



## SLM APPROACHES AND CASE STUDIES

Awareness of the best SLM technology options is a precondition for spreading SLM. However, how to implement and adapt these practices on the ground and how to create an enabling environment to facilitate this process is a major challenge. Despite continuous efforts over many years the spread and upscaling of SLM practices in SSA has been slow.

In the following section, successful experiences and promising current trends in approaches are presented, in order to assist land users under their specific conditions, and to help indicate what are the most favourable enabling environments for uptake of SLM practices. This is supported by six selected case studies illustrating the variety of approaches that underpin the trend towards successful implementation and adoption of SLM.



Land users and technicians planning SLM interventions in a watershed, Kenya. (Hanspeter Liniger)

## In a nutshell

**Definition:** A SLM Approach defines the ways and means used to promote and implement a SLM Technology - be it project / programme initiated, an indigenous system, a local initiative / innovation - and to support it in achieving better and more widespread sustainable land management. It may include different levels of intervention, from the individual farm, through the community level, and the extension / advisory system at regional or national levels. It may be set within an international framework. Critical analyses of approaches should assist in answering questions about how land users learn about improvements or 'new' technologies, how they obtain skills to apply them, how they are stimulated to adapt technologies and innovate, and how they gain access to required inputs, equipment and financial resources.

A successful approach is usually characterised by being people-centred, responsive and participatory, practical, multilevel and multi-stakeholder, part of a partnership, sustainable (in its socio-economic, institutional and ecological dimensions) and dynamic. An effective SLM Approach comprises the following elements: (1) participants / actors at all levels: policy-makers, administrators, experts, technicians, land users; (2) inputs: labour, material and financial, etc.; (3) know-how: technical, scientific, practical; and (4) the enabling environment: socio-cultural, legal and political (discussed in Part 1).

Approaches that have demonstrated success in SSA include: community-based natural resource management (*gestion des terroirs*), farmer field schools, *animation rural*, various approaches that support farmers' innovations, and the 'Landcare' Approach based on its success in Asia and Australia.

**Problems addressed:** Lack of technical knowledge, lack of cash to invest in SLM, limited access to inputs, conflicts over resource use, poverty, social inequity, lack of a supporting environment such as markets, prices, infrastructure and services, institutional support, with appropriate laws and regulations. These are intended to address the root causes of low agricultural production through stimulating the adoption and spread of improved SLM.

**Intended beneficiaries:** Individuals, communities, common interest groups, watershed / catchment / village associations.

**Adoption and upscaling:** Clearly identified causes of degradation and corrective measures, an enabling policy and regulatory environment are basics for the adoption of the most appropriate SLM measures. Furthermore, the extent of community involvement at different stages from problem identification to decision making and implementation will influence adoption and the potential of an approach to be upscaled. Land users or communities need to feel ownership or identify with the approach and the technology. Approaches and technologies need to go hand in hand and be matched: technologies influence the approach needed and vice-versa.

**Development issues** addressed are: Food security, rural, urban and peri-urban poverty alleviation, preventing and reversing land degradation, biodiversity and adaptation to climate change.

### Distribution:

Participatory Research and Development: Ethiopia, Ghana, Kenya, Senegal, Sierra Leone, Tanzania, Uganda, Zambia;

Participatory Catchment Approaches and Community Based Natural Resource Management (CBNRM): Burkina Faso, Ghana, Kenya, Lesotho, Malawi, Niger, Tanzania, and Zambia;

Information and Communication Technologies (ICT): Kenya and Uganda;

Contracting Extension Services to NGOs and other third parties: promising in Madagascar and Mali;

Farmer Field Schools (FFS): large number of countries, recent developments in Eastern Africa;

Payment for Ecosystem Services: Ghana, Kenya, Tanzania and Uganda.

## Evolution of SLM approaches

Approaches can be grouped into three major types: top-down interventions, farmer-first and trans-disciplinary. This typology reflects the broad evolution of approach types and methods over time.

**Top-down interventions:** Most of the early soil and water conservation - the forerunner of SLM - approaches in SSA during the colonial and immediate post-independence era focused on top-down interventions. These were characterised by lack of land user's participation and 'forced' implementation of externally developed measures (typically coercive terracing and compulsory destocking). In the associated conventional research and extension systems, a form of linear *Transfer of Technology* (ToT) indicated the one-way flow from researcher to extension worker to land users. This model viewed land users, extension agents and researchers as three separate levels with links in one direction only, and no feedback mechanism. In the 1950s and 1960s, the common explanation of non-adoption of technologies was that land users were ignorant. The answer was more *extension teaching*. In the 1970s and early 1980s non adoption by land users was attributed to farm level constraints. The 'cure' was to remove the constraints by input supply and introduction of *Farming Systems research* (FSR). During the late 1980s, and early 1990s the central role of land users was recognised and their non-adoption was explained by technologies that do not fit. The solution was to emphasise *land user participation*.

**Farmer first:** The new approach made the land user central to programme design and implementation of soil and water conservation activities. It stressed small-scale and bottom-up participatory interventions, often using indigenous technologies and

## Main principles

**Participatory (collaborative):** Involving and giving land users / communities responsibility at all stages.

A participatory approach serves a number of important purposes:

- builds trust and understanding among stakeholders at local, regional and even national level;
- ensures that the perspectives and realities of the intended beneficiaries are accurately reflected;
- empowers marginalised and disadvantaged groups (downstream 'end' users, female land users, disaffected youth, members of minority ethnic groups, etc.);
- fosters ownership of both resources and the process - and thus increases the prospects for adoption.

Participatory methods are relevant from initial policy formulation and programme appraisal, through the different evaluation stages including implementation and improvement, and monitoring and impact assessment at later stages. Key elements are: awareness raising / capacity building, research, extension / advisory service, and organisational development. There is increased use of participatory methods in organisational strengthening, understanding and negotiation of stakeholders' perceptions and increased public accountability. Participatory methods attempt to deal with issues of ownership and control of knowledge, and to reach clarity or consensus between stakeholders as to how, by whom, and against what criteria, the programme is to be measured. Examples of approaches that are underpinned by a strong participatory philosophy are: participatory rural appraisal, participatory technology development and learning for sustainability.

**Integrated** (multilevel and multi-stakeholder): An integrated approach places people and supportive institutions at the centre

largely rejected the 'conventional' transfer of technology (ToT) model (see above). New approaches based on collaboration between people with local knowledge and researchers developed and were put into practice. The difficulties of implementing land user-led participatory approaches have in turn led to a more focussed approach, in which farmer innovation is driven by the economic, social, institutional and policy environment. In the last few years, the concept has moved from soil conservation towards SLM both at the farm and landscape level. The focus now is on *empowerment of local community groups* by delegating authority, accountability and resources to the most appropriate level and focusing on local technologies.

**Trans-disciplinary approach:** Research and development is now widely seen as a 'holistic' learning process suggesting that it is a joint process requiring the participation of a wider range of stakeholders (*multi-level and multi-stakeholder*). More importantly, it redefines the role of local people from being merely recipients and beneficiaries to actors who influence and provide key inputs to the process; it links scientific and local knowledge in an interdisciplinary mode, emphasises multi-agency collaboration and is problem- and impact-driven.

However, SLM is often beyond the means, responsibility and decision-making power of single resource users. Instead of solely considering local needs the focus has to be expanded towards regional (watershed / landscape, upstream, downstream) and even national needs (for example irrigation schemes), which might restrict individual freedom of decision-making. At this higher level of intervention, interagency collaboration and the responsibilities of different ministries and institutions should be clearly defined and strengthened.

of the management and development process, sustaining and enhancing both human and natural capital. Integrated approaches imply a shift from simply bringing together representatives of each sector or projects, towards having them absorb each others' messages and integrating these ideas into their own core work. It must involve researchers, extension agents, communicators and land users in a continuous and interactive way, with the objective of solving land users' problems, using local resources and personnel, and using equipment and buildings in a low-cost manner. Experience has also shown that integrated processes are assisted enormously when they are supported at the highest levels of government. Examples of integrated approaches are: landscape approach (integrated watershed management), livelihoods approach (integrated rural community development), and multi-stakeholder decision-making.

**Partnership-based:** In a collaborative approach the role of partnerships, platforms and coalitions is to mobilise scientific knowledge for agricultural investments that are pro-poor, pro-growth and pro-environment, to have more equitable partnerships by coupling science and traditional knowledge, achieve a common vision about SLM, provide the right framework to work together to develop policy, govern programs and share information and to target a broad spectrum of stakeholders: policymakers, civil society (NGOs), land users / owners, community-based organisations, research institutions, mass media, and the private sector. TerrAfrica is such a platform.

