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FINAL TECHNICAL REPORT[1]

Volume I

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Up-scaling field level pilot research experiences

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FINAL TECHNICAL REPORT
CONTENTS

Volume I

Volume II

Case Studies, institutional scaling up plans, capacity building activities and dissemination material

Case studies annexes

C. **Summary of case studies** (English) – *hard copy*
   - Locations, key stakeholders, approaches, main benefits, main constraints
   - Pre-project, implementation and post project phases

D. **Individual case study reports** *- electronic copies*
   i) Bolivia: CIFEMA, PROLADER, PROMICH, PROSANA, , (Spanish)
   ii) CARE-CIAT, (Spanish)
   iii) Nepal: SSMP (English)
   iv) Uganda: ISWS-PFI (English)

E. **Case study Workshop Proceedings** (Spanish) – *electronic copy*

Institutional scaling up plans annexes

F. **GNT Consultant reports and scaling-up plans (Behrandt, 2002)**
   - Reports- *hard copy*
   - Scaling up plans-*electronic copy*

G. **Summary of Bolivian institutional scaling-up plans** (English)

H. **Letters from Collaborating institutions** (Spanish) *– electronic copy*

Capacity building activities annexes

I. **Workshop Proceedings** (Spanish) *– electronic copy*
   i) Funding workshop
   ii) Dissemination workshop-farmers and community leaders
   iii) Dissemination workshop-Institutional staff
   iv) Evaluation of *Feria* and funding workshop

J. **NRM Platform Constitution–** *electronic copy*

Dissemination material annexes

K. ***Estrategias de Amplicaión papra la investigacion en el manejo de recursos naturales*** (Leaflet in Spanish) – *electronic copy*

L. ***Pequeña Guía para Amplicación*** *(booklet in Spanish*) **–** *electronic copy*

M. **Scaling-up kits** (Spanish) – *electronic copy*
   - CIFEMA
   - PROLADE
   - PROMIC
   - PROSANA

N. **Scaling-up successful pilot experiences in natural resource management: lessons from Bolivia**– (English) – hard copy

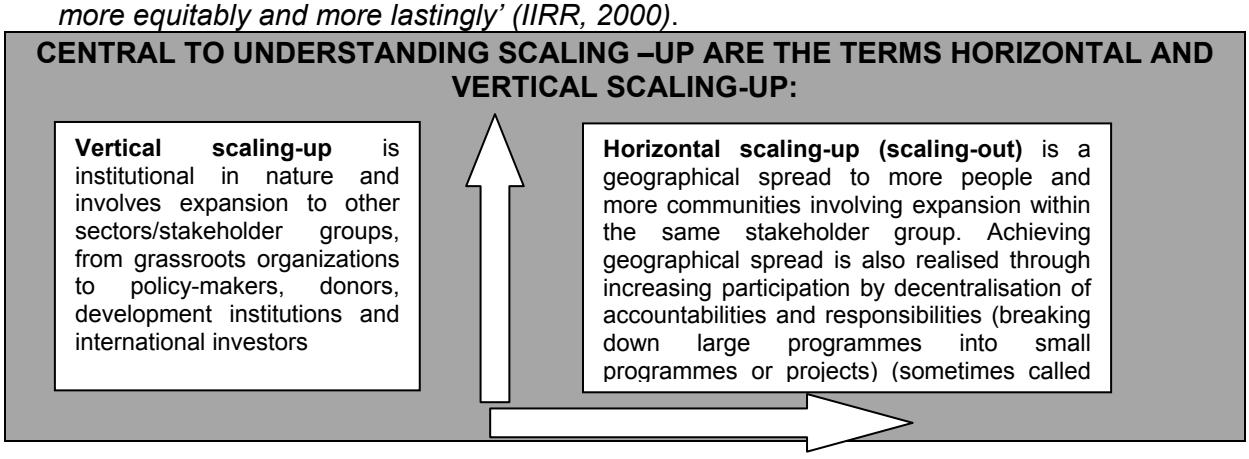
O. **Final Project Workshop Proceedings** (Spanish) – electronic copy

Abbreviations, acronyms and definition of scaling-up

ATICA	*Agua Tierra Campesino*
CIAT	*Centro Investigación Agricultura Tropical*
CIFEMA	*Centro de Investigación, Formación y Extensión en Mecanización Agrícola*
DAP	Draft animal power
Departmento	Department
DFID	Department for International Development
Feria	Fair
GOs	Government Organisation
GNT	*Groupo Nacional de Trabajo*
JICA	Japanese International Cooperation Aid
M&E	Monitoring and evaluation
Municipio	Local municipality (government)
NGOs	Non Government Organisation
NR	Natural Resources
NRM	Natural Resources Management
NRSP	Natural Resources Systems Program
PDM	*Plan Desarollo Municipal*
PEA	Participatory Extension Approaches
PLA	Participatory Learning and Action
POA	*Plan Operativa Annual*
Prefectura	Departmental Government
PROAMP	*Proyecto Ampliación*
PROLADE	*Proyecto Laderas*
PROMIC	*Programa de Manejo Integral de Cuencas*
PROSANA	*Programa de Seguridad Alimentaria y Nutricional para las Provincias Arque, Bolivar y Tapacari*
PTAR	Participatory Training and Action Research
PTD	Participatory Technology Development
Pusisyo	(Literally) Eight villages (in Quechwa)
R&D	Research and Development
RNR	Renewable Natural Resources
PRODEVAT	*Proyecto de Desarrollo de los Valles de Arque y Tapacarí*
PDM	Plan de Desarrollo Municipal
SIBTA	*Systema Invocion Boliviano Technologia Agraria*
Sindicato	Sindicate
SSMP	Sustainable Soil Management Project
SWOT	Strengths, Weaknesses, Opportunities and Threats
VIPFE	*Vice-Ministerio de Inversion Publica y Financiemento*

Definition of scaling-up

'M*ore quality benefits* to *more people over a wider geographical area, more quickly, more equitably and more lastingly' (IIRR, 2000)*.



EXECUTIVE SUMMARY

A very brief summary of the purpose of the project the research activities, the outputs of the project and the contribution of the project towards DFID's development goals. (Up to 500 words).

Project purpose

The limited impact of a large range of NR management technologies and practices, which have been successful at a pilot level, is a cause of concern amongst development agencies and donors. In order to understand 'scaling-up', this project has documented and analysed the experiences of organisations attempting to increase the impact of successful pilot work. This knowledge derived is intended to develop and promote more effective scaling-up strategies.

Outputs

The project delivered three Outputs

i) Processes for scaling-up successful pilot NRM management and technologies have been analysed and key constraint and success factors identified. This was achieved through a case study approach of projects in Bolivia, Nepal and Uganda from which important factors that limit and facilitate scaling-up of promising land management practices were identified and analysed. This provided an increased understanding of the ways that institutional, socio-economic and technological issues affect the scaling-up process.

ii) "Best Option Strategies" for scaling-up have been developed and tested through participatory action research validating some of the lessons learnt from the case studies in collaboration with development projects in Bolivia. Key factors identified as pivotal for scaling-up were incorporated into their institutional work plans. Key components were implemented and relevant promotion activities undertaken. Although participant responses to work plans were monitored, it was not possible to monitor or evaluate the full extent of their implementation within the project lifetime. It is however expected that the plans will continue to be implemented and impact at a landscape level will become apparent over a period of time. Best Practice Guidelines building on the experiences of the project should assist in the better design of NR research and development projects.

iii) An increased capability of local professionals in collaborating institutions to promote scaling-up has been achieved through capacity building, improving functional linkages with local government and grassroots organisations; establishing effective inter-institutional alliances; involvement in national networks and seeking innovative funding mechanisms. A range of communication materials including a manual containing practical advice on the main issues, a "scaling-up kit" for the development of a practical work plan and a video on farmers' perceptions of the requirements for scaling-up helped in this process.

Contribution towards DFID's development goal.

The project has shown there is a need to give increased attention to the vertical aspects of scaling-up, if increased impact is to be achieved, in particular improving the institutional capacity of collaborating institutions to support local communities seeking to improve their NRM practices at a wider community and landscape level that also targets the poor. Once such lessons have been incorporated into institutional plans, the aims of more benefits for more people, more quickly is likely to be achieved. Important lessons include:

- Longer pre-project planning or initiation phases are required to allow scaling-up activities to be planned and initiated.
- Research and development activities need to be closely linked with long term funding commitments, tied to intermediate targets. This will require close links with regional national and local development programmes.
- Capacity building and multi-disciplinary partnership development need to be given high priority within integrated research and development approaches.
- Funding for monitoring, evaluation and impact assessment systems will need to be increased.

1. BACKGROUND

Information should include a description of the importance of the researchable constraint(s) that the project sought to address and a summary of any significant research previously carried out. Also some reference to how the demand for the project was identified.

1.1. Importance of the researchable constraint

Increasing land degradation in hillside environments, caused by a variety of factors, has and continues to result in reducing productivity, undermining the sustainability of rural livelihoods and forcing natural resource users to either further degrade their environment or seek their livelihoods elsewhere. Many restorative technologies have been shown to be effective and popular in pilot studies, but adoption on a wider scale has often proved illusive. An approach is now needed, which facilitates scaling-up pilot research from the plot level to a wider landscape level. Past DFID-NRSP Hillsides-funded research (Gregory, 2000, Ellis-Jones and Mason, 1999, Keatinge *et al*., 1998; Lawrence, 1999, Sims *et al*; 1999, Stocking and Clarke, 1999; and Wheeler *et al*; 1999) provide a sound basis for this and has been used together with other experiences (e.g. Gündel *et al* 2002; IIRR 2000; Reich *et al*., 1996; Tiffen *et al*., 1994; Heathcote 1998; Shaxson *et al*, 1997; Pretty *et al*, 1995) as a precursor to this project.

Through improved networking arrangements, stakeholder interactions and improved processes, the project has provided guidelines for scaling-up that can improve the impact of future technology and land management projects. Through working closely with communities and relevant organisations (both Government and NGO) the project has facilitated increased and better communication between stakeholders and increased understanding of positive and negative factors affecting scaling-up.

1.2. Demand for the project

Past research to address hillside environmental issues has largely been carried out with farmers at a plot or field level and has tended to be technology focused and led. However, many of the problems of natural resource management cannot be solved at a field level and require a wider perspective that consider landscape level implications. This inevitably involves community representative bodies, local government organisations and NGOs with as great an emphasis on process as technology.

The need for research to improve scaling-up, broadly defined as “Bringing more benefits to more people more quickly” (IIRR, 2000), has been identified by many researchers working on projects in different continents (Gündel *et al*., 2002; IIRR 2000; Lawrence, A, 1999, Turton and Farrington 1998, and Farrington *et al*., 1999. In a review of NRM technologies in Uganda, Briggs *et al*., 1998 concluded that despite numerous research efforts, dissemination of the outputs had been poor. The authors suggest that information and communication mechanisms between research, extension, land-users and local government need to be addressed as a matter of urgency.

Lawrence (1999) suggests that in order to face the challenges of NRM, there was a need to increase participation at an institutional level and to consider broader issues of decision making and policy. She suggests that research into scaling-up should draw on previous hillside’s project experience, since this context provides a natural unit for stakeholder identification, interaction and negotiation at a landscape level. Comparing and contrasting the Bolivian situation with other experience from South Asia and sub-Saharan Africa can draw valuable generic lessons.

1.3. Previous research

Until recently, relatively little work has been undertaken to specifically identify effective processes of scaling-up pilot natural resources management research. Traditional dissemination strategies, focusing largely on horizontal scaling-up have faced scaling-up constraints, despite increased use of participatory methodologies. Impact has often been limited to a few households with institutional linkages to or resources from a development project (Bunch, 1999).

Much of the scaling-up literature (at watershed level) comes from India where there has been strong growth in both governmental and NGO capacity to implement participatory approaches. However, despite success of certain projects, it is argued that such projects are, so far, few in number and operated under special conditions which cannot easily be replicated (Turton and Farrington, 1998). They suggest that if success is to be sustained, new partnerships will be needed between central, state and district governments, NGOs and the communities themselves. This implies a move away from "enclave" projects by donors and encouragement of a stronger capacity and motivation towards improving partnerships with greater flexibility by government. India's experience provides a framework against which to compare the situations in hillsides target countries. With many countries undergoing political decentralisation the Indian experience is likely to have important elements applicable to scaling-up.

