

Household food security and nutrition in the Luapula Valley, Zambia

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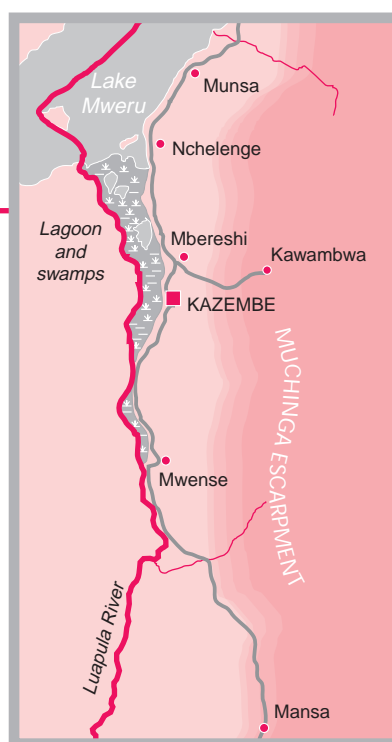
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The Luapula Valley of northern Zambia has significant natural resources, and the main road cutting through the valley has attracted many people to the area. Of the population of 207 000, the majority of people live along the lake, the lagoon and the river (Figure 1). Fishing is the principal economic activity, and agriculture is practised further inland. The diet of most households is based on two main staples: cassava and maize. As relish people consume fish in those areas with access to water resources and a limited number of less abundant and seasonally available food crops such as sweet potatoes, groundnuts, bambara nuts, cowpeas and beans as well as indigenous and other vegetables. Palm oil is also consumed in a few villages where oil-palm trees are found. When in season, indigenous and cultivated fruits such as wild loquat, mobola plum, papaya, orange and mango are also consumed. Until recently, national agricultural policies emphasized maize production to attain food security.

Improvements in the production of other important food crops were neglected.

In the Luapula Valley, rates of chronic malnutrition and micronutrient deficiencies are unacceptably high. Preliminary results from two nutrition surveys carried out in the area in September 1997 and May 1998 indicated that about 65 percent of children under five years of age were stunted because of chronic protein-energy malnutrition, while 3.7 percent were wasted during the rainy season and 2.5 percent during the dry season as a result of acute malnutrition. According to a participatory rural appraisal carried out by the Zambian Ministry of Agriculture, Food and Fisheries, the Ministry of Health, the Ministry of Community Development and Social Services and FAO in 1996, the underlying causes of nutritional vulnerability in the valley are related to the combined and synergistic effects of:

- chronic household food insecurity;



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Location and main physical features of the Luapula Valley, Zambia

- poor access to adequate health, water and sanitation facilities;
- inadequate provision of care for the most vulnerable in the society;
- lack of essential knowledge and basic skills because of poor education and communication.

A number of critical factors affect household food insecurity, including:

- pressure on agricultural land;
- low soil fertility;
- restricted access to wetlands;
- poor diversity of food crop production;
- poor postharvest practices;
- poor access to fertile farmland and fishing areas.

Community support services such as agricultural extension, credit and marketing infrastructure were found to be inadequate. Households lacked sufficient sources of income. The population experienced serious labour and time constraints, which created difficulties especially for small households, households headed by a single adult and families with very ill or disabled members. Division of labour by gender was also a major problem, as women were 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. These problems affected the households' ability to increase food production and to care adequately for the nutritionally vulnerable.

HOUSEHOLD FOOD SECURITY AND NUTRITION PROJECT

In April 1997, FAO in collaboration with the Government of Zambia began implementation of an integrated five-year project focusing on household food security and nutrition, with funding by the Belgian Survival Fund. The project aims to improve year-round access to a balanced diet that is adequate in energy, vitamin A, iron and other macro- and micronutrients. Within the Luapula Valley, the project's target area includes the Kawambwa, Mwense, Nchelenge and Chiengwe (formerly part of Nchelenge) districts.

The project's main objectives include:

- increasing year-round production of a wider variety of foods, including oil crops, staple crops, food legumes, vegetables and fruits;
- improving food availability and reducing seasonal shortfalls in food supplies through better food storage, processing, preservation and utilization;
- empowering communities and individuals to identify, plan and implement activities and microprojects aimed at improving household food security;

- strengthening the knowledge of communities, extension and other support services;
- establishing a system of sustainable participatory monitoring and evaluation.

