

Innovation systems in forest resources management: Lessons learned from community forestry programme of Nepal

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ABSTRACT

There have been various attempts to engage states, markets and communities in managing natural resources to achieve both conservation and poverty reduction. In Nepal, a participatory approach to forest management popularly known as “community forestry” (CF) has proven effective in conserving forests and meeting the livelihood needs of forest-dependent communities. Since 1978, CF has evolved at both the local institutional and national policy levels. However, uneven socioeconomic relations, power dynamics, cultural contexts and other factors pose a challenge for sustainable livelihoods.

Moving away from traditional research and extension services, a new emphasis on innovation systems approach has emerged. This approach demands greater attention to interactions among actors in knowledge creation, dissemination and knowledge into use. This research draws on the decade-long experience of Forest Action in adaptive, collaborative processes and management approaches, self-monitoring, and participatory action and learning with 60 community forest users groups (CFUGs) in three districts of Nepal.

Preliminary results reveal effective forest management and governance innovations, adoption of planning and self-monitoring in enterprise development, and marketing of forest products and services to user groups. Furthermore, CF service providers and collaborators employ more adaptive and collaborative approaches and are more responsive to the demands and concerns of forest users and other socially marginalized groups.

Key words: *Forest management, Forest users, collaborative approach, poverty, community*

CONTEXT OF INNOVATION SYSTEM

Innovation system composes of actors, institutions and their relations, as well as their interaction which are involved in the innovations (Roesle, 2004). Innovation systems is a network of organizations, enterprises and individuals focused on bringing new products, new processes, and new forms of organizations into economic use, together with the institutions and policies that affect their behavior and performances (World Bank 2006). It means the innovation system embraces interactions of actors involved in innovations. The innovation systems extend beyond the creation of knowledge to the use of knowledge in novel and useful ways. Katz (2006) stipulates that an innovation system is

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composed of individuals and organizations that directly and indirectly invest time and energy in the production of scientific and technical knowledge. The concept of the innovation system stresses that the flow of technology and information among people, enterprises and institutions is key to an innovative process. Research into Use (RIU) (2008) defines innovation system as the context in which a number of actors interact in order to improve a practice or institution that matters. The interactive process does not take place in vacuum and is affected by social, cultural, political, economic, physical and technological environment. An innovation system is complex and evolves through time. It contains the interaction between the actors who are needed in order to turn an idea into a process, product or service. Innovation is often the result of the interaction among ecology of actors, and the term 'innovation ecosystem' is occasionally used to emphasize this

Scope of Innovation systems in forestry

Despite widespread expansion of community forestry, forest management strategies are still passive in Nepal. CFUGs utilize only a small proportion of what can be harvested in a sustainable basis. Experience shows that despite recognition of this issue for several years now, the progress towards active forest management is too slow. The main reasons for this are: the conservative attitude of government forestry staff, limited technical capacity of CFUGs to undertake resource assessment and forest management planning control of decision-making by local land-rich elites (who are less dependent on community forest areas for day-to-day needs of forest products than the land-poor farmers). CFUGs continue to be dominated by local elites, and socially excluded groups (SEGS) like women, indigenous people, Madhesi, Dalit, and other ethnic minorities have limited say in decision-making. Despite policy emphasis on group level processes, executive committee is considered all powerful, and at times, only a few committee officials actually run the CFUGs. Limited attention is paid to visioning exercises and negotiation of interests among multiple sub-groups within CFUGs. Many of the CFUGs were formed in a hasty manner to meet DFO's annual targets or under the political pressures, without paying sufficient attention to institutionalizing measures of participation and decision-making. Studies claim (Luintel edit., 2004) that SEGs have limited access to benefits from community forests because of exclusion from membership, lack of representation in decision making forums, inappropriate rules of access, including high charges for forest products.