In addition to these principles and as with technologies, important criteria for an approach to be adopted, adapted and upscaled are that it should be relatively cheap, practical, flexible and sustainable.

## Types

Approaches are basically social processes; they do not necessarily follow any systematic classification and there is no absolute best approach - though clearly some work better in certain situations than others. Approaches need to be developed - not selected, transferred or copied - depending on the situation, the people involved, objectives, possible solutions and resources available. In the following, established and contemporary, proven and promising approaches are briefly described:

**Participatory Research and Development (PRD)** is a pool of concepts and practices that enable people to enhance their knowledge of SLM and strengthens land users' innovative capacity. It is bottom-up, demand-driven and has partly evolved from efforts to improve technology development and dissemination. Participatory approaches are envisioned to (1) respond to problems, needs and opportunities identified by users; (2) identify and evaluate technology options that build on local knowledge and resources; (3) ensure that technical innovations are appropriate for local socio-economic, cultural and political contexts; and (4) promote wider sharing and use of agricultural innovations.

**Participatory Learning and Action (PLA):** This is a new, alternative name for what was initially (and still often is) termed PRD. Instead of outsiders trying to understand the knowledge of the local people, PLA tries to facilitate local people to develop their capabilities. The emphasis is on participation as a systemic learning process linked to action and change. PLA is the latest term for the basket of 'P' technologies including those that follow below.

**Participatory Rural Appraisal (PRA):** PRA is an approach developed mainly by NGOs. The approach aims at analysis by people themselves of their own realities and thus the incorporation of the knowledge and opinions of rural people in the planning and management of projects. It includes the use of transect walks, maps, calendars, matrices, and diagrams using locally available materials. PRA evolved from Rapid Rural Appraisal (RRA) - which was modified more in name than in nature as 'participation' was not thought to be compatible with 'rapid'.

**Participatory Monitoring and Evaluation (PME)** is primarily used in impact assessment and project management. Local people, community organisations, NGOs and other stakeholder agencies decide together how to measure results and what actions should follow once this information has been collected and analysed. It goes beyond the choice of particular methods and techniques to who initiates and undertakes the evaluation process and who learns or benefits from the findings.

**Participatory Land Use Planning (PLUP)** for planning of communal or common property land, which is particularly important in many communities where communal lands are the most seriously degraded and where conflicts over land use rights exist. Rather than trying to regulate communal lands through national policy, new arrangements can be regulated through negotiation among all stakeholders and communally binding rules for SLM, based on planning units, such as social units (e.g. village) or geographical units (e.g. watershed) can be developed.

**Gestion des Terroirs** is the best-known example of a **participatory catchment approach** in francophone West Africa. It associates groups and communities with a traditionally recognised land area, aiding these communities in building skills and developing local institutions for the implementation of sustainable management plans. It has focused on natural resource management at the village or community level through: (1) technical projects, such as those related to the conservation of soil, etc; (2) socio-economic factors related to the organisational structures within which people arrange their livelihood strategies; and (3) the legal system and its administration, by which use rights are enforced in practice.

**Participatory and Negotiated Territorial Development (PNTD)** is rural development through negotiation, participation and dialogue. Developed by FAO, the dialogue process starts with the establishment of international partnerships between the FAO and local government that will lead to the consolidation of a territorial social pact to overcome the social and economic inequalities that affect rural populations, for the eradication of hunger, and for the promotion of social inclusion.

### Example: Zimbabwe

*An Intermediate Technology Development Group project is located in southern Zimbabwe, where drought occurs in three out of every five years. The approach combines low-cost technologies (water harvesting and subsurface irrigation) with building farmers' capacities to participate in research, extension and within group structures. The benefits of the project, beside doubling the yield, include farmers having acquired new skills for food production; local institutions having been strengthened in tackling their own problems; training has increased confidence among local people, particularly poorest groups; there is increased involvement of women in community decision-making; there is also greater capacity amongst farmers to articulate their needs to service providers, and research and extension systems have become more responsive to farmers' needs (Pretty, 2001).*



Top: *Gestion des Terroirs* meeting of village members and technical staff of a SLM project, Niger. (Hanspeter Liniger)  
 Middle: Participatory Planning with drums in a village, Ghana. (William Critchley)  
 Bottom: Community's participation at all stages. Treasurer of a forest management project in Niger. (Hamadou Mamoudou)

**Community-Based Natural Resource Management (CBNRM):** The nature of CBNRM is not simple to define. The concept is related to, and embraces, a variety of terms, including participatory, community, community-based, collaborative, joint and popular natural resource management. It tends to be associated with approaches where the focal unit for joint natural resource management is the local community and resources are subject to communal rights.

Decentralisation is a promising means of institutionalising and scaling-up the popular participation that makes CBNRM effective. However, most current 'decentralisation' reforms are characterised by insufficient transfer of powers to local institutions. Decentralisation reforms present the opportunity to move from a project-based approach toward legally institutionalised popular participation.

**Landcare** is a community-based approach focused on building social capital to voluntarily resolve local problems affecting the community while preserving land resources. The unique aspect of 'Landcare' is its effective partnership with government and the broader society, including the business sector, in the form of financial and technical advice. In this way, technical knowledge from scientific sources can be integrated with indigenous knowledge and the skills of local people. Although not yet common in SSA (found only in South Africa and Uganda) it is very promising.

**Community development / investment funds:** Part of a decentralisation policy often includes making funds available to communities for their own development efforts. Depending on the specific situation - which is a function of the donor, the country, and the local needs - the funds may be open or earmarked for specific purposes. The basic concept is that the community has sovereignty over these funds - in other words within a specific domain (for example agricultural intensification), the community decides how to use the funds. Commonly, when allocated to individuals they are paid back into the pool after a number of years, and thus form a local 'revolving fund'. Some such schemes broaden their scope and become, effectively, savings and credit schemes benefiting the community as a whole.

**Extension, advisory service and training** can be divided into:

1) 'Multiple strategy' which includes several or all of the following: awareness-raising, extension worker to farmer visits, training workshops and seminars around specific themes, exposure visits, hands-on training, and the use of demonstration plots. This is what is adopted by the majority of the project / programme-based approaches.

2) Informal farmer-to-farmer extension and exchange of ideas. Farmer-to-farmer transmission was the only form of 'extension' for thousands of years, and not only has it not died out, but it is being rejuvenated through progressive projects.

3) Trained 'local promoters' that become facilitators / extension workers under a project.

None of these are mutually exclusive. Investment in training and extension to support the capacity of land users and other local and national stakeholders is a priority to adapt better to changing environmental, social and economic conditions, and to stimulate innovation. Examples of innovative extension approaches are: Participatory Technology Development (PTD), Promoting Farmer Innovation (PFI), Participatory Innovation Development (PID) (an umbrella term now covering PFI); Training and Visit (T&V) for promoting technology packages developed by subject matter specialists, Information and Communication Technologies (ICTs), market driven extension, entrepreneurship to support value chains, etc.

**Contracting extension services to NGOs and other third parties:** NGOs are playing an evolving role in linking and bridging sectors. Many NGOs are forming strategic partnerships with government agencies, private sector and grassroots organisations, and strengthening their technical capacities for scaling-up successful initiatives while continuing to pilot innovative approaches. Over the past few decades, governments in SSA have shifted considerably, from viewing NGOs as a threat, to recognising their valuable role in grassroots implementation of public agendas, often filling gaps in government services and capacity.

**Example: Community-Based Natural Resource Management (CBNRM)**

*In practice, CBNRM is mostly about ways in which the state can share rights and responsibilities regarding natural resources with local communities. At one end of the scale is community participation in protecting, for instance, a national park, without actually involving them in park management. At the other end of the scale is a complete handover of ownership of land and natural resources from the state to communities. Between these two extremes are joint management models, where representatives of the state, acting within the terms of negotiated contracts, manage a state-owned natural resource (for example a lake or forest reserve) together with one or several communities (DANIDA, 2007).*

**Example: Agroforestry Extension project, Malawi**

*The Agroforestry Extension project (MAFE) works with some 20,000 farmers on 4,200 hectares to encourage the adoption of various agroforestry practices within farms (e.g. undersowing of pigeon pea and sesbania in maize for soil fertility improvement). The project uses participatory approaches. Farmers are formed into farmer associations, trained as trainers and can ask for specific services from government and non-governmental organisations. As a result, maize yields have improved from 700 kg/ha to 1,500-2000 kg/ha, farmers have become less dependent on fertilizers and more households have become both food and woodfuel secure. Some 6.98 million trees were planted in 1999 by 1,155,900 households, and the project expects to see reduced pressure on natural forests as these mature (Pretty, 2001).*



Savings and loans: micro-finance in Burkina Faso. (William Critchley)

# SLM APPROACHES

**Learning for Sustainability (LforS)** is an innovative extension approach for facilitating group learning processes concerned with issues relevant to sustainable development. Its main characteristics are: group learning, learning in the local context, a multi-level and multi-stakeholder approach and an active, process-oriented and situated learning. LforS fosters an in-depth understanding of the local context by linking information, knowledge, perspectives and experience from different sources, and by focusing on the dynamics of a given system. LforS is a process-oriented approach that encourages participants to share with each other, to discover common interests and goals, and to develop their own visions.

