

Education for Rural People



Education and Training for Food Security

**Capacity building and good
practices in five African countries**



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Capacity Building and Good Practices in five African Countries

Research and Extension
Division
NRR

Knowledge Exchange and
Capacity Building Division
KCE

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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Introduction

Education for Rural People (ERP) is crucial to achieving by 2015 the Millennium Development Goals (MDGs) of eradicating extreme poverty and hunger (No. 1), achieving universal primary education (No. 2), promoting gender equality (No. 3) and ensuring environmental sustainability (No. 7).

The World Food Summit, held in Rome in 1996, highlighted the need to increase access to education for the poor and the members of disadvantaged groups, including rural people, in order to achieve poverty eradication, food security, durable peace and sustainable development. The 2002 World Summit on Sustainable Development (WSSD), held in Johannesburg, also emphasized the role of education. As the majority of the world's poor, illiterate and undernourished live in rural areas, it is a major challenge to ensure their access to quality education. The lack of learning opportunities is directly related to rural poverty. Hence, education and training strategies need to be integrated within sustainable rural development strategies, through plans of action that are multisectoral and interdisciplinary. This means creating new partnerships among policy-makers and practitioners working in agriculture and rural development and those working in education.

To address these challenges, the Directors-General of FAO and UNESCO jointly launched the flagship programme on ERP (<http://www.fao.org/sd/erp/>) during the World Summit on Sustainable Development. ERP promotes inter-agency collaboration to facilitate targeted and coordinated actions. Moreover, ERP is a flagship to alert donors and other stakeholders of the need for systematic action and investment in education, training and capacity building related to MDGs one, two, three and seven.

This book was prepared by the FAO Interdepartmental Working Group on Training for Technicians and Capacity Building within the framework of ERP. Previous titles of ERP publications, prepared in collaboration with the UNESCO International Institute for Educational Planning (IIEP) or other partners, are listed at the end of this book.

FAO is the UN lead agency of the ERP Flagship external network whereas the Interdepartmental Working Group on Training for Technicians and Capacity Building (IDWGTT) is the ERP network within FAO. The Group aims at strengthening the capacity of technicians working in the development of food security, agriculture, forestry, fisheries, sustainable rural development and natural resources management. ERP shares with member countries and UN organizations the knowledge generated and managed by FAO during the last decade in the area of education and training.

The new developments in information and communication technology have increased the demand for training materials available on the Web. Technicians are the massive and basic target of the capacity building efforts, with often limited access to conventional training materials. Access to virtual training materials in the area of agriculture and food security represents an enormous potential for enhancing and enriching the capacity of technicians, especially of those working in rural areas.

ERP is making available online a coordinated series of learning materials for people working on practical issues related to achieving a reliable supply of safe, nutritious food and providing income-generating opportunities for rural populations. These materials may be consulted by trainers of extension workers, extensionists, researchers, literacy and school teachers, self-learners, communities and may be retrieved from the ERP Toolkit, available on the Education for Rural People Web site (http://www.fao.org/sd/erp/ERPtktoolkit_en.htm). The Toolkit allows technicians, as well as ERP members, policy makers involved in ad hoc capacity building initiatives, and the general public to consult, use or adapt key learning tools in agriculture, food security, rural development and natural resources management.

ERP encourages its partners (member countries, NGOs, the Academia, etc.) to share their knowledge on education and training for technicians.

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Acronyms

AESA	Agroecosystem Analysis
CCFAD	Comité de coordination et formation des actions de développement
CFMA	Community Forest Management Agreement
ECCO	Education through Communication and Culture Organisation
EUPD	Entraide universitaire pour le développement
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
FLS	Farmer Life School
GAP	Good Agricultural Practices
GCP	Government Cooperative Programme
GFMC	Gambian Forest Management Concept
GGFP	Gambian-German Forestry Project
GLP	Good Life Practices
JFFLS	Junior Farmer Field and Life School
MA&D	Market Analysis and Development
NACO	National Consultancy on Forestry Extension Services and Training
OP	Organization of Producers
OVC	Orphans and Vulnerable Children
PM&E	Participatory Monitoring and Evaluation
RTM	Mali Radio and Television
TCP	Technical Cooperation Programme
URTEL	Union of Radio and Television Broadcasting
WFP	World Food Programme

Chapter 1

Education and Training on Forestry

Gambia: Capacity Building in Community-based Forest Enterprise Development TCP/GAM/2904 (T), by Daniela Bruni and Sophie Grouwels

1. Background

The Gambia, with a land area of 11 300 km², is one of the smallest countries in Africa. At present, 43 percent of the total land area is under forest, but 78 percent of the forest area belongs to the degraded tree and shrub savannah forest category. The consequences of deforestation and resulting environmental degradation and enhanced poverty of the rural population were acknowledged by the Gambian Government in a timely manner. In the mid-1980s, the Community Forestry concept was introduced. The Forestry Department realized that it would never be able to implement even the most adapted and less cost-intensive natural forest management strategies on a large scale without local communities' participation. Hence, the concept of community forestry was first elaborated in 1989, and the first community forests were established in 1990. The basic idea of community forestry in the Gambia was to transfer ownership rights back to villagers to stimulate an attitudinal change towards forest protection and to encourage the sustainable utilization of resources through the creation of benefits for the communities. The community involvement in forest management was achieved through a two-stage process leading to full ownership rights of the forestland by communities (Community Forest Management Agreement, CFMA).

At the end of the year 2000, the Department of Forestry identified the Market Analysis and Development (MA&D) approach of the Food and Agriculture Organization (FAO) to address the critical need to assist communities with income-generating activities from community forests in line with the requirements of the Gambian Forest Management Concept (GFMC).

In order to do this, in January 2001 the Community Forestry Programme of the Gambian Forestry Department, with the support of the Gambian-German Forestry Project (GGFP), started the implementation of the MA&D methodology in a pilot area of the Western Division. The pilot area included 14 villages managing 11 community forest areas.

After the promising results obtained from the pilot implementation in the Western Division (WD), the Forestry Department decided to extend the use of the methodology on a wider scale in the country, in three divisions: Western Division (WD), Central River Division (CRD) and Lower River Division (LRD). It also

expressed an urgent need of capacity building of its personnel in Community-based Enterprise Development to ensure the sustainability of its national Community Forest Programme and requested FAO support, through the Capacity Building in Community-based Forest Enterprise Development project, TCP/GAM/2904 (T) to ensure a timely and appropriate use of the MA&D methodology and replicate at a national scale the process initiated in the pilot communities in the Western Division. By doing so, the Forestry Department personnel trained in the MA&D methodology could then facilitate the development of enterprises based on resources, products or services from community forests. The enterprises would improve livelihoods of forest-dependent people while providing incentives for sustainable natural resource management of community forests in the Gambia. The Forestry Department was supporting the activities related to community-based forest enterprises not only through the enforcement of the forest policy for participatory forest management, but also with a serious personnel and institutional commitment.

2. Learning objectives

The MA&D approach aimed at strengthening the capacities of field-level facilitators and forest users to systematically identify and develop sustainable micro and small-scale tree and forest product enterprises. Through training on MA&D methodology, villagers were not only more knowledgeable in forest products and in carrying out necessary market surveys, but also in revealing existing illegal exploitation and trade of forest products. The MA&D methodology helped communities to directly link forest management and conservation activities to income-generating opportunities.

3. Training objective and calendar

The objective of the training was to build the capacity of the Forestry Extension staff operating in villages in the MA&D methodology so that they were able to facilitate the development of enterprises based on resources, products or services from community forests. At the beginning of the project, the forest extension staff training was assigned to the Forestry Department and to the Gambian-German Forest Project, with the support of FAO expertise.

By extending the project on MA&D methodology to others divisions in the country, it was necessary to involve the National Consultancy on Forestry Extension Services and Training (NACO), a local NGO that supported the Gambian Forestry Department with the implementation of the Community Forestry concept, specifically with regards to extension and training. NACO played a key-role in the training of facilitators. Four training sessions were organized for forest extensionists and facilitators.

The training, developed over 12 months, focused on:

- assessing the situation and short-listing potential products for the community-based enterprises;
- conducting a series of surveys (including market surveys) for final products selection;
- creating interest groups for selected products;
- developing enterprise development plans; and
- linking with appropriate sources of enterprise development support.

4. Training methodology

MA&D is a step-by-step participatory methodology for capacity building, organized in three phases that systematically consider social and environmental concerns alongside the technological, commercial and financial aspects of enterprise development. It uses a series of general tools that need to be adapted to local reality to achieve specific results in the development of business ideas.

The three main phases of the methodology are:

Phase 1: Assess the existing situation

Participants learn the livelihood strategies of the local community, identify a target group of small entrepreneurs within the community, obtain an overview of the available natural resources and products, define problems and opportunities, and short-list a range of products. Village motivators further trained in MA&D methodology are also identified.

Phase 2: Identify products, markets and means of marketing

Participants gather information for analysing the feasibility of short-listed products and decide on the most viable enterprises that can be developed.

Phase 3: Plan enterprises for sustainable development

Participants, after having formulated an enterprise development plan and implemented a pilot phase in which the enterprise is established, are trained to be able to adequately respond to the needs of targeted markets.

5. Trainers and trainees

One Senior Forest Officer (Forestry Department) and one Junior Technical Advisor from the Gambian-German Forestry Project (GGFP) were assigned the responsibility of the training of forest extension staff while the supervision was assigned to FAO expertise.

Forty forest extensionists and six NACO members were trained. National trainers provided also technical support to the field staff for the implementation of the MA&D approach at village level.

6. Didactic materials and curriculum

At the Forestry Department level, it was felt that the MA&D concept should have been best integrated into operational concepts like the Gambian Forest Management Concept.

An MA&D Field Manual has been designed to guide field practitioners who assisted local people in conducting the MA&D process. It consists of six booklets (A-F) and a map of process. Field Facilitators Guidelines complemented the Field Manual and provided easy-to-follow descriptions of practical methods and field tools that may be used to turn villagers into successful small-scale entrepreneurs. Users of the guidelines do need to be experts in business management in order to implement them.

Certain aspects of the MA&D approach had already been incorporated into the Community Forestry Implementation Guidelines and Field Manual produced in English and in two local languages, Madinka and Wollof.

A review of the Kafuta School for Forestry was carried out and changes were made to the curriculum to include the MA&D methodology. The MA&D approach was first introduced at the Kafuta School for Forestry in June 2004. This approach was a completely new concept for both the school and the students. After observing the MA&D approach in the field, the future foresters showed great enthusiasm about its effectiveness.

7. Learning assessment

The assessment of villagers' learning was important to understand how they were developing income-generating enterprises, also taking into account the commercial and financial aspects of small enterprises development. Villagers created associations on their own initiative demonstrating the degree of assimilation of the new knowledge and their familiarity with the MA&D process.

It is also interesting to note that the MA&D process started a new way of thinking which is now used for the marketing of other resources (crops, fruits, etc.). Villagers realize now that they have a much stronger bargaining power when they are well organized and better informed.

8. Training infrastructure

The training course first took place in the Forestry Department but it was later organized in the official buildings of Administrative Divisions.