Innovation in forest management system and practices is needed if the increasing numbers (more than 15000) of community-managed forests are to meet local and national livelihood needs (McDougall et al. 2007). Since the 1970s, Nepal has tried various approaches to address livelihood needs and sustainable management of forest resources which includes technology transfer, needs based service delivery to participatory development and rights based approaches. A consistent trend is to devolve power to local levels and put the beneficiaries in the front line. The question is how beneficiaries get empowered and capable to create the change they would like to see in their lives and livelihoods. Therefore there is a specific need for innovation that enables diverse stakeholders to bridge the gaps that so often divide them and creates a means of working together effectively to meet social, livelihoods and environmental

goals and the beneficiaries need to constantly engage in the processes of innovation – learning and experimenting different ways of achieving the change. The success of collective actions depends on how multiple actors from government to market players respond to the actions of local beneficiaries.

In this context, innovation system in forestry is defined as deliberate learning and change through actions and experimentations through collaboration among multiple social actors while resolving conflicts and negotiating multiple interests. We use the term “forestry innovation system” to refer to the set of distinct actors’ e.g forest users, and institutions e.g CFUGs, Federations of Community Forest Users Nepal (FECOFUN), Ministry of forest, Department of Forest, District Forest Offices, and other NGOs and INGOs which contribute to the development and diffusion of innovations in forestry.

The paper is based on the lessons learned and experience of working with 60 community forest users’ groups (CFUGs) in three districts: Lalitpur, Nawalparasi and Baglung of Nepal. An innovative initiative entitled “Reducing poverty through innovation system in forestry (RPISF) which is an action and learning based initiative of Research into Use (RIU) program of DFID and IDRC has been implemented since June 2008. The said action and learning project aims to disseminate, adapt and utilize innovations, strengthen the community institutions (e.g. community forest user groups – CFUGs, their federations), enhance the access of the users particularly the poor and marginalized groups in forest resources and forest resource related market; improve governance system of the CFUGs, CFUG networks and service providers. Directly benefiting to 20,000 people including a population 4,000 poor (including women and socially exclusive groups: Dalits, ethnic minorities and indigenous people) from 60 CFUGs: 15 in Lamatar area in Lalitpur district, 30 in Kushmisera area in Baglung district, and 15 in Nawalpur area in Nawalparasi district. A coalition of five different organizations has been working to promote research innovations and for their effective out-scaling.

METHODOLOGY

Numbers of action and learning approach have been adopted in bringing ground realities into research documentation. The paper is based on the RPISF-RIU field activities started from early 2008. Numbers of such learning events are briefly described here. Overall methodology was mainly centered on the learning approach by interacting with community people focusing on the process e.g. visioning and planning for social transformation, issue based discussion. Through the series of interaction programs that are based on adaptive collaborative processes, adaptive collaborative management (ACM) and collaborative learning and action research organised initially at the CFUG level, then to cluster level and sub-national level, and finally at the national level led to generate number of lessons e.g. Which applied innovations work for effective forest management, poverty reduction and group governance and how? Therefore, the ongoing RIU project activities, regular meetings (Cluster level meetings, reflective and interactive meetings) and correspondences with CFUGs committee members, Hamlet

representatives, 60 local facilitators, district FECOFUN members, three district advocacy officers of the project are the major sources of information for the research. Database (Baseline, CFUG level workshops, etc) of the research have been generated.

A coalition of five different organizations (led by Forest Action) has been formed to promote research innovations for active, equitable and effective management of natural resources within the framework of community forestry in Nepal (see Figure 1). The other coalition partners include Federation of Community Forestry Users Nepal (FECOFUN), Nepal Herbs and Herbal Products Association (NEHHPA), Nepal Forum of Environmental Journalists (NEFEJ), and Department of Sociology/Anthropology (CDSA) of Tribhuwan University.