**Farmer Field Schools (FFS)** for SLM (and 'farmer study circles' which are more informal) is a group learning approach which builds knowledge and capacity among land users to enable them diagnose their problems, identify solutions and develop plans and implement them with or without support from outside. The school brings together land users who live in the similar ecological settings and socio-economic and political situation. FFS provides opportunities for learning-by-doing. Extension workers, SLM specialists or trained land users facilitate the learning process.

**Initiatives for supporting local innovators** identify traditional practices with a SLM potential and support recent innovations (e.g. self-help groups, self teaching). Here the 'approach' is basically through transfer of knowledge within a community and through generations. Land users continuously adapt and experiment with new seeds and plants, as well as new practices and technologies, in order to cope with changing environments and new problems. Spontaneous spread may have occurred either recently or through the ages as a tradition. Adoption can be supported by local institutions / community organisations such as land user groups, marketing cooperatives, irrigation and range management associations, women's groups, land user to land user extension groups etc. More attention and support should be given to local innovation as well as to traditional systems, rather than focusing solely on project-based SLM implementation of standard technologies.

**Integrated watershed management (IWM) approach** aims to improve both private and communal livelihood benefits from wide-ranging technological and institutional interventions. The concept of IWM goes beyond traditional integrated technical interventions for soil and water conservation, to include proper institutional arrangements for collective action and market related innovations that support and diversify livelihoods. This concept ties together the biophysical notion of a watershed as a hydrological landscape unit with that of community and institutional factors that regulate local demand and determine the viability and sustainability of such interventions (i.e. SLM).

**Payment for Ecosystem Services (PES)** is a rather new approach and carbon markets in particular, offer incentives to mobilise investments to conserve or rebuild forests and vegetative cover, in favor of higher biomass, higher productivity, sustainable agriculture and resilience to climate change. A UNDP and UNEP CDM capacity-building project includes Ethiopia, Kenya and Tanzania. The Clean Development Mechanism (CDM) allows emission-reduction (or emission removal) projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO<sub>2</sub>. These CERs can be traded and sold, and used by industrialised countries to meet a part of their emission reduction targets under the Kyoto Protocol. The mechanism stimulates sustainable development and emission reductions, while giving industrialised countries some flexibility in how they meet their emission reduction / limitation targets. Other projects are: payments for Reduced Emissions from Deforestation and Degradation (REDD), pro-Poor Rewards for Environmental Services in Africa (PRESA) is providing technical and policy support to small-holder PES projects.



Top: Participants of a training workshop in Mali playing the LforS simulation game 'Sustainable household strategies and community development'. (Ernst Gabathuler)  
Middle 1: Learning for Sustainability workshop in a shifting cultivation, Madagascar. (Andreas Kläy)  
Middle 2: Farmer Field School on fertilizer micro-dosing in upper east Ghana. (William Critchley)  
Bottom: A Farmer Field School group in Bassodawish, Tanzania reflecting on Conservation Agriculture. (Photo CPAR)

## Adoption and upscaling

### Adoption rate

Participation of land users / communities has often remained wishful thinking due to conflicts and a habitude to adopting a passive role. Under pressure of success, institutions fall back into instruction-oriented behaviour and a lack in confidence in the rural population. Almost the only field of sustained effective extension has been with single commodity approaches for cotton, maize, tea, etc. Nonetheless, participatory approaches are gradually gaining ground across the institutional landscape – from research and academic organisations to NGOs, development agencies, and local government units.

### Upscaling

Field experiences show that for innovations to be sustainable there is a need to address not only the technological but also the socio-cultural, political, economic dimensions such as: community structures, gender, collective action, property rights, land tenure, power relations, policy and governance.

However, public sector research and extension, due to several constraints - including financial - are generally unable to develop technologies tailored to a set of individual local conditions (agro-ecological and cultural preferences) hence often produce poorly focused recommendations. The future of extension is in decentralisation of technology testing in highly diverse environments, or in participatory research with land users (inter-disciplinary).

Continuous innovation has been carried out by farmers for millennia. Enabling external institutions, such as NGOs, can play a supportive role in stimulating processes of open discussion and conflict resolution. Researchers and extension workers can further stimulate the ongoing process of innovation and give it a new dimension.

### Methods and key elements of technical support

- Awareness raising
- Creating opportunities for information exchange
- Using appropriate technologies for information and communication
- Training and capacity building
- Organisational development
- Advisory service
- Research
- Networking



Participatory rural appraisal: sharing experiences between Ethiopia, Ghana and Uganda. (William Critchley)

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## STRATÉGIE ENERGIE DOMESTIQUE - NIGER

The SED approach (*Stratégie Energie Domestique*: domestic energy strategy) aims at sustainable management of forest resources by delegating responsibility to the communities and increasing their sense of stewardship. The approach was used within PAFN (*Project d' Aménagement des Forêts Naturelles*) a long term project in Niger for the management of natural forests. The local people are organised to manage and protect forest resources. On the one hand they carry out controlled, intensive cutting of trees and use of other forest products (gum arabic, honey, fruits, doum palm leaves etc). On the other hand the communities are committed to sustainably managing the forests through SLM technologies, ensuring long term preservation and regeneration of forest resources and maintenance of ecosystem services. Rural wood markets created by the project facilitate wood supply for urban centres and generate permanent income for the rural communities, thus improving their livelihoods. Part of the income is reinvested in sustainable forest management practices. The main aims of the approach are to simultaneously expand woodland areas, enhance controlled cutting, assure provision of urban centres with wood, and guarantee a permanent source of income for rural communities living near the forests. The approach is based on participatory methods, involving local actors at all stages of the project and handing over of major responsibilities to the communities.

The main operational unit of the approach is the so-called SLG (*structures locales de gestion*), a committee at community level, which is responsible for resource management, execution of development activities, monitoring and evaluation and sustainability of investments. Setting-up these organisational structures, as well as training and capacity building of its members is carried out by the project. Once the SLGs are established, planning of development activities and elaboration of forest management plans (PAF) and village forest management plans (PVAF) is done. Then, concrete activities are implemented: establishment of rural wood markets; commercialisation of wood and forest products; establishment of village development funds; implementation of SLM activities. Local people implement project activities at field level. The SLGs are the institutional beneficiaries of the approach, they participate in the management of generated income (e.g. taxes on products sold) and in turn support the mobilisation of local communities. The project provides technical and financial support (for village development funds earmarked for infrastructure projects). A Committee for Science and Technology (CST) with experts from CIRAD France and University of Niamey supervised programme implementation.

**Type of approach**

Project / programme based

**Problems / constraints addressed**

- Overuse of fragile natural resources through uncontrolled cutting of trees
- Conflict over natural resources between pastoralists (*Peulhs*) and agropastoralists, lack of social cohesion, exclusion of women
- Lack of financial resources
- Lack of land titles and inadequate laws
- Weak organisational capacity and technical expertise

**Aims and objectives**

- Stop uncontrolled exploitation of forest resources and increase the population's stewardship of their land
- Ensure fuelwood supply for large population centres (e.g. Maradi, Niamey)
- Combat poverty by providing additional sources of income in the form of new rural wood markets

**Target groups**

- Land user(s), pastoralists, women, loggers and local merchants
- SLM specialists and advisors, planners and decision makers, teachers and students

**Participation and decision-making**

National and sub-regional governmental institutions, partnering national NGOs and communities were in charge of managing the project. Planning as well as monitoring and evaluation was done by regional and sub-regional committees (*comités de suivi et évaluation*), NGOs and SLGs. Decision regarding choice of SLM technologies was taken by specialists, after consulting with communities and land users. The implementation was done by the SLG with support from field technicians.