COMMUNITY ACTION PLANNING

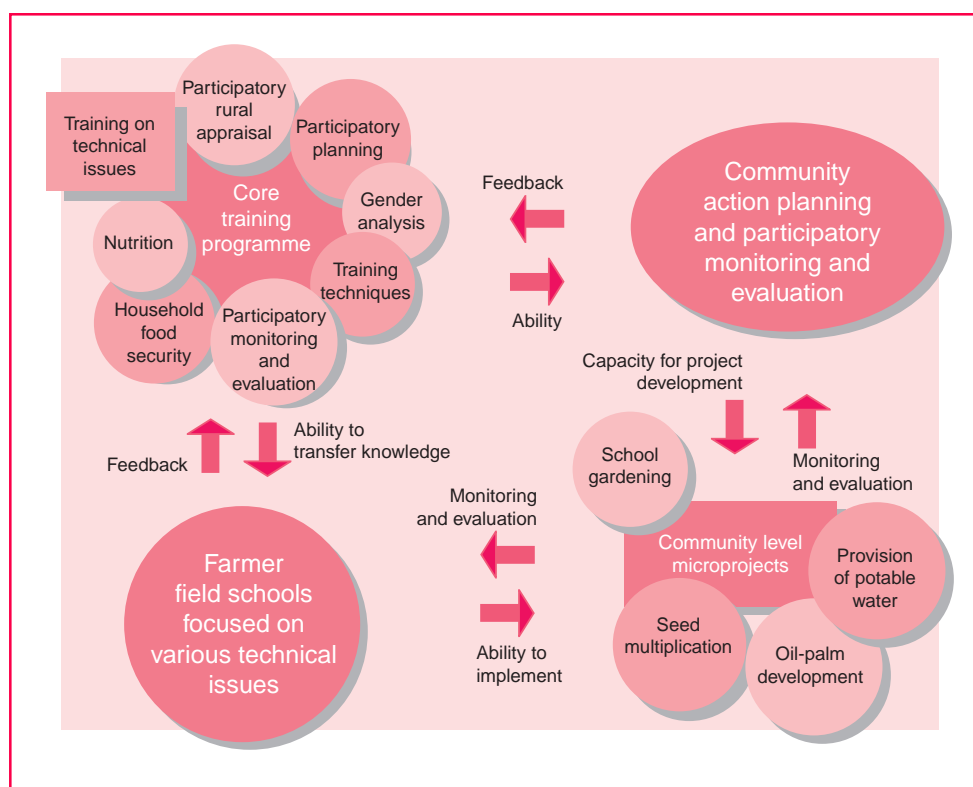
The project follows a strategy of community action planning which is rooted in and sustained by the community itself (Figure 2). The community members fully participate in the planning process and take the lead in determining needs, identifying solutions, initiating actions and monitoring progress. The project facilitates this open-ended process and provides essential technical and other support services.

Individuals from the community who work in agricultural extension, health, community development and education have a direct responsibility in planning, implementation and monitoring along with other community members. They form Community Food and Nutrition (FAN) Teams which initiate, direct and monitor the community action planning exercise. The entire process is centred on three interrelated key issues:

- **Nutrition.** For a positive impact on nutrition, everyone needs to be aware of the underlying causes of malnutrition in the community so that activities can be developed to address the problems and monitor their impact.
- **Participation.** For improvements in nutrition to be sustainable, the community itself needs to take charge of problem identification, action planning, project implementation and monitoring of progress.
- **Gender.** For interventions to have a positive impact on the nutritionally vulnerable groups (mainly women and children), traditional gender roles and divisions need to be examined, especially in terms of labour, access to and control over resources and benefits, and responsibilities for care.