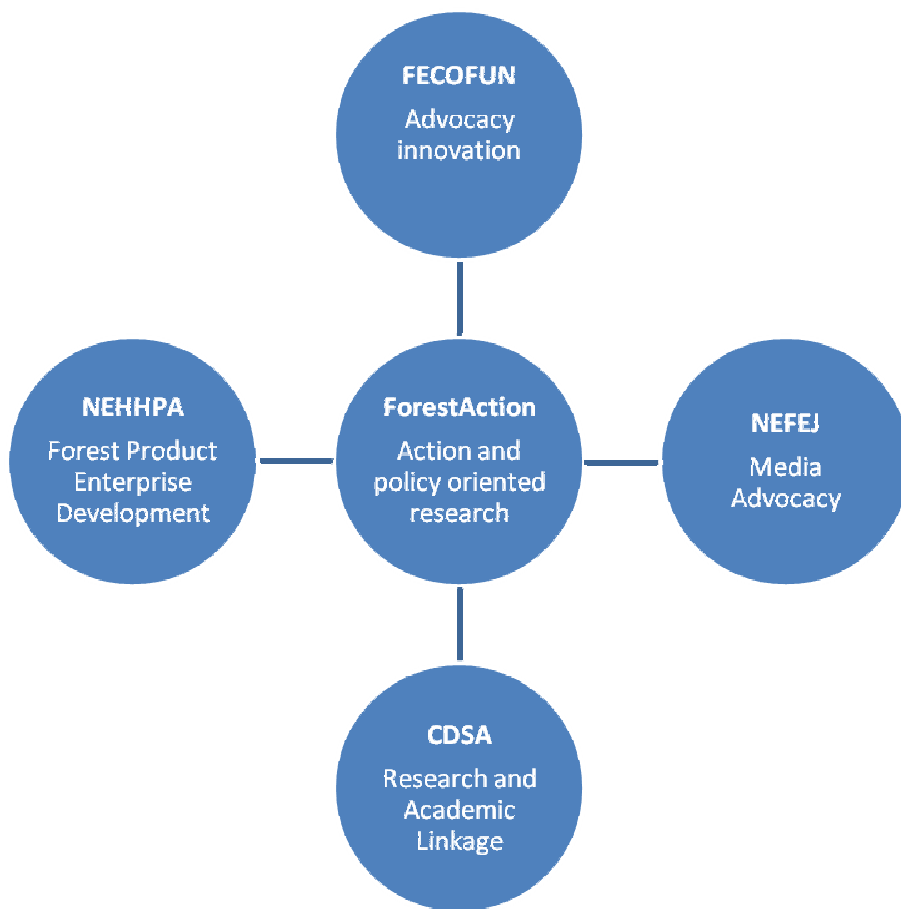


Figure 1. Working model for generating lessons

Regular interaction with local stakeholder: Interaction between the CFUGs was organized within certain duration to address newly emerged issues and problem.

Regular interaction with external stakeholders is important to transform skills, knowledge and behaviour of local leaders - resulted to governance reform of CFUGs (RIU policy brief, 2010). Most of the participant from local level enthusiastically participated in the discussion and readily expressed their opinion and feeling. Almost all people expressed their level of satisfaction with CFUG committee decisions and its working modality. The issues that were accumulated from the cluster level sharing under the theme "issue based discussion", are discussed with local stakeholders. Local stakeholders try to resolve the issues if the issues could resolve in their capacity and fall in their jurisdiction. If the issues are beyond the capacity of the local stakeholders, then they recommend consulting with district stakeholders.