**Implemented SLM / other activities**

SLM measures: enclosures, natural regeneration (e.g. *Acacia alibida*), vegetative strips (trees / shrubs, fodder plants, grass), stone lines, half-moons, passage ways, mulching with straw and branches, selective clearing, fire control, etc. Other activities: health, education, infrastructure, trade and markets, micro-credits, gardening, poultry farming, beekeeping

**Implementing bodies**

International institutions together with national / local government, national NGOs, private sector, local communities and land users

**Land users' motivation for implementing SLM**

Increased revenue, improved livelihoods, payments / subsidies, environmental awareness / health

**Photo 1:** *Marché de bois* – firewood market of Awanchalla, Illéla, Tahoua.

**Photo 2:** Training of SLG members. (All photos by Hamadou Mamoudou)



**Case study area: natural forests in Niger;**  
3,723 km<sup>2</sup> covered by the approach



**Costs and subsidies**

**Annual budget:** 1,915,061 US\$/year

**Approach costs** were met by the following contributors / donors:

|                                    |             |
|------------------------------------|-------------|
| International institution / agency | 89,9%       |
| National government                | 9%          |
| Local community, land users        | 1,1%        |
| <b>TOTAL</b>                       | <b>100%</b> |

Remarks: African Development Fund, Niger Ministry of Environment / national departments of environment, beneficiaries (SLG)

**Subsidies** financed under the approach:

**Externally financed inputs**

|  |                 |
|--|-----------------|
| Labour   | partly financed |
| Agricultural inputs  | partly financed |
| Construction material  | fully financed  |
| Infrastructure   | fully financed  |
| Training, research   | fully financed  |
| Project management (technicians, advisors, monitoring, steering, etc.) | fully financed  |

Remarks: Labour for SLM technologies is an in-kind contribution from the local people. But labour of development activities was paid by the project. Agricultural inputs: seeds, seedlings, imported fertilizers were paid by the project. Seeds collected in the forest and organic fertilizers were supplied by the beneficiaries.

**Access to credits**

Credits were (mainly) given to women for 'income-generating activities' (fodder, buying of fertilizers, marketing and small trade activities). They were set for six months with an annual interest rate of 20%. Credits were managed by two micro-finance institutions (SICR Kokari, MCEPC).

**Training and awareness raising**

- Training was provided for the managers of SLGs, advisors, field technicians (NGOs and government) and land user(s). Twelve by the project trained rural animators continued to train SLG members and local animators in the villages.
- Form: On-the-job learning, site visits, farmer-to-farmer, demonstration areas, public meetings, courses, field trips.
- Topics: SLGs approach and organisation, planning at village level, forest law, principles and measures of sustainable forest resource management, management of rural wood markets and of village development funds, methods of rural animation and literacy campaigns.

**Advisory service**

Extension is provided by NGOs (Karkara, ABC Ecologie) and governmental technical services (at regional and sub-regional level) who work directly with the land users. The methods used are training workshops, training of trainers, monitoring and evaluation as well as Rapid Rural Appraisal (RRA). Financial and material support for inputs are offered.

**Research**

Research was conducted by the *Institut National de Recherche Agronomique du Niger* (INRAN), University of Niamey, CIRAD France, and local communities. It covered: agro-economy, institutional and energy aspects, training and communication, sociology, forestry and pastoral infrastructure, environmental monitoring, credit systems.

**Organisation / capacity development**

In each village a local forest management body (*Structure Locale de Gestion* - SLG) was established. All in all there are 113 SLGs. In addition 12 rural markets (9 for doum palm leaves and 3 for gum arabic) were established, each managed by a SLG.

**Benefits of SLM Approach**

- +++ Improved sustainable land management: 6 PAF and 110 PVAF were elaborated and applied by the communities.
- +++ Adoption of approach by other land users / projects: The SED has become an integrated part of 'Programme National pour un Environnement et un Développement Durable' funded by UNDP. Since 2005, all environmental projects have a SED component.
- +++ Improved livelihoods / human well-being: 24 school rooms and 4 wells were financed; more than US\$ 200,000 of credits were distributed to 2,660 men and women from 2004-2006, etc.
- +++ Improved situation of socially / economically disadvantaged groups: pastoralists, women, loggers.
- +++ Poverty alleviation: Production and commercialisation activities increased income in the project zone by over 100%.

**Strengths**

- Organisation and training of local communities
- Enhancing local income and level of economic activity
- Decision support for sustainable management of natural resources (e.g. maps, scientific monitoring methods)

**Weaknesses → and how to overcome**

- Requires substantial financial and technical means → enhance in-kind contributions from local communities.
- Energy and deforestation problems are not solved sustainably → substitute fuelwood by a more sustainable source of energy.
- Long term control of forest exploitation is needed → establish permanent bodies for ecological monitoring.

**Sustainability of activities**

The local communities continue implementing the approach without external support; cutting of trees is controlled by the water and forestry department to avoid uncontrolled logging.

**Main contributors:** Abdoulaye Sambo Soumaila, Groupe de Recherche d'Etude et d'Action pour le Développement (GREAD), Niamey, Niger ; leffnig@yahoo.fr

**Key references:** Rapport d'achèvement du projet PAFN, Cellule de gestion du PAFN, Décembre 2006 ■ Rapport d'évaluation du PAFN, document de projet soumis au FAD, Rapport de mission internationale, Juin 1998 Manuel de planification et de suivi-évaluation, Cellule de gestion PAFN, Novembre 2002 ■ fiches de suivi du projet, 2002-2006 ■ Kimba Hassane. 2003. Talatou Harouna: Protocole de suivi environnemental, septembre 2003 ■ Bützler W. 2003. Expertise en Faune et Biodiversité, Rapport de la mission d'appui Août - Septembre 2003.

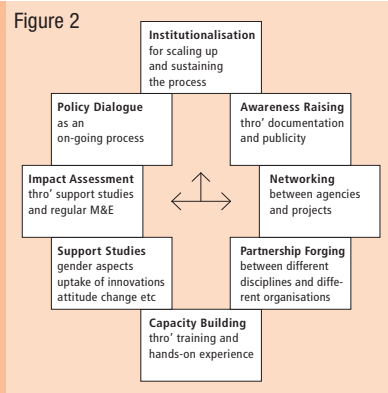
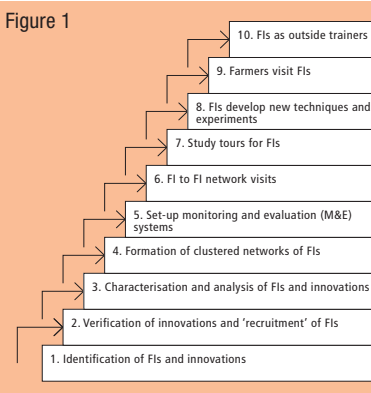
**PROMOTING FARMER INNOVATION - KENYA, TANZANIA, UGANDA**

The objective of Promoting Farmer Innovation (PFI) is to stimulate technical innovation, in the field of land management, by farmers. The PFI approach seeks to build on technical initiatives – ‘innovations’ in the local context - developed by farmers themselves in dry / marginal areas where the conventional approach of ‘transfer of technology’ from research to extension agents, and then on to farmers, has so often failed.

The approach basically comprises identifying, validating and documenting local innovations / initiatives. Simple monitoring and evaluation systems are set up amongst those innovative farmers who are willing to co-operate. Through contact with researchers, extra value is added to these techniques where possible. Farmer innovators are brought together to share ideas. Finally, ‘best-bet’ technologies, in other words those that are considered to be good enough to be shared, are disseminated through farmer-to-farmer extension. This takes two forms. First, farmers are brought to visit the innovators in their farms. Secondly, farmer innovators are used as teachers / trainers to visit groups of farmers – including FAO’s ‘farmer field schools’ in some cases. Only in this second form of extension is an allowance payable to the innovator. A ten-step field activity methodology has been developed (see figure 1).

At programme level, there is capacity building of in-line extension and research staff, who are the main outside actors in the programme. In each of the countries the approach has been implemented through a government ministry and with NGOs in the field. The principle, and practice, is not to create separate project enclaves, but to work through existing personnel, sharing buildings and vehicles that are already operational in the area. A ‘programme development process’ methodological framework shows how the ultimate goal of institutionalisation can be achieved (see figure 2). PFI’s first phase, completed in 2000, was financed by the Government of The Netherlands, through UNDP, and was active in Kenya, Tanzania and Uganda.

PFI is a potentially important direction for research and extension in SSA. Its principles have been taken up by, amongst others, the UNEP-GEF funded ‘Stimulating Community Initiatives in Sustainable Land Management’ project.



**Type of approach**

Recent local innovation (stimulated by project)

**Problems / constraints addressed**

- Poor supply of relevant recommendations from research for small-scale farmers in marginal areas
- Poor delivery of SLM technologies (where they exist) to farmers
- Lack of motivation of research and extension staff
- Isolation of promising ‘innovative’ SLM ideas which address low crop yields, land degradation and poverty
- Lack of exchange of innovative knowledge

**Aims and objectives**

Improve rural livelihoods through an increase in the rate of diffusion of appropriate SLM / water harvesting technologies.