9. Institutional arrangements

FAO, as Technical Agency, implemented the project with the executive support of the Government of the Gambia while the State Department for Fisheries, Natural Resources and Environment represented by the Forestry Department was responsible of the project execution.

10. Impact

The implementation of the project on MA&D methodology had a very positive impact on the life of local people in the Gambia. Twenty-six villages are actively employing the MA&D methodology and manage 11 different products effectively marketed: firewood, logs/timber, honey, Netto fruits, palm oil, handicrafts from Rhun palm based products, Rhun palm splits, ecotourism, forest walks, tree nurseries and Kembo posts. A number of other products, such as local ropes and bush fruits, were eliminated during Phase 2 because of environmental concerns, lack of appropriate markets and seasonality. More than 484 interest group members are directly engaged in MA&D activities. The positive impact on local people is clear by examining social and economic aspects like a greater community participation and women's involvement in the activities, new employment opportunities and increased economic incentives for local forest users and community forest committees as well as a higher revenue to the Forestry Department through the National Forest Fund (NFF) royalties.

11. Sustainability

The institutional environment related to community forestry is very well developed in the Gambia. There is no or little uncertainty about forest ownership rights, the Forestry Department is fully committed to the countrywide implementation of community forestry and the communities have gained experience in managing their forests. This enabling institutional environment has been a key factor for the success of the MA&D approach. The approach is now clearly contributing to the strengthening, the long-term sustainability and the expansion of community forestry. The Gambian experience can be seen as an example for a successful and gradual transfer of forest ownership rights and responsibilities. The report of the National Market Survey commissioned by the project clearly indicated that some of the outcomes of the project can be used by the Forestry Department for the development of policy instruments like a strategy for the prevention of the looming fuel wood crisis in the country (e.g. planting fast-growing trees for firewood production).

12. Project evaluation

The institutional context has been well developed, through the adoption of MA&D methodology as part of the Forestry Department policy for participatory forest management and the inclusion of the MA&D training package into the technical forestry school curriculum. Additionally, it was made clear in the report of the National Technical and Market Survey that some of the outcomes of the Technical Cooperation Programme (TCP) can be used as a policy instrument for the Forestry Department's forest utilization strategy.

Description of some experiences in Western, Central and Lower River Divisions

Buram and Berefet villages, Western Division

In the village of Buram, villagers who used to sell a truckload of firewood for 3 000 dalasis are now able to sell it for 28 000 dalasis because of better market intelligence. Similarly, in the village of Berefet, firewood and logs are now sold directly on the market place instead of selling to vendors, and much higher revenues are collected. Also the market for branch wood (dead wood collected in the forest) is now better structured and organized.

Brefet village, Western Division, Jombombantang tourist camp

The Brefet Forest Committee decided to establish a camp for ecotourism after considering different options using the MA&D approach. A village youth group was in charge of managing the camp and through that process familiarized itself with the concept of sustainability. Because of the villagers' commitment and the sound planning process, the committee was also able to attract funding from the German Embassy (100 000 dalasis) and other organizations such as ECCO Gambia to support the project. The daily rate for food and lodging is 350 dalasis per person. About 50 percent of the revenues were used to cover overhead costs and the balance for village development and forest management activities.

Tabanani village, Central River Division (CRD)

In the CRD, six villages were involved in the TCP, Tabanani, Korup, Baroba on the south bank and Dobo, Bustaan, Kunting on the north bank. Just over one year after the introduction to the MA&D approach, the six villages decided to establish an association or *kafo* to coordinate their activities. The name of the *kafo* is *Kambeng* or "one voice". The idea of establishing the *kafo* came directly from the participating villagers as they quickly understood that through the association they would be in a much stronger position to access information and to negotiate the sale of their forest products. The president of the *kafo* confirmed that villagers are now in a position to ask for better prices. They already contacted other villages to encourage them to follow the same approach. The vice-president of the *kafo* indicated that without the MA&D methodology they probably would never have been able to manage their

resources in a sustainable way and said, “Now, we know how to use our forests”. A visible impact of the TCP was that villagers now know exactly how best they can use their forest products thanks to better understanding of and access to the markets. They also identified new and more valuable uses of non timber forest products (NTFPs), such as the Rhun palm leaves. Rhun palm leaves were normally used by villagers as fencing material, mostly for their own utilization, but now they build furniture and sell it on the market. A chair is sold for 250 dalasis and a bed for 450. The project supported a twelve-day training course with a Senegalese crafts-man for the production of this furniture, which is selling well on the market and has already been ordered by some hotels. Moreover Rhun palm is a good substitute to the very much endangered Raffia palm.

All villagers are now aware of this result and increasingly realize the potential for income-generating activities through forest management. Because of the sharing of information, all villages are asking the same, have agreed prices for forest products and are not any more selling individually at a non-negotiated price. In addition to the obvious economic impact of the MA&D approach, a significant social impact was also obtained. A member of the *kafo* said, “At the beginning we were blind, now we can pave the way, we can see ahead of us. It brought us together. Forest management is just another way of farming. We have learnt how to catch a big fish but not to eat it”. Through the MA&D, they understood their previous mistakes in forest management. For example, they felled a mahogany tree (*Khaya senegalensis*) two years ago but the log is still lying in the forest because they cut it without knowing if there would be a market

Bustaan village, CRD

This village was involved in community forestry activities, with its own community forest, and in the Joint Forest Management (JFM) of a neighbouring forest park (state owned). So far, revenue was generated only from the community forest. On the other hand, forest utilization in the forest park was hindered by the lack of a revenue sharing mechanism between the community and the Forestry Department. Despite the introduction of JFM in the Gambia a few years ago, the Forestry Department was unable to devise an adequate system for revenue sharing and this was a major obstacle for the management of forest parks.

The village of Bustaan was registered with the Attorney General and has a Certificate of Incorporation. The villagers paid the fee of 500 dalasis to register and they have contributed with further 500 to the *kafo* fund. Financial contributions from Gambian villagers always represent a good indicator of their involvement as their financial resources are very scarce and are only used for important reasons. To register with the Attorney General has a beneficial effect as it is an official and legal recognition of the association, facilitating the creation of partnerships or the support of different organizations. The village decided to implement the MA&D approach after a field trip they made in the WD.

Jassobo village, Lower River Division (LRD)

Jassobo villagers obtained the permanent ownership of their forest in 1999. Since they started to be responsible of their forest during the transfer of ownership, about ten years ago, the forest has never been subject to any fire (fire is one of the main causes of forest degradation in the region). After having obtained the ownership of the forest, villagers did not know exactly how to benefit from it. Like in other villages, they sold their products to individual and occasional buyers without realizing they were selling at a loss. The host villagers provided a good and clear explanation of the MA&D process to the visitors. Their ability to define a selling price based on production costs generated a high interest in the community. The MA&D process took one and a half year to complete and created a visible sense of empowerment among them. As an example, they are now selling a truckload of logs for 17 000 dalasis, while previously they were selling it for 2 000. Moreover, the village is now willing to extend its community forest and to develop an ecotourism activity. In addition, they are also planning to create an association together with four other villages. Under the guidance of the extension staff from the Forestry Department, the selected communities short-listed a range of potential products by assessing their socio-economic situation, making an inventory of existing and potential resources available and studying the market system in which they operated. Market surveys in the pilot area showed that currently several forest products originated in surrounding countries were marketed in the Gambia. The same products could also be harvested, processed and marketed by the local population in a profitable and sustainable way. The implementation of MA&D methodology showed awareness-raising opportunities among concerned village groups in order to obtain good margins through increased production of available forest products.

The community forest committee members highly participated in the activities carried out by the villagers. Valuable forest products and services, which had not been previously considered by the communities and the Forestry Department, were identified through investigations on local and international markets.

13. Cost

The total cost of the project was US\$164 000.

Chapter 2

Education and Training on Junior Farmer Field and Life Schools (JFFLS)

Mozambique: Education on Agriculture and Life Skills Knowledge in Junior Farmer Field and Life Schools (JFFLS) in Africa by Daniela Bruni, Carol Djeddah and Paolo Israel

1. Background

Mozambique is a coastal country of south-eastern Africa, a former Portuguese colony that gained independence through war in 1975. The first 30 years of the history of independent Mozambique were turbulent and dramatic: after a 15-year long civil war (1977-1992), peace accords were signed, and the first democratic elections held (1994). Since then, Mozambique has been one of the foremost African success stories of democratization and development. The three corridors that link the main Mozambican harbours with the surrounding Anglophone countries are one of its most important colonial legacies. Since the 18th century, Mozambican people migrated seasonally to the neighbouring countries looking for work, mainly in the mines of the Copperbelt and in South Africa. In the last decade, the zone of central Mozambique has been heavily affected by the HIV/AIDS epidemics. The rural populations of those areas live scattered around the hilly lands, organized in small patriarchal family settlements living of subsistence agriculture and occasional hunting. Those activities are organized following a gendered division of work: men do the most labour-intensive tasks in the fields, whereas women fetch water, weed the fields and harvest. Because of the scattered pattern of settlement, many of the households are far from schools, health posts, main markets and other facilities. This region of central Mozambique, although united by a common history and a common cluster of languages (all related to the Shona group) are very diverse in ecology. The zone is divided in two provinces, Manica, away from the coast and Sofala, on the coast.

Even in the more remote areas, the AIDS epidemics has taken many lives, disrupting families and orphaning many children both in urban and rural areas. The orphan situation being very severe, this region of Mozambique was chosen as the site where the Government of Mozambique with the support of the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) would implement the pilot project of Junior Farmer Field and Life School (JFFLS), an innovative educational initiative to mitigate the impact of AIDS through the agricultural sector.

2. Learning objectives

The learning aims of the JFFLS are to empower children and youth, enhance their agricultural and life skills and enable them to explore risks, solve problems and develop greater gender equity. At the end of one season, children and youth gain significant knowledge in agriculture, having been exposed to both traditional and modern techniques, are more confident in analysing and solving life problems, are better informed on health, HIV/AIDS, child rights and gender issues, and in general have a stronger self-esteem and capacity to speak out and defend their positions and ideas.

3. Training objectives and calendar

The project focuses on training orphans and vulnerable children and youth on agricultural and life skills in order for them to be better equipped to live in a HIV/AIDS affected area, minimizing their vulnerability to destitution and providing the correct coping strategies for people at high risk of HIV infection. A preliminary study on the situation of orphan and vulnerable children was carried out, showing the need for intervention in the agricultural sector, as a mitigation strategy against HIV/AIDS. During a whole agricultural season, the children/youth follow the life cycle of crops, and make links and inferences to their own life cycles. They meet once, twice or three times a week in the field during a whole afternoon and, guided by facilitators and volunteers, learn by doing and exploring.

4. Training methodology

JFFLS include two participative learning methodologies: Farmer Field Schools (FFS) and Farmer Life Schools (FLS).

Farmer Field Schools (FFS) are field-based training initiatives (existing worldwide) where a group of farmers meet regularly to study a particular topic related to agriculture and income-generating activities. The training follows the natural cycle of the topic chosen, is participatory and based on learning-by-doing and experimentation. Participants in the training will have to learn how to observe a certain crop, how to analyse the field situation and how to take proper decisions for their crop management. This process is called the Agroecosystem Analysis (AESA).