Research in Tanzania (Boyd *et al*., 2000) into the contribution of SWC to sustainable livelihoods concludes that there are important differences between and within communities and that the decision to invest in SWC relates to both household assets and the attractiveness of agricultural intensification as a livelihood strategy. Inevitably, wider policy and institutional issues beyond the control of the households influence this. Brown *et al*. (1999) developed a participatory decision support tool to engage different stakeholders and resource users in policy formulation and decision making so as to create a space for conflict resolution and consensus building in order to manage NR within and between communities.

In Bolivia, Nepal and Uganda, pilot research experiences have included a number of technically and financially viable of soil management technologies (live-barriers, cover crops, integrated nutrient management and irrigation) which can provide the basis for improving livelihoods through agricultural intensification. However problems such as land tenure, water rights, uncontrolled grazing and conveying water across steep slopes for irrigation can mean that promising technologies are not adopted (Mason, 1999). Integrating irrigation with soil conservation measures can reduce the irrigable area, cause soil erosion, and result in excessive water loss and often conflict between users. Bulking up planting material, livestock grazing and watering are other key issues that need to receive further consideration (Céspedes *et al.,* 1999) if conflicts between NR users are not to become major impediments to wider landscape management. This requires consideration of the institutional structures to ensure the interests of all user groups including the poorest and most marginalised are represented.

On-farm research undertaken often works with those farmers that are most willing to participate (De Salvert, 1998) and have the resources to do so. There is a need to ensure that the experiences of working with such farmers are relevant in terms of developing options for the wider community. Work in Honduras (Bunch 1999) shows that technologies that had been initially popular were modified or sometimes abandoned within a few years when wider landscape or community issues became apparent. He concluded that a prerequisite for sustainability is that farmers must have the confidence, motivation and ability to constantly innovate and adapt within an appropriate institutional framework. Ashby *et al*., (1999) highlights that in order to achieve impact at both farm and landscape level there is a need for multi-stakeholder participation in decisions and partnership among different types of institution.

For this to occur a better understanding is now required of local livelihood strategies and institutional relationships (Céspedes *et al*., 1999, Lawrence 1999) that can be harnessed to accelerate pilot research use in the wider community. A range of institutional and community stakeholders identified potential uptake pathways at a regional level and identified their preferred dissemination materials (Lawrence and Mason, 1999). There is considerable potential for applying the results of household and plot level research throughout the watershed but that technology, even when developed by farmers is no substitute for the development of appropriate institutional arrangements, decision making process and conflict resolution mechanisms required for participatory landscape or watershed management.

Gündel *et al*., 2001 found few cases of successful scaling-up in relation to research. The majority of research cases took a narrow perspective and emphasised the existence of

knowledge and technologies, with heavy reliance on a "post project" stage for creating impact. Development orientated projects, however, stressed the importance of institutional linkages and learning with the need to include a range of stakeholders from different sectors. Many of the elements for scaling-up are often related to good development practice but missing from traditional research activities. Such element include: Integration of research within a wider pro-poor development process; building networks and partnerships; raising awareness and building capacity; developing funding mechanisms to sustain capacity; identifying indicators with appropriate planning, monitoring and evaluation. Gündel *et al*., 2001 indicated that NRM research needs to take place in the context of local and national development processes in order to be able to respond to local demand. This requires that researchers work within a participatory development process and be accountable for their contribution to scaling-up (Hagmann et. al., 1999; Defoer *et al*., 2000)

At the same it was recognised that a vision was required to identify an impact pathway, building on a programme or project logical framework. Ongoing work in Nigeria (Douthwaite *et al*., 2003) was used towards the end of this project to link impact with the activities required for scale-up as well as the associated indicators.

2. PROJECT PURPOSE

The purpose of the project and how it addressed the identified development opportunity or identified constraint to development.

The Project Purpose is derived from Output 1 of the Hillsides NRSP logframe:

"Improved hillside livelihood strategies relevant to the needs of marginal farmers developed and promoted".

It is specifically concerned with Activity 1.3 and sub-Activity 1.3.2c of the NRSP Hillsides logframe. Hence the purpose of the project is:

"Ways to accelerate and upscale pilot research to the wider community developed and promoted".

This has examined the processes required to scale-up pilot research developed at a plot, field or farm level to a wider community or landscape level considering the implications of micro-watershed, watershed or other appropriate geographical or social scale

3. OUTPUTS

The research results and products achieved by the project. Were all the anticipated outputs achieved and if not what were the reasons? Research results should be presented as tables graphs or sketches rather than lengthy writing and provided in as quantitative a form as far as is possible.

3.1. Understanding the processes for scaling-up successful pilot NRM practices

OVI: By December 2001, processes evaluated and key opportunities and constraint documented.

Key factors influencing the scaling-up process were derived from seven case studies (Annex C and D) undertaken in the first Phase of the project. Five of the studies were from Bolivia, one was from Nepal and one was from Uganda. These comprised:

- PROLADE, Cochabamba – live barriers (Roman *et al*., 2001a)
- PROSANA, Cochabamba – participatory micro-catchment planning (Roman *et al*., 2001b)
- PROMIC, Cochabamba – integrated catchment management (Roman *et al*., 2001c)
- CIFEMA, mid-Andes valleys – animal traction and improved tillage (Roman *et al*., 2001d).
- CARE-CIAT, Santa Cruz –silvo-pastoral systems (Linzer and Rochas, 2001)
- ISWC-PFI, Kabale for hill districts of SW Uganda – indigenous soil and water management practices, coupled with farmer-to-farmer extension (Ellis-Jones *et al*., 2001
- SSMP-Helvetas, hill districts of Nepal – soil management practices (Neupane *et al*., 2002)

For each of these case studies, factors affecting scaling-up were identified through SWOT analysis and separated into 'facilitating' and 'limiting' factors. Factors identified in each case study were presented, discussed and further analysed at the Cochabamba workshop (Roman *et al*., 2002) (Annex E), synthesised (Middleton *et al*., 2002) (Annex A) and subsequently modified as the project proceeded. As a result key opportunities, constraints and action areas were identified that could be implemented during the course of a project.

Although there were major differences between the case studies and the capacities of the institutions involved, a clear picture of opportunities (facilitating factors) and constraints (limiting factors) was identified. Each facilitating and limiting factor was categorised into one of eleven broader categories, namely: institutional; accountability; funding; time frame; external project influence; collaboration, networking and partnership; capacity building; community approaches and participatory technology development (PTD), livelihoods; sustainability and impact assessment. These were then ranked in order of the number of facilitating or limiting factors in each category (Figure 1). This provided an indication of which categories were seen as more important in facilitating or limiting the scaling-up process.

The main facilitating factors were seen as the increasing use of participatory approaches and institutional collaboration, although the latter was largely amongst development orientated rather than research projects. The main limiting factors were seen to be lack of institutional capacity, a need to improve collaboration for research-orientated projects, lack of resources, external environmental pressures, lack of sustainability and measures to assess impact.

A key concern amongst all the institutions was a limited understanding of the concepts surrounding scaling-up, in particular the vertical components and the potential role for each institution to influence this. In most research projects considerable effort had gone into horizontal scaling-up, primarily in dissemination of extension material, while vertical scaling-up was largely overlooked.

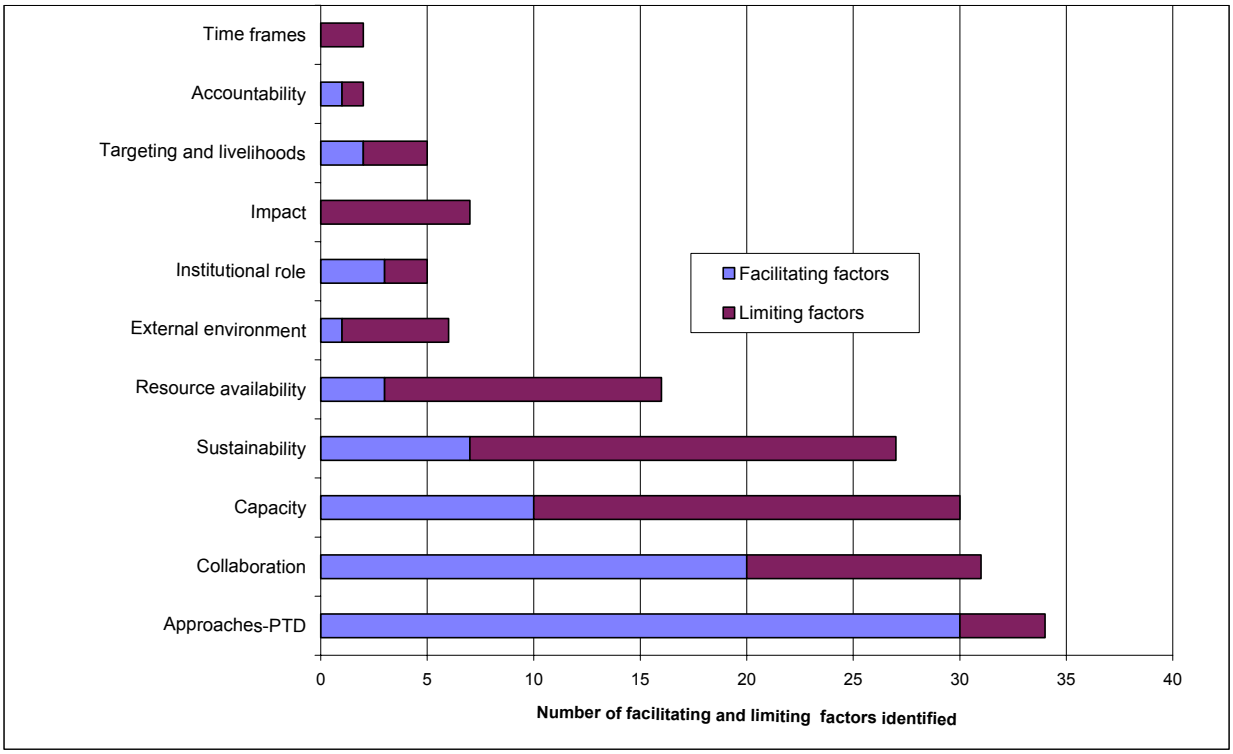


Figure 1: Summary of number of facilitating and limiting factors to scaling-up identified in case studies

Further analysis of the individual case studies using the Gündel *et al*., (2001) conceptual framework during the Cochabamba workshop (Roman *et al*, 2002) led to further clarification of the facilitating and limiting factors that need to be addressed in scaling-up. This enabled each factor to be placed within an activity area that should be addressed within a scaling-up plan. Such activities could then be initiated at a pre-project or initiation phase, during implementation or in a consolidation or post project phase (Tables 1a, 1b and 1c). Exact timing would depend on the point within the project cycle that had been reached by individual projects. Although none of the activity areas on their own was individually innovative, the need to systematically address them all is required, if scaling-up and sustainable impact is to be achieved. It was also clear that although each activity was placed within a specific project time-frame the earlier that each was addressed the greater would be scaling-up and consequently the greater would be the impact.

Table 1a: Pre-project or initiation phase activity areas, facilitating and limiting factors

Facilitating	Limiting
Understanding the concepts of scaling-up	
• Some organisations have given consideration to vertical aspects of scaling-up and have built the necessary institutional alliances to facilitate this	• However there is limited understanding of the term 'scaling-up,' beyond dissemination especially in smaller and research-orientated institutions. Vertical scaling-up is given limited consideration.
Undertaking an external environmental analysis	
• Focused and timely use of situational analysis of the political, institutional, cultural, social and biophysical environment should enhance the impact of scaling-up.	• Failure to understand and use the opportunities and threats will limit scaling-up.
Considering livelihoods and targeting the poor	
• A real need exists to take into account the many ways in which people derive their livelihood and ensure poorer groups are targeted in the process	• Those who adopt NRM technologies tend to be better resourced with access to resources, migration, education and levels of non-agricultural income influencing technology adoption.
Ensuring resources (especially funding) are available	
• Long-term financial commitment facilitates scaling-up providing a secure institutional environment conducive to long-term planning and the formation of inter–institutional networks and alliances. • Having the resources to plan, budget and undertake scaling-up activities (pre-project situation analysis, networking, capacity building) in both research and development institutions. • Availability of local government (municipal) funding with cost sharing opportunities. • Donor willingness to provide funding for pre project scaling-up activities.	• Poor integration between research and development funding by donors. • Low priority for NRM activities in local Government funding. • A focus on institutional sustainability through commercialisation/privatisation can compromise a pro poor focus. • Short-term, uncertain and limited funding are predominant factors limiting most scaling-up activities.
Increasing time horizons	
• Having a pre-project planning phase for the early development of short medium and long-term initiatives for scaling-up. • Longer-term projects are better able to develop institutional networks and partners at many different levels. • Long-term support through community based NGOs increases farmers' confidence and improves impact.	• Landscape level implementation of NRM practices are unlikely to occur within a short timeframe.