CF management and governance training: At initial stages, external facilitation is reported crucial to sensitize the local population, thus, several forest management and governance trainings are conducted in various CFUGs in three districts. As in entire innovation approach there is great importance of technical expertise in addressing many of the development challenges that require technical adaptations to suit the local context. The entire 60 beneficiary CFUGs adopt tole based mechanisms for planning, implementation and monitoring of CFUG. There are five action oriented thematic committees are formed in each CFUG where RPISF initiative is undertaken. These five committees that were formed during the "forest Management and Governance" training period are: (1) Forest and Environmental conservation and development, (2) Institutional Development of CFUG, (3) Community Development, (4) Poverty Reduction, and (5) Enterprise Development. Almost in all the RIU program launched CFUGs, CF management and governance training was conducted to increase representation and strengthened voice of SEG members in CFUG committee, to extend the women membership of the Household. From different forms of report like LRP report. Member's feedback, OPs, CGFUG minute, CFUGs constitution, tole based meetings record, and other survey records were analyzed to known the management state of forest, the aspect of inclusiveness and decision making process and procedure. The major outcomes of this training cum workshop are to to sensitize the CFUGs about governance and forest management issues. CFUGs were facilitated to prepare 10 years of future forest management planning and visioning with all plans, process, approach and missions. And also the mechanism of self-monitoring of CF was formulated to promote innovation- the process by which new knowledge is generated, applied, adapted and used.

Cluster level sharing: Within a district, different CFUGs were organized in a single cluster in every three months to promote interaction, dialogue and mutual concerns, on which the mechanism in place to inform CFUGs , their networks and other locally based stakeholder along with Federation members and district forest officials about emerging issues and opportunities, achievements, lessons and challenges around forest management and marketing. The importance of group action and therefore the need for platform for interaction to promote innovation began to be increasingly recognized during the preliminary survey of the project. Collaborative mechanism set up by CFUGs and communication and sharing increased among the CFUGs on enterprise related matters. Mainly in this platform, issue based discussion was carried through which

major of the problem were resolved within this level. Learning and achievement from one CFUGs were disseminated among the cluster level sharing form which other remaining CFUGs can also generate further ideas to launch similar innovative ideas in their respective CFUGs. In addition to this, an informal network of CFUGs in each district was established and the aforementioned informal network.

District level stakeholders workshop: Within the RIU implemented district, district level stakeholder workshop was conducted to solve overall dispute related to natural resources. As mentioned earlier, the issues that are not possible to resolve at the local level are raised with district stakeholders' workshop which is organised once in a year at all clusters. Beside these, dissemination of newly intervened innovation system and its embedded challenges, up scaling of that innovation system and its further refinement was major agenda to be discussed. This kind of workshop help works as bridging between community and national level, which is pre-requisite for the overall transformation of society through the change in policy. Many organizations such as Livelihoods and Forestry Program (LFP), district FECOFUN also noticed the change and wanted to collaborate. Stakeholder from DFO, NGOs, local government bodies working at district, district FECOFUN, local club, co-operative limited, and community based micro-enterprise, and major district level political party was participated in different district level workshop.

National sharing: All the learning and findings from different district were discussed between common forums of all stakeholder from government body, concerned district, FECOFUN, NGOs, Coalition partner of RIU program, expertise, media personnel. Through this, it helps to develop the common consensus on the problem and also create the opportunity to share and learn the different innovation practices of one district with others. The emergent issues and problem in national sharing also direct the further ways which we should have to follow to achieve the objectives of RIU program. National sharing ultimately helps to bring the changes in innovative policy and practices which were socially practical, economically benefitable, and ecologically viable.

RESULT AND DISCUSSION

Key lesson learnt from innovation system approach in Forestry in Nepal

- i) Hamlet (Tole) level meetings within Community Forestry User Groups (CFUGs) conducted as per the plan, have led to develop quick communication, active participation, leadership development and enhance group governance within a group.

A good lesson learnt and one of the crucial impacts of the RIU project at the village level is the formation of Tole Committees and designation of local Resource Persons (LRPs). The LRPs role in communication and information sharing at the village level, has resulted in efficient communication, and filled any communication gaps among CFUG members. A visible example of this impact was seen at the Self-Monitoring Workshop of CFUGs, held on August 28 in Kusmisera of Baglung district. A total of

88 participants— including 26 female and 62 males— including CFUG presidents, Secretaries, and LRPs were present in the interaction meeting, which we consider a very significant impact of our project. This was not recorded in the previous meetings. So, gradually the situation has been changing, and users at the grassroots level are being motivating. The participants have also expressed their satisfaction with the role of our project LRPs in communicating and discussing local issues at Hamlet-level meetings.