Farmers Life Schools are based on the same learning approaches as FFS, however applied to farmers' lives and livelihoods. They were conceived in Cambodia as a space where farmers might discuss the problems affecting their livelihoods, in particular the HIV/AIDS pandemic.

In JFFLS, the FFS and FLS approaches have been adapted to the needs and situations of vulnerable children and youths. The JFFLS approach is based on experimental learning, whereby children learn good agricultural and life practices through observing, drawing conclusions and making informed decisions. Knowledge

and skills not only empower children economically, but also help them become responsible citizens with positive values regarding gender and human rights.

Moreover, in JFFLS art, theatre, song and traditional dancing play a central role in encouraging self-expression and integration with peers. These cultural activities are also used when exploring sensitive issues such as psycho-social problems, children's rights, gender roles and HIV/AIDS because they help to build trust, explore risks, solve problems and develop greater gender equity.

5. Trainers and trainees

An interdisciplinary team of facilitators accompanied children in the field during the year-long learning cycle. Each team included one school teacher (who then took the JFFLS methodology into the formal school setting), one agriculturist (extensionist, FFS facilitator or JFFLS graduate) and one social animator specialized in drama, dance and creative activities. Each team of facilitators was responsible for approximately 30 children, 15 girls and 15 boys. The children selection was a very important and delicate phase of the whole JFFLS project. Criteria of vulnerability and community involvement had been defined for the participants' selection.

In particular, JFFLS facilitators had to learn how to facilitate children's learning processes by encouraging them to ask questions and by stimulating participation and discussion. Facilitating life skills is the most difficult component of the JFFLS project and needs discussion and attention.

By taking into consideration the importance of facilitators' role a Training of Facilitators (TOF) specifically conceived for JFFLS was organized before the beginning of the school and was developed according to a previous assessment of the facilitators' skills gaps. The main task of a facilitator is organizing the school, facilitating learning activities and dealing with basic administrative issues. The training provided to facilitators included JFFLS methodology and curriculum, the links between vulnerability, HIV/AIDS, agriculture and food security, facilitators' roles, responsibilities, code of conduct and ethics, participatory and gender-sensitive facilitation skills, life skills, technical agricultural issues and business skills development. Since the year 2004, 350 facilitators have been trained and the number of trainees has been estimated around 2 624.

6. Didactic materials

Several didactic materials have been prepared for JFFLS.

A Getting Started Manual has been developed by FAO and WFP for the staff of government ministries, NGOs and faith-based organizations (FBO) working with rural communities in developing countries. The first part provides background information on the JFFLS approach, its origins and guiding principles. The second part describes how to initiate and manage a JFFLS.

In the year 2005, the video "Harvesting for Life" was filmed in Mozambique showing a JFFLS in action with interviews to children, facilitators and programme

officers. Finally, a JFFLS Facilitator's Manual was released by FAO/WFP, focused on child-centred training exercises for the field staff running a JFFLS. The manual deals with the different topics covered by a JFFLS: planning for the future, growing up healthy, diversity, protection, water, harvesting care and support, livelihoods. It shows different facilitation techniques like buzz groups, energizers, community dramas, story-telling, community maps, etc.

7. Curriculum

In the initial experimental phase, the JFFLS curriculum was centred on agricultural practices and life skills that reflected children's interests and needs. As the schools gained experience, an integrated curriculum was developed combining problems encountered in the field and problems faced in life. In other words, the JFFLS curriculum is organized according to monthly themes that link good agricultural practices (GAP) and good life practices (GLP).

The curriculum is built on four main pillars: a) the school site and field activities where children learn by doing; b) special agricultural topics; c) life skills; and d) cultural activities (theatre, dance, singing, etc). The learning field activities are all those that involve setting up and maintaining the JFFLS site. Participating children choose a crop and, with adults' help and support, the learning activities on the school site follow the agricultural cycle, from laying out the site, preparing the land, seeding or planting, weeding and thinning to constructing suitable storage units, storing harvests, making compost, managing livestock, establishing a nursery and irrigating vegetables.

By structurally integrating agriculture and life skills according to monthly topics, the curriculum helps both JFFLS facilitators and children approach life and agriculture from a holistic point of view.

The monthly topics include:

- Life cycles: participants start to know each other and the learning field and explore the similarities between plant and human life cycles.
- Planning for the future: participants undertake initial agricultural planning and explore future aspirations.
- Growing up healthy: participants explore possible ways to grow a healthy crop and how good hygiene and nutrition can help them grow up healthy.
- Diversity: participants explore how diversity in food production helps support food security and how gender equity and respect for diversity help strengthen the community.
- Protection: participants learn how to protect the crop from pests and disease and learn how to protect themselves from threats such as HIV, violence and exploitation.
- Water for life: a short module that coincides with the rainy season, exploring crop water management and revisiting the issue of hygiene.

- Care and loss: a module that coincides with the harvest and participants learn how to maximize output against agricultural losses and how to conserve and store food for the future. At the same time, they explore how to care for their own psychosocial health and plan for their future.
- Business skills and entrepreneurship: focus of the second year/agricultural cycle of JFFLS. Participants explore how to develop everything they learned about agriculture and life and transform it into livelihood opportunities.

8. Learning assessment

The assessment of children's learning is important to understand their level of knowledge and eventually correct some shortcomings in the learning process. The Facilitator's Manual provides some examples of creative ways to assess children, without necessarily grading them, in order to build their self-confidence and motivate them to continue learning.

Each JFFLS activity has a learning objective indicating what skills children should have acquired at the end of the activity itself. Practical exercises give children the possibility of practising and remembering what they have learned and give facilitators the opportunity to observe their progress in learning. With the games, facilitators can evaluate children's learning and identify some gaps. Many JFFLS activities have an assessment component built in where participants demonstrate their level of learning through drawings, presentations, role playing.

9. Training infrastructure

At the beginning, JFFLS were implemented through faith-based organizations in the province of Manica, near the city of Chimoio. With the scaling up of the project, new sites were identified in other areas and were connected to formal education schools, mostly in remote rural areas affected by AIDS.

The site selection criteria were developed through an open and participatory process together with communities and local institutions. The learning field should be safe, near major roads (for an easy access of the community and for demonstration), near water sources or irrigation plants. In Mozambique, village leaders interviewed clearly indicated that JFFLS activities were welcomed by participating communities because the approach "makes learning easier because it is practical", as stated the village chief, Inchope.

Each JFFLS site is a living classroom, well organized, very visible, near formal schools, it has no cost for the community and is linked to already existing initiatives. The field should demonstrate technical, educational, environmental feasibility and provide measurable concrete results thence increasing community's understanding of advantages and impacts on long-term food security and protection of children.

An area measuring between 800 and 1 000 m² would be the best size for a JFFLS, consistent with its learning criteria. The field should have:

- staples to meet basic food needs and a nutritional garden for healthy growth;

- long-term crops such as cassava, pineapple and sweet potatoes to introduce planning for the future and investing;
- a small traditional space for indigenous and medicinal plants to include health care trees so that agroforestry can contribute to long-term livelihoods.

Each experimental plot allows children to experiment and analyse different agricultural techniques following the seasonal cycle and the agro-ecological zones. At a later stage, livestock is also introduced in the living classroom.

10. Institutional arrangements

In Mozambique, after a few months of piloting, the JFFLS have been enthusiastically adopted by the Ministry of Agriculture as a national policy and it was given a budget line. At the same time, JFFLS were included into a nation-wide project of FFS for adults (PAN II).

In the overall process of implementation in southern Africa, national entities and local authorities from the Ministries of Agriculture, the Ministries of Education and Social Welfare and local NGOs participated actively in the whole project and particularly in the training activities.

The selection of an appropriate host institution is of crucial importance and has immediate and long-term implications for implementation and potential up-scaling strategy of the JFFLS approach/model. In Mozambique, Kenya, Zambia and Namibia, JFFLS sites were implemented in cooperation with national institutions, faith-based organizations, local NGOs or linked to formal primary schools.

11. Impact

Almost 7 000 children either orphaned by HIV/AIDS or living in vulnerable conditions benefited to date from the project.

The impact of JFFLS has been assessed in many missions and is proven by the enthusiasm demonstrated by stakeholders and communities adopting the project. Children empowered through JFFLS show more resilience, self-esteem, a better vision of the future and improved livelihoods. The children often shared with their families the agricultural and life practices learned and experimented at the JFFLS fields, contributing to the sustainability of livelihoods in the communities.

In order to meet the needs of all JFFLS participants and their communities, a participatory monitoring and evaluation (PM&E) process has been developed for all stakeholders involved in the monitoring and evaluation activities of the project. A selection of these activities, adapted for the use with children, is included in the Getting Started and the JFFLS Facilitator's Manual. A thorough assessment of JFFLS impact, both quantitative and qualitative, is expected to emerge through those M&E tools, and through snapshot studies and operational research at present ongoing in this promising project.

12. Sustainability

The institutional link between JFFLS and formal (primary) schools seems to be the key to sustainability, along with spontaneous replication of the initiative. The synergies and complementarities between formal school and JFFLS activities can integrate theory with practice. Another way to sustainability is the availability of and access to Direct Support to Schools (DSS) funds through the Ministry of Higher Education, Science and Technology from central to district level, specifically dedicated to orphan-related activities.

A governmental decentralized institutional network such as the formal school system (there are many more schools than NGOs and extensionists) facilitates the expansion of JFFLS. Moreover, schools are permanently there, beyond FAO and WFP, and facilitators from schools (teachers) and agriculture (extensionists) are already paid and need no additional incentives. The training courses strengthen their capacity by equipping them with additional skills and expertise. JFFLS offer an added value in the improvement of teachers' capacity and the quality of teaching.

JFFLS, partly in an independent way, started to be developed in 2004 in eight different African countries (Kenya, Malawi, Namibia, Sudan, Swaziland, Tanzania, Uganda, Zambia) with significant creative adaptations and innovations of the original project design, following local contexts. In the year 2006, the JFFLS approach was expanded to the Kakuma refugee camp in Kenya (and soon in Uganda), with a particular focus on orphans and vulnerable children resulting from civil violence and displacement, with the support of the United Nations System-wide Work Programme on Scaling-up HIV/AIDS Services for Populations of Humanitarian Concern. The schools in Kakuma currently reach about 180 children, both from refugee and hosting communities. A Mobile JFFLS Manual for the training of facilitators in refugee settings has been elaborated.

13. Cost

The overall cost of a JFFLS varies depending on the context and the implementing agency. The first cost to be envisaged is the training of facilitators. The estimated running costs per school per year are US\$1 755, equivalent to less than 5 dollar per child per month (Table 1).

Table 1: JFFLS Running Costs per year

Item	Quantity No. of Units	Unit cost US\$	Total cost US\$
Learning field inputs (fertilizers, seeds, pesticides and equipment)	For 1 000 m ²	292.50	292.50
Water pump	1	160.00	160.00
Small livestock (mix)	-	192.00	192.00
Fruit trees (mix)	-	100.00	100.00
Training materials	For 30 OVC	4.47	134.00
Recreation materials	For 30 OVC	3.45	103.50
Livestock infrastructure	-	80.00	80.00
Field days	1 per year	80.00	80.00
Graduation	1 per year	80.00	80.00
Transport of facilitators (per session)	1 facilit. x 150	3.00	450.00
Miscellaneous (5%)			83.00
Total running costs for one JFFLS in the first year			1 755.00

Chapter 3

Education and Training on Fisheries

Guinea: Improving Fish-Smoking by Daniela Bruni, Audun Lem and Yvette Diei Ouadi

1. Background

The Gulf of Guinea, in West Africa is a traditional fishing ground for its bordering coastal countries, especially as far as small-scale fisheries are concerned.