Table 1b: Project implementation or consolidation phase activity areas, facilitating and limiting factors

Facilitating	Limiting
Improving collaboration, networking and alliances	
• Inter-institutional collaboration (from grass roots to local government level) is integral to successful, sustainable scaling-up. • Working through existing organisations, where they exist, rather than creating new ones, facilitates the spread of information at the community level and increases farmers willingness to participate. • Working through local government channels can facilitate scaling-up especially where appropriate legislation and capacity is in place. • Collaboration is more successful where there is a capable and committed facilitating institution co-ordinating. • Development of networks of collaborators with well-defined roles and responsibilities and regular meetings is a successful mechanism for improved communication. • Binding agreements help to ensure that commitments are fulfilled. • Consultation with a wide range of stakeholders in the planning stage and identification of potential collaborators can facilitate scaling-up by improving the options for later networking and collaboration. • Collaboration is facilitated by a shared commitment to the goals of scaling-up.	• The success of working through local government structures is highly dependent on government capacity and is vulnerable to political change. • Weak capacity, lack of funds and lack of true motivation on the part of collaborating organisations can undermine the success of inter-institutional collaboration in scaling-up. • Lack of opportunities for inter-institutional communication and knowledge sharing is a key factor limiting scaling-up. • Lack of institutional lobbying for NRM to be raised on the political agenda.
Increasing institutional capacity	
• Strong organisational and technical capacity at institutional and community level is essential for scaling-up.	• Lack of sufficient capacity will undermine the effectiveness of inter-institutional networks. Appropriate capacity building is a necessary activity in order to facilitate the scaling-up process.
Agreeing institutional roles	
• Some scaling-up occurs by chance rather than part of a plan.	• There is often inadequate collaboration between research and development institutions. • Each institution tends to act individually, often in competition with each other.
Increasing use of participatory technology development approaches	
• Raising farmer awareness of NRM issues and their influence on farming can generate demand for appropriate technologies and increase commitment to improved NRM practice. • Participatory technology development and dissemination approaches, which bring together local and scientific knowledge, ensure that the technologies/practices promoted are adapted to farmers' needs and that farmers are aware of the wider options available to them. • Practical field demonstrations, exchange visits and technical support allow farmers to see the benefits of new practices and to understand how to implement them on their own land. • In certain cases, well-timed incentives in combination with sufficient awareness raising and motivation may be justified. • Technology builds on local practice, uses local materials are used, low levels of investment are required, short term benefits accrue and multiple benefits are derived	• When farmers are not involved in the planning process their daily realities are often overlooked resulting in inappropriate or poorly timed activities. Involving farmers in planning project activities increases their commitment, ensures that activities are responding to their needs as well as fitting in with their realities. • Incentives which mask the true cost of a practice or which are more attractive than the practice in itself may increase the short-term uptake of NRM technologies and practices at the expense of sustainability. • Where technology is given greater importance than process can inhibit PTD activities
Improving accountability	
• Working with existing community groups can reduce duplication and ensure that community needs are taken into account and greater ownership and control over development interventions.	• Institutions are usually accountable to donors and not local communities, where development agendas may be more focused on donor objectives than the priorities of the farmers and local communities. • NRM interventions may not be considered in the context of other community issues and priorities.

Table 1c: Post project or sustainability phase activity area, facilitating and limiting factors

Facilitating	Limiting
Ensuring sustainability • Improving local organisational capacity, increased partnership, long-term access to materials and technical support need to be available to local communities	
Assessing Impact	• Lack of M&E makes it difficult to measure impact and ascertain whether scaling-up is occurring. • M&E is often not undertaken due to lack of funds and confusion over who should take responsibility and how it should be done.

It was emphasized that scaling-up requires coordinated action by many different stakeholders. Without active involvement and coordination, the impact of NR research will remain localised and slow to spread. Scaling-up will be promoted if stakeholders outside the immediate research activity and location have information about the research, nd its potential and ideally to have contributed to identification of the problem and its solution. This requires institutional linkages to participate with and share the research process and findings from an early stage. Each of the activity areas identified in Tables 1a, b and 1c represent steps in this process, which were incorporated into institutional scaling-up plans as part of the second Phase of the project.

While Output 1 was based on consideration of case studies from Bolivia, Nepal and Uganda, Phase II concentrated on Bolivian institutions. Although it had been intended that SSMP in Nepal would participate in Phase II, this became impossible due to a deteriorating security situation in Nepal.

3.2. "Best Options" Processes for scaling-up developed

OVI: By June 2002, institutions in at least three target sites in Bolivia and at least one other country are actively using the options in a participatory manner.

3.2.1. Scaling up plans

Phase 2 of the project developed and validated, within the time constraints, practical 'options' for successful scaling-up through implementation and monitoring of activities based upon the opportunities and constraints identified in Phase 1. 'Scaling-up plans' prepared by four collaborating organisations in Bolivia incorporated a range of activities based on the case study lessons and institutional priorities (Annexes G and H). Some of these lessons were practically implemented by each institution and although an assessment of their impact was intended, this was not possible within the time-frame of the project.

Development and implementation of the scaling-up plans took longer than expected as limited institutional capability in key areas required that emphasis was placed on joint capacity building initiatives and linkages, before the plans could be implemented. Thereafter limited time and institutional resources meant that collaborating institutions focused their efforts on a selection of the key issues, which they considered of priority in their particular circumstances. As a result, institutional rather than community issues received priority attention.

Given these priorities, it was not possible, within the lifetime of the project, to demonstrate the validity of all the case study lessons through implementing scaling-up plans and measuring their impact at a community or landscape level. However, the project did strengthen the capability of local professionals to promote scaling-up. This gave emphasis to building ownership and improving motivation to continue with planned scaling-up activities after project completion. Moreover, through monitoring joint capacity building and support activities it was possible to validate some of the key case study lessons. The "Best Practice

Guidelines" (Middleton *et al*., 2003) (Annex B) are therefore based upon the lessons learnt from Phase 1 case studies enhanced by the insights gained from Phase 2.

3.2.2. Lessons from joint capacity building activities

i) *Understanding the concept of scaling up and its implementation*

It was accepted that a failure to understand the practical implications of scaling-up, in particular vertical aspects, (forming strategic alliances, developing long-term plans and lobbying for change at the policy level) would limit the achievement of widespread impact. In order to improve understanding of scaling-up and further explore perceptions of key stakeholders, three dissemination workshops were undertaken, each tailored to the needs of a different target group (farmer and community leaders; field and senior institutional staff) (de la Fuente *et al*., 2002a and 2002b) (Annex J), These workshops proved vital for the successful development of 'Scaling-up Plans' with collaborating institutions, enabling them to gain a clear understanding of the implications of the concept and its relevance to their situations. They also provided feedback on the validity of the opportunities and constraints identified in the case studies. Participant evaluations indicated that they had been vital in increasing understanding of scaling-up and its implications through the presentation and discussion of *a generic scaling-up strategy* containing all the 'strategic elements' and 'activity areas' identified in the case studies. Lessons from each group are summarised as follows;

- *Lessons from farmer's and community leaders*

Although one-day workshops with farmers and community leaders were not sufficient to enable them to take on board all the implications of scaling-up, key lessons were identified (Table 2a)

Table 2a: Scaling-up issues most relevant to farmers and community leaders

Scaling-up issues	**Key lessons**
Understanding the opportunities and constraints of the wider environment	- 100% agreed that the main economic activity in their communities was agriculture. - 50% related agriculture to NR. - 85% live from subsistence agriculture. The main problems they face are: lack of appropriate infrastructure, lack of access to markets, and very low production. - 78% feel their communities have a very strong sense of identity, however 63% thought that it was not taken into account by external institutions. - 41% agreed that some of their major strengths were their traditional forms of organisation and their culture. - 46% thought that their weaknesses lied in lack of funding and productive land, lack of capacity for elaborating projects and lack of knowledge on the new laws of decentralisation and popular participation. 50% agreed that external agents as important had not identified these areas, they just tend to focus on technical aspects.
Ensuring realistic time horizons	- 63% claimed that projects are too short term
Working through local government structures	- 44% thought the new laws of decentralisation and popular participation provide a potentially favourable environment for increasing community participation and ensuring demands are met. However, 63% said that given the lack of capacity and understanding of these laws, they can be misused to the detriment of the communities. - 63% claimed that for projects to succeed they must be introduced through the POAs and PDMs (local plans mediated through the municipal government)
Increasing awareness on NRM issues	- 100% saw environmental degradation as a major issue affecting people's livelihoods but people are not always aware of the links between poor environmental management and the agricultural problems that they experience. - 61% agreed that raising awareness on the impact of environmental degradation on livelihoods is key to the success of a project.
Involving communities in the identification, design and implementation of solutions to their problems	- 63% claimed that solutions are introduced from the outside without much consideration of cultural factors or actual community needs. This hinders the success of many projects. - 70% said that organisational training is required more than technical training, particularly in the areas of, local government proceedings and laws, project evaluation, articulation of their demands, decision-making

Scaling-up issues	Key lessons
	capacities and conflict resolution methodologies.
Seeking effective funding mechanisms	- 58% claimed that farmers or community leaders do not have direct access to donors. Many of them do not even know of their existence. Funding bodies are divorced from the targeted population's reality and funds are misused or do not benefit the rural poor but stay with the development institutions.
Increasing accountability to local communities	- 93% have experienced the intervention of external bodies in their communities. However 63% agreed that their needs had not been met. - 70% felt fieldworkers do not respond to their needs, and that they are not 'trustful'.
Increasing local capacity	- 49% agreed that for projects to be sustainable capacity building at the community level is essential, especially in organisational and management issues. However, training must be long-term and adapted to local capabilities and culture. - 60% claimed that there is an urgent need for lobbying at the decision-making level to get policy to reflect the true needs of rural communities, however for this to take place improved capacities and capable leaders are needed at the community level.
Assessing impact	- 52% said external agents do not undertake M&E studies, however they considered it to be extremely important

The approach embodied in scaling-up was positively received by community leaders, which, if acted upon by all stakeholders, would enable them to ensure projects met and were accountable to their needs. This was made clear in the evaluation, which showed that 48% of participants claimed to have gained a better understanding of the scaling-up concept, however the explanations and the evaluation forms where complex and hard to fully grasp. 89% claimed that the strategy could allow them to ensure that projects are being accountable to their needs. 100% of the participants re-assured that they would communicate their new knowledge back in their communities. Another concern was that out of 29 participants, 7, the youngest ones, claimed to be dissatisfied with the way projects are executed and 22 thought that projects this could be improved.

Some of the practical lessons emphasized the importance of using communication techniques and tools adapted for each target group. For instance the workshops highlighted the importance of carefully considering an appropriate mix of workshop participants from within the community. Although contrary to the notion of inclusion, in this situation it proved more constructive to work with those who were better able to fully participate in activities. Such participants were then able to appropriately communicate the key messages to others within the community who found the workshop environment difficult. In the case of farmers, younger leaders (as agreed by elders present) were more appropriate for this workshop environment. It was essential that elders, women and other minorities were reached through different means.

A key message from the farmers was that they needed organisational training more than technical training, particularly in the areas of, local government proceedings and laws, project evaluation, articulation of their demands, decision-making capacities and conflict resolution methodologies.

- *Lessons from institutional field staff*

Initially 85% of the participants had little understanding of the relevance of scaling-up to their work and a perception that the issues did not concern them (62%). Working with the practical implications of the concept enabled most (60%) to gain a better understanding of how activities to promote scaling-up could improve project execution in the field. 90% of the participant fieldworkers were extremely unsatisfied with the manner in which projects are executed. Although most they found the scaling-up strategy useful they felt dis-empowered with regards to its practical implementation, which in their view, should be a requirement of donors (Table 2b).