- Promotion of farmer-farmer exchange
- Capacity building of farmers and supporting organisations
- Promotion of policy dialogue

**Target groups**

Land users, SLM specialists / agricultural advisors, planners, politicians / decision-makers

**Participation and decision-making**

‘Best –bet’ technologies were pre-selected by extension agents / researchers based on innovative farmers’ technologies identified in the field – but the farmers chose which technology to implement.

**Implemented SLM / other activities**

- SLM measures: runoff harvesting, gully control, composting, etc.
- The approach focussed on SLM only

**Implementing bodies**

National governments, national NGOs, and land users

**Land users’ motivation for implementing SLM**

Increased production, profitability; improved livelihoods; learning from innovative colleagues

**Photo 1:** ‘Stimulating Community Initiatives in Sustainable Land Management’ – a project that follows the PFI methodology: active in Ghana (pictured), Morocco, South Africa and Uganda. (William Critchley)

**Figure 1:** Field activities: the ten steps - from identification through to using innovators as trainers. (Critchley, 2000)

**Figure 2:** Programme development processes: the framework of a farmer innovation programme. (Critchley, 2000)

Acronyms: FI: Farmer Innovator, M&E: Monitoring and Evaluation

**Case study area:** East Africa (parts of Kenya, Tanzania and Uganda); 15,000 km<sup>2</sup> covered by the approach. Map shows case study area in the districts of Soroti, Kumi and Katakwi, Uganda.



### Costs and subsidies

**Annual budget:** No estimates available

**Approach costs** were met by the following contributors / donors:

|                                    |             |
|------------------------------------|-------------|
| International institution / agency | 60%         |
| National government                | 20%         |
| International NGO                  | –           |
| National NGO                       | –           |
| Private sector                     | –           |
| Local government                   | –           |
| Local community, land users        | 20%         |
| <b>TOTAL</b>                       | <b>100%</b> |

**Subsidies** financed under the approach:

#### Externally financed inputs

|                       |  |
|-----------------------|--|
| Labour                | not financed   |
| Equipment / tools     | not financed   |
| Agricultural inputs   | partly financed (planting material)                      |
| Construction material | not financed   |
| Infrastructure        | na   |
| Other                 | meals during field days, small allowances on study tours |

### Access to credits

Credits were not provided.

### Training and awareness raising

Staff seconded from Ministries of Agriculture / NGOs provide: (1) methodology training for participating staff; (2) presentational skill training for farmer innovators and; (3) training in gender aspects. Training has proved very effective – partially because it was provided on a ‘response to need’ basis and not predetermined.

### Advisory service

Under this approach there are new roles for government / NGO extension staff - as trainers and facilitators. Substantive extension work is carried out by the innovators themselves, through (a) other farmers visiting their plots / homes, and (b) the innovators going outside to act as trainers themselves, either to individual farmers or to train groups as happens under PFI Kenya, through FAO supported ‘farmer field schools’. Farmer-to-farmer extension has been a main strength of the programme.

### Research

Apart from process monitoring of the methodology, which has led to improvements, technical research into the innovations has been relatively weak.

### Organisation / capacity development

The approach had an articulated ‘Programme Development Process’ procedure, starting with capacity building and moving upwards through networking, impact assessment and awareness raising, towards the final goal of ‘Institutionalisation’.

### Benefits of SLM Approach

- +++ Improved sustainable land management: leads to improved production and soil and water conservation.
- ++ Adoption of approach by other land users / projects: In each of the three countries Government and NGOs adopted at least certain elements of the approach. UNDP and FAO in Kenya set up a joint ‘PFI-Farmer Field School’ project.
- +++ Improved livelihoods / human well-being: All the innovations were directly related to better livelihoods (as demonstrated in an ‘monitoring & assessment’ exercise).
- +++ Improved situation of socially / economically disadvantaged groups: After evaluation at the end of the first phase a gender-proactive policy (which worked well) was put in place to increase the number of women innovators involved.
- +++ Poverty alleviation: The project focussed on poor, small-scale farmers in dry areas.

### Strengths

- Builds on local ideas
- Revitalises the extension service
- Is attractive to stakeholders at all levels
- Gives land users more confidence in their own abilities
- Offers new locally tested ideas / technologies which work

### Weaknesses → and how to overcome

- Dependent on individual commitment and flexibility; does not follow the conventional institutional chain of command → training in skills and methodologies.
- Sometime confers too much prestige on a particular group of ‘favoured farmers’ → ‘rotate’ farmers who are the focus of attention.
- Researchers reluctant to respond to farmers’ agenda → effort to convince researchers of benefits of joint research with farmers.

### Sustainability of activities

There are examples of spontaneous voluntary continuation of farmer innovator groups in all three countries – but on a reduced level after initial project support ended.

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**Key references:** Critchley W. 2000. Inquiry, initiatives, and inventiveness: farmer innovators in East Africa. *Phs Chem Earth (B)*, Vol 25, no3, pp 285-288 ■ Critchley W. and K. Mutunga. 2003. Local innovation in a global context: documenting farmer initiatives in land husbandry through WOCAT. *Land Degradation and Development (14)* pp 143 – 162.

## FARMER FIELD SCHOOLS - KENYA

A Farmer Field School (FFS) is a community-based practically-oriented field study programme. It is usually a time-bound activity (generally one agricultural production cycle), involving a group (commonly 20-30) of farmers, facilitated by agricultural advisors or – increasingly – by other farmers. The FFS provides an opportunity for farmers to learn together, using practical, hands-on methods of discovery-based and participatory learning. The methods emphasise observation, discussion, analysis, collective decision-making, presentation and taking appropriate action. Discussion and analysis are important ways to combine local indigenous knowledge with new concepts and bring both into decision-making. The aim is to develop participants' decision-making and problem solving capacity among farmers. The process builds self-confidence (particularly for women), encourages group control of the process, and builds management and leadership skills. Although FFS are time-bound, many groups formalise their relations and continue study or action projects, including FFS on other subjects, after the FFS learning cycle is completed.

The Farmer Field Schools on Integrated Land and Water Management (ILWM) in eastern and central Kenya focus on learning about how to improve management of land and water resources both on individual plot and farm level and within 'landscapes' and communal lands; including local watersheds, river-valleys, forested hill-tops, grazing lands, eroded gullies etc. Each FFS group experiments practically on selected SLM practices / measures. All learning takes place in the field and farmers usually meet once per week at a selected host farm in their locality to monitor their field experiments and to discuss emerging issues. Trained facilitators, usually agricultural advisors, guide farmers in their observation and analysis of what is taking place in the field. Local farmer innovations are identified to feed indigenous knowledge into the FFS process: Innovators visit FFS groups or FFS members visit innovators farms to share their knowledge. The FFS process combined with the promotion of farmer innovation has proven to contribute to strong and cohesive groups that are able to make informed decisions and change cultural and practical behaviour in order to improve their production and land management. The process also builds self-confidence, and empowers especially women to take on leadership roles in the community. The impacts observed of FFS thus have strong biophysical and social dimensions.

**Type of approach**

Project / programme based

**Problems / constraints addressed**

- Land degradation, climatic variability and loss of agricultural biodiversity
- Farmers focus on their own farms and income and lack of interest for wider watershed / environment

**Aims and objectives**

- Support farmers' knowledge levels and decision-making capacity in relation to sustainable land and water management
- Raise farmers' yields in a sustainable manner and ultimately contribute to increased net farm income
- Strengthen community organisation and collective efforts

**Target groups**

Land users and small-scale farmers / SLM specialists / public rural and agricultural advisors

**Participation and decision-making**

The land users are actively involved in all phases of the approach and the learning curriculum is based on the problems identified by the group. Each group has its own leadership and management structure and handles its own funds. Extension staff serves as facilitators rather than teachers and focus on methodological aspects of the FFS approach. The technical scope of the learning is determined by the group and specific technical support brought in as needed.

**Implemented SLM / other activities**

- SLM measures: conservation agriculture, water harvesting, mulching, green manures, improved pasture, composting, integrated plant nutrient management, enhancing on farm biodiversity, etc.
- The approach focuses also on community organisational building for collective action and collective storage and marketing of products.

**Implementing bodies**

The Food and Agriculture Organisation (FAO) of the UN in collaboration with the Ministry of Agriculture in Kenya

**Land users' motivation for implementing SLM**

Increased production levels; increased income; also prestige and status in the community (affiliation to a group / network); friendship and collective spirit among group members (especially women)

**Photo 1:** A FFS group in Nakuru Kenya, monitoring their water harvesting trials in maize during a regular learning session.