In Guinea, the fisheries sector represents an important sector in the national economy. It generates more than 10 000 direct jobs and provides about 40 percent of the food consumed locally by people.

Women play a central role in the fisheries sector of Guinea and are involved in both fish processing and fish marketing. In particular, they are responsible of preserving the local catch by smoking the fish over open fires, traditional round barrels or mud ovens. It is a time-consuming tiring job and the result is often of poor quality because the fish dries unevenly or becomes charred. Women represent 70 to 80 percent of fish workers involved in this activity and the majority of them are illiterate.

To address this issue, the FAO TeleFood Programme identified the fish-smoking women in Guinea as eligible for TeleFood funds and decided to support the local cooperatives of fish-smoking women in Bonfi and Temenetaye villages.

The two villages are important fishing communities situated in a rural area not far from the national capital, Conakry. Women working in smoking activities in Temenetaye and Bonfi are organized in cooperatives significantly contributing to the socio-economic development of the country.

In Guinea, like in most West African countries, fish-smoking is mainly used for fish preservation combining three effects:

- the extraction of moisture by the heat generated by fire causes drying and consequent unavailability of water for microbial activities that may alter the quality of fish;
- the smoke from burning wood preserves the fish because it contains a large number of compounds, e.g. phenols, an antioxidant, that can also kill bacteria causing spoilage;
- the cooking of the fish flesh at a high temperature kills bacteria and destroys harmful enzymes.

The preservation effects are actually ensured by the drying and the anti-microbial action of the phenols.

To facilitate and support the activities of fish-smoking women, the TeleFood Project initiated an education/training programme to replace the old ovens with an improved version more fuel efficient and with increased capacity, thereby conserving the scarce wood and reducing leakage of heat and smoke (with subsequent exposure of women) by increasing heat concentration.

Realizing the inefficiency of the old open ovens, the FAO project promoted the Chorkor fish-smoking technique that had proven to be more efficient in terms of cost and energy utilization than the others used in West Africa. This technique comes from the traditional cylindrical oven made from compacted clay. The cylindrical oven became rectangular and then further developed into the now famous Chorkor oven with mud, cement, red-brick walls with stokeholes for fuel wood inlet and fire control.

2. Learning objectives

The aims of the Improving Fish-Smoking project were to empower local women and enhance their fisheries and life skills.

At the end of the education and training courses, the women, exposed to a modern technique, gained more knowledge about fisheries, they became more confident in managing the Chorkor oven, better informed on health and strengthened their self-esteem and capacity in literacy and numeracy.

3. Training objectives and calendar

Eighty percent of the 140 women participating in the project were illiterate. For this reason, before the beginning of the technical training programme, a basic literacy course was developed for the participants. All the women were keen to be involved in the basic education course because they realized that through education they would be able to have access to information and improve their skills in management, planning and commercial operations.

The educational needs as identified by the women themselves were:

- functional reading and writing;
- simple calculations;
- understanding of credit mechanisms; and
- training in appropriate fish-processing technologies.

The basic literacy courses were developed by using modules of reading, writing and calculations. Each class was conceived for 20 people following a rotation programme that allowed all participants to attend the courses. The organization of the classes and the timetable (twelve hours per week) were decided by the participants themselves. This type of organization fitted well with their jobs both at the cooperatives and at home with their families. The course of basic literacy lasted 45 days. After its completion, the women started to follow the second training activity concerning implementation of the fish-smoking new techniques.

The aim of the project was to improve the oven technology used in the villages and increase the nutritional and economic value of fish. Another aim was to improve women's working conditions and reduce the amount of wood consumed. An additional benefit is that the new oven is less expensive to build when local materials are used, is also durable when sheltered and can produce a high-quality and uniform product.

The success of this technology in Guinea attracted considerable interest from technologists and processors in the region. Practitioners testified to its merits like the reduction of adverse health effects (eye, nose and bronchial problems) associated with the traditional open banda oven. Fuel wood consumption, which is increasingly becoming a major concern for the processors, is also reduced by this technique.

4. Training methodology and curriculum

The methodology was a step-by-step participatory methodology for basic skills and training and it was arranged and planned by using two different modules.

The first module for the basic literacy course provided an opportunity for women to develop their understanding, knowledge and skills in the three areas of reading, writing and calculations, taking into account their own development and learning needs.

The second module concerned the application of the new fish-smoking technique and the construction of the ovens using local materials. The construction of the modified Chorkor ovens was explained step by step by a group of bricklayers and masons previously trained in Ghana.

5. Trainers and trainees

The trainers were selected by the NGO *Entraide universitaire pour le développement* (EUPD), specialized in basic literacy training and located in Conakry.

EUPD trained staff from the *Comité de coordination et de formation des actions de développement* (CCFAD), also involved in the project.

The trainers of CCFAD participated to the whole project, training 140 women both in literacy and numeracy and in the use of new smoking racks and ovens.

6. Didactic materials

Two didactic materials were designed for the project. A *Getting Started Manual* was developed in local language and included notions of basic education. It was used before the *Technical Manual* which explained step by step the use of the Chorkor oven. Women were taught new smoking techniques by using new smoking racks and ovens built with local materials. A short video to facilitate dissemination of information related to the project was also developed.

7. Learning assessment

The assessment of the women's learning was important to understand how they were integrating the new technique and this was demonstrated by its immediate application, by using smoking racks and ovens built with local materials as well as by the improvement of working conditions.

8. Training infrastructure

The training took place in the local cooperatives situated in the Temenetaye and Bonfi villages and involved about 140 women. The ovens used for the training were constructed with local materials and remained in the villages after the training was completed. The new ovens were used as a practical example for the training

9. Institutional arrangements

The Government, with the support of the FAO Representative in Guinea, chose the local cooperatives as recipients for TeleFood funds based on their organizational set-up, the importance and distribution of fish-smoking in the local economy and the importance of fish as a vital component to cover nutritional needs.

10. Impact

The implementation of the project had a very positive and significant impact on the life of local people in Temenetaye and Bonfi villages. It resulted in a reduction of production costs thanks to a more efficient use of wood for smoking, less damage to the environment as a result of the reduced consumption of fuel wood, an improved utilization of fish with less spoilage and waste and, mostly important, an improvement in the health of women doing the smoking, some of whom are among the poorest in the community.

This positive impact on local people is clear when examining both social and economic aspects. The participation of communities and the involvement of women in the whole process of smoking techniques were increased. It is interesting to note that the basic skills learnt and the techniques acquired facilitated a new way of thinking now used also for the marketing of fish. Indeed, it is the evidence that women can have a much stronger bargaining power when they are well organized and better informed, a very strong indicator of local people empowerment.

11. Sustainability

The best indicator of sustainability is the fact that women formed cooperatives on their own initiative and requested to extend the training to other villages. Such a level of empowerment was rarely observed in rural areas, especially among fishing communities. The women's commitment was impressive and in their presentations

they demonstrated their high degree of assimilation of the new knowledge and their familiarity with the new fish-smoking process.

The new smoking technique with improved ovens has also promoted exchange of experiences between Guinea and other West African countries like Mali, Senegal and Burkina Faso where the project was replicated.

12. Project evaluation

The impact of the project has been considerable, both at local level in the involved villages and at regional level in Western Africa. The project has been replicated a number of times and the Chorkor oven has firmly established itself as the oven of choice. However, smoking technology has been further developed and more advanced ovens than the Chorkor are now available.

The women's group in Bonfi, for example, was supported by FAO in 1984 and is still in operation. This spirit of self-help and independence is confirmed by the president of a local non-governmental organization: "You really need to know the Bonfi area in order to appreciate how much work has been done here. Before the TeleFood project we, as an NGO, were already working on the ground and, frankly, we knew that there was a great deal to be done."

Future projects will therefore build on the positive outcomes resulting from the project including interaction with stakeholders and active stakeholder involvement.

13. Cost

The cost of the training was US\$10 000.

Chapter 4

Education and Training on Land and Plant Nutrition

Niger: Promotion of the Use of Agricultural Inputs by the Organizations of Producers (GCP/NER/041/BEL) by Daniela Bruni, Bruno Poitier and Walter Burgos León

1. Background

Niger is a vast land-locked country with a total area of 1 267 000 km² in West Africa. Only 15 percent of its land is suitable for cultivation. The semi-arid Sahelian zone of West Africa is one of the poorest regions on earth and shows one of the lowest human development index. The climate is extremely harsh, with an annual rainfall ranging from 350 to 800 mm. Niger's economy is dominated by subsistence agriculture and informal economic activities. Its dependence on agriculture makes the economy extremely vulnerable to climate change (low rainfalls, high temperature and soil aridity). The main agricultural activities are normally divided into two categories according to the seasons. Millet and sorghum are the main crops in the winter season and they essentially provide for family needs. Only when the production is more than needed, it is possible to sell on the market.

Moreover, Niger often has to face food crises owing to poor soil fertility and drought. When plants are malnourished, their poor root systems cannot benefit from the small quantities of rainwater. Increased food needs in the region, driven by considerable population growth, have put further pressure on the fragile land system. Although livelihoods in Niger are based on subsistence agriculture and animal husbandry, agriculture production and its value do not meet the needs of the majority of rural families.

To address this issue, the Government of the Niger, with FAO technical support, started in the year 1999 the project Promotion of the Use of Agricultural Inputs by the Organizations of Producers (GCP/NER/041/BEL), called *Projet Intrants* or Inputs Project, financed by Belgium and implemented in collaboration with the Ministry of Agriculture of the Niger.

The Inputs Project was launched to face the major challenges of rural development in Niger. Indeed, farmers and rural populations in general always have to face the same problems:

a. Access to technical knowledge. Farmers' training and capacity building was one of the pivotal areas of the project. The enhancement of quality of learning outcomes and their impact on agricultural development were closely related to the training given to all beneficiaries. In 2004, after years of "traditional" agricultural extension

activities, the project wanted to go further by introducing the innovative concept of Farmers Field Schools to reveal and promote farmers' traditional knowledge and experience and to let skilled farmers become themselves trainers.

b. Access to affordable and quality fertilizers. To facilitate access to agricultural inputs, two kinds of demands were identified:

1. "Structured" or "predictable" demand: it concerns Farmers or Producers' Organizations with working capital to purchase in bulk and generate an economy of scale;
2. "Diffuse" or "poor" demand: it concerns individual producers who purchase a small quantity of agricultural inputs according to their financial availability. The diffuse demand is now satisfied by a network of 330 shops of agricultural inputs, an idea also developed by the FAO Inputs Project.