Table 2b: Scaling-up issues most relevant to field workers

Scaling-up issues	Key lessons
Planning for scaling-up	- 83% claimed that most projects focus on the implementation phase with a need for developing activities for scaling up in pre and post

Scaling-up issues	Key lessons
	project phases
Understanding opportunities and constraints of the wider environment	- 72% of participants reckoned that this factor is not taken into account. - Just 40% did try to look at the socio-economic and political factors. - 72% indicated that these kind of pre-project studies usually take from two to three months.
Considering vertical as well as horizontal scaling-up	- 51% of participants agreed on the importance of the activities for vertical scaling-up. However some of the problems identified were: conflict of interests, lack of interest and motivation, lack of co-ordination and information, institutional jealously.
Improving collaboration, networking and strategic alliances	- 56% of field workers considered the new laws of decentralisation and popular participation to be very positive for scaling-up impact, however they identified some of its weaknesses such as corruption, lack of capacity, and that it mainly focuses on infrastructure. - 50% claimed to work with other NGOs with the main purpose of not duplicating efforts. - 52% claimed to lobby at the national level through proposals, targeted actions, and the municipality and through representation at local meetings. - None of them mentioned any strategic alliance with secondary institutions
Seeking effective funding mechanisms	- 86% claimed to access funding through already established networks, personal contacts, alliances, shared costs, government funding, the municipality, external funding and public bids.
Ensuring realistic time horizons	- 43% undertake projects with an approximate duration of one to three years. Another 14% of participants said three years. - 85% agreed that it was not enough time for a project to achieve its aims.
Taking into account livelihood strategies	- 100% of the field workers present had ever undertaken a livelihoods analysis due to its complexity and limited time and funding
Working through local government structures	- 56% of field workers considered the new laws of decentralisation and popular participation to be very positive for scaling-up impact
Increasing capacity in technical and organisational issues	- 57% agreed that all projects undertake capacity building activities, however these are short term (43%), NRM or technically focused (79%), and do not take into account issues such as gender, strengthening cultural values or any other specific needs of a given community. - 78% of the participant fieldworkers claimed to undertake field demonstrations.
Raising awareness	- Just 64% of the fieldworkers claimed to undertake this activity. - 50% reckoned that the targeted population priorities are not NRM and the other half responded the opposite.
Improving accountability to communities	- 45% claimed that although participatory techniques are often used, they tend to focus on NRM. Furthermore their use is seen more in response to donors requirements than to the actual needs of targeted groups. - 47% felt they were being imposed on the targeted populations. - 57% reckoned that although it is very important to adapt practices/technologies to the community's context, in practice, and given the lack of resources, is almost impossible to do so.
Including the poorest	- 71% of fieldworkers claimed to undertake such activity.
Ensuring long-term sustainability	- Just 14% of the participants seemed to have ever undertaken a post-project strategy; the rest had never done one.
Improving monitoring and evaluation	- Measuring impact is hindered by two main problems: field workers not entirely sure of what needs to be measured and how to measure it. - 71% claimed that M&E after project completion is never considered so long term impact is never ascertained

- *Lessons from senior institutional staff*

Before the workshop 77% of participants related scaling-up to the horizontal spread of technologies. After the event, 37% seemed to comprehend the concept in more depth. In general participants felt that scaling-up entailed many new ideas and concepts difficult to meaningfully grasp without further training. 27% considered that the lessons learnt in the case studies still needed to be validated and the impact of implementing a scaling-up strategy monitored before the concept and its implications would be widely adopted. More

than the farmers and field workers, they highlighted a number of practical constraints to implementing a scaling-up strategy.

- Institutions adapt to donor's requirements, they cannot change project's formats. Therefore the onus should be on the donors to require evidence of an effectively designed scaling-up strategy and to fund the additional activities required to fulfil this
- Scaling-up implies new responsibilities for the institutions, which they may be unable to accept
- Without additional financial resources it will not be possible to implement the activities required by a scaling-up strategy
- NRM is still not a priority in the government's agenda
- At present there are not enough benefits/incentives to initiate change through the implementation of the strategy

ii) Seeking innovative funding mechanisms

A workshop on funding (de la Fuente, 2002) (Annex J), bringing together donors and NRM institutions was considered the most effective approach for increasing NRM institution's knowledge and understanding of existing funding opportunities and to develop practical methodologies for 'making the best' of these. At the same time there was a need to consult how NRM could address poverty alleviation. Analyses of funding opportunities provided by ATICA; JICA; VIPFE and SIBTA (through the Fundacion Valles) indicated concerns, but also provide important lessons.

The main concerns of participants included

- Lack of knowledge on the latest information on funding
- Lack of strategic alliances with other institutions so as to lobby funding bodies
- Lack of M&E so that impact can be demonstrated and funding bodies asked for more support.
- Lack of funding to undertake scaling-up activities and respond to target group demands.
- Poor perceptions of funding bodies, in that
  - Views of local institutions are not taken into account by funders.
  - SIBTA has closed many of the funding opportunities previously available from international donors. Funding for the most disadvantaged is difficult to access.
  - Many have to be accessed first through the central government, which is largely impossible due to corruption in Bolivia
  - Funding bodies themselves are regarded as corrupt, elitist, and lacking in transparency.
  - Their requirements are not seen to match the country's reality, and in the end institutions are more accountable to funding bodies than to the targeted populations.

Unfortunately, the extent to which the workshop objectives were met was limited by the absence of some key donors, who failed to attend at the last moment. This absence reinforced the sentiment amongst NRM institutions that most development interventions were still top down and donor driven, and that the donors were uninterested in hearing or responding to the viewpoints of the organisations, which they funded.

Lessons learnt

The main lessons identified a need for action in the following areas:

- Improving training of staff with regards to funding within specialised institutional funding units.
- Developing better M&E systems that demonstrate impact.
- Building strategic alliances with other NRM institutions with cost sharing arrangements.
- Creating a strong commitment with the communities.
- Using opportunities as *municipios* give higher priority to NRM projects, although it was hoped that donors would provide support to *municipios* in more disadvantaged areas.
- Systematising the latest information with regards funding. This could be done by the NRM platform using a database, updated every year and available through the internet.

- Creating an NRM institutional network capable of lobbying at the policy-making levels encouraging greater transparency; more resources for scaling-up activities; with funding mechanisms provided through local and Department Government; within a coherent national policy for funding giving priority to NRM projects.
- Establishing an NRM platform as a vehicle for lobbying at policy-making levels.

iii) *Improving collaboration, networking and alliances*

Understanding how best to manage alliances and partnerships proved to be one of the greatest challenges facing organisations committed to scaling-up NRM practices. The main approach taken was the development of a NRM platform. One of the main lessons learnt from developing the platform was the importance of a key person or organisation to drive the process, motivating and co-ordinating participants until a solid base had been established and benefits were evident. Building a critical mass of motivation amongst the platform members was vital for its survival. The involvement of the University of San Simon proved beneficial, since its reputation gave the platform credibility, and it was able to provide a stable base, funding and good potential for institutional linkages at a national level. The platform had already started the process of engaging different stakeholders and resource users in policy formulation and decision-making. If successful, this process will create a space for consensus building, conflict resolution and capacity building.

Lessons learnt

National networks related to NRM are key for influencing decision making and policy formulation, therefore the establishments of links and alliances through workshops like the one undertaken during the second phase are vital for influencing policy at the national level.

iv) *Developing functional linkages with local government and community organisations*

The main tool used for this was an NRM *Feria* or fair attended by community leaders, farmers, *municipios* and R&D institutions. An evaluation of the '*feria'* and its impact demonstrated the effectiveness of such an event in raising awareness, capacity building and promoting interaction between different stakeholders.

- 85% of participants believed that poor awareness of **the range** of available NRM technologies and practices was seriously limiting implementation at a community level.
- 94% of participants believed that the fair was an excellent forum for forging relationships/linkages with other stakeholders.
- 65% believed that these linkages would facilitate the scaling-up process.
- 76% believed it was a good approach for generating community demand.
- 90% believed that the development of the NRM Platform was relevant and appropriate for overcoming problems identified.
- 48% already had some knowledge of the mechanisms and instruments of the new laws.
- 47% were aware of the relevance of the laws for their situation

However, limited farmer attendance highlighted the importance of making such events more accessible to community members by holding them in rural areas. Consequently, some of the participating organisations obtained EU funding to hold similar 'fairs' in rural areas.

Lessons learnt

Small-scale technology fairs proved to be a useful approach for stakeholder interaction, raising awareness on the importance of NR degradation, and prioritising NRM in communities' municipal local agendas. These types of events are a good tool for lobbying at the local level especially where decentralisation legislation or decentralisation is taking place.

3.2.3. Lessons from institutional scaling-up plans

Each institution initiated other relevant activities within their scaling-up plans (Annexes G and H). A summary of the different elements selected by the collaborating institutions along with the activities shows that.

i) CIFEMA's institutional plans focused on two main activities, first direct advertisement of their products (DAP implements) and secondly formal education. This approach did not contribute to achieving CIFEMA's main goal: poverty reduction through improved agricultural mechanisation. Advertising CIFEMA's DAP implements lacked some of the strategic elements identified as crucial in the first research phase (raising awareness, long-term technical support, field demonstrations, etc). In other words, horizontal scaling-up issues were not fully recognised, leading to a poor up-take of their technologies. With regards to the spreading of their technologies through formal education, this approach also had limited success. Trained students often did not return to their communities, leading again to a poor community uptake of their technologies. It is in this context that the project tried to build capacity in CIFEMA's M&E abilities, so they could measure the impact of their main approach. CIFEMA also identified strategies such as forming strategic alliances with other institutions, in providing training to national servicemen in the army, liasing with municipalities, and adapting their implements according to farmer demand. CIFEMA also undertook three promotional workshops for *municipios* that lead to CIFEMA's further promotion of its technologies in one municipality trough its municipal development plan.

ii) PROLADE's institutional plans focused largely in the horizontal spread of their technologies/practices (live-barriers ad cover crops) through formal education. This again proved insufficient for scaling-up, since the targeted populations rarely have access to formal courses. It was within this context that PROLADE identified several strategies within their scaling-up plans, namely: creating institutional alliances, introducing their technologies/practices through the municipal development plans; searching for innovative funding mechanisms and creating the appropriate infrastructure at the community level in order to ensure the long-term sustainability of live-barriers ad cover crops. In order to strengthen these strategies, relevant activities were developed within their plans. The following were initiated with evaluation showing that.

- As a result of exchange workshops, two new institutions were requesting live-barrier planting material.
- Inter-institutional relations were developed.
- PROLADE had taken the initiative in organising capacity building events with other NRM Platform members.
- As a result of the funding workshop, long-lasting contact was made with one development institution.
- Three proposals were written; a local municipality accepted one and three agreements were signed with secondary institutions in one community.

iii) PROSANA, as a well-resourced development institution with a holistic approach to poverty reduction, had already developed a strategy for scaling-up. For instance building inter-institutional strategic alliances and offering their practices through the municipal development plans. However the scaling-up plans proved useful to PROSANA for improving their M&E strategies. They have started developing a guide for M&E, to be distributed among different stakeholders. In addition PROSANA has now signed three agreements with the municipality for the training of municipal staff as part of their POAs and PDMs..

iv) PROMIC, another well-resourced but technically focused development institution with an integrated approach to soil erosion reduction and poverty reduction through improved NRM, already considers vertical scaling-up. However its institutional plans are very technically orientated and the final impact on poverty reduction has never been assessed. This was the main reason why PROMIC showed great interest in the scaling-up plans. Although it took into account seven strategies and developed the relevant activities, the impact of these activities is not yet apparent. Future M&E and impact assessment of the activities would be essential for showing the effectiveness of the plans in scaling-up.

Lessons learnt

The main benefits identified by the institutions from developing a scaling-up plans were:

- The scaling-up plans have challenged them on their current approaches towards development
- The plans have helped the institutions to identify those factors that had not previously been taken into account, and initiate corrective action, in particular.
    - An increased focus on non technical issues in scaling-up plans.
    - Greater attention to vertical scaling-up.
    - Monitoring, evaluation and impact assessment.
- The new political framework for funding in Bolivia through SIBTA is characterised by competitiveness. In this context institutions compete on their abilities to articulate supply and demand in an equitable manner. Since many of the strategic elements identified in the case studies allow for a better articulation of demands, the implementation of the scaling-up approach was seen as an added value to the institutions.

Letters of appreciation from each institution for their involvement in the project are shown in Annex H.

These lessons have come from Bolivian institutions when it was intended that the lessons learnt from the case studies and subsequent institutional plans would be shared with and actions taken by SSMP in Nepal. However due to delays in completing the SSMP case-study due to a deteriorating security situation in Nepal and this did not occur. However many of the institutional lessons from Bolivia have wide applicability in other countries.

3.2.4. Best Practice Guidelines

From the opportunities and constraints identified in Phase 1 of the project and the lessons learnt in Phase 2, seven strategy areas and 19 activities were identified for promoting scaling-up. These have been compiled into "Best Practice Guidelines" (Middleton *et al.,* 2003) (Annex B), which have wide applicability..