The action planning process was initiated through an analysis of the food chain. First, the community identified major food crops and assessed their importance in the diet based on the people's local knowledge of food and nutrition. The group selected one or more food crops of major nutritional importance and looked at who did the various tasks involved in producing the food, who had access to and control over resources and how benefits were distributed among men and women. This exercise provided a good opportunity to discuss major food and nutrition problems and their causes from the perspectives of both the local people and the technical support services staff, including constraints related to the social, cultural and economic organization of the community. This naturally led to a discussion of what can be done to address the problems that have been identified,

2 The project strategy



COMMUNITY ACTION PLANNING AT WORK

Prior to any community meeting, the District Coordinator makes an appointment with the community leader and the community support staff to discuss the purpose of the gathering. The community leader is asked to mobilize the community, including men and women, old and young, poor and better off, and to organize the meeting at a time and location that will ensure that women may be able to participate. After this first meeting initiated by the project staff, the community may initiate consecutive meetings.

At the meeting, all participants introduce themselves (facilitator, community support staff and community members). The facilitator introduces the project and explains the purpose of the gathering. To stimulate participation, the facilitator asks community members what they know about the project, what their expectations are and what they understand by "good nutrition". (The answer to the last question almost always refers to having enough food.) Notes are made on flip charts for the group's reference, and everyone is encouraged to participate in the discussion. The facilitator refrains from interfering in the discussion or teaching, as a well-facilitated discussion will more naturally lead to the right conclusions.

To focus the discussion on nutrition, the facilitator asks the people to mention the ten most important crops they grow and to choose the main staple and relish from this list. The group then reviews the entire food cycle from production to consumption, also looking from a gender perspective at various responsibilities and at access to and control over resources and benefits. This leads to an identification of constraints in the food

chain, including issues related to health, water, sanitation, care, knowledge, attitudes, practices and community organization, as most of these issues are interrelated. Through their own analysis and starting from their own perspective, participants realize that achieving good nutrition goes far beyond having enough food. As a result, a number of priority problems are identified and possible solutions formulated. At this stage, the first meeting ends and the group agrees on a follow-up meeting and agenda.

Further action planning focuses on the development of microprojects to address one or more of the key problems identified by the community. The planning involves further in-depth analysis of the specific problems and solutions to be addressed. The following are some key questions.

- What is the objective of the project?
- What activities will be undertaken?
- What is the expected impact on nutrition?
- Who takes responsibility for what and when?
- What resources are needed and how will these be mobilized?
- How can sustainability be ensured?
- What community organization is required?

At this stage, the people have often formed groups to mobilize resources and to implement the project. However, further regular meetings of the community at large are stimulated to maintain the momentum, monitor progress and evaluate the impact on nutrition and the vulnerable groups.

prioritizing of activities and the development of a plan of action. While this process is mainly a tool for participatory planning of project activities, it also provides a good vehicle for nutrition education and sensitization on gender issues.

CONSTRAINTS AND SOLUTIONS

Many communities said that they lacked seeds and planting material of improved food crops. Insufficient amounts of energy- and protein-rich crops were major constraints to improving nutrition. Women in particular emphasized the need to know more about the utilization of nutritious crops such as food legumes and about the preparation of weaning foods. Some farmers did not have access to water for dry-season food production. Access to safer sources of drinking-water and improved pit latrines also figured as prominent needs. Teachers and parents mentioned the poor status of schools, lack of nutrition education material and the failure of school gardening initiatives because of lack of support and lack of community organization.

To address some of these priority problems, microprojects were planned and are being implemented by the communities. The microprojects include community-managed oil-palm nurseries, seed multiplication groups, farmer field schools, small-scale irrigation and dry-season vegetable gardening, school gardening in conjunction with nutrition education, and water user groups.

MICROPROJECTS

Based on the plans of action, the communities worked out microproject proposals which clearly and realistically stated the potential impact of the activities on nutrition, how the effects would be measured, activities and work schedules, budgets and the division of responsibilities. Through this process, each community came up with its own unique strategy in terms of activities and community organization.

Community oil-palm nurseries

As community action planning made farmers more aware of their nutrition problems, they showed interest in palm oil as a good source of dietary energy, beta-carotene (a precursor of vitamin A) and extra income. At present, oil-palm trees are only available in a few locations, mainly in the lagoon and lake areas. In general, each household's compound has one or two trees. The Dura type of oil-palm found in most villages produces small bunches of fruits with a thin layer of flesh that contains oil. Tree management is poor and is limited to harvesting bunches.

