



## Participatory hedgerow management

Nepal: सहभागितामूलक घाँसेहार व्यवस्थापन

**Hedgerow technology can be introduced through the joint participation of farmers, scientists, and related stakeholders. The whole community works together at all stages, including designing, planning, implementation, monitoring and evaluation, and scaling up.**

Communities can establish better hedgerows by supplementing the traditional knowledge that they have employed for generations with scientific knowledge through a participatory process where both groups are involved in every step of planning, designing, and implementation. This approach recognizes the validity of the local knowledge that farmers have about their land and supplements it with scientific techniques to facilitate the implementation of methods which will yield better results sooner.

Hedgerow technology can be implemented by forming farmers' groups and using a participatory approach. This technology has the potential to be scaled up and applied on a broader scale. The steps for sharing labour and know-how to establish hedgerows can be summarized as follows:

- Capacity is strengthened through discussions with technical persons.
- Farmers, technical persons, and related stakeholders work together to come up with plans that make the best use of both the farmers' indigenous knowledge on how to form hedgerows and their understanding of the landscape, and scientific knowledge, for designing and planning.
- The hedgerows are established by the farmers as per the consensual plan.
- Some farmers are designated to periodically inspect the hedgerows and to perform maintenance as needed.
- The technology is scaled up by farmers who disseminate the learning to other farmers through extension and knowledge sharing at different fora.

Farmers, technical persons, and related stakeholders were all involved at every stage. In addition, LI-BIRD, local community-based organizations, and other related stakeholders such as the district forest office and the district agriculture office were on hand to support the farmers' group by offering technical and financial resources. The farmers' groups had a vested interest in this approach and demonstrated their commitment by: generating funds from a savings and credit scheme and conducting income generating activities. They also worked to establish effective linkages and to coordinate with related stakeholders to obtain resources which would ensure that the group would be self-reliant in the long run. The involvement of a wide range of participants will ensure that the technology is not only effective but that it is also sustainable. Moreover, when neighbouring communities see how successful this approach can be, it is hoped that they also will adopt the technology.

**Left:** Land users with an A-frame that they use to mark out contour lines on sloping land (Gyanbandhu Sharma)

**Right:** A local woman harvesting grass planted along a contour line (Gyanbandhu Sharma)



**WOCAT database reference:** QA NEP 27

**Location:** Tanahun and Gorkha Districts, Nepal

**Approach area:** Approximately 1–10 km<sup>2</sup>

**Land use:** Agroforestry

**Type of approach:** This is a project/ programme-based approach

**Focus:** Mainly on conservation with other activities

**Related technology:** Hedgerow technology QT NEP 27

**Compiled by:** Gyanbandhu Sharma, LI-BIRD

**Date:** March 2010, updated March 2013

The technology was documented using the WOCAT ([www.wocat.org](http://www.wocat.org)) tool.

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WOCAT

## Problems, objectives and constraints

### Problems

This approach addressed a few of the major problems in the area. The outstanding problems were:

- poor technical knowledge,
- lack of group efforts,
- lack of cash for investment,
- poor access to service providers,
- inadequate use made of farmers' traditional knowledge,
- inadequate knowledge resources, and
- poverty and poor social cohesiveness.

### Aims/objectives

- The objective of this approach was to introduce the technology through participatory planning, designing, and implementation by integrating farmers' knowledge and experiences in the process.

### Constraints addressed

Major	Constraint	Treatment
Technical	Farmers had low technical knowledge	Farmers shared their know-how and also learned from scientists, other farmers and related stakeholders
Institutional	Farmers had no formal institutional mechanisms and also had no capacity to run their institutions	Farmers learned how to form a formal group and also improved their capacity to run their institutions
Minor	Constraint	Treatment
Financial	Farmers had insufficient financial resources to implement the technology	Farmers learned how to apply for resources from different related stakeholders and they also learned how to generate cash from their own group using savings and credit schemes.

## Participation and decision making

### Stakeholders/target groups



Land users, groups



Land users, individual



SLM specialists, agricultural advisors



### Approach costs met by:

National non-governmental organization	20%
Local community/land user(s)	70%
Local government (district, municipality, and village)	10%
<b>TOTAL</b>	<b>100%</b>

**Annual budget for sustainable land management component:** approximately USD 8

### Remarks

- The cost of implementing this technology is dependent on the gradient of the slope (and other geographical features), the local cost of the seeds or seedlings, and the availability of labour.
- Costs are rough estimates by the technicians and authors. Exchange rate USD 1 = NPR 73 in March 2010.