**Photo 2:** A FFS group on a study visit to the Kenya Institute of Organic Farming, Thika.

**Photo 3:** Training of facilitators in Mwingi and practice on how to use the infiltration ring for measurement of the soil infiltration rate. (All photos by Deborah Duveskog)

## Case study area: Eastern and Central Kenya; Mwingi, Kitui and Nakuru Districts



### Costs and subsidies

**Annual budget:** about 100,000 US\$

**Approach costs** were met by the following contributors / donors:

|                                    |             |
|------------------------------------|-------------|
| International institution / agency | 60 %        |
| National government                | 20 %        |
| International NGO                  | –           |
| National NGO                       | –           |
| Private sector                     | –           |
| Local government                   | –           |
| Local community, land users*       | 20 %        |
| <b>TOTAL</b>                       | <b>100%</b> |

Remarks: Community contributions included provision of land, manure, fencing materials, tools etc. and weekly contributions to the group savings account.

**Subsidies** financed under the approach:

#### Externally financed inputs

|                       |                 |
|-----------------------|-----------------|
| Labour                | not financed    |
| Equipment / tools     | fully financed  |
| Agricultural inputs   | partly financed |
| Construction material | not financed    |
| Infrastructure        | not financed    |
| Learning materials    | partly financed |

Remarks: Funding for group level learning; materials and farm inputs were given directly to the group as a grant for them to manage.

### Access to credits

No access to credits provided through the approach.

### Training and awareness raising

- Agricultural advisors were trained in the FFS approach and in ILWM topics through a total of four weeks of training.
- Farmers were trained in FFS through season-long FFS learning where farmers meet at a 'host-farm' weekly to carry study activities.
- All the training was of practical nature with hands-on practice in the field on the learning subjects, including site visits to farmers and tours to centres of expertise.
- All aspects of ILWM topics were covered in the training.

### Advisory service

- Participatory extension with season-long regular interaction between farmers and agricultural advisors. At a later stage also strong farmer-to-farmer extension.
- The approach requires an attitude shift among agricultural extension workers to become more client-orientated.

### Research

- Local researchers were involved at the start-up of FFS groups for the sake of providing technical advice as well as to capture farmers' demands for future research priorities.

### Organisation / capacity development

- Through the FFS cycle participants develop skills in financial management, leadership, organisational management etc. that form the basis for effective institutional capacity.
- FFS groups regularly interact and visit each other which has led to the creation of networks of federated FFS groups that in many cases have developed into local farmer associations or producer organisations.

### Benefits of SLM Approach

- +++ Improved sustainable land management: yield increase of more than 200% has been recorded frequently.
- +++ Improved livelihoods / human well-being: improved gender relations and division of farm workload, resistance to drought and improved livelihoods and life satisfaction in general.
- ++ Adoption of approach by other land users / projects: the applied practices have spread from participants to neighbours in the community.
- ++ Poverty alleviation: all participants fall in the poor or medium poor category and therefore the project has contributed to reduced poverty levels.

### Strengths

- The collective action created in communities to deal with and manage their own resources.
- Improved capacity of farmers for problem solving and innovation in ILWM.

### Weaknesses → and how to overcome

- A top-down and patronising attitude towards farmers is common among agricultural staff and experts, which prevents equal and trustful relationships → institutionalisation of participatory extension is thus needed with a change in mindset among government and other agricultural support staff.
- The various government bodies and ministries responsible for land and water issues often operate individually without strong synergies → a stronger collaboration is needed between ministries especially Ministry of Water and Ministry of Agriculture in order to deal effectively with land and water aspects in an integrated manner.

### Sustainability of activities

Graduated FFS groups have organised themselves into a network and farmer organisations that have taken on collective activities following the end of the initial project. In some cases this has included starting-up self-financed new FFS groups.

**Main contributors:** Deborah Duveskog, regional FFS advisor, FAO Nairobi; deborah.duveskog@gmail.com and Sally Bunning, FAO, Rome, Italy; sally.bunning@fao.org

**Key references:** Duveskog D. 2001. Adapted from A Study Guide for Farmer Field Schools: Water Harvesting and Soil Moisture Retention. ■ FAO-IIRR. 2006. Discovery-based Learning on Land and Water Management: Practical Guide for Farmer Field Schools.

**PARTICIPATORY NEGOTIATED TERRITORIAL DEVELOPMENT - BURKINA FASO AND GHANA**

Participatory Negotiated Territorial Development (PNTD) is a rural development approach developed by FAO. It offers a structure to build consensus among individual communities and development partners on natural resources / territorial management and development issues. PNTD facilitates consensus based planning within a team that represents different actors at different levels, including sector offices / technical services (agriculture, environment, etc.) and NGOs (involved in community-based rural development) at district / department / municipality level; and traditional authorities, user groups and associations at community / village level.

During the diagnostic phase of the PNTD process, local territorial issues are analysed based on the viewpoints of the different actors and on a historical analysis. This step contributes to a coherent, shared understanding of the territorial system, thus providing the basis for collective agreements on development. These are referred to as Social Territorial Agreements. They are based on negotiation within the PNTD team. Main activities of PNTD include: (1) Facilitation of the planning process; (2) Provision of technical expertise; (3) Linkages to relevant institutions; (4) Technical advisory to assess viability and costs of joint development proposals; (5) Reporting back to communities and provision with final plans and resource maps; (6) Signing of 'Social Territorial Agreements' and endorsement by local government; (7) Establishment of a joint monitoring and evaluation system; and (8) Follow-up meetings between government institutions and NGOs.

Independent external support by territorial facilitators is essential to assist in various aspects of the process. A PNTD approach was piloted within a project in the Onchocerciasis (riverblindness) Freed Zone along the Burkina Faso-Ghana border. This newly opened zone lacked a well defined, accepted management structure to support the development process, while cross-border aspects further complicated development, requiring cooperation among the communities and development partners from both countries. The PNTD team was supported by facilitators from the Netherlands Development Organisation (SNV). The team's capacity to carry out inclusive planning processes has improved significantly, in terms of proposal development, negotiation and consensus building, and in placing the findings of the diagnostic phase in the larger geographical context. Joint development plans were elaborated and agreed upon from the perspective of the communities. FAO has been supporting the exercise through technical backstopping.

**Conceptual principles of PNTD**

|                              |   |
|------------------------------|---|
| Territorial based:           | Social territories (shaped by the social and historical relations between the actors and the territory) are the spatial units of analysis.          |
| Actor based:                 | Recognition of the heterogeneity of the actors' interests and vision of the territory.  |
| Dynamic:                     | Understanding of and learning from the changing context and complexity of interactions to support positive patterns and mitigate negative patterns. |
| Systemic:                    | Appreciation of the interdependencies within and between territories and their components.  |
| Multi-sectoral:              | Integration of environmental, social, economic, political and cultural aspects.   |
| Multi-level:                 | Recognition of different territorial levels and administrative levels.  |
| Participatory and negotiated | Agreements are developed on the basis of consensus and equal representation of all stakeholders.  |



**Type of approach**

Project based

**Problems / constraints addressed**

- Limited commitment from central governments
- Cross-border planning proved to be considerably more expensive than regular planning activities

**Aims and objectives**

- Testing a PNTD approach for local (trans-boundary) territorial planning
- Refining the methodological process
- Preparing a joint development plan for the two areas in Ghana and Burkina Faso

**Target groups**

Local government (district / department), NGO trainers, community leaders; OFZP national coordinators plus ECOWAS-FAO (Economic Community of West African States) project managers

**Participation and decision-making**

Initial stakeholder meeting with government representatives, traditional authorities and NGOs was held to introduce PNTD, define pilot area, set composition and tasks of the PNTD team, revise timeframe. Decisions on priority activities were negotiated first within each community and then among communities of the two countries. The PNTD team members acted as facilitators of this process.

**Implemented SLM / other activities**

- SLM measures: re-forestation, improved livestock rearing, soil conservation, dam construction (between two communities)
- Other activities: a road to link two communities directly

**Implementing bodies**

SNV (Netherlands Development Organisation) Burkina Faso, SNV Ghana, international and national NGOs

**Land users' motivation for implementing SLM**

Social pressure (avoiding potential transboundary conflicts) and improving natural resources and land management

**Photo left:** PNTD can help tackle problems related to territorial disputes and natural resource management. (SNV, Ghana)

**Photo right:** Dialogue, negotiation and consultation the most significant elements of PNTD. (SNV, Burkina Faso)

**Case study area:** pilot area covering four communities: Barre and Narquia in the Zecco and Ziou Departements, Nahouri Province, Burkina Faso; and Namoo and Feo, Bongo district in the Upper East Region of Ghana.



