assigned a specific time or structure. The methods normally employed in primary schools that teach nutrition are conventional lessons with explanations and group activities or discussions. Less than one-third of the countries use nutrition guides and recommendations in primary-school nutrition education. Perhaps the most critical finding was the lack of teacher training in nutrition education. Less than half the Latin American and Asian countries reported the inclusion of nutrition in teacher training. The situation was better in the Caribbean, Africa and the Near East.

The constraints and problems of getting schools to encourage children and their families to adopt healthy eating habits and lifestyles continue as before. Greater efforts are needed if children are to decide for themselves to adopt healthy eating habits. Policy-maker support for related teacher training, through systematic programmes with sufficient coverage and continuity, and the inclusion of nutrition in school curricula, with allotment of adequate time and a focus on tangible results rather than just increased awareness, are needed more than ever to deal with existing nutrition problems and to prevent chronic diet-related diseases, which are becoming increasingly common as a result of new lifestyles and eating habits. Education represents the best strategy for overcoming these problems.

[Complete article available in Spanish](#) - PDF 148 K

Preventing and controlling micronutrient malnutrition through food-based actions in south Asian countries

Micronutrient malnutrition, especially vitamin A deficiency, iodine deficiency disorders and iron deficiency anaemia, is a serious public health problem in South Asia, affecting millions of people. Of the four methods used to reduce micronutrient malnutrition - diet diversification, food fortification, medicinal supplements and disease control - the first two are food based. Many micronutrient programmes rely too heavily on health interventions and do not fully exploit the potential of food-based actions.

The Workshop on Prevention and Control of Micronutrient Malnutrition was held in Dhaka, Bangladesh from 17 to 20 November 1997. Representatives from Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka participated in the meeting, along with national and international non-governmental organizations and donor institutions. The participants discussed ways to improve nutrition through home gardening, small animal production and aquaculture. Food processing and preservation, nutrition education and food fortification were considered as ways to raise micronutrient levels in the diet.

A comprehensive developmental approach including elimination of poverty, increasing food production, improving literacy (particularly among women) and provision of health, hygiene and welfare services to vulnerable populations will be required to ameliorate the micronutrient problem. Food-based actions are sustainable, cost-effective, income generating and culturally acceptable. They can promote self-reliance and community participation and create partnerships among producers, consumers and the food industry.

The metabolic effects of nutrients and related components from food are different from those of dietary supplements. Food-based actions should always be taken and must be combined with medical and public health approaches when they are implemented. Where possible, actions should be combined to create a synergy between the various strategies for the control of micronutrient malnutrition in all countries of the South Asian Association for Regional Cooperation (SAARC).

Strong initiatives are needed to implement food-based nutrition interventions to combat micronutrient deficiencies. The extent, type, prevalence and distribution of malnutrition in SAARC countries should be documented periodically to determine trends, and surveillance should be continuous. The micronutrient composition of local foods should be determined.

Training on micronutrient malnutrition is needed. Each country should support initiatives to increase home production of micronutrient-rich fruits and vegetables, small animals and fish. Governments should promote pre- and postharvest techniques and methods to prevent wastage and for processing of fruits and vegetables. Nutrition education should be an integral part of all nutrition improvement programmes and school curricula. All SAARC countries should prepare food-based dietary guidelines, which should encourage the consumption of micronutrient-rich foods, particularly fruits and vegetables. Fortification of common foods should be encouraged, and a regulatory body should enforce quality control of fortified food.

[Complete article available in English](#) - PDF 243 K