A main constraint to increasing production is the lack of improved planting material. Therefore the Tenera type of oil-palm was imported from Costa Rica. Since the minimum yield

of a Tenera tree is three bunches of 10 kg each per year, a household with five trees could be ensured at least 30 litres of palm oil per year. Under optimal conditions a household could harvest 75 to 100 litres of palm oil, which would be sufficient for home consumption and would give extra income for the family.

Initially, the project established two pre-nursery sites to receive the imported oil-palm seeds. After four months, the seedlings were transferred to the 88 communities that had decided to grow oil-palms and had developed a microproject around this crop. Project staff, agricultural extension workers and district crop husbandry officers make regular visits to these communities for monitoring, continued sensitization on nutrition and community participation and training on oil-palm production, utilization and nutritional benefits.

The community groups (comprising both men and women) and individual farmers established their own nurseries with an average of 160 seedlings per group. Management of the community nurseries was discussed during a series of community meetings. The groups are composed of those community members that have a genuine interest in growing oil-palms and not only producing seedlings for sale. Farmers purchased the seedlings from the central pre-nurseries. It was emphasized by farmers in almost all communities that production of oil-palm trees should be carried out on an individual rather than group basis.

Legume seed multiplication

To diversify the local diets, the project suggested various foods such as groundnut, sunflower, soybean, sesame and bambara nut. The communities said they had no access to seeds and that some of the proposed food legumes had a bad taste after cooking. The bad taste was caused by inappropriate cooking practices that can be avoided. Thus, demonstrations in the preparation of legumes were held with men and women. Several communities organized one-day gatherings; community members brought various local food items from their homes and project staff brought seeds of soy, cowpea, pigeon pea and bambara nuts. These activities were used to create greater awareness of the nutritional benefits of food legumes, and agricultural extension staff took the opportunity to elaborate on crop management. Following the demonstrations, farmers realized the potential of food legumes for improving their diet and indicated that they were interested in growing these crops.

Initially, high-quality seeds had to be procured from specialized seed companies in the capital, Lusaka, or from research institutions. Consequently, community members decided to establish seed multiplication groups. The farmers are required to follow strictly the technical guidelines



Carlos Hunnora

Agricultural extension workers at seminar on oil-palm and nursery management at Mbereshi, Zambia



Carlos Hunnora

Planting of germinated seeds at Mbereshi pre-nursery site

provided by the project staff in order to ensure the quality of the seeds. Each group member contributes cash or labour to purchase the seeds, according to the system created by the particular group.

Upon harvesting, the plot is divided into two classes of seed. The second-class seeds are for immediate consumption. The group stores half of the first-quality seeds for further multiplication during the next season. The other half of the first-quality seeds is distributed among the group members for production on their individual plots during the next season.

In this way, the community always has high-quality seeds available for further production.

As part of the microproject, community members are trained in seed multiplication and crop production techniques. Training is held on-farm so that women can also participate, as they may not be able to attend residential courses because of their heavy workloads and existing social and cultural norms. The seed multiplication groups are regularly visited by project staff, agricultural extension workers and district crop husbandry officers.

TRAINING PROGRAMME

The success or failure of the approach described above largely depends on the capabilities of the people involved in the project. Community support services are available at the provincial, district and community levels and the project currently works with more than 60 staff workers throughout the project area. However, their experience with grassroots community participation in assessment, planning, implementation, monitoring and evaluation is recent and limited. Farmers and community workers noted that existing extension services are often poorly equipped to address the needs of the farmers. Provision of support to the communities is mostly gender biased. Agricultural extension is often geared towards men, while health, family planning, sanitation and nutrition are commonly considered women's issues. Some of the service providers are also unmotivated because of inadequate resources, knowledge and opportunities.

The project's training programme has three main components:

- a core training programme in nutrition, gender analysis, participatory approaches and various technical subjects;
- a community action planning and participatory monitoring and evaluation (PME) process;
- farmer field schools focused on various technical issues.

The project's training programme attempts to reach members of the communities; staff from various community support organizations, including those dealing with agriculture, education, community development and health; and technical staff, district project coordinators and other collaborators.