### Costs and subsidies

**Annual budget:** No estimates available

**Approach costs** were met by the following contributors / donors:

|                                    |             |
|------------------------------------|-------------|
| International institution / agency | 100%        |
| National government                | –           |
| International NGO                  | –           |
| National NGO                       | –           |
| Private sector                     | –           |
| Local government                   | –           |
| Local community, land users        | –           |
| <b>TOTAL</b>                       | <b>100%</b> |

**Subsidies** financed under the approach:

No subsidies were given. Labour was not rewarded and inputs were not financed by the project.

### Access to credits

No access to credits provided through the approach

### Training and awareness raising

A local NGO (BADECC) conducted training of PNTD teams on territorial diagnosis, proposal development, negotiation and conflict resolution. All activities were jointly conducted and attended by participants from Ghana and Burkina Faso. Capacity development took place within the pilot area through a combination of formal training sessions and – preferably – on-the-job training. Training focused on: (1) the PNTD process and its application in the context of cross-border natural resource management; (2) PRA tools relevant to the diagnostic phase; (3) participatory resource mapping (a tool to support the negotiation on development proposals).

### Advisory service

This approach focuses on establishing and maintaining social dialogue within the territory and restructuring and / or strengthening territorial institutions.

### Organisation / capacity development

The PNTD team's capacity to carry out inclusive planning processes has improved significantly, particularly referring to proposal development, negotiation and consensus building, and in placing the findings of the diagnostic phase in a larger geographical context (interactions between communities). Less impact was achieved from the diagnostic phase as many team members had used the PRA tools before. As PNTD team members work for local (non-) government organisations, the capacity of these institutions to facilitate consensus based planning has also enhanced.

### Benefits of SLM Approach

- +++ Invoked a high level of interest within the targeted communities; increased active participation, planning and consensus building capacity at community level.
- + Improved sustainable land management: improved soil conservation and livestock rearing.

### Strengths

- Provides a suitable framework for cross-border planning in the West African context.
- PNTD process raised the level of participation of local government institutions and NGOs in a negotiated territorial development process through the PNTD team which comprised technical staff of these organisations.
- PNTD enabled (and stimulated) the communities on both sides of the border to interact, and joint development plans were elaborated and agreed upon from the perspective of the communities.
- Looking beyond community boundaries, and consensus building between communities and stakeholders were new aspects of planning to the team members.

### Weaknesses → and how to overcome

- It took time for team members to grasp the conceptual approach of PNTD. They were used to working within individual communities, and if they were involved in planning then mostly at a diagnostic level.
- Language problems required almost continuous translation, and thus effectively doubling the time required → recruitment of linguistic mediator(s) needs to be considered in the project budget.

### Sustainability of activities

The PNTD-approach has shown applicability. Yet, there are some aspects which need to be considered: (Local) governments need to take ownership of the cross-border planning and development processes. This could be realised by structuring external support differently: (1) Local government (districts, municipalities) supported by NGO's are responsible to carry out all activities; (2) External (project) support focuses on overall coordination, the provision of technical advice, the provision of operational budgets, and building of partnerships.

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**Key references:** FAO. 2005. An approach to rural development: Participatory and Negotiated Territorial Development (PNTD). Rural Development Division, FAO. OFZ Project (Socio Economic Development Programme for the Transborder Onchocerciasis Freed Zone of Burkina Faso and Ghana) ■ SNV Burkina Faso - SNV Ghana. 2007. X-border Participatory, Negotiated, Territorial Development (PNTD) – pilot phase report.

# PARTICIPATORY LEARNING AND ACTION RESEARCH APPROACH TO INTEGRATED RICE MANAGEMENT - MADAGASCAR

The Participatory Learning and Action Research approach to Integrated Rice Management (PLAR-IRM) is a bottom-up, social and experiential learning approach, leading to sustainable agricultural improvements, based on mutual support and communication among farmers. Innovation and agricultural change is aimed for, through capacity strengthening of all major stakeholders involved in the rice sub-sector. IRM refers to the production system and value chain as a whole. Innovation is not limited to technological change; it also includes time management and the building of social networks and institutions for mutual collaboration between farmers and other stakeholders within the rice value chain. A step-wise, self-discovery learning mode encourages the stakeholders to find solutions for their own site-specific problems. During the first years, groups of 25-30 producers are supported by a programme facilitator who animates the learning and innovation sessions. The main instruments are the learning modules dealing with specific crop management practices, harvest and post-harvest practices (involving processors and entrepreneurs also), as well as the agro-ecological and socio-economic conditions of rice production. The sessions aim to strengthen farmers' and other rice stakeholders' capacity to observe, analyse, interpret, make decisions, innovate and share knowledge and experiences. PLAR is based on locally relevant knowledge, practices and skills. Exchanges about current practices, and their logic or justification, are the starting point in all modules.

In a learning-by-doing approach farmers are encouraged to try out any new ideas identified during PLAR sessions on some parts of their fields reserved for new practices ('innovation space'). This allows them to assess the impact of such innovations on their rice yield, or on the profitability of rice growing and the rice business as a whole, and consequently to adapt and fine-tune the measures taken according to their needs. These innovation spaces are regularly visited as part of learning sessions for knowledge sharing between farmers. Since 2005, innovations in land preparation, early transplanting of seedlings, weeds and water management - basically without external inputs - have resulted in three times higher yields, benefitting thousands of farmers. Rice value chain activities started in 2008 with a view to empowering farmers' position within the chains and improving the competitiveness. Groups are unifying into PLAR centres with common marketing of rice, and contract input providers and rice processors.



## Type of approach

Programme based

## Problems / constraints addressed

- Low yields in rice production; most farmers live below subsistence level
- Absence of government and NGO support
- Limited access to markets, lack of infrastructure

## Aims and objectives

- Sustainably improving food security, livelihoods and incomes of poor rice farmers by boosting the profitability of rice production and increasing the efficiency and competitiveness of the rice sub-sector
- Capacity strengthening of all stakeholders involved in the rice-subsector

## Target groups

Mainly: land user groups (rice farmers);  
in 2<sup>nd</sup> phase: private service providers (e.g. input suppliers), rice processors and buyers

## Participation and decision-making

Land users are actively involved in all phases of the approach. The curriculum is based on needs assessment. Decisions on SLM activities to be implemented are taken by individual farmers, and collectively. SLM implementation is done by farmers with technical support from programme officers. Gradually farmers take more responsibility, through the so-called weaning process: decisions on curriculum of training modules are taken by PLAR groups; Farmers' Facilitators (FF) are trained and lead the groups (from the 3<sup>rd</sup> year on). 5-10 weaned PLAR groups unify in the form of a PLAR centre, mainly dealing with rice value chain related activities.

## Implemented SLM / other activities

- SLM measures: land preparation; nursery management; transplanting of young seedling in rows; new rice varieties; improved seed multiplication and conservation practices
- Other activities: value chain development: collective storage and marketing of rice; contractual arrangements with input providers and rice processors

## Implementing bodies

International institution / agency (Aga Khan Foundation) operating as a local NGO with support of the local government, local communities and private sector

## Land users' motivation for implementing SLM

Production, profitability and affiliation to movements / groups / networks

**Photo 1:** Farmers discussing development priorities on the basis of the lowland map.

**Photo 2:** Transplanting rice in lines using a 'fomby'.

**Photo 3:** Farmer weeding using a rotative weeder.

(All photos by PSSDRI - Programme de soutien de la région Sofia pour le développement rural intégré)



**Case study area:** Sofia Region, Madagascar; about 10,000 km<sup>2</sup> covered by approach.



### Costs and subsidies

**Annual budget:** 400,000 US\$

**Approach costs** were met by the following contributors / donors:

|                                    |             |
|------------------------------------|-------------|
| International institution / agency | 10 %        |
| National government                | –           |
| International NGO                  | –           |
| National NGO                       | 30 %        |
| Private sector                     | 10 %        |
| Local government                   | –           |
| Local community, land users        | 50 %        |
| <b>TOTAL</b>                       | <b>100%</b> |

**Subsidies** financed under the approach:

#### Externally financed inputs

|                       |                |
|-----------------------|----------------|
| Labour                | not financed   |
| Equipment             | fully financed |
| Agricultural inputs   | not financed   |
| Construction material | not financed   |
| Infrastructure        | not financed   |

Remarks: Two *sarcleuses* (weeding equipment) per starting group are provided for free and remain property of the group.