Hamlet committees were formed based on the principle of decentralization and devolution of power. Such types of arrangements (ward committees) have also been existing in the government system in Nepal; however they are inactive for the last 6 years because of the political instability of the country. Wards are the lowest administrative unit of government, functioning under Village Development Committees. Most of the CFUGs under RIU-RPIS project have formed Hamlet committees according to the government system of ward. “We have 9 Hamlet committees formed by bringing all stakeholders of the ward level and functioning under CFUG committee” said the President of Sundari CFUG of Nabalparasi. “The arrangement reduced my responsibility by 50%”, as ward committees are actively working, he added.

According to report from LRPs in Nawalparasi district 118 Hamlet committees in 6 CFUGs have been formed and have been conducting meeting regularly. The main agenda of discussion in the Hamlet meetings are: identification of ultra poor households within the members, forest resources conservation, sale of excess forest products, planning according to wealth status of members, distribution of grass, fodder and firewood, awareness on the stock of forest products, legal rights of users, representation of poor, women and SEGs in executive committee, plantation of useful species and NTFPs, house construction and distribution to ultra-poor people, goat farming for income generation, control forest fire, etc.

Such types of arrangement have also lead to develop leadership of the CFUG members. Women and other disadvantaged members of the CFUGs have now taken the vital positions of the forest User Committee (FUC) a decision making body of the CFUG. As an example, Ms. Maiya devi Shrestha, a women has become the president of Goldada CFUG through their general assembly held in August, 2010. The group governance has been improved due to RIU intervention where RPISF/RIU encouraged to changing leadership through a democratic process. RPISF/RIU team has facilitated in preparing an exemplary constitution for Goldada CFUG. Binaybagar CFUG, one of the RIU sites in the Nawalparasi district got selected for the ‘best Community Forest Award for the year 2009/10’ by the government. Patle CFUG of Lalitpur, another RIU site, also received the same award in 2009.

- ii) Reflective workshops/ and interactive meetings(e.g. Networking meeting of CFUG leaders, forest management and governance training, Hamlet level meeting, thematic committee meeting) have been helpful in identifying key compelling local issues which are better recognized and appreciated by the district stakeholders, thus enhancing their responsiveness.

Networking among CFUGs (in all clusters) has led to transfer the best innovative practices (e.g. exemplary constitution/Operational Plan (OP) making process facilitated by RPISF/RIU in Goldada and Patle CFUGs in Lalitpur, Medicinal plants cultivation practices of Binaybagar CFUG Nawalparasi and Goldada CFUG in Lalitpur) to other CFUGs within and outside of the RIU program implemented area. Also, state forest agencies interest and desire to implement similar activities to other CFUGs can well be a sign of the potential impacts that RPISF/RIU project has generated till date.

There have been significant changes in attitudes, working procedures and responsiveness of the CFUG members (for example, Manedande CFUG in Lalitpur planned for general assembly after a long impasse in governance arrangement, changed signatories of their Bank account which was pending since last four years, went delegation to Area Range-Post for renewing their Operational Plan (OP). Later, area range post officer came to discuss the matter with RPISF team about the possibility to prepare new operational plan (OP), and based on his willingness to participate in preparation of new OP, the RPISF project allocate some fund for preparing model OP in the cluster. This all happened, soon after a governance training conducted there. Similarly, five CFUGs in Nawalparasi district made joint action committee for establishing timber based enterprise in Parasi region of Nawalparasi.

- iii) Community based forestry enterprises established by CFUGs with support from other agencies became functional through the new marketing and communication networks facilitated by the RIU project support.