**Decisions on choice of the technology:** Mainly by land users supported by sloping land management specialists. Both farmers and specialist were involved in on-farm visits to assess the condition of the land; farmers attended seminars to acquire new knowledge and they also used this opportunity to share their own knowledge. Farmers and specialists together selected the technology.

**Decisions on method of implementing the technology:** Mainly by land users supported by sloping land management specialists

**Approach designed by:** Specialists and land users. During the design process, specialists organized on-farm visits and exposure visits. The plan was prepared jointly by the land users and the specialists who used each others' expertise.

### Implementing bodies:

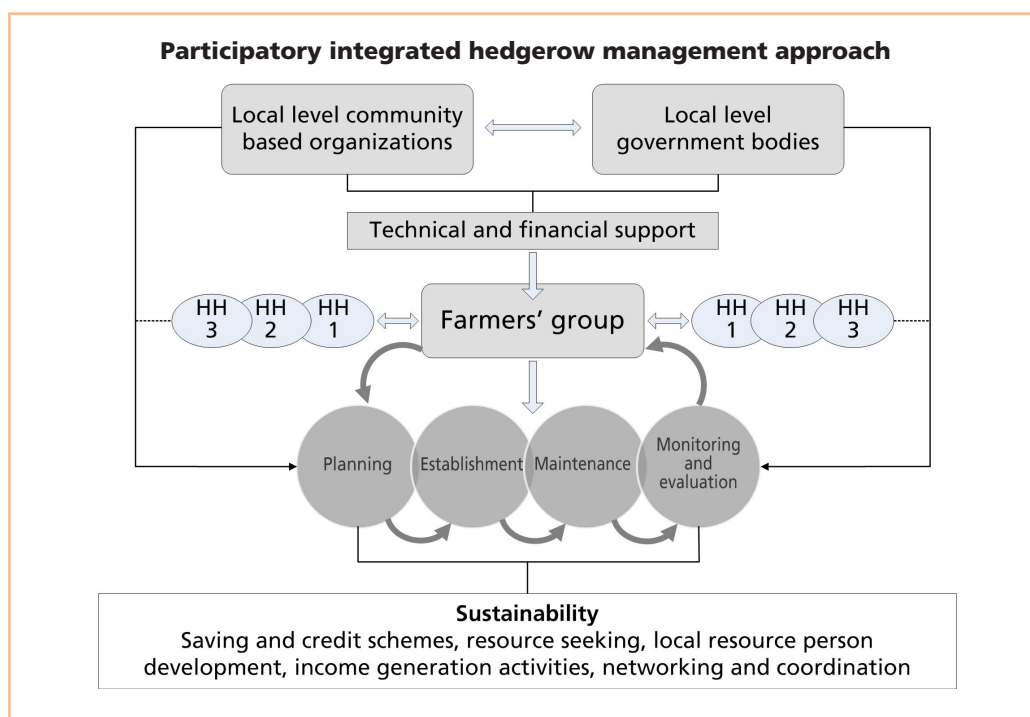
- LI-BIRD was the implementing national non-governmental organization.
- Local farmers' groups were involved in the field implementation.
- Local government bodies such as the district forest office, the range post office, the district agriculture office, and the agriculture service centre, all supported the local farmers' groups with resources and coordination.

## Land user involvement

Phase	Involvement	Activities
Initiation/motivation	Passive	At the beginning, the land users were mostly passive because they lacked information on sloping land management.
Planning	Interactive	Land users were actively involved in the planning stage and they incorporated feedback from other stakeholders to finalize the action plan. During this phase they also prepared the land and the materials, and recruited the resource person needed to implement the technology.
Implementation	Self-mobilization	Land users were involved in the implementation phase mobilizing their group members and shared the new technical knowledge that they had acquired.
Monitoring/evaluation	Interactive	Land users and other stakeholders remained actively involved throughout the different stages of monitoring and evaluation.
Research	Payments/external support	Land users were actively involved in research work to test and validate the approach.

**Differences in participation of men and women:** Men and women participated equally.

**Involvement of disadvantaged groups:** Yes, moderately. This approach encouraged the involvement of disadvantaged groups and ethnic minorities such as Dalits, Gurungs, and Chepangs at different stages of implementation.



## Organogram

Households (HH) participate in hedgerow management (Gyanbandhu Sharma, AK Thaku)

## Technical support

**Training/awareness raising:** This approach provided training on hedgerow technology and group mobilization to enhance the capacity of land users, field staff, and local resource persons. Site visits to the demonstration areas were also organized for the land users.

**Advisory service:** They used an advisory service called the 'group mobilization method'; networking and coordination of farmers' groups with district level line agencies such as the district forest office, the district agriculture office, the district livestock office, and other relevant stakeholders for learning and sharing of information.