### Access to credits

Was supported by the approach in collaboration with an existing microfinance institution; loan period: 6-8 months; monthly interest rate: 2.5%

### Training and awareness raising

- Training was given to groups of land users and facilitators
- Form: compulsory and optional PLAR learning modules; on-site experimentation (learning by doing) and farmer-to-farmer exchange during site visits
- Topics: crop management practices, harvest and post-harvest practices (incl. storage, marketing), socio-economic and ecological conditions of rice farming; curriculum based on needs assessment
- Current and planned: expansion of numbers of groups, unification into Centres, value chain activities and extending training sessions for non PLAR-group farmers

### Advisory service

- Method and key elements: modular learning sessions guided by a facilitator, farmer-to-farmer extension
- Approach is based on indigenous knowledge

### Research

- Local researchers were involved at the start-up of FFS groups for the sake of providing technical advice as well as to capture farmers' demands for future research priorities.

### Organisation / capacity development

PLAR groups are formed (new formation or based on already existing entities) for mutual support and exchange of knowledge. In 2<sup>nd</sup> phase PLAR groups are weaned into higher-level learning and innovation platforms (=PLAR centres) for exchange between farmers facilitators and SLM specialists from the programme.

### Benefits of SLM Approach

- +++ Improved sustainable land management: yields have increased by > 200% (on innovation spaces).
- +++ Adoption of approach by other land users / projects: from 2005-2009 PLAR groups have increased from 6 up to 102, involving 3,782 families and extended to 4,200 non grouped farmers.
- +++ Poverty alleviation / improved livelihoods / human well-being: SLM practices result into a net benefit of > 700 US\$/ha.
- +++ Improved situation of socially / economically disadvantaged groups: marginalised poor rice farmers are targeted.

### Strengths

- Farmers learn basic principles of rice management and develop their own locally adapted options for improvements; the innovation comes from inside the groups.
- Farmers build up individual and organisational capacity to find out solutions to their problems and build confidence as efficient partners with other value chain actors.

### Weaknesses → and how to overcome

- Labour intensive improvements → provision of group credit to PLAR group members in collaboration with a local microfinance institution.
- Learning intensive approach, with regular group learning sessions → PLAR groups elaborate their own learning programmes and curricula according to their availability and needs.

### Sustainability of activities

In a 2<sup>nd</sup> phase farmers who are organised in PLAR groups gradually build up the capacity to manage the innovation and mutual learning approach on their own without programme support: Farmers' facilitators are trained to take over the lead of PLAR groups with backstopping from programme facilitators.

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**'CATCHMENT' APPROACH - KENYA**

The 'catchment' approach promotes sustainable land management systems by conservation of defined areas (termed 'micro-environments') through the active participation of the communities living there. It was launched in Kenya in 1988 to achieve greater technical and social impact - at a more rapid pace, than the previous focus on individual farmers. This case focuses on a single 'catchment' in a subhumid area of Central Kenya. The emphasis is on structural measures - especially *fanya juu* terraces - but vegetative systems are promoted also. Other activities are supported such as spring protection, improved crop and animal husbandry, agroforestry, fodder production, fish ponds and others. The specific objectives are to stimulate the implementation of a variety of SLM measures leading simultaneously to improved production.

Each approach area is defined by cultural / administrative boundaries rather than strict hydrological watersheds or catchments (as its name confusingly implies). A conservation committee is elected from amongst the focal community before problem identification begins. Technical staff from relevant government and non-government agencies (NGOs) are co-opted onto the committee. The approach then involves participatory methods of appraisal and planning of solutions. Land users, together with the co-opted subject matter specialists, pool their knowledge and resources. Common Interest Groups (CIGs) are formed, with the aim of self-help promotion of specific farm enterprises. Training is given to the members of the CIGs by the Ministry of Agriculture. The farmers carry out the majority of the work themselves: monetary or other tangible incentives are few.

The end result is the micro-environment (catchment area) conserved for improved production, and left in the hands of the community to maintain and sustain. The 'catchment' approach was developed under the National Soil and Water Conservation Programme - supported by the Swedish International Development Cooperation Agency (Sida) - and continues to be promoted as the Focal Area Approach (FAA) under the National Agricultural and Livestock Extension Programme (NALEP), which is again supported by Sida. However, under NALEP there is less emphasis on soil and water conservation than under the previous programme, and more focus on promotion of productive enterprises.

**Type of approach**

Project based

**Problems / constraints addressed**

- Lack of tangible and assessable impact of SLM activities, technically or socially
- Slow implementation of SLM programme
- Underlying problems of poverty, declining soil fertility, soil erosion and fuelwood shortage
- Lack of capital hinders farmers from investing in structures
- Lack of conservation / SLM knowledge

**Aims and objectives**

To contribute to increased and sustained environmental conservation and improved agricultural production at farm level, through participatory approaches for better land husbandry / SLM.

**Target groups**

Land users, SLM specialists / advisors, teachers / students, planners, politicians / decision makers

**Participation and decision-making**

The approach was designed by national specialists. The community was involved in the initiation, planning (public meetings, PRA) and implementation phase. Choice of the technology was mainly by land users supported by SLM specialists and partly by SLM specialists alone. Decision on the method of implementing the technology was mainly by land users supported by SLM specialists.

**Implemented SLM / other activities**

- SLM measures: *fanya juu* terraces, level bench terraces, agroforestry, fodder production, improved crop and animal husbandry
- Spring protection
- Fish ponds

**Implementing bodies**

Implemented by community members

**Land users' motivation for implementing SLM**

Increased production, profitability and improved livelihood



**Photo 1:** An extension officer showing members of a women group how to protect young mango seedlings in the catchment area of Sololo Division, Moyale District, Kenya. (James Njuki)

**Case study area: Muranga District, Kenya;**  
1 km<sup>2</sup> covered by the approach



**Costs and subsidies**

**Annual budget:** US\$ 4,000-5,000

**Approach costs** were met by the following contributors / donors:

|                                    |             |
|------------------------------------|-------------|
| International institution / agency | 70%         |
| National government                | 20%         |
| International NGO                  | –           |
| National NGO                       | –           |
| Private sector                     | –           |
| Local government                   | –           |
| Local community, land users        | 10%         |
| <b>TOTAL</b>                       | <b>100%</b> |

**Subsidies** financed under the approach:

**Externally financed inputs**

|                       |                 |
|-----------------------|-----------------|
| Labour                | not financed    |
| Equipment / tools     | fully financed  |
| Agricultural inputs   | partly financed |
| Construction material | not financed    |
| Infrastructure        | not financed    |

Remarks: Incentives (other than education and motivation) have been used at very low levels. Common Interest Groups (CIGs) were then required to solicit help and assistance as need arises.

**Access to credits**

Credit was not provided directly, though a ‘stakeholder kitty’ revolving fund (savings and credit) was promoted and developed.

**Training and awareness raising**

Training included layout of conservation measures; agroforestry; energy conservation; food preservation – as well as specific farm enterprises. It was carried out for groups and mainly through farm visits by Ministry of Agriculture extension agents. Impact was good for farmers and extension workers.

**Advisory service**

Extension methods include farm visits; field demonstrations; field days; on-farm demonstrations. The extension service was ‘quite adequate’ to take this process forward into the future. The impact of the advisory service for farmers and teachers was rated as good, and as excellent for technicians.

**Research**

Specific problems were researched as they arose. A strong research-extension linkage was / is being built up. Monitoring of the progress of the overall programme is part of the approach.

**Organisation / capacity development**

A conservation committee is formed including elected members from focal communities and technical staff from relevant government and non-government agencies (NGOs). Common Interest Groups (CIGs) are formed. Support to local institutions was given through training.

**Benefits of SLM Approach**

- ++ Improved sustainable land management: mainly through *fanya juu* and level bench terraces.
- + Adoption of approach by other land users / projects: the further spread of the approach has been limited to one NGO within the case study area.
- +++ Improved livelihoods / human well-being: more income generating activities identified and implemented through common interest groups (CIGs) for crop production, marketing and livestock.
- ++ Others: some enhanced collaboration between agencies; Partners understand each other and avoid activity duplication.

**Strengths**

- Genuine community participation
- ‘Ownership of approach’ by the community: feeling that what has been achieved is due to communal efforts and belongs to them
- Improved linkages between extension / training and research
- Promotion of new and productive farm enterprises alongside better SLM

**Weaknesses → and how to overcome**

- Technologies tend to be implemented uniformly, not site-specifically → match SLM to each particular situation (e.g. promote structural measures only where necessary, i.e. where agronomic and vegetative measures do not provide sufficient protection).
- Uncertainty about continuation in specific areas if direct support stops after only one year → continue approach for at least two or three years in each catchment (approach area).
- Limited area covered by National Agricultural and Livestock Extension Programme → more staff required and more effective use of staff.
- In many places there is a lack of availability of inputs → provide better credit facilities for CIGs / farmers generally.

**Sustainability of activities**

Interventions are likely to continue and be maintained, but this depends on common interest groups continuing to function actively.

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