The inputs shops, owned by farmers' organizations, are managed by qualified farmers, previously trained by the project on marketing and technical aspects relating to the agricultural inputs sold in the shops. They offer different services such as selling agriculture fertilizers, seeds, pesticides and renting agricultural tools. In rural areas, inputs shops also act as an important focal point for exchanges of technical information among farmers.

c. Access to funding opportunities through warrantage (or inventory credit).

To promote "access to credit", FAO strengthened and developed a system of warranting credit facility. This is an interesting technique of credit which consists in farmers securing loans by putting in guarantee their agricultural production later sold at a higher price during the lean season. These loans enable them (1) to meet their immediate family cash needs, (2) to carry out income-generating activities during the dry season, and (3) to purchase fertilizers (and other agricultural inputs) for the following agricultural campaign.

2. Learning objectives

The Inputs Project aimed at strengthening the capacities of farmers' groups to play an important role in inputs supply for farm production as well as to enhance their agricultural and life skills. At the end of the training courses, farmers were more knowledgeable in agriculture, having been exposed to a modern technology, more confident in managing micro-dosing fertilizer technique, better informed on credit access and had a strengthened self-esteem and marketing capacity. Their level of competence in job performance was emphasized and their personal creativity was fostered through the enhancement of their abilities required for learning in the context of lifelong education and training.

3. Training objectives and calendar

Training is a key element in ensuring the sustainability of the technology and dynamics initiated in this project. In order to define the training topics on the basis of an agreement with the target population of farmers, the project staff first undertook some baseline surveys to identify the farmers learning needs.

The trainees expressed the wish to be involved in agriculture and microfinance activities because they knew that through training they would have access to information and improve their skills in agriculture, planning and commercial operations.

The training objective was to improve fertilizers' use in order to increase the agricultural production and prevent food crisis. The training started in five regions of Niger: Dosso, Maradi, Tahoua, Tillabery and Zinder. These regions are situated in the arable dryland zones where soils are generally sandy with low inherent fertility and moisture holding capacity, except in river valleys where clay soils are found. About 70 percent of the population of Niger resides in these regions.

Farmers were usually trained on micro-dosing technique and warranting activities, inputs shops management, marketing techniques, etc.

The micro-dosing technique developed by research institutes consists of placing small doses of fertilizer directly into the soil at the time of sowing rather than spreading it all over the field. In this way, the soil composition (mainly phosphorus deficiency) can be rectified and the plants can better resist to drought when a shortage of water occurs. With just one sixth or less of what is used in the developed countries, micro-doses technique allows the plants to develop a better root system and capture more water, increasing millet yields by 70 percent on average.

The training sessions on micro-dosing consisted in demonstrating this new technique of fertilization (conventional demonstrations in rural areas) with the hope that positive effects will convince farmers to adopt it.

After several tests with proactive farmers' organizations (in the years 1999 and 2000), training sessions on warrantage were developed to teach the necessary marketing operations: storing grains during the harvest period, contacting a microfinance institution ready to provide cash loans for 80 percent of the actual value of the warranty (harvest stock), helping farmers to develop economic activities enabling them to pay back the loan including interest, organizing collective fertilizer purchase for the next season with part of the warrantage operation benefits.

The organization of the training course and the timetable are always decided together with farmers according to daily unloading and field activities. These training programmes are usually short, never exceeding three or four days together and six hours a day. One of the reasons is the fact that farmers cannot leave their work for long periods to attend training programmes and have problems in concentrating more than few hours a day. Field work or demonstration always improves the impact of a training session with farmers.

In the year 2004, in order to make farmers' capacity building more participative, the project adopted an innovating programme based on the Farmer Field Schools

concept. Farmer Field Schools are a form of adult education, which evolved from the concept that farmers learn best from field observation and experimentation. Therefore Field Schools are oriented to provide basic agro-ecological knowledge and skills in a participatory manner so that the farmer experience is integrated into the programme.

Both Farmer Field Schools and training for trainers are usually based on fertilization, improved seeds variety, pesticides, biological pests control, marketing issues, etc.

Farmers Field School groups usually include 20 farmers and meet on a weekly basis during the whole agricultural season (from field preparation to crop and marketing). The gender ratio is set according to local context, i.e. it can be 100 percent men or 100 percent women, but in most cases it is balanced with an average of about 48 percent of women.

4. Training methodology

The training assessment was first based on the experience of the project regional staff posted and working closely with regional agricultural services. Backstopping was ensured by the project technical staff based in Niamey and on some occasions additional support of external teachers was searched to face the large number of training sessions organized. In any cases, it was necessary to investigate into the socio-economic organization at village level and to use appropriate communication channels and specific modules in order to mobilize the communities.

The selection of the communities was done following well-defined criteria:

- existence of a core of literates;
- mobilization and motivation of the village;
- community participation in training activities; and
- possibility of strengthening the farmers' organizational capacity making them capable of using available resources. .

A multi-disciplinarily team (educationists, technicians in agriculture and in new technologies) was in charge of the training. They demonstrated the suitability of the native languages for the training and established links between them and a modern scientific knowledge.

It was developed a participatory methodology for basic skills in agriculture techniques although the training programme was not organized on a regular basis. It was arranged and planned by using different modules covering all sectors of agriculture production, from inputs supply to products marketing.

During the first phase, farmers learned the importance of the use of nutrient and fertilizer techniques. They obtained an overview of the available natural resources and products, defined problems and opportunities and short-listed a range of fertilizers, seeds and products.

In the second phase, participants gathered information and techniques for analysing the products and fertilizers and learnt how cooperatives and inputs shops could be developed.

In the third phase, the training was organized in order to be able to manage the warranting technique.

In the last phase, FFS were used to train selected farmers as interns in the targeted areas and from neighbouring villages on various agricultural subjects. These farmer trainees, who formed farmer research groups, served as extension agents and field technicians during farmer field days.

5. Trainers and trainees

At the beginning of the project, the trainers were technicians from the Ministry of Agricultural Development who had acquired a broad experience in the field of agricultural techniques and in microfinance. They were based in Niamey and wanted to share their knowledge and expertise with farmers. Today seven regional staff of the ministry are trained to attain a multiplier effect, that is to enable them to share their experiences and train others at a lower level. Many local NGOs were also involved in the project to provide training to farmers.

Between 1999 and 2006, the project trained more than 33 000 farmers and collaborated with about 1 850 Organizations of Producers gathering 60 000 farmers and about 50 other partners (NGOs, bilateral and multilateral cooperation agencies, private sector, banks, etc.).

6. Didactic materials

The quality of the training was enhanced by using appropriate modules to improve and implement farmers' skills in power plant, fertilizers and warranting. These modules were teaching-learning resources, well designed and helped the trainers to ensure standards of effective training.

The materials included a statement of learning objectives focusing on:

1. plant nutrition and soil fertilization;
2. inputs shops management;
3. pests control;
4. accounting and bookkeeping;
5. inventory credit and microfinance;
6. conservation and transformation of products; and
7. marketing.

The materials used during the training were complemented by messages, examples and illustrations related to the interests, expectations, previous knowledge and experience of trainees.

7. Learning assessment

The assessment of the farmers' learning was important to understand how they were managing the new techniques. Facilitators demonstrated the farmers' capability of organizing and conducting the application of the new fertilizers, the management of producers' organizations, the inputs shops and warranting credit.

The assessment of the trainees' achievements as regards to changes in attitudes, skills and awareness were determined by the effectiveness of the training in producing immediate learning outcomes which allowed farmers to transfer the new knowledge to the community and its application to their daily life.

8. Training infrastructure

During the first phase of the project, the training took place in the FAO premises in Niamey. Later, with the collaboration of some NGOs, other structures such as official buildings or field houses were used to train farmers.

9. Institutional arrangements

FAO as Technical Agency implemented the project with the executive support of the Ministry of Agricultural Development of the Niger.

10. Impact

The implementation of the project had a very positive and significant impact on local people's lives. Farmers skills and knowledge were upgraded and now they are able to run their activities by and for themselves. The income of farmers using micro-doses of fertilizer and the inventory credit system increased from 52 to 134 percent.

Farmers' access to credit and inputs was greatly improved by the warranting system. Moreover, farmers who were involved in warranting activities used the credit to undertake income-generating activities and purchase fertilizers and seeds of improved varieties for the next cropping cycle.

It is also interesting to note that the basic skills and the techniques acquired have initiated a new way of thinking now used also for the marketing of agriculture products. Indeed, it is the evidence that farmers have a much stronger bargaining power when they are well organized and better informed. This is a very strong indicator of empowerment of local people.

The impact of the project has been considerable, both at local and national level. A network of 330 inputs shops managed by and for the farmers is currently operational. Investigations show that in villages where inputs shops were implemented, the utilization of fertilizers has increased up to six times within the two years following the opening of the shop.

The extension of the techniques has improved the quality of crops while the warranting technique has become an appreciated strategic tool for rural development, officially encouraged by the Government of the Niger.

11. Sustainability

The Kingdom of Belgium financed the whole project and, after having analysed the successful results obtained between 1999 and 2006, showed great interest in extending the activities at a regional level including Mali, Burkina Faso and Senegal. The programme Management of Agriculture Inputs for Food Security in Western Africa has been designed and will be executed by FAO from 2008 to 2011.

The European Union (EU) has also appreciated the development and positive effects of the inputs shops network in Niger and considers them useful tools to fight hunger and poverty in rural areas. The EU already allocated 3.8 millions of euros for the networking of inputs shops in the country.

The inputs shops have modified the use of agriculture fertilizers in the country. More than 330 inputs shops have been opened gathering 100 000 members.

The extension of the techniques has improved the quality of crops while the warranting technique has become a financial strategy for rural development officially encouraged by the Government of the Niger.

12. Cost

The total cost of the project was US\$6 848 019.

The project was developed in three phases as follows:

Phase 1 from January 1999 to June 2001:	US\$1 195 299
Phase 2 from July 2001 to November 2003:	US\$1 186 640
Phase 3 from December 2003 to November 2007:	US\$4 466 080

Chapter 5

Education and Training on Communication

Mali: Rural Radio by Riccardo Del Castello

1. Background

Communication is essential to rural development, all the more so with the importance now attached to grassroots participation and sustainable development. Despite the technological advances in the communication field, radio is still the most pervasive, inexpensive, popular and socio-culturally appropriate means of communication in many parts of the developing world. Particularly in Africa where the majority of people live in rural areas, radio is a vital communication tool. Often it is the only medium available for disseminating rapidly to large and remote audiences, critical information about markets, weather, crops and livestock production and natural resource protection. Rural radio can motivate farmers, promote the exchange of views and draw their attention to new agricultural production ideas and techniques. It implies a two-way process, which calls for the active participation of the communities in the planning and production activities of the radio broadcasts. It is the expression of the community rather than a channel for the community.

Thanks to its wide coverage rural radio also brings people closer together, stimulates information, and enhances the value of local know-how. Programme production is relatively simple and local stations can easily create their own content which often goes beyond agricultural issues to address a wide range of social, educational, health-related and cultural issues.