However, each institution, with its own strengths and weaknesses, operating at different stages in the project cycle, with its own operational plans would need to formulate their own individual strategies, activities and supporting actions within a three phase approach (Table 3). The ideal timing of these 19 activities is shown in Figure 2

Table 3: Strategies and key activities required for scaling-up

Phase	*Strategies*	*Key activities*
Pre project or initiation phase	1. Developing a strategy for scaling-up	i Ensure the concepts and principles of scaling-up are understood by all stakeholders ii Ensure understanding of the opportunities and threats of the wider environment iii Identify target groups (key demand, support and supply actors?) iv Develop an impact pathway with stakeholders identifying appropriate indicators that can be monitored and evaluated and can be used for assessing impact
	2. Developing a strategy for ensuring sustainability	v Ensure close integration of research and development activities vi Ensure resources availability for capacity building, communication and monitoring and evaluation vii Establish cost sharing within strategic alliances viii Seek existing local Government support to promote sustainability ix Ensure realistic time horizons for establishing support mechanisms at community level
Implementation or consolidation phase	3. Increasing capacity of local institutions	x Improve collaboration, networking and strategic alliances xi Build institutional and community capacity in key areas identified by relevant stakeholders xii Ensure that institutional roles are well defined
	4. Addressing priority community constraints	xiii Ensure use of participatory technology development approaches xiv Ensure the poorest and marginalised are included in the process xv Ensure technology options are available that address the needs of all resource groups
	5. Monitoring and evaluating outputs and activities	xvi Improve feed back and accountability to local communities
Post project or sustainability phase	6. Ensuring long term sustainability	xvii Ensure farmers are aware from project outset the timeframe for interventions xviii Ensure local organisational capacity and access to inputs and technical support (although this is significant in the post project phase it must be established in the implementation phase)
	7. Assessing impact	xix Ensure indicators developed at planning stage are relevant and can be used

Note: Colours denote strategic area activities shown on Figure 2

i) Pre project or initiation phase

Developing a strategy for scaling-up

- This requires that the concepts and principal of scaling-up are fully understood. Institutions at all levels require a clear vision of how vertical and horizontal scaling-up can be promoted. Each should clearly define their role in scaling-up, and plan, implement, monitor and evaluate appropriate activities. To facilitate this, appropriate materials and activities to increase institutional capacity in scaling-up should be developed and disseminated.

- An understanding of the opportunities and threats of the wider environment is essential. Institutions taking the lead role in scaling-up technology or practice should always undertake a timely situational analysis focused on the opportunities and threats to scaling-up. Such analysis should go beyond the community level and include consideration of political, institutional, social, cultural and biophysical factors identifying the strengths, weaknesses, opportunities and threats associated with each. This should include identification of the key demand, support and supply actors.

- Institutions need to seek improved understanding about the way in which people's different livelihood strategies are likely to influence adoption in order not to overlook and to target poorer farmers and marginal groups.

- A vision for an impact pathway (see next section) needs to be developed by stakeholders that identifies indicators appropriate for monitoring and evaluation for each of the activities they intend to undertake.

Developing a strategy that ensures sustainability

- There needs to be close integration of research and development activities. This requires that research institutions link with development organisations with greater capacity for networking and political advocacy in order to increase impact. These may be better achieved through building alliances with partner organisations. Institutions need to develop short, medium and long-term plans, which define how they will contribute to scaling-up.

- Resources are required for capacity building, communication, monitoring and evaluation. Donors need to consider longer-term flexible funding approaches, which take into account the need for pre-project analysis or longer initiation phases with clear intermediate milestones. This will require innovative funding mechanisms and improved integration between funding of research and development activities. Institutions themselves need to plan, budget for and carry out scaling-up activities in particular: situation analysis; networking; capacity building and M&E.

- In building alliances, institutions should consider cost sharing as a funding mechanism within strategic alliances.

- In order to develop better local funding opportunities, institutions need to promote and lobby policy and decision-makers for higher political priority for NRM. Securing existing local government funding will promote local sustainability.

- At the same time realistic time horizons are required for establishing support mechanisms at community level. Achieving landscape level impact is a long-term process and interim targets need to be established with local communities and donors.

ii) <u>Implementation or consolidation phase</u>

Increasing capacity of local institutions

- Improved collaboration, networking and alliances are required to ensure successful scaling-up. A key stakeholder (or 'primary' institution) is required to facilitate and co-ordinate this process planning for vertical and horizontal collaboration early in the project cycle. Confirmation of demand, supply and support stakeholders requires consultation with a wide range of stakeholders and should be initiated in the project-planning phase and continued through the project implementation phase. This needs to include:
  - Increasing opportunities for institutional knowledge sharing and collaboration.
  - Creating networks of collaborators who have regular interaction to share experiences and resolve problems as they arise.
  - Forming strategic alliances with local government

- Capacity building activities should be targeted at both institutional and community level stakeholders according to their specific needs. Such activities should be prioritised and funded as a vital part of the scaling-up process.

- Institutional roles should be well defined, understood and backed by agreements or memorandum of understandings.

Addressing priority community constraints

- Many institutions are already improving their approaches to community level technology development and dissemination using participatory methods that bring together local and scientific knowledge (PEA, PTD, PLA, PLAR etc). These require a process approach that includes community mobilisation, action planning, testing new ideas using farmers' own monitoring and evaluation criteria. This can be repeated over a number of years (Hagmann *et al.*, 1999) with R&D institutions gradually withdrawing. Such approaches should:
  - Raise awareness of the problem prior to technology promotion through ensuring farmers are aware of the wider NRM options available and helping them to understand the concepts underlying the technologies or practices.
  - Involve farmers in planning project activities to ensure that possible solutions respond to their needs and fit in with their realities. This should include the provision of practical farmer field testing and/or demonstrations, exchange visits and technical support to allow farmers to see and test the benefits of new practices and how they can be implemented in their own land.
  - In order to facilitate uptake amongst farmers where possible technologies should be based on local knowledge, use of locally available materials, require low investment and demonstrate tangible short-term benefits.
  - Discourage the use of incentives unless there is evidence that they are not the overriding factor influencing scaling-up. Where incentives are used, there should be sufficient awareness raising activities.
  - Innovative ways to provide longer-term technical/organisational support at the community level need to be developed. These should give consideration to local entrepreneurs and farmer-to-farmer extension based on local groups and elected lead farmers.

- Efforts and methods are needed to ensure the poorest and marginalized are included in the process. This can include working with women's, youth and special interest groups.

- This in turn requires that technology options and practices are as far as possible available that can be tested and used by all resource or wealth categories, taking into account the main means by which different people in the community derive their livelihoods.

Monitoring and evaluation of outputs and activities

- Institutional development activities need to focus on a broad understanding of community priorities and needs rather than institutional priorities and interests. At the same time institutions need to be as accountable to local communities and their organisations as they are to donors. As such institutions need to work with existing community groups to foster greater local ownership and control over development interventions, developing mechanisms for this.

iii) *Post project or sustainability phase*

Ensuring long term sustainability after project completion

- Farmers should be made aware from the start of the project, the timeframe for interventions so that they do not feel disillusioned and let down when the project withdraws.

- Institutions need to develop strategies that ensure that farmers have access to the resources that they need to continue once the institution has left. Key elements of an exit strategy should include improved local organisational capacity, long-term access to materials and technical support.

Assessing impact

- M&E indicators need to be developed from the start of the project cycle and incorporated into plans. At the same time capacity needs to be built in M&E at both institutional and community level

Although set within pre-project or initiation, implementation or consolidation and post project or sustainability phases, it was clear that many of the activities needed to be initiated during the pre-project or initiation phase and needed to be continued into the consolidation and sustainability phases (Figure 2).

Monitoring, evaluation and impact assessment

The project considered M&E indicators, initially dividing them into four categories: adoption/adaptation; changes provoked; accessibility; and sustainability. These related, at activity level (monitoring) and output level (evaluation) to change in NR status and associated variables. Thus, for example, amongst changes provoked, the indicators were reduction in costs, increased ease of production, increase in agricultural productivity, change in production system, reduction in erosion, and increased awareness of NR issues. Implicit was betterment in livelihoods.

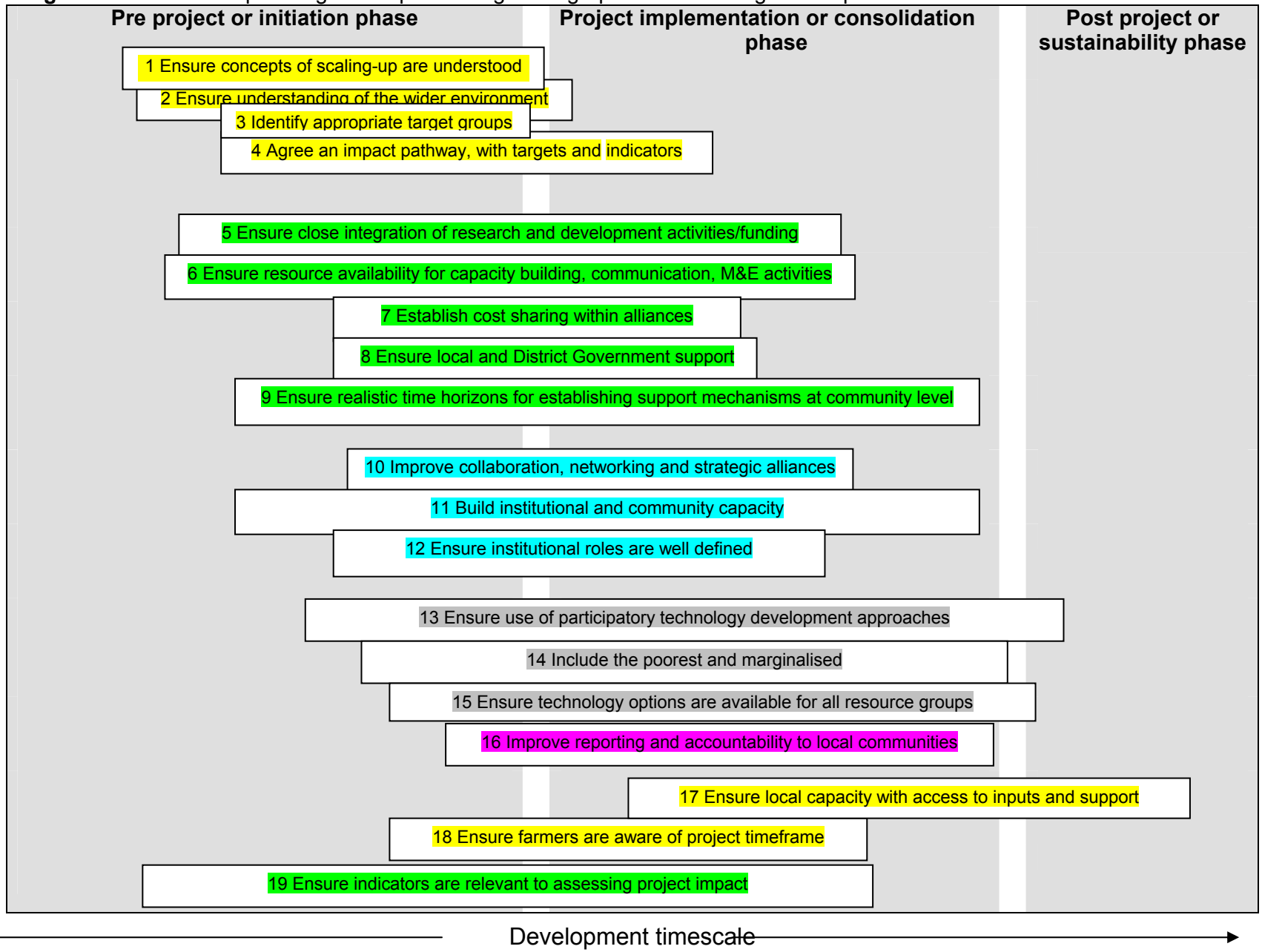
Monitoring and evaluation indicators have now been developed for each the nineteen activities concerned with scaling-up (Table 4). In this case monitoring indicators are short term and used to guide the activities, while evaluation indicators are longer term and assist in ensuring progress is being made towards delivering outputs and achieving impact.