The core training programme addresses conceptual and technical issues and helps community support staff and project collaborators develop their skills to assist the farmers in planning, implementation and monitoring of community action plans and microprojects. This programme ensures that all staff and community support workers use gender-aware and participatory approaches in all of their community work. Community support staff are also trained in subjects such as seed multiplication, low-input sustainable agricultural practices, food storage and processing, oil-palm cultivation and processing, microenterprise development, nutrition, water and health and sanitation education.

Through the farmer field school approach, farmers and extension workers exchange experiences and knowledge regarding issues arising from the microprojects. While subjects for discussion and training may be very technical, this forum also provides a good way for ensuring that nutrition, gender and participation are properly addressed. From the farmer field schools, community support staff are now able to inform project staff and collaborators about the true needs of the

community, thus enabling adjustments in the core training programme and other project activities.

CONCLUSION

While project operations began little over a year ago, to date more than 100 communities have started microprojects and many more are ready to begin implementation. The attitudes of farmers and community service providers are gradually changing, with farmers reporting to grassroots community support services and even to district and provincial authorities about their accomplishments and needs. Where farmers used to be silent and indifferent to their situation, an active dialogue has now begun and people are taking action to improve their nutrition situation with the assistance of the community support services and the project.

Farmers have also made substantial progress in terms of awareness of nutrition problems and the adoption of integrated and sustainable solutions. During a recent independent monitoring visit to some of the project's target communities, farmers in Chibanga village (Kawambwa district) explained why they had purchased oil-palm seedlings and had started a nursery for growing green leafy vegetables. Their concern about the nutritional well-being of their children figured prominently among other reasons such as income generation and dietary preferences. They were also very eager to voice their opinion that food production alone was not enough and that they were willing to do more. In particular, the construction of a school to educate their children and the improvement of the road for better access to the rural health centre and the market for sale of their produce were considered priorities. Through the project, 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.

For FAO and other development organizations, the project has provided a unique experience and a challenge to adopt similar integrated and participatory approaches in future projects. International organizations require project proposals outlining every objective, outcome, result and activity in much detail; however, the project strategy calls for the ability to respond on a daily basis to the needs and priorities identified by the communities. This requires flexibility in terms of project operations, technical support, communications and, not least, budget management. The experience so far has been positive, and the enthusiastic response of the farmers and the community support staff endorses the approach. ♦

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.

La sécurité alimentaire et la nutrition des ménages dans la vallée de Luapula (Zambie)

Dans la vallée de Luapula au nord de la Zambie, les taux de malnutrition chronique et de carence en oligoéléments ont atteint des niveaux inacceptables. D'après les premiers résultats d'une enquête, une majorité d'enfants de moins de cinq ans souffrent de retards de croissance dus à une malnutrition protéino-énergétique chronique. Une évaluation rurale participative a constaté que la vulnérabilité nutritionnelle est la conséquence d'une insécurité alimentaire chronique des ménages; d'un accès insuffisant à des services adéquats de santé, d'alimentation en eau et d'hygiène; de soins insuffisants dispensés aux personnes vulnérables, et du manque de connaissances et de techniques de base, résultant d'une éducation et d'une communication insuffisantes.

L'insécurité alimentaire des ménages est liée à leur accès insuffisant aux terres agricoles, au manque de diversité de la production vivrière et aux mauvaises pratiques après récolte. Les services de vulgarisation agricole, de crédit et de commercialisation sont médiocres. La sécurité alimentaire des ménages est entravée par le manque de revenus, de main d'œuvre et de temps. Les femmes ont la charge de la quasi-totalité des activités de production vivrière – hormis le défrichage des terres – en sus de leurs tâches ménagères telles que la transformation et la préparation des aliments et les soins aux enfants.

En avril 1997, un projet intégré sur cinq ans, axé sur la sécurité alimentaire et la nutrition des ménages, a été lancé dans le but d'améliorer l'accès permanent à une alimentation équilibrée satisfaisant les besoins énergétiques, en vitamine A, en fer et en autres macro et micronutriments. Le programme de formation du projet comprend l'analyse des sexospécificités, les démarches participatives et divers sujets techniques. Il s'adresse aux membres de la communauté; au personnel des organisations chargées des secteurs de l'agriculture, de l'éducation, de la santé et du développement communautaire; et au personnel technique et aux coordonnateurs de district des projets.