FAO has supported African countries in developing rural radio for more than 20 years and has drawn up a methodology based on the involvement of the different sectors of rural development in the definition and implementation of programmes. Interdisciplinary production teams work together to ensure that programme topics are relevant and are based on the real information needs of their audiences. Therefore production units must work with rural populations and often broadcast directly from the field. Mali is also one of the countries where FAO's assistance to rural radio has been instrumental in promoting the use of radio for the development of rural areas. Through the Technical Cooperation Programme, and in particular through the activities carried out within the context of TCP/MLI/2355 "Relance de la Radio Rurale", similar initiatives were implemented by other organizations and attracted donor investments. A direct result of this was the project MLI/020/NET "Relance de la Radio Rurale au Mali (phase II)", implemented by FAO from 2001 to 2003 with funding from the Government of the Netherlands. The project yielded

considerable results in terms of programme quality, effectiveness, capacity building and sustainability.

TCP/MLI/2355 – *Relance de la Radio Rurale- Phase I*

After 25 years of existence, marked by various periods of ups and downs, Rural Radio in Mali saw a new rebirth starting in 1993, backed by strong political will to promote the development of the rural world through radio and by the commitment of local rural communities to contribute to their own development by sharing knowledge and information.

Since its independence in 1960, the Republic of Mali lived through thirty years of government propaganda disseminated by the national radio and television network, and with *L'ESSOR*, the national newspaper, to carry out the government's media show, and its mobilisation of public opinion. At the beginning of 1991, Radio Mali only covered 60 percent of the country's territory, and *L'ESSOR* was read by less than 5 percent of the population, and both continued to completely ignore the nationwide need for information and communication, as well as the linguistic and cultural diversity of the nation's minorities. After March 1991, the country's new political authorities put an immediate halt to the Government's outright monopoly of media and a new era begun, particularly in the radio sector. Ten years later, in the year 2000, there were more than 120 radio networks broadcasting in Mali.

It is within this context that the Malian Government requested FAO's assistance to provide equipment and training to local communities for institutional strengthening and training in radio production. A work-plan for the implementation of the project was prepared with the collaboration of potential users of the rural radio consisting of representatives from the public and private sectors, NGOs, bilateral and multilateral cooperation.

GCP/MLI/020/NET – *Relance de la Radio Rurale- Phase II*

As a follow-up to the first phase of the Rural Radio Project, a second phase was implemented between 1997 and 2000 with the financial support from the Government of the Netherlands for the creation of four community rural radio stations, in Bougouni, Bla, Kolondieba and Koutiala, in the cotton-producing region also known as Mali-South. The project was implemented in collaboration with the Ministry of Communication and with the local support of the CMDT (Mali Company for Textile Development).

The management structure that would have assured the continuity of the four rural radio stations was considered of fundamental importance. To achieve this objective, the local population has been involved as much as possible in the management of the radio stations, by means of:

- a sensitization campaign to inform and mobilize local communities;
- the creation of Programme and Management Committees; and
- the establishment of production teams.

The absence of any regulations with regard to radio broadcasting in the Mali Republic has made it necessary to carry out a study dealing with the adoption of a

juridical status for this sector, as well as the specifications recognized by the Government.

2. Learning objectives

The aim of both rural radio projects was to build capacity in the overall management and operation of a rural radio station as well as provide the necessary equipment for the installation of radio stations. This entailed, on the one hand the establishment of a management structure capable of ensuring the financial sustainability of the station and the smooth running of a programming schedule, and on the other the development of skills in radio production techniques and equipment operation and maintenance.

3. Training objectives

The aim of the project was the training of radio producers or, as their title suggests, *animateurs*, that is journalists with specific skills ranging from radio interviewers to social researchers and media organizers.

During this first phase, the project carried out a technical feasibility study for the installation of local rural radio stations in the North and South regions of the country. The first phase of the rural radio project began in May 1993 and was completed in June 1995. Its main objectives were:

- Formulating a short-term and a long-term rural radio development plan;
- Training rural radio personnel at the regional and local levels;
- Defining the juridical, administrative and financial modalities relating to rural radio; and
- Establishing a follow-up and evaluation system that would lead to a study of the rural radio audience.

In the second phase, training consisted of installing four rural radio stations in the southern region of Mali: Bla, Kolondieba, Koutiala and Bougouni. The main aim of these radio stations was to produce radio programmes for rural populations and engage them in dialogue and discussion over topics of their own immediate interests. Similarly, the radios were expected to provide assistance in information and communication for other development programmes supported by the Dutch Development in fields such as natural resource management and protection, education, water conservation and promotion of gender issues.

4. Training methodology

FAO's support to rural radio in Mali mainly concentrated on capacity building of local human resources to acquire the technical aptitudes and competences that were indispensable for production, organization, broadcasting, management as well as the maintenance of the rural radio stations.

The methodological approach, which in earlier models of rural radio had been placed primarily on educational aspects, concentrated on the interactive dimension, and to mutual support. Essentially it was the entire communication process that had been enhanced, as well as the present means of operating. Whereas the old way of doing radio had been based upon a thematic approach, the new rural radio formula builds on the principle of integration, and seeks a global approach. The rural radio methodology took into account the juridical and regulatory aspects that enabled rural radio networks to operate independently after the external assistance ended.

The main objective of a rural radio methodology was to ensure that rural radio activities were embedded in the daily schedule of programming and were geared towards service provision of the different development operations. In order to do these four methodological principles were applied:

1. **Integration**: It was essential that rural radio stations expediently integrated all of the concerns and themes of rural development. It was therefore important to encourage the establishment of intersectoral structures for the joint planning and orientation of programmes that involved the Ministry departments concerned with development, the NGOs, the sponsors, as well as the associations or groups that were representative of the rural world.
2. **Interdisciplinarity**: It was essential that the rural radio production and animation teams were of an interdisciplinary nature. It was useful for the staff and technicians from the main organizations involved in rural development to work together with these teams, to provide them with homogeneous and technical training on rural radio production methods, and to encourage the creation within these organisations of groups that would follow up the activities of the rural radio stations.
3. **Interactivity**: The rural radio production and broadcasting activities were based upon the real concerns that affected rural world, and they took the form of a permanent dialogue with the communities. Therefore priority was given to mobile production means and to information coming from the field. Radio programmes were adapted to the cultural characteristics and the communication circuits that were typical of the rural world. In addition, they integrated the values that formed part of the local heritage.
4. **Durability**: It was essential to design and formulate the appropriate juridical, institutional and administrative framework that allowed the rural radio stations to generate their own resources, and to manage their activities autonomously.

5. Trainers and trainees

FAO experts in collaboration with the Mali Radio and Television (RTM) trained 106 radio producers at national, regional and local level. Two international consultants led training sessions in microprogramme production and audio documentation and archival, while various national consultants led the training in radio production techniques, audio and editing techniques. Among these a number of radio

technicians were also trained in recording and editing techniques. Training sessions were open to officers from agricultural support services so that they could also be exposed to the rural radio methodology. The local communities as owners of these radios networks participated in an active manner in the production of radio programmes, and in their monitoring, in order to promote the development of social, economic and cultural activities.

6. Learning assessment

The assessment of the local communities learning was important to understand how they were managing and applying the new radio methodology. Globally the activities of the project have been successfully implemented. Key to this success was the involvement of local communities from the very beginning of the implementation period starting with the establishment of the Management Committee. The work of the committee was thus instrumental in creating a democratic and transparent environment in which members of the community had developed a deep sense of ownership of the radio, could voice their opinions freely and be sure that their concerns were taken in consideration.

7. Training Infrastructure

The training sessions took place in official buildings in the capital Bamako, with the support of radio networking broadcasting in Mali.

8. Institutional arrangements

FAO as technical Agency implemented the project with the executive support of the Ministry of Culture which was designated as the Government Institution in charge of the project.

9. Impact

Radio stations were regarded as tools for mediating between villagers and their external partners and as an effective way of expressing the needs of rural communities. Often villagers' requests for better services, equipment and assistance were communicated through the radio. They knew that decision makers, back in the capital city, were listening and that radio gave them the opportunity to express their opinions, raise their concerns and be heard.

Radios were also viewed as tools for reinforcing cohesion and solidarity within villages. Through the exchange of information and different points of view, people learnt about each other's ways of "doing things" from agricultural practices to marketing techniques, credit and investments. Radio broadcasts promoted and mobilized the participation of all community members to achieve a common goal.

Thanks to rural radio, people could familiarize themselves with their environment and with socio-economic and social health care problems as they evolved. Rural radio also allowed them to become better informed and to better understand the world around them. In this manner, they could participate more easily in different development programmes and become more involved in those activities which allowed them to become creative.

10. Sustainability

Local communities, the owners of these radio networks, participated in an active manner in the production of radio programmes and in their monitoring in order to promote the development of social, economic and cultural activities.

Village surveys have revealed that consequently rural audiences recognized the important role that radio stations play in awareness-raising, training and education. It was agreed that air time had to be extended in order to cover all the topics they were interested in or that responded to their specific concerns. In most cases, audiences contributed financially to the radio's running costs through subscriptions, therefore the direct ownership or control over programme contents was a legitimate claim on their part and also showed the level of commitment they were willing to engage.

11. Cost

The TCP project contributed US\$260 000 in 1993. Then an additional funding of US\$80 000 was granted by UNICEF for the purchase of material and equipment. The second phase of the project was funded by the Government of the Netherlands with US\$795 000.

Conclusion

We would like to recommend this book to all those people interested in issues related to technical projects.

It could be a useful tool for the delivery of education services and training in Africa and elsewhere in the world.

It focuses on the educational training processes which are able to change and modify the knowledge, the capacity, and the behaviour of target groups and empower them with the purpose of increasing production and incomes unavailable to the poor.

The education and training projects reported in the book describe the strategies of field practices that can be easily replicated in different countries as well as the results of such experiences whose effects on the beneficiaries or target groups have been so evident and important that the idea of going back to the previous behaviour has never been considered again.

Learning from field experiences of other people facing similar problems has proved to be an efficient practice. The exchange of information and communication among governments and communities is important to accept and promote the implementation of new technologies.

In this book, an attempt has been made to share field experiences. The lessons learnt show that governments, planners, communities and field workers should search for a multiplier effect in training.

It is proven that agriculture production, sustainability and productivity increase when small-scale farmers, extensionists, teachers, trainers, learners and local rural populations are involved in projects of rural development promoting changes and improving livelihoods.