Assessing impact will be based on achieving quantity and time indicators related to:

- Number of communities/families testing, adopting or adapting the technologies or practices.
- The number of poor-medium resourced farmers with access to and using the technologies or practice.
- The level of satisfaction with the technologies or practices.
- A reduction in the costs of production or an increase in production by the different resource groups.
- Improved livelihoods[2]. Indicators need to based on improved livelihood assets and directly relevant to and suggested by target communities such as increased natural assets (improved production potential) increased physical assets (livestock owned, increased use of agricultural inputs, increased food security, improved standard of housing and utilities, household clothing), increased financial assets (access to credit or cash, new sources of income) improved human assets (household education levels and skills, household health), and increased social assets (community groups and leadership).

[2] During the MTR it was indicated that indicators of improved livelihoods could, for example, access government records of income, taxes, and loan repayments and be available well beyond a project time frame. They would have the capability of detecting long-term trends because measurable change in the NR sector usually needs considerable time to become apparent. However there was considerable scepticism among all project participants about the reliability and the usefulness of such data

Figure 2: Activities for planning and implementing scaling-up NRM technologies and practices



Different colours represent the seven key strategy areas as indicated in Table 3

Table 4: Monitoring and evaluation indicators for key activities

Strategy area/ Key activities	Short term monitoring indicators	Medium term evaluation indicators
Developing a strategy for scaling up		
1. Ensuring the concepts and principles of scaling-up are understood	- Number of capacity building activities undertaken and dissemination materials distributed (workshops, videos, guidelines, etc)	- Number of institutions in Bolivia that make use of the best scaling-up options guidelines - Number of projects being executed according to the guidelines recommendations
2. Ensure understanding of the opportunities and threats of the wider environment	- Number of pre-project activities undertaken with a focus on political, cultural and socio-economic factors	- Number of activities being built on the opportunities/threats of the wider environment
3. Identify target groups	- Number of pre-project activities undertaken to ensure that different socio-economic groups within a community are taken into account	- Number of disadvantaged families being accounted for
4. Develop an impact pathway with stakeholders identifying appropriate indicators that can be monitored and evaluated and can be used for assessing impact	- Number of activities undertook for developing the impact pathway jointly with the stakeholders - Impact pathway developed	- Number of times that the impact pathway has been used by stakeholders for assessing the impact of a particular project - Number of people using the impact pathway
Developing a strategy for ensuring sustainability		
5. Ensure close integration of research and development activities	- Number of treaties or links with research organisations or with development organisations	- Number of development or research activities being incorporated within a project
6. Ensure resources availability for capacity building, communication and monitoring and evaluation	- Number of activities related to capacity building, communication and M&E that are being funded for	- Number of trained, aware people - Number of times that project has been assessed
7. Establish cost sharing within strategic alliances	- Number of cost sharing treaties signed within a project	- Number of extra activities undertaken
8. Seek existing local Government support to promote sustainability	- Number of treaties signed with the local government	- Number of activities undertaken that build local capacity with regards to the project's objectives
9. Ensure realistic time horizons for establishing support mechanisms at community level	- Number studies undertaken for ensuring that time-frames are adequate	- Number of well established support mechanisms at the community level
Increasing capacity of local institutions		
10. Improve collaboration, networking and strategic alliances	- Number of treaties signed between GOs, NGOs, local institutions, etc in a deliberate manner - Number of opportunities for lobbying at the national level	- Number of activities, practices, strategies incorporated from another institution - Number of policies signed in favour of sustainable use of NR - Number of institutions practising/disseminating the institution's technology/practice
11. Build institutional and community capacity in key areas identified by relevant stakeholders	- Number of capacity building events that have taken place - Number of capacity building activities being prioritised and funded	- Number of farmers/institutions involved in the scaling-up process - Number of institutions communities with increased technical and organisational capacity
12. Ensure that institutional roles are well defined	- Number of inter-institutional agreements signed	- Number of institutions undertaking their role

Table 4 continued: Monitoring and evaluation indicators for key activities

Strategy area/ Key activities	Short term monitoring indicators	Medium term evaluation indicators
Addressing priority community constraints		
13. Ensure use of participatory technology development approaches	- Number of participatory activities undertaken - Number of farmers consulted - Number of awareness raising activities undertaken - Number of planned research and development activities undertaken jointly with farmers - Number of field demonstrations and inter-community visits undertaken	- Number of farmers that fully understand and agree on the technology/practice being implemented - Number of farmers concerned about NR degradation - Number of farmers benefiting in various forms from the project
14. Ensure the poorest and marginalised are included in the process	- Number of inclusion activities being undertaken	- Number of marginalised resources farmers being benefited
15. Ensure technology options are available that address the needs of all resource groups	- Number of studies undertaken for assessing different needs within a community - Number of different technologies being developed or technologies/practices re-adapted to suit farmers needs	- Number of different socio-economic groups in the community benefiting
Monitoring and evaluation of outputs and activities		
16. Improving feed back and accountability to local communities	- Number of communal meetings between community members and project staff	- Number of times community priorities and concerns are taken into account - Number of mechanisms developed in order to give communities greater control over development interventions
Ensuring long term sustainability		
17. Ensure farmers are aware from project outset the timeframe for interventions	- Number of farmers aware of project time-frames	- Number of mechanisms established within the community for the project's long-term sustainability
18. Ensure local organisational capacity and access to inputs and technical support	- Number of people being trained with regards to the project's objectives - Number of activities developed for ensuring long-term access to inputs - Number of available staff providing long-term technical support	- Number of communities/farmers continuing the practice after the institution has left
Assessing impact		
19. Ensure indicators developed at planning stage are relevant and can be used	- Number of indicators developed	- Number of impact assessment studies undertaken - Number of satisfied small holder farmers

Note: Colours represent strategy areas shown in Figure 2

Developing an impact pathway with indicators

NRM technologies especially soil management practices require farmers to consider an integrated approach that may affect their whole farming system. Such technologies are not easily replicated especially in hillside systems. Hence social and organisational processes are as important as the technologies themselves.

It is also recognised that farmers test and modify new technologies under their own management conditions leading to adaptations of original approaches and development of new ones. Encouraging such testing and subsequent adaptation is likely to speed adoption rates and may influence who benefits and loses. This makes scaling-up complex with high degrees of non-linearity. It is therefore important in assessing potential project impact that scaling-up pathways are identified. Early identification will guide project planning to include activities that will speed the scaling-up process. Many of these activities need to be initiated during the planning or initiation stages of the project. This can also guide the information requirements of base-line surveys, which can be used for impact assessment after project completion.

Assessing potential impact therefore requires projections to be made and a pathway developed with intermediate outputs (or milestones and indicators) between delivering project outputs and achieving Project or Programme Goals. This starts with project outcomes, followed by a chain of intermediate outcomes related to vertical and horizontal aspects of scaling-up leading to wider and often longer-term outcomes related to improvements of the livelihoods of poor people. This represents a set of projections about what needs to happen for project outcomes to be transformed, over time, into impact. These projections can be recorded in a matrix (adapted from Douthwaite *et al*., 2003), which build on a project Log-Frame (Figure 3). The key questions and answers, which we have endeavoured to address, include:

- What would impact look like?	- Scaling-up plans should identify an impact pathways, such as that summarised in Figure 3
- What are the intermediate steps that will lead to this impact?	- These relate to elements of vertical and horizontal scaling-up shown in Figure 2
- What are the factors that influence achievement of impact?	- Opportunities and constraints were identified in Output 1
- What activities should a project or its partners undertake to promote scaling-up faster?	- 19 key activities have been identified related to the seven strategy areas show n in Figure 3 (highlighted in yellow)
- What information should be collected to monitor, evaluate and assess scaling-up and impact?	- Indicators for each activity have been identified for each of these activities (Table 4)
- How should this information be gathered?	- We have not fully addressed this aspect within the project, but have emphasised that improved accountability to recipients is essential

In the case of hillside soil management technologies we have identified an Impact pathway based on existing project outputs from participatory research in developing soil and water conservation and soil fertility management practices. Such practices had been generated either on research station or through farmer innovation. Ultimate impact (Project Super-Goal) is improvement in the livelihoods of poor people. Intermediate steps relate to achievement of Project Goal and Purpose. Shaded boxes in the Figure are intermediate outcomes to achieving impact that can be monitored using existing log frame indicators or new improved ones. For instance project purpose, goal and super-goal[3] already have indicators, which may be difficult to measure and at higher levels become increasingly qualitative. There are other intermediate steps, which need to be addressed in achieving impact. These are related to good development practice and relate to vertical and horizontal scaling-up activities (Table 4). The main elements to speed the scaling-up process and therefore create impact faster are shown in the yellow shaded areas.

[3] These will depend on nesting arrangements between Programme, System and Project level objectives

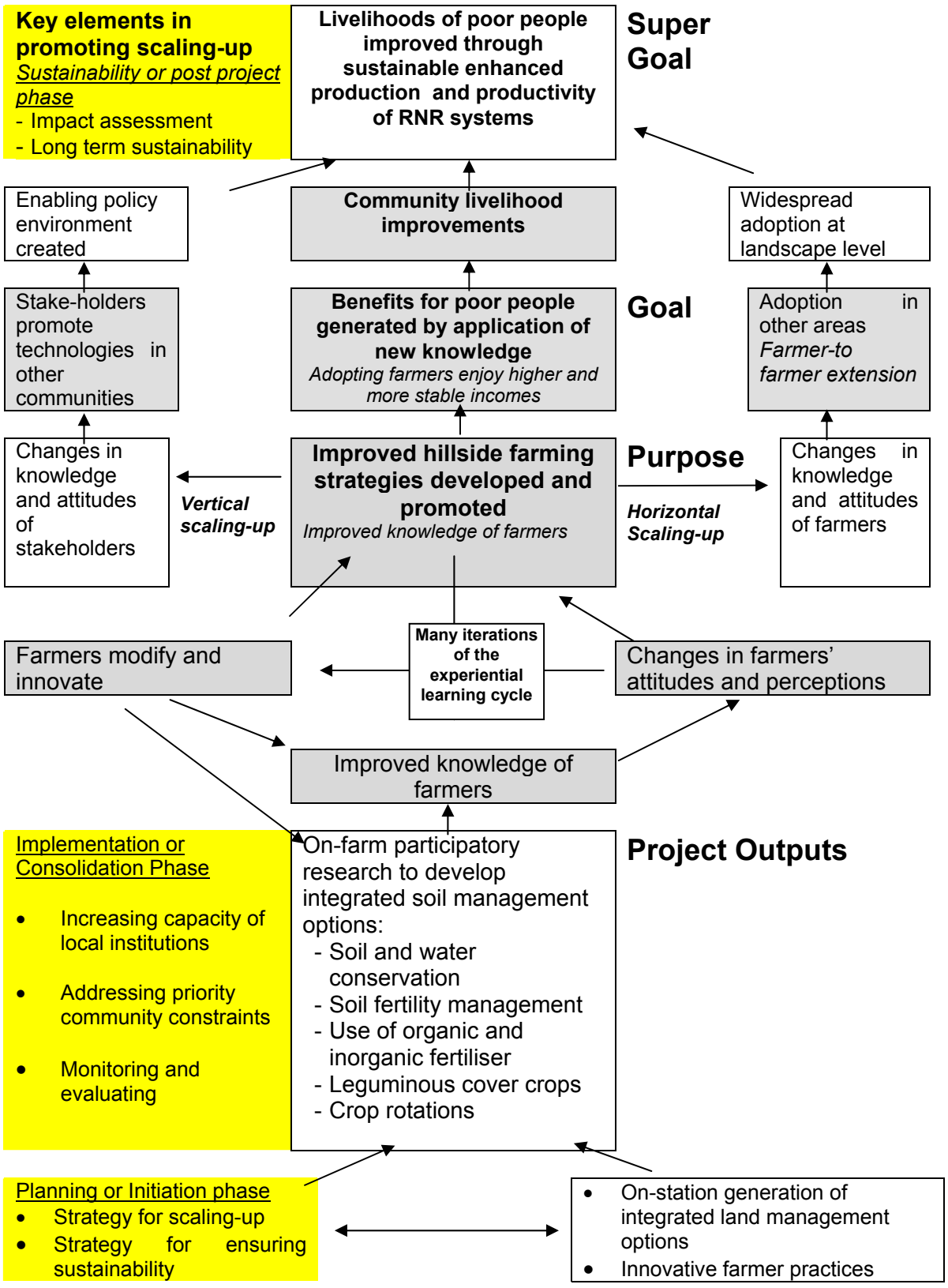


Figure 3: Impact pathway for RNR projects in Hillside Systems

3.3. Strengthened capability of local professionals to promote scaling-up

OVIs: From June 2002, dissemination materials for use jointly prepared by UK and overseas partners
From December 2001, new knowledge promoted and disseminated to research and development professionals in both collaborating and target institutions

3.3.1. Dissemination material

The partnerships formed amongst collaborating institutions during the life of the project were both part of the scaling-up process as well as contributing to the capacity building activities that were undertaken. During this process the following dissemination material was jointly produced in Bolivia in Spanish.