The RIU program has made significant contributions to transforming traditional resource management practices into active and enterprise oriented forest management with elements of social change. RPISF-RIU visioning programs have helped to dismantle the existing social discrimination such as caste and gender based discrimination, while also work towards setting up enterprises based on value chain analysis and interaction with concerned stakeholders. In the course of implementing project activities, the RIU project team, in its cluster-level meeting and interaction with CFUGs, heard a story about a women-managed enterprise that produced Bael Juice (Marmelous Squash). An organization gave them training about how to produce Marmelous Squash, and based on this training they produced about 4000 bottles of Juice but did not gain adequate information and skills on marketing the products. They were able to sell some 2000 bottles at the local market, but were worried about selling the remaining 2000 bottles. The RIU project team immediately communicated with entrepreneur women and assessed their problems by inviting them to the stakeholders' meeting. The women said, "we don't know what to do with these 2000 bottles, as their expiration date is approaching". To establish the said enterprise, they took loan 150,000 NPR from Gramin Bikas Bank, and were paying interest. Therefore they were worrying about the future of their enterprise. The RIU team raised their issue at the district-level

stakeholders and also gave them information about possible buyers. After the RIU led meeting with stakeholders was concluded, the organization that gave them training was initiated to promote them. Finally, they were invited to exhibit their products at the International Community Forestry Workshop, held 14-18 September in Pokhara. While project team met them there in Pokhara, they express their sincere gratitude to RIU team. She said, "She is happy to be there in Pokhara at the international event"

- iv) As the project team supported CFUG clusters in establishing the resource center, has lead to out-scaling and up-scaling of the innovative approaches, and best practices of a community or an individual at different level.

Community based resources centers are established in an assumption of documenting local knowledge, local practices, and out-scaling of best practices of one community to others. A CBRC that was established in early 2009 in Lamatar of Lalitpur district (see Figure 2) has started documenting on resources available in the community forests, collected numbers of natural resource based books, and becoming a communication hub for CFUGs. Increased communication among CFUGs, and between CFUGs and local stakeholders has led to the further development of Community Based Resource Centre (CBRC) and because of such intensely bottom up approach, the CBRC has been receiving material and institutional support from wider stakeholders.

A project trained person together with CBRC management committee has been managing the Resource Centre. The Centre has received additional in-kind support from the Ministry of Science and Technology, Lamatar VDC, and Lutheran World Federation (LWF).



(Figure 2: Community based resource center, Lamatar in Lalitpur district)

An Initiative of RPIS-RIU to establish a Resource Centre at Kusmisera area of Baglung district has also drew an attention of the local stakeholders for taking similar actions in different clusters. Impressed by this initiative of RPIS-RIU, the District FECOFUN office of Baglung has also started to make a resource centre at the district level. The district FECOFUN president Mr. Dinesh Pant has said to the project team, "I am very impressed by the initiatives of the RIU project to establish a resource centre and requested us to either give them the same support as has been

given to the cluster level or to play the role of facilitator in finding funding for the purpose. The district-level stakeholders welcomed the proposed initiatives of FECOFUN and made a commitment to help their initiative to establishing a Resource Centre at the district level too.

- v) Regular Radio programs are becoming community friendly tools of distance learning as they are only source of information in the rural areas in project sites and are becoming means of out-scaling the lessons .

Regular radio program "Garibi Nyunicaran Ka Lagi Ban Karyakram" (Forestry program for poverty reduction) airing in project districts continuously cover local issues and showcase innovations since early period of the project. Four community F.M stations, Radio Sagarmatha in Lalitpur, Baglung F.M in Baglung, and Vijaya F.M in Nawalparasi have been broadcasting radio programs in fortnightly basis.

The Radio programs focus on, and provide spaces to, several areas since the launching of the RIU program: (i) news of events around the project sites and specific project activities; (ii) interviews with members of participating CFUGs, project staff, and other stakeholders and partners; (iii) the potential and infrastructure development of forest resources enterprises in the project area (iv) concerns and voices of women, Dalits and marginalized groups (v) key learning from innovation system (vi) issues such as forest conservation and its use, including carbon trade and mitigation; (vii) forest management, good governance and inclusiveness in CFUGs; and (viii) a provision that forestry should be included in the new constitution.