References

- Ahmed, M. & Coombs, P.H.** *Education for Rural Development – Case studies for planners*. New York, Praeger Publishers.
- Andrews, K.L.** 2004. *The deep change process in Zamorano, 1997-2002*. Rome and Paris. (also available at <http://www.fao.org/sd/erp/zamorano.pdf>).
- Atchoarena, D. & Gasperini, L. (editors)** 2003. *Education for Rural Development. Towards new Policies*. FAO and UNESCO/IIEP. Rome and Paris. (also available at <ftp://ftp.fao.org/docrep/fao/006/ad423e/ad423e00.pdf>)
- Avila, M. & Gasperini, L.** 2005. *The MDGs and Sustainable Rural Development in Sub-Saharan Africa: Challenges and Implications for Education for Rural People*. Background paper for the Ministerial Seminar on Education for Rural People in Africa: policy lessons, options and priorities. Addis Ababa. (also available at http://www.fao.org/sd/dim_kn2/docs/kn2_051101d1_en.pdf)
- Avila, M. & Gasperini, L.** *Skills Development for Rural People: a renewed Challenge*. Background paper for the Working Group for International Co-operation in skills Development. 10-11 November 2005. FAO. Rome. (also available at <http://www.norrag.org/wg/documents/%20IIPE%20background.doc>)
- Blay, D. & Ottah Atikpo, M.** 2007. Design and construction of AFSMO-150, an improved fish smoking oven. In *FAO Fisheries report 819*. Report and papers presented at the FAO Workshop on Fish Technology, Utilization and Quality Assurance. Rome, FAO. Pp. 49-55.
- Blum, A.** 1996. *Teaching and Learning in Agriculture. A guide for Agricultural Educators*. FAO. Rome. (also available at <http://www.fao.org/sd/EXdirect/EXan0014.htm>)
- Burchi, F. & De Muro, P.** 2006. *Education for Rural People, a neglected key to MDGs*. FAO and University Rome 3. Rome. (also available at <http://host.uniroma3.it/dipartimenti/economia/it/index.asp?se=Attivita%20e%20Ricerca&inced=Pubblicazioni&cl=F0F5FB>)

Chambers, R. & Conway, G. 1991. *Sustainable Rural Livelihoods: practical concepts for the 21st century*. IDS Discussion Paper 296. IDS Brighton (also available at <http://www.ids.ac.uk/ids/bookshop/dp/dp296.pdf>)

Cook, J.F. 1996. *Expert Consultation on Extension Rural Youth Programmes and Sustainable Development*. FAO. Rome. (also available at <http://www.fao.org/docrep/W1765E/W1765E00.htm>)

Desmond, D., Grieshop, J. & Subramaniam, A. 2004. *Revisiting Garden-Based Learning in Basic Education*. FAO and UNESCO/IIEP. Rome and Paris. (also available at <http://www.fao.org/sd/erp/revisiting.pdf>)

Djeddah, C. 2005. *JFFLS, empowering orphans and vulnerable children living in a world with HIV/AIDS: concept paper*. FAO/WFP. Rome.

Djeddah, C., Mavanga, R. & Hendrickx, L. 2005. *Junior Farmer Field and Life Schools: Experience from Mozambique*, in Gillespie.

Dumont, R. *Training for Rural Development- the gulf between Farm and Town in 1976*. Training for Agricultural and Rural Development. FAO, UNESCO, ILO. Naples.

Education for Rural People Toolkit (available at http://www.fao.org/sd/erp/ERPtktoolkit_en.htm)

Education for Rural People website <http://www.fao.org/sd/erp/>

Facon, T. Land and Water Management. FAO Regional Office for Asia and the Pacific

FAO & UNESCO/IIEP. 2002. *Education for Rural Development in Asia. Experiences and Policy Lessons*. FAO/UNESCO Seminar. Bangkok, Thailand. 5-7 November 2002. UNESCO. Paris. (also available at ftp://ftp.fao.org/sd/SDR/SDRE/Mep_seminar_bangkok%20vFAO.PDF)

FAO & the World Bank. 2000. *AKIS/RD Strategic Vision and Guiding Principles*. FAO & The World Bank. Rome. (also available at <ftp://ftp.fao.org/SD/SDR/SDRE/AKIS.pdf>)

FAO, Italian Cooperation & UNESCO/IIEP. 2005. *Alimentación y Educación Para Todos. Documento de Síntesis*. FAO and UNESCO/IIEP. Rome and Paris. (also available at http://www.fao.org/sd/erp/documents2007/MEPFAO_A_Latina.pdf)

- FAO, UNESCO & Italian Cooperation.** 2003. *Education for Rural People: Aid Agencies Workshop*. FAO and UNESCO/IIEP. Rome and Paris. (also available at <ftp://ftp.fao.org/sd/SDR/SDRE/OxenhamRapportfinal.doc>)
- FAO, UNESCO, CIDE, REDUC & Italian Cooperation.** 2004. *Educación para la población rural en Brasil, Chile, Colombia, Honduras, México, Paraguay y Perú*. Rome and Paris. (also available at <http://www.fao.org/sd/erp/Estudio7países.pdf>)
- FAO.** 1976. *FAO/DANIDA Seminar on Agricultural Extension Youth Programmes for the Sons and Daughters of Small Farmers and Agricultural Labourers*. Rome.
- FAO.** 1979. *Trained Manpower for Agricultural and Rural Development*. Rome.
- FAO.** 1987. *Report of the Expert Consultation on: Progress of Institutional Development in Agricultural Schools and Colleges*. Rome.
- FAO.** 1991. *Improving Training Quality. A Trainer's guide to Evaluation*. Rome. (also available at <http://www.fao.org/sd/erp/toolkit/books/ImprovingTrainingQuality.PDF>)
- FAO.** 1991. *Report of a Sub-regional Workshop on Population Education for Rural Youth in Anglophone East Africa*.
- FAO.** 1995. *Performance Evaluation Guide*. Rome. (also available at http://www.worldbank.org/wbi/itq/peg_toc.pdf)
- FAO.** 1995. *Strategy Options for Education and Training in Agriculture in the Caribbean Countries. Regional Round-Table*. Rome.
- FAO.** 1996. *Intégration des thèmes de l'environnement et du développement durable dans les programmes d'éducation et de vulgarisation agricoles*. Experts Consultation. Rome.
- FAO.** 1997. *Issues and Opportunities for Agricultural Education and Training in the 1990s and beyond*. Rome. (also available at <http://www.fao.org/sd/EXdirect/EXre0003.htm>)
- FAO.** 1997. *La petite irrigation dans les zones arides. Principes et options*. FAO. Rome.

- FAO.** 1998. *Participatory Curriculum Development in Agricultural Education. A Training Guide*. Rome. (also available at <ftp://ftp.fao.org/sd/sdr/SDRE/manuelformation.pdf>)
- FAO.** 2005. *Empowering communities through forestry: Community-based enterprise development in the Gambia*. Forestry Policy and Institutions Working Paper # 8.
- FAO.** 2005. *Harvesting for life*. Boudicca Downes
- FAO.** 2005. *Micro finance and forest based small enterprises*. Forestry Paper # 146.
- FAO.** 2005. *Setting up and Running a School Garden. A Manual for Teachers, Parents and Communities*. Rome. (also available at <http://www.fao.org/docrep/009/a0218e/a0218e00.htm>)
- FAO.** 2006. *Community-based enterprise development for the conservation of biodiversity in Bwindi World Heritage Site, Uganda*. Forestry Policy and Institutions Working Paper # 11.
- FAO.** 2006. *Community-based Tourism: Income generation and conservation of biodiversity in Bwindi World Heritage Site, Uganda. The Buhoma village Walk Case Study*. Forestry Policy and Institutions Working Paper # 12.
- FAO.** 2006. *The State of World Fisheries and Aquaculture*.
- FAO.** *Education opportunities for hill tribes in Northern Thailand: Implications for sustainable rural development*. July 2002. (also available at http://www.fao.org/sd/2002/kn0704_en.htm)
- FAO.** *Human Resource Development in Agriculture: Developing Country Issue*. Chapter 10. Document C 93/24 of the 27th Session of the FAO Conference. 6-25 November 1993. Rome. In *Agriculture: Towards 2010*
- FAO.** *The Journal of Agricultural Education and Extension*. Volume 5, Number 2. September 1998.
- FAO/WFP.** 2007. *“Getting started!” Running a Junior Farmer Field and Life School*.
- FAO/WFP.** 2007. *Facilitator’s manual for a Junior Farmer Field and Life School*.
- Gasperini, L. & Mac Lean, S.** *Education for Agriculture and Rural Development in Developing Countries: implications of the Digital Divide*. In *SD Dimension*, the

Electronic Journal of FAO's Sustainable Development Department (also available at http://www.fao.org/sd/2001/kn0301a_en.htm)

Gasperini, L. & Zulberti, E. 2003. *Education for rural people as the front line to achieve the Millennium Development Goals*. In *Entwicklung + ländlicher raum* (agriculture + rural development). Germany.

Gasperini, L. 2001. *World Food Summit Five Years On: The Challenge of Feeding and Educating All*. In *SD Dimensions*, the Electronic Journal of FAO's Sustainable Development Department. Paper presented at the Global Consortium of Higher Education and Research for Agriculture and Food Systems in the 21st Century. San Francisco, 14 July 2001. (also available at http://www.fao.org/sd/2001/kn1005a_en.htm)

Gasperini, L. 2002. *Education for rural people: addressing a neglected majority*. In *Commonwealth Education Partnerships 2003*. Norwich, UK, The Stationery Office (TSO).

Gasperini, L. *From Agriculture Education to Education for Rural Development and Food Security: All for Education and Food for All*. In *SD Dimension*, the Electronic Journal of FAO's Sustainable Development Department. October 2000. (also available at <http://www.fao.org/sd/EXdirect/EXre0028.htm> in English, French and Spanish)

Girard, B. (ed.). 2003. *The one to watch: Radio, new ICTs and interactivity*. FAO, Rome. (also available at http://www.fao.org/sd/2003/KN12023_en.htm)

Gomes, C.A. & Câmara, J. 2004. *Training for Rural Development in Brazil: SENAR*. FAO and UNESCO/IIEP: Rome and Paris. (also available at http://www.fao.org/sd/erp/fao_brazil.pdf)

Haddad, C. 2006. *Addressing learning needs of rural people in Asia*. FAO, Italian cooperation & UNESCO/IIEP. Rome and Paris. (also available at http://www.fao.org/sd/erp/documents2007/Mep_Bangkok%20report.pdf)

Hautecoeur, J.P. (editor) 1996. *Basic Education and Work*. ALPHA 96 & UNESCO Institute for Education. (also available at <http://unesdoc.unesco.org/images/0010/001052/105210eo.pdf>)

Hemrich, G. 1996. *Integration of Population Education into Programmes for Out-of-School Rural Youth. A review of Pilot Activities in Africa, Asia and Latin America*. FAO. Rome. (also available at <http://www.fao.org/docrep/w2618e/w2618e00.htm>)

IFAD. 2001. *Rural Poverty Report 2001: the challenge of ending rural poverty*. Rome. (also available at <http://www.ifad.org/poverty/>)

Ilboudo, J.P. 2000. *Méthodologie participative et interactive de la radio rurale*. FAO. Rome. (also available at <http://www.fao.org/sd/FRdirect/CDan0031.htm>)

Ilboudo, J. P. 2002. *Rural radio as a social enquiry tool. Participatory production techniques and audience research*. FAO. Rome. (also available at http://www.fao.org/sd/2002/KN0804_en.htm)

ILO. 2005. *Community-Based Training for Employment and Income Generation Investing in Development. A Practical Plan to Achieve the Millennium Development Goals*. UNDP. New York.

Le Thank, K. 1974. *Education in rural development*. UNESCO. Paris.

Lecup, I. & Nicholson, K. 2000. *Community-based tree and forest product enterprises*. Market Analysis and Development manual, [booklets A-F].

Lecup, I. & Nicholson, K. 2004. *Community-based tree and forest product enterprises*. Market Analysis and Development. Field Facilitator Guidelines. FAO.