- A Scaling-up leaflet based on "Scaling-up strategies for research in natural resource management" (Gündel *et al*., 2001)[4]. *Estrategias de Amplicación para la Investigación en el Manejo de Recursos Naturales,* PROAMP, 2002a) (Annex K).
- A manual containing practical advice on the main scaling-up issues (*Pequeña Guía sobre la Amplicación* (de la Fuente *et al*., 2003) (Annex L).
- "Scaling-up kits" for the development of practical work plans for each institution. (de la Fuente *et al*., 2002) (Annex M).
- A video on farmers' perceptions of the requirements for scaling-up (PROAMP, 2002b).
- A calendar with key messages on scaling-up concepts.

3.3.2. New knowledge promoted

Experiences from project activities were shared with both collaborating and target institutions again both as part of the process and contributing to capacity building activities. This included:

- A presentation at the ICIMOD-NRSP Hillsides Workshop, Kathmandu, Nepal Workshop held during February 2003 and subsequent publication of a paper on the experiences from and lessons for scaling-up (Middleton *et al*., 2003a) (Annex N)
- "Best Practice Guidelines for Scaling-up" have been produced which will require distribution to collaborators and target institutions. (Middleton *et al*., 2003b) (Annex B).

We envisage these being widely distributed.

[4] This was translated in to Spanish and a draft was submitted to NRSP.

4. RESEARCH ACTIVITIES

This section should include detailed descriptions of all the research activities (research studies surveys etc.) conducted to achieve the outputs of the project. Information on any facilities expertise and special resources used to implement the project should also be included. Indicate any modification to the proposed research activities and whether planned inputs were achieved.

4.1. Understanding the processes for scaling-up successful pilot NRM practices

4.1.1. Agreeing the scope of the review

Milestone: By Nov 00, scope of review agreed

At the time that R7866 was commissioned to identify ways of scaling-up positive pilot research experiences, a linked project, R7865 had been commissioned to undertake a broad desk based review of scaling-up experiences and to develop a framework for identifying scaling-up strategies for NRM research. To avoid duplicating work between the two projects, a meeting was held between researchers from the two projects in order to define the scope of each project's literature review. It was agreed that R7866 would build on the framework developed by R7865 to design their case study methodology and that whilst R7865 would review a wide range of published literature, R7866 would focus on the grey literature of the specific case studies selected. The R7865 framework only became available after the case studies had been completed. As a result the case study methodology was based on a modified checklist for analysing scaling-up processes initially developed by IIRR (2000). Notwithstanding the R7865 framework (Gündel *et al*., 2001) was later used as a tool in the analysis of the case study findings during workshop analysis (Roman *et al*., 2002).

4.1.2. Identifying case studies

Milestone: By March 2001 case studies selected

Case studies were used to identify important factors influencing the scaling-up process, learning from the positive and negative experiences of a range of institutions in the process of scaling-up the technologies and/or practices that they had developed or piloted. Five of the studies were from Bolivia, one from Nepal and one from Uganda. Nepal and Uganda case studies had also been used through mutual agreement in the R7865 review.

i) Case study selection-Bolivia

In February 2001, a project planning meeting was held in Santa Cruz, Bolivia, with the full time project researchers[5] as well as three Santa Cruz based consultants[6] with expertise in Institutional issues, livelihoods and NRM. The meeting agreed a case study methodology and a list of appropriate selection criteria for the case studies, requiring that.

- The technology/practice or methodology/process had been successful at a pilot level.
- There was evidence that its was being adopted or adapted in communities beyond those involved in the pilot stage.
- There was evidence that at least one organisation, which was not the research/initial organisation is promoting this practice.

The success of the scaling-up process in itself was not a selection criterion since it was difficult to define success. However, the key criteria demonstrated that the process has at least begun. In order to enrich the process and ensure a varied range of cases, a list of secondary criteria to be taken into consideration was also considered. These criteria were factors which might have significant impact on the process including:

- Geographic location and hence cultural context.
- Whether scaling-up was horizontal or vertical.
- Primary institutions were Government or non Government.
- Participatory or non-participatory approaches were being used.
- Scaling-up was technology or process led.
- Different levels of financial investment

[5] Tabitha Middleton from SRI, UK and Marco Antonio Roman from the Universidad de San Simon, Cochabamba.
[6] Adam Behrendt and Fernando Dick from the Grupo Nacional de Trabajo (GNT)and Katrin Linzer from Tierra Viva

- Different project time scales and where the project was in the project cycle (implementation or post project)

A series of discussions were then held with all appropriate NRM institutions in Cochabamba and with three institutions in Santa Cruz bearing these criteria in mind. The discussions consisted of an explanation of the research aims, proposed approaches and relevant institutional activities. Where the institution fitted the case study selection criteria they were invited to participate as a case study and collaborate with the project.

Four case studies were selected in the Cochabamba Department and undertaken by a UMSS with support from Silsoe Research Institute (Roman *et al*., 2001a, 2001b. 2001c, 2001d) (Annex D i). One case study was selected in the Santa Cruz Department and undertaken by *Tierra Viva* consultants (Linzer and Rojas 2001) (Annex D ii).

ii) *Case study selection-Nepal*

The one Nepal case (SSMP) was selected due to the known familiarity of the primary institution, Helvetas, a Swiss based NGO with the concept of scaling-up and the fact that there was a positive existing relationship with some of the key staff through an on-going project (R7536). This facilitated the undertaking of fieldwork in a short space of time, although considerable delays were experienced due to the serious security situation in Nepal. The work was undertaken by Nepali consultants with support from the University of Reading (Neupane *et al*., 2002) (Annex D iii). Delays in finalising this study due to a deteriorating security situation in Nepal did mean that it was not possible for SSMP to participate in the second phase of the project.

iii) *Case study selection-Uganda*

The one Uganda case was selected due to its long history of project involvement using participatory research and development approaches within the wider context of learning from farmers and promoting farmer innovation. Although the case study was in located in the hillsides areas of south-west Uganda similar approaches were being used in other semi-arid parts of Uganda, Kenya and Tanzania involving a wide variety of stakeholders. Project Outputs and activities had been well documented allowing lessons to be learnt without extensive field studies. The work was undertaken by Dan Miiro, Ministry of Agriculture, Fisheries and Animal Health (MAIFF) with collaboration from Ugandan organisations with support from Silsoe Research Institute (Ellis-Jones *et al*., 2001) (Annex D iv).

4.1.3. Identifying key issues in scaling-up

Milestone: By December 01, key issues in scaling-up identified and documented -(5 case studies in Bolivia, 1 in Nepal and 1 in Uganda)

Each case study consisted of a multiple-stakeholder analysis of the scaling-up experiences of a range of NRM technologies and practices. The approach comprised primary and secondary institutional analysis, community level and individual farmer analysis. The intention was to gain a holistic view of the factors facilitating and limiting scaling-up by taking into account the different experiences and perceptions of all the relevant stakeholder groups. The learning process was to be iterative, with the knowledge provided by each stakeholder group influencing the analysis of the perceptions of the other groups.

i) *The research questions*

Each case study consisted of a multiple-stakeholder analysis of the scaling-up experiences of a range of NRM technologies and practices. The approach comprised primary and secondary institutional analysis, community level and individual farmer analysis (Middleton *et al*., 2001a) (Annex A) . The intention was to gain a holistic view of the factors facilitating and limiting scaling-up by taking into account the different experiences and perceptions of all the relevant stakeholder groups. The learning process was to be iterative, with the knowledge provided by each stakeholder group influencing the analysis of the perceptions of the other groups.

The fundamental research question, which served as the Purpose to the project, was: "*How to accelerate and scale-up positive pilot research experiences on soil, water and land resource management"?* For the purpose of case study analysis the key research questions addressed were:

- What were the key factors facilitating and inhibiting scaling-up?
- What were the positive aspects of the process and how can these be built upon?
- What problems were experienced and how could these be overcome?
- What was the influence of people's livelihood strategies on the process, and how were the poorest targeted?

In order to tackle these key questions a list of focused research questions was drawn up. These were took account of the complex, multi faceted nature of the scaling-up process by considering the influence of political, institutional, socio-economic, technological and biophysical issues. The questions reflect the importance of understanding the dynamics between different stakeholder groups and of being aware of the extent of local participation, ownership, accountability and resource mobilisation. Since many of the key issues were inter-related, the questions were categorised under the different dimensions of scaling-up (IIRR 2000) (Table 5). These were then used as the basis for developing the participatory activities and interviews described in the following sections.

Table 5: Research questions for analysing the scaling-up process

Dimensions of scaling–up	Key issues	Key questions
Methodological/Process	Empowering Learning Social change	How were the technologies/practices/principals promoted? Who controls/drives the process? (farmers, donors, NGOs?) Was the process technology or principal led? Was the scaling-up process planned or spontaneous? Was local capacity strengthened? How? How can we measure this? How do we evaluate success and failure? What indicators should be used? Over what time scale? How should this be monitored and by whom?
Temporal	Entrance points Stages Adaptability Sustainability	At what point was the scaling-up process initiated? What influenced this? What impact did this have on the process? What were the key decision points? At what point did different stakeholders come on board? What influenced this? How long does the process realistically take (to what level)? Is the process sustainable? How do we monitor this?
Spatial/Geographical	Horizontal spread Target areas Agro-ecology Site-specificity	What is the geographical/biophysical context? Which groups were targeted? Why? What unit was considered (watershed, community, region etc)? Have NRM practices been scaled up to an extent that improves/maintains the environmental services of the watershed? Are there tangible benefits? (time scale?)
Institutional/ Organisational	Vertical and horizontal networks Stakeholders and players Catalysts Policy and legislation	What is the institutional context? What is the social context? Who are the key stakeholders? What are the relationships between these groups? How do they evolve over time? Where there are gaps/weaknesses how have /could these be addressed to improve collaboration/partnership? Who makes the decisions? How are decisions made? How are conflicts resolved? Are there compatabilities and synergies? Are there trade off mechanisms? How do national and local policy influence the process? Are there local bye-laws or traditions that influence the process? How are these enforced? Are local needs/views incorporated into policy? How was/could this be done?
Technological	Options Site specific vs. broad	What was being scaled up? What adaptations/innovations occurred?
Economic	Resources Cost benefit Markets Credit	What are the costs? What are the benefits? What resources are needed (finance, labour, materials, expertise etc)? Who supplies them? Over what time scale? Is this sustainable? How can it be made sustainable? What is the role/importance of markets?
Equity	Winners and losers Social risk Cost sharing	How are costs and benefits distributed between stakeholder groups? Are some groups excluded/poorly represented? Does the process disadvantage some stakeholders?

ii) Primary institution analysis

The 'primary institution' was defined as the institution promoting the practice or technology that it had developed. It was used as the starting point for the research, providing the main body of information on the scaling-up process that could be used as a baseline against which to compare the views of the other stakeholders. This stage involved a grey literature review, key informant interviews and an institutional workshop (Box 1).

Box 1: Primary institution analysis activities

Literature review and key informant interviews. These were be used to gain an understanding of the political, institutional, geographical, and socio-economic context of the scaling-up process for each case study. They also ensured that the project team already had some knowledge of the broad objectives, aims and strategies of the institution prior to the institutional workshop.

In some cases the literature available was very limited and most information had to be obtained from key informant interviews. Key informants were generally the co-ordinators and main staff on the project that was promoting the technology or practice in question. In some cases, the institution was unable to find the time for individual interviews and the process had to begin with the Institutional workshop.

Institutional workshops. Once background information had been gained through key informant interviews, informal workshops were planned in order to bring together the main institutional stakeholders to analyse the scaling-up process. The activities listed below were stimulated discussion and helped to visualise the scaling-up process in order to answer the key questions (Table X). The intention was also to develop a baseline of information and opinion against which to compare the findings of the subsequent research stages (with communities and secondary institutions).

- *Mapping the process (actors and linkages)* was a visualising activity which illustrated the way in which the case study project had evolved over time, showing how the stakeholders had become involved in the process and their role had evolved. The maps also showed the spread of impact over the years, indicating the number of families involved in different communities and the organisation through which these communities had been reached. The maps were used as a tool with the workshop participants to explore the research questions and to identify 'secondary institutions' for future interviews and to select communities for analysis. The mapping process proved time consuming and often too much emphasis was placed upon analysing what had occurred rather than implications for scaling-up.