Le projet suit un schéma de planification d'action communautaire, qui consiste à associer pleinement les

membres de la communauté au processus de planification afin qu'ils prennent l'initiative de la définition des besoins, de l'identification de solutions, de l'adoption de mesures et du suivi des progrès. Après avoir établi des priorités et des plans d'action, les communautés élaborent des microprojets comprenant notamment: des pépinières de palmiers à huile à gestion collective; des groupes de multiplication des semences; des écoles de terrain pour les agriculteurs, des petits réseaux d'irrigation et des potagers pour la saison sèche, des potagers scolaires associés à une éducation nutritionnelle et des groupes d'utilisateurs d'eau. A ce jour, plus de 100 communautés ont lancé des microprojets et beaucoup d'autres devraient les mettre en œuvre sous peu. Un dialogue actif s'est instauré, et les gens prennent des mesures pour améliorer leur état nutritionnel avec l'aide des services d'appui communautaire et du projet. Ainsi, les agriculteurs et les vulgarisateurs commencent à comprendre que les problèmes de nutrition renferment divers aspects et que les solutions sont le fruit d'une démarche intégrée.

**La seguridad
alimentaria
familiar y la
nutrición en el
valle de
Luapula, Zambia**

En el valle de Luapula, del norte de Zambia, las tasas de malnutrición crónica y de deficiencias de micronutrientes son muy altas. De los resultados de encuestas preliminares se desprende que una mayoría de niños menores de cinco años sufre de retraso en el crecimiento debido a una malnutrición proteíno-energética crónica. En una evaluación rural participativa se llegó a la conclusión de que la vulnerabilidad nutricional se debe a la inseguridad alimentaria crónica de los hogares, a un escaso acceso a servicios suficientes de sanidad, agua y saneamiento, a una escasa prestación de asistencia a las personas vulnerables y a la carencia de conocimientos esenciales y básicos debido a una enseñanza y comunicaciones deficientes. La inseguridad alimentaria familiar deriva de un acceso insuficiente a tierras agrícolas, a la falta de diversidad en la producción de cultivos alimentarios y a prácticas poscosecha defectuosas. Hay insuficiencia de extensión agrícola, de crédito y de infraestructura comercial. La seguridad alimentaria se ve menoscabada por insuficientes fuentes de ingresos, trabajo y tiempo. Las mujeres se encargan de casi todas las actividades de producción alimentaria, aparte del desmonte de la tierra, además de sus otros quehaceres domésticos como la elaboración y preparación de los alimentos y el cuidado de los hijos.

En abril de 1997 se puso en marcha un plan quinquenal integrado que se centraba en la seguridad alimentaria familiar y en la nutrición con la finalidad de mejorar el acceso en todo el año a una dieta equilibrada y suficiente en energía, vitamina A, hierro y otros macro y micronutrientes. El programa de capacitación del proyecto comprende análisis por razón del género, enfoques participativos y varios asuntos técnicos. Llega a los miembros de la comunidad; al personal de los sectores agrícola, educacional, de desarrollo comunitario y sanidad; al personal técnico y coordinadores del proyecto en los distritos.

En este proyecto se aplica una planificación de la acción comunitaria, en la que los miembros de la comunidad participan de lleno y determinan las necesidades, encuentran las soluciones, inician medidas y siguen de cerca la marcha del proyecto. Una vez establecidas las prioridades y los planes de acción, las comunidades organizan microproyectos que comprenden viveros de palmas aceiteras administrados por la comunidad; grupos de multiplicación de semillas; escuelas de campo para agricultores; riego en pequeña escala y horticultura de temporada seca, huertos escolares en unión con educación nutricional, grupos de regantes, etc. Hasta la fecha son más de un centenar de comunidades las que han iniciado microproyectos y son muchas más las que están dispuestas a ponerlos en marcha. Se ha iniciado un diálogo activo y la gente se mueve para mejorar su situación nutricional con el apoyo de los servicios auxiliares de la comunidad y del proyecto. Con este procedimiento, los agricultores y los extensionistas han acabado comprendiendo que son muchos los aspectos que encierran los programas nutricionales y que deben reflexionar sobre las soluciones que habrán de dar de forma integrada. ♦