**Research:** On-farm technical research was a part of the approach applied by land users, specialists, and relevant stakeholders who were involved in hedgerow technology trials.

## External material support/subsidies

**Contribution per area (state/private sector):** LI-BIRD provided some support.

**Labour:** The land users themselves contributed to implementing the whole approach.

**Inputs:** Not financed

**Credit:** Not provided

**Support to local institutions:** Yes, a little. Trainings and sessions on capacity building were provided to the land users.



## Monitoring and evaluation

Monitored aspects	Methods and indicators
Biophysical	The land users and project staff made regular observations of sediment deposition rates after the intervention.
Technical	The land users and project staff made regular observations on the formation of terraces and control of erosion.
Socio-cultural	The land users and project staff regularly observed sociocultural impacts.
Economic/production	The land users and project staff regularly observed the extent to which the income of the land users changed.
Area treated	The land users and government staff monitored the coverage of the technology.
No. of land users involved	Regular observations were made by the land users and project staff on how many land users were adopting the technology.
Management of approach	The land users and project staff regularly observed how well the group functioned together and how well they linked with stakeholders

**Changes as a result of monitoring and evaluation:** Monitoring brought few changes; farmers used the information gathered during monitoring of on-farm demonstration to help them select the species they preferred but the technology remained the same.

## Impacts of the approach

**Improved sustainable land management:** Yes, moderately. This approach helped to stabilize the fragile hill slopes.

**Adoption by other land users/projects:** Yes, some. This approach was adopted by adjoining villagers and scaled up gradually in Dhading, Chitwan, Nawalparasi, and Makwanpur Districts. According to preliminary information, at least 450 households have now adopted this approach for sustainable land management.

**Improved livelihoods/human wellbeing:** Yes, moderately. This approach helped to improve the livelihood status of the land users by helping to diversify their options for income generation and skills development.

**Improved situation of disadvantaged groups:** Yes, a little. The capacity of marginal ethnic groups increased; they learned how local institutions function and felt empowered to seek resources from their service providers.

**Poverty alleviation:** Yes, moderately. After the implementation of this approach, land users could earn cash income and learned how to increase their capacity to implement income generating activities which would enhance their livelihoods.

**Training, advisory service, and research:** Farmers and stakeholders participated in capacity building and training sessions to learn about the technology. Land users gradually became more receptive to advice from specialists and stakeholders. Research was an effective way to help introduce the approach; the land users were more open to the whole approach once they had seen the results of the research.

**Land/water use rights:** Land: individual, not titled; Water: community owned

**Long-term impact of subsidies:** Not applicable as subsidies were not provided.

## Concluding statements

**Main motivation of land users to implement sustainable land management:** Improved wellbeing and better livelihoods as a result of enhanced capacity and the ability to earn cash income. Affiliation to other groups improved their networks.

**Sustainability of activities:** Individual land users were enthusiastic to implement the approach and to take it further. Land users who are shifting cultivators, and who typically have no land ownership, are slower to embrace the approach.

Strengths and →how to sustain/improve	Weaknesses and →how to overcome
Sustained capacity building → Continue to build strong links and coordinate with government line agencies	Difficult to develop common understanding → Organized regular learning and sharing to develop common understanding
Improved access to services providers helped to enhance their capacity to cope with adverse conditions → Continue to build and maintain contact with government line agencies	Farmers have only a limited understanding of the skills needed → Continue to strengthen farmers' groups and continue to mobilize through sharing and learning
Local institutions were strengthened → Established formal institutions and help to sustain them	The approach is resource intensive. → Promote savings and credit schemes with farmers' groups. Mobilize farmers' groups so that they can petition other groups and line agencies for resources.
Land users actively participated and took ownership → Continue capacity building and training. At present the government is initiating programmes with leasehold forest groups in Gorkha and Tanahu Districts that encourages the establishment hedgerows → Work to mainstream the approach within government programmes	Time consuming → Work with land users to improve their time management and their ability to plan future activities and delegate responsibilities.
Collaboration helped land users to sustain their efforts → Continue to build a sense of community between land users	Few farmers participated during the initial stages → Conduct awareness raising activities and promote activities that give some tangible benefits in the short term.
Developed skilled manpower → Continue to build a critical mass of skilled land users so that they themselves can help to propagate the approach	

**Key reference(s):** Regmi, BR; Aryal, KP; Shrestha, PK; Tamang, BB (2003) Building on partnership approaches in participatory identification of integrated agricultural technological packages suitable for sloping land areas (unpublished). Pokhara, Nepal: LI-BIRD

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