Maguire, C.J. 2000. *Agricultural Education in Africa: Managing Change*. Prepared for Workshop 2000 sponsored by the Sasakwa Africa Association. Accra and Cape COSAT, Ghana. 4-6 September 2000. (also available at http://siteresources.worldbank.org/INTARD/8258261111044795683/20424536/Ag_ed_Africa.pdf)

Maguire, C.J. 2000. *From Agriculture to Rural Development: Critical Choices for Agricultural Education*. Rural Development Department, the World Bank. Washington, DC. (also available at <http://www.fao.org/sd/EXdirect/EXre0029.htm>)

Ministère de l'Agriculture et de la Pêche, Le Pôle National de Coopération Internationale (PNCI). 2004. *Formation de masse en milieu rural, élément de réflexion pour la définition d'une politique nationale*. Actes. Atelier pour l'Afrique Subsaharienne. Montpellier, Agropolis Productions.

Ministry of Education, Science and Technology (MEST), Ministry of Agriculture and Rural Development (MAFRD) & FAO. 2004. *A Strategy for Education for Rural People in Kosovo*. Pristina. (also available at <http://www.fao.org/sd/erp/ERPkosovoenglish.PDF>)

Qamar, K. 2005. *Modernizing National Agricultural Extension Systems: a Practical Guide for Policy-Makers of Developing Countries*. FAO. Rome. (also available at <http://www.fao.org/docrep/008/a0219e/a0219e00.HTM>)

Rakotoson, J.P. *Rural Radio and Development*. FAO. Rome. (also available at http://www.fao.org/sd/2002/KN1204_en.htm)

Ramos, E. & del Mar Delgado, M. 2005. *Higher education for rural development: the experience of the University of Cordoba*. FAO and UNESCO/IIEP. Rome and Paris. (also available at http://www.fao.org/sd/erp/documents2007/MEPFAO_Spain_Cordoba.pdf)

Renault, D. *Modernizing irrigation management– the MASSCOTE approach*. FAO Land and Water Development Division. Rome.

République française, Ministère de l'Agriculture et de la Pêche. 2000. *L'enseignement agricole en France*. Paris. Mallette

Rowat, R. *Improved Management in Agricultural Education in 1977*. Training for Agricultural and Rural Development. FAO, UNESCO, ILO. Naples.

Sauvageot, C. & Dias Da Graça, P. 2005. *Indicateurs pour la planification de l'éducation pour les populations rurales: un guide pratique*. FAO and UNESCO/IIEP. Rome and Paris. (also available at <http://www.fao.org/sd/erp/documents2007/indicateurs.pdf> and for the English version at http://www.fao.org/sd/erp/documents2007/Indicators_guide.pdf)

SD Dimensions. *L'enseignement et la formation agricoles: difficultés et chances*. Dossier. 20 May 1997 (available at <http://www.fao.org/sd/frdirect/EXref003.htm>)

Shibeshi, A. 2006. *Education for Rural People in Africa*. FAO, ADEA, UNESCO/IIEP, Italian Cooperation. Rome and Paris. (also available at http://www.fao.org/sd/erp/documents2007/Mep_Addisseminarsecured.pdf)

Taiwo Williams, S.K. *Agriculture and Adult Education in 1977*. Training for Agricultural and Rural Development. FAO, UNESCO, ILO. Naples.

Teutscher, F. Tall, A. & Jallow, A.M. 1995. Workshop on seeking improvement in fish technology in West Africa. Pointe-Noire, 7-9 November 1994. FAO-IFAD/wp/66

- The World Bank.** 1991. *Vocational and Technical Education and Training*. The World Bank, Washington DC.
- The World Bank.** 1997. *Rural Development: From Vision to Action*. Washington, DC. World Bank Publications. (also available at <http://www.worldbank.org/html/extpb/annrep97/endnot19.htm>)
- UNDP.** 2005. *Investing in Development. A Practical Plan to Achieve the Millennium Development Goals*. UNDP. New York (also available at <http://www.unmillenniumproject.org/reports/index.htm>)
- UNESCO/Institute for Statistics & UNICEF.** 2005. *Children Out of School: Measuring Exclusion from Primary Education*. UNESCO Institute for Statistics, Montreal. (also available at http://www.uis.unesco.org/template/pdf/educgeneral/OOSC_EN_WEB_FINAL.pdf)
- UNICEF.** *A practical guide to improved fish smoking in West Africa. Introducing the Chorkor smoker*. Published by UNICEF. New York. December 1983.
- United Nations.** 2005. *World Youth Report 2005. Young People Today, and in 2015*. United Nations, New York. (also available at <http://www.un.org/esa/socdev/unyin/wyr05.htm>)
- Van Crowder, L., Lindley, W., Truelove, W., Ilboudo, J.P. & Del Castello, R.** 1998. *Knowledge and Information for Food Security in Africa: from Traditional Media to the Internet*. FAO. Rome. (also available at <http://www.fao.org/sd/cddirect/cdpub/SDREpub.htm>)
- Vermillion, D.L. & Sagardoy, J.A.** 2001. *Bulletin FAO d'irrigation et de drainage 58 - Transfert des services de gestion de l'irrigation – Directives*. Service des eaux – ressources, mise en valeur et aménagement. FAO. Rome.
- Wahaj, R.** 2007. FAO Consultant. Rome.
- Walker, W.R.** 1989. *FAO Irrigation and Drainage Paper 45*. Utah State University, FAO. Rome.
- Wallace, I.** 1997. Agricultural education at the crossroads: present dilemmas and possible options for the future in Sub-Saharan Africa. *Educational Development*. 17 (1): 27-39.

Whitehouse, J.R.W. *Education and Training for Rural Workers and their Organizations in 1976*. Training for Agricultural and Rural Development. FAO, UNESCO, ILO. Naples.

Working Group for International Cooperation in Skills Development. *Skills Development for Rural People: a Renewed Challenge* Paper 10. Rome. November 2005. (also available at <http://www.fao.org/sd/erp/Documents2006/Paper%2010.doc>)

Yonggong, L. & Jingzun, Z. 2004. *The reform of higher agricultural education institution in China*. FAO and UNESCO/IIEP. Rome and Paris. (also available at <http://www.fao.org/sd/erp/documents2007/china.pdf>)

Zertuche, M. 2005. *Reforming Higher Education Institutions. The case of the School of Agriculture at Monterrey Tech (ITESM)*. FAO and UNESCO/IIEP. Rome and Paris. (also available at http://www.fao.org/sd/erp/documents2007/Mep-Monterrey_ITESM.pdf)

ERP Publications

1. ***Education for Rural Development in Asia: Experiences and Policy Lessons.*** Bangkok, Thailand, 5-7 November 2002. Rome and Paris 2002 (also available at ftp://ftp.fao.org/sd/SDR/SDRE/Mep_seminar_bangkok%20vFAO.PDF)
2. ***Education for rural development. Towards new policy responses.*** by Atchoarena, D. & Gasperini, L. Rome and Paris 2003 (also available at <ftp://ftp.fao.org/docrep/fao/006/ad423e/ad423e00.pdf>)
3. ***Education for Rural People: Aid Agencies Workshop.*** Rome and Paris 2003 (also available at <ftp://ftp.fao.org/sd/SDR/SDRE/OxenhamRapportfinal.doc>)
4. ***Training for rural development in Brazil: SENAR.*** Gomes, C.A. & Câmara, J. Rome and Paris 2004 (also available at http://www.fao.org/sd/erp/fao_brazil.pdf)
5. ***Revisiting Garden-Based Learning in Basic Education*** by Desmond, D., Grieshop, J. & Subramaniam, A. Rome and Paris 2004 (also available at <http://www.fao.org/sd/erp/revisiting.pdf>)
6. ***The reform of higher agricultural education institution in China*** by Yonggong, L. & Jingzun, Z. Rome and Paris 2004 (also available at <http://www.fao.org/sd/erp/documents2007/china.pdf>)
7. ***The deep change process in Zamorano, 1997-2002*** by Andrews, K.L. Rome and Paris 2004 (also available at <http://www.fao.org/sd/erp/zamorano.pdf>)
8. ***Educación para la población rural en Brasil, Chile, Colombia, Honduras, México, Paraguay y Perú.*** Rome and Paris 2004 (also available at <http://www.fao.org/sd/erp/Estudio7paises.pdf>)
9. ***A Strategy for Education for Rural People in Kosovo*** by Ministry of Education, Science and Technology; Ministry of Agriculture, Forestry and Rural Development (MAFRD) with FAO technical assistance. Pristina 2004 (also available at <http://www.fao.org/sd/erp/ERPkosovoenglish.PDF>)
10. ***Using indicators in planning education for rural people: a practical guide*** by Sauvageot, C. & Dias Da Graça, P. Paris 2005 (also available at http://www.fao.org/sd/erp/documents2007/Indicators_guide.pdf)
11. ***Reforming Higher Education Institutions. The case of the School of Agriculture at Monterrey Tech (ITESM)*** by Zertuche, M. Rome and Paris 2005

(also available at http://www.fao.org/sd/erp/documents2007/Mep-Monterrey_ITESM.pdf)

12. ***Higher education for rural development: the experience of the University of Cordoba*** by Ramos, E. & del Mar Delgado, M. Rome and Paris 2005 (also available at http://www.fao.org/sd/erp/documents2007/MEPFAO_Spain_Cordoba.pdf)
13. ***Alimentación y educación para todos. Documento de síntesis.*** FAO/UNESCO Seminar. Santiago, Chile, 3-5 August 2004. Rome and Paris 2005 (also available at http://www.fao.org/sd/erp/documents2007/MEPFAO_A_Latina.pdf)
14. ***Education for rural people in Africa*** by Ayalew Shibeshi, Paris 2006 (also available at http://www.fao.org/sd/erp/documents2007/Mep_Addiseminarsecured.pdf)
15. ***Addressing learning needs of rural people in Asia*** by Haddad, C. Rome and Paris 2006 (also available at http://www.fao.org/sd/erp/documents2007/Mep_Bangkok%20report.pdf)
16. ***Education and Training for Food Security. Capacity Building and Good Practices in Five African Countries*** by Bruni, D., Del Castello, R., Djeddah, C., Gasperini, L., Growels, S. & Lem, A. Rome 2007 (also available at http://www.fao.org/sd/erp/ERPpublications_en.htm)
17. ***Education for Rural People: a neglected key to food security*** by Burchi, F. & De Muro, P. Rome 2007 (also available at <http://www.fao.org/sd/erp/Documents2007/WP78romatre.pdf>)
18. ***Education for Rural People and Food Security: A cross Country Analysis*** by Burchi, F. & De Muro, P. Rome 2007 (also available at http://www.fao.org/sd/erp/ERPpublications_en.htm)



The education and training good practices in agriculture, fishery, land and water, and communication compiled in this book can provide inspiration to other countries.

These practices, aimed at contributing to food security enhancement and poverty eradication in the Gambia, Guinea, Mali, Mozambique and Niger, were selected for their quality.

Participatory practices at community level have proved to be effective tools for farmers to strengthen local capacity, promote social cohesion and improve livelihoods by engaging them in the farming system.

This book is addressed to extensionists, farmers, educators and trainers, field workers, researchers as well as capacity building policy-makers and planners in national and international institutes, NGOs and academic institutions.

Education for Rural People:
a call to boost education and training for food security

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