Impacts of Innovative system economic development

Innovation System Approach (ISA) of working with 60 communities brings many innovations for the economic development and thereby contribution to the household economy of the forest users. The key initiatives and their impacts have been listed here:

- Binay Bagar CFUG has started cultivation Pipla (*Piper longum*) since 2008 after RIU project start working with this group in early 2008, and the CFUG started selling Pipla worth of Nepali Rupees (NRs.) 80,000 in 2010. The group is committed and has concrete plans to produce more Pipla along with other medicinal plants in their community forest.
- Several CFUGs have begun commercial cultivation of medicinal and aromatic plants (e.g. Goldada CFUG and Padali CFUG in Lalitpur, Sundari CFUG, and Binaibagar CFUG of Nawalparasi established plant nursery in their community forest).
- Bamboo based enterprises have begun in some groups (e.g. Bambo and fiber products production at Kusmisera cluster of Baglung district).
- RIU actions have contributed to commercial production of suitable NTFPs, and medicinal and aromatic plants (e.g. *Amriso (broom grass)*, *Rubber (Rubber plant)* at Sundari CFUG; Pipla (*Piper longum*) production at Binaybagar CFUG of Nawalparasi) (RPISF/RIU Nepal value chain report, 2008).
- Engaging local people to adopt new technologies can bring in new insights and vision to initiate community based micro-enterprises at local level that can contribute

to uplift the household economy. As an example, bio-briquette production started in different CFUGs using leaf and other waste generated during forest management along with use of an invasive species like *Lantana Camera* (e.g. Lamatar cluster involving four CFUGs. A Biobriquette production and marketing committee has been formed to support and monitor the enterprise. NEHHPA one of the RPISF/RIU consortium members working for business innovation has guaranteed to buy the products. A MOU regarding the purchasing guarantee has been signed between enterprise group and NEHHPA in June, 2010)

- Pahelibhitta CFUG of Nawalparasi has earned about NRs. 80,000 by selling of Pipla (*Piper longum*) in the year 2009/10, with its total annual income out of NTFP sale is NRs. 125,000.
- Sundari CFUG in Nawalparasi district has started to sell 'Tripphala' (a digestive product widely popular in Nepal) and has established link with NEHHPA for marketing these products. The CFUG has annual income worth of NRs. 3,061,007 by selling of timber, NTFPs and membership fee. Sundari CFUG has started to build two houses per year for the ultra poor people. Till date, 6 houses (cost invested per house was NRs. 50,000) has been distributed to the poor people.
- Padali CFUG in Lalitpur district has started selling seedlings from their nursery following the business plan facilitated to prepare by the RPISF/RIU team during CFUG planning process (Visioning Plan) in the year 2008.
- About 61,000 rural people are directly benefiting from RPISF/RIU initiatives in the three clusters under RPISF/RIU project.

CONCLUSION

The development of effective innovations depends by and large on a combination of governance-related issues across levels, including clarity of rights and roles, sharing and balance of power, flow of communication, transparency of procedures, and extent of participation and interaction of disadvantaged actors in decision-making. Specifically, the extent to which relevant information flows across the levels in both the directions is a crucial factor in determining the effectiveness of micro-macro linkage and consequently the nature and degree of innovative actions.

The innovation system approaches are useful in enhancing internal group governance, and introducing active forest management, sustainable harvesting technologies and linking market chain through the association of entrepreneurs. These innovations are found to have positive impacts on environmental sustainability.

Overall, the lessons and experiences from innovation systems suggest several key challenges involved, mainly related to inclusive governance of the innovation process and collaborative action. Community Forestry - as with natural resource management in general - is a complex and dynamic environment, characterized by struggles for power and resources and by differences in needs, worldviews and capacities. These struggles make innovation system processes challenging, beyond the linear conception of change through application of research knowledge.

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