- *Analysing stakeholder roles and linkage performance* was based on Ricardo Ramirez's (1997) methodology for analysing the quality/performance of linkages between different stakeholders. Since the quality of linkages between stakeholders had been highlighted as a key factor influencing scaling-up (IIRR 2000), it was considered that an analysis of linkages in each case study could identify existing limitations and success factors, thus providing the basis for discussion on how to improve the performance of stakeholder relationships. In practice these exercises had limited value often due to time constraints

- *SWOT analysis of the scaling-up experience* provided institutional stakeholders with a direct opportunity for analysing the factors, which limited and facilitated the process, as well as the opportunities for improvement and the external threats. This proved to be the most useful workshop activity, perhaps because it was more straightforward than the others, with participants able to state directly the factors which they thought were facilitating or limiting the process.

Workshops reflected institutional openness and motivation to analyse and learn from their scaling-up experiences. For example, PROSANA, a self-analytical development institution, invited many institutional stakeholders to their workshop, providing interesting debate and quality information. However, in other cases, there was less motivation and meetings were

attended by limited staff from the primary institution. This made it harder to carry out the planned activities and in some cases the meetings were key informant interviews rather than workshops. Despite these limitations, important information for analysing the factors influencing scaling-up was obtained.

iii) Community level analysis

The community level analysis explored the different factors (political, institutional, social, cultural. economic, biophysical), that influenced the spread and uptake of NRM technologies/practices within a community. More specifically, it provided farmers' perspectives on the key research questions (Table 5). The approach used for the community level analysis consisted of a workshop followed by semi-structured interviews with selected individuals (Box 2).

Box 2: Community level analysis activities

Criteria for community selection: In Bolivia communities were selected in collaboration with the primary institutions. However, community visits were made without their presence to ensure that the key informants were able to speak freely. For each case 4-6 communities were visited to ensure that a range of representative but contrasting situations was available. This included at least one community, which had been reached by a secondary organisation, as well as those recently involved in the project and those that had been involved for a number of years, other communities where uptake had been alternatively high or low;. In practice, logistical considerations, such as accessibility, played the most important role in defining the communities visited.

The number of communities visited varied between cases. In Bolivia, six communities were visited for Proyecto Laderas study, four for Prosana, three each 3 for CIFEMA and PROMIC, and 2 for CIAT in Santa Cruz. In Nepal 2 focus group discussions were held with representatives from a range of communities and in Uganda one workshop was held with representatives from three communities involved in the case study project.

Community workshops. A community stakeholder workshop involving a range of group activities was undertaken with each selected community to gain a clear perspective on NRM practices within the community and on the community's perceptions of institutional interventions. Exploring the history of NRM interventions was considered important for understanding why some had failed to spread when others had succeeded. Farmer analysis of community level institutional linkages provided a forum for discussing the relationships with different institutional stakeholders, the ways in which their modes of operation were perceived by different community members and how this affected scaling-up. A livelihoods' assessment was undertaken to understand how livelihood strategies affected farmers' ability to access, adopt or adapt new practices. The workshop also sought to understand any conflicts or problems that might limit the spread of NRM practices within the community. The activities undertaken were:

- *A transect or tour of the community lands*- to build up a picture of the extent to which villagers were under taking NRM practices in their fields and to gain an impression of extent of NRM practices at a landscape level. Particular attention was paid to the work of the case study institution. Although transects were undertaken in all the case studies, the results did not always contribute to the objective[7]. .
- *A matrix of NRM interventions* – provided a starting point for discussing the approach taken to introduce new practices into the community and the way that this was perceived. For example was the process driven by a technology or by a concept? How useful did farmers find the approach? How were the costs and benefits distributed? Were some groups excluded? What was the impact? Was the process sustainable? This was undertaken in all the cases and proved a useful activity for considering key questions.

[7] This provides an example of a participatory tool used incorrectly which can waste institutional, community and individual time.

- *Analysis of stakeholder linkage performance*- (Ramirez 1997) was planned not only to understand the limitations and strengths of different stakeholder linkages but also to compare community perceptions with those from the institutional workshops. The intention was also to use these analyses as a base for considering the potential for improving the linkage performance between stakeholders in order to facilitate scaling-up.

- *Livelihoods assessment and wealth ranking*- provided an understanding of the different livelihood strategies existing in each community and the way that these influenced people's ability to adopt new practices/technologies. Although the focus was to be on livelihood strategies rather than resource availability, the community members were asked to choose their own criteria for stratification. Attempts were to be made to find out how many families from each stratum were involved in the work of the case study project. The ranking activity was undertaken in all the case studies. However, the livelihoods analysis was developed more thoroughly in the Nepalese and Ugandan cases.

iv) Household /Family level analysis

The results of the resource ranking were used to select individuals in each category to participate in semi-structured interviews. The aim of these interviews was to:

- Gain more detailed information on different livelihood strategies
- Gain the farmers' opinion of the case study project and its dissemination strategies
- Understand in greater detail the factors which influence the ability/willingness of families from each strata to adopt, adapt and promote NRM practices
- Validate the findings from the community meetings

The criteria used to select these farmers were as follows:

- Minimum four per resource category
- Families that were involved with the project and those that were not

Interviews were undertaken in all the case studies, although in some cases the minimum number per resource category was not achieved, and there tended to be a bias towards interviewees with roles of responsibility within the community and those who had been involved in the project. This in itself was a lesson for scaling-up.

v) Secondary institutional analysis

Both the 'primary' institutional analysis and the community analysis provided opportunities to identify 'secondary' institutions involved in the scaling-up process. 'Secondary' institutions were considered to be organisations, other than the primary institution, such as donors, NGOs or local government, which played a role in the scaling-up process.

This part of the research was particularly important in understanding the vertical component of scaling-up (for example, the importance of inter-institutional alliances in increasing impact and the potential for local government policy to support scaling-up). It also provided the opportunity to validate information gained in the primary institution and community analyses. Semi structured interviews were used to explore the role and perceptions of secondary institutions involved in the scaling-up process. These were tailored to be relevant to each institution whilst bearing in mind the key research questions. This provided important insights, which were built on in the other phases of the case study analysis.

Detailed descriptions of each case study research activities can be found in the individual case study reports (Roman *et al*., 2001a, 2001b. 2001c; 2001d, Linzer and Rojas 2001; Ellis-Jones *et al*.; 2001 Neupane *et al*., 2002) (Annex D i to D iv).

4.2. "Best Option" strategies for scaling-up developed

4.2.1. Sharing knowledge

Milestone: By Feb 02, workshop proceedings available, at least 3 areas selected and tasks developed for Activity 2.2

A workshop on 'Scaling-up of successful pilot experiences in natural resource management' was held at the end of the first phase of the project in Cochabamba (Roman *et al*., 2002). 38 participants representing a range of organisations whose work related to NRM in Bolivia attended the workshop. These included the *Prefectura* and *Municipios* (Departmental and Local Government), those organisations that had participated in the case studies, local donors and other R&D organisations. The workshop had three main outputs:

- Identification of opportunities and constraints for successful scaling-up based on further analysis of the seven case studies. Further analysis (summarised in Annex C) was based on the use of the Gündel, *et al*, (2001) framework.
- Identification of easily measurable success indicators for the monitoring and evaluation of the scaling-up process.
- Development of draft institutional scaling-up plans for testing out 'activities to build on the opportunities and minimise the constraints.

The workshop was the key activity linking the 'case study phase' of the project, from which initial scaling-up lessons were drawn, to the 'action research phase', where key lessons were developed into elements of institutional scaling-up strategies, implemented and then monitored. Since most of the case study lessons were related to institutional and vertical scaling-up issues, it was decided that the project should no longer aim to select 'appropriate (geographical) areas' for action research but rather to identify motivated organisations interested in collaborating in the development and implementation of scaling-up plans. Other important issues arising during the workshop included:

- Scaling-up was a new and unfamiliar concept for most of the participating institutions. Although the concept was explained during the workshop, it appeared that many participants still had difficulty grasping its significance. As a result, it was considered important to follow up with more in depth exploration of the concept with representatives from NRM and development institutions.
- Close collaboration with the institutions selected for the second phase was seen to be vital to ensure motivation and institutional buy-in for the scaling-up plans. The period for monitoring and evaluation of the strategies implemented was considered by most participants to be too short for plans to be implemented and any meaningful lessons drawn.

Civil unrest in Cochabamba during the workshop meant cancellation of the third and final day. As a result the development of work plans (planned for the final day) was fitted into the evening of the second day. This meant that the depth of discussion and analysis of the plans was reduced. However, it was agreed that research staff would follow up with meetings with the interested organisations to further develop their plans. These plans were to provide the basis for the second phase of the project during which the key elements of scaling-up strategies were to be implemented with support from R7866 and any changes in the scaling-up process were to be monitored.

At the end of the workshop, CIFEMA PROLADE, PROMIC and PROSANA had been identified as key collaborators for the second phase. Their key scaling-up approaches had been prioritised within draft work plans and draft Indicators for the monitoring and evaluation of the process had been developed.

4.2.2. Processes for scaling-up developed, refined and taken up.

Milestone: By Dec 02, strengths and weaknesses of best options, findings evaluated and results reported

The development of '**scaling-up plans'** with collaborating institutions was identified as the most appropriate approach for testing and refining scaling-up options based on the lessons learnt from the case studies. The activities included in these plans were intended either to build upon the opportunities, identified in the case studies, which facilitated the scaling-up process, or to overcome constraints, which limited the process. It was envisaged that the

lessons learnt from the case studies could be validated and developed into potentially successful **strategies** for scaling-up through the implementation and monitoring of a range of 'scaling-up activities' with selected collaborating institutions, building on the initial scaling-up plans drawn up with as part of the knowledge sharing workshop held at the end of the first phase of the project.

Immediately following the workshop, the project team intended to visit each collaborating institution in order to further develop the scaling-up plans. This was considered to be the start of 'phase 2', the action research phase in which key lessons from the case studies would be incorporated into institutional strategies, implemented and monitored. Unfortunately, health problems prevented the key UK researcher from being present in Bolivia at this time. This caused some delay in activity since UMSS lacked the capacity to effectively undertake this work, without in-country support from SRI. To overcome this problem, a GNT consultant provided conceptual and practical support to UMSS in the development of institutional plans (Behrendt, 2002). This was undertaken between March and June 2002.

In response to the Behrendt recommendations, draft institutional scaling-up plans were revised with each institution to assure they matched their initial purposes. The draft plans consisted of five main sections, which included the main scaling-up goal, strategies for achieving these goals, and indicators for measuring success. During the revision of the plans with each partner institution, major emphasis was placed on defining exact goals and objectives for scaling-up, that is, what the organisation wished to scale up, where they wished to do so and what they expected to achieve. In previous instances more emphasis had been placed upon identifying the strategies for scaling-up rather than the actual expected outcomes. Therefore, time was dedicated to defining outcomes and indicators using more concrete language, such as X more communities reached, or new zones entered, or additional technology sold etc. Emphasis was also placed on identifying clear objectives for vertical scaling-up, including identifying partners, key alliances, policies to be influenced and capacity building requirements

Indicators for monitoring both the process of scaling-up as well as final impact were identified. These impact indicators were pitched at the landscape and human development levels. While most institutions agreed that these should be the kinds of impacts, which should be aimed for there was much less certainty as to how such indicators could be measured and how to attribute causality to project interventions.

While the visits to each institution were undertaken, the development and ownership of the plans proved more difficult than might have been expected. This was due to a number of concerns including the work loads of each institution and difficulties with sequencing and aligning the scaling-up plans to already existing priorities, goals, objectives and activities of each organisation so as to avoid seeing the scaling-up strategy as a mere tag-on exercise with little hope of being implemented.

At the same time the Bolivian Government and donors were making major policy changes in funding research and development activities. Donors were moving away from funding a series of free-standing projects to strategic level support to define and implement effective poverty reduction strategies (DFID, 2000). This included a number of key themes: enhancing livelihoods opportunities, human development, social protection and integration and institutional development. This meant that key areas of donor support were likely to focus on representative community organisations and contributing to a basket fund for Bolivia's new system for a demand driven agricultural research and technology transfer system (SIBTA) and its associated foundations.

UMSS's role in Phase two of the project needed to adapt to the demands of these policy changes and facilitate the development of the new scaling-up work plans working with the different institutions to continue stimulating their interest, and ownership of the planning process. In practice this proved problematic with UMSS finding it difficult to adjust to this change. The intention was that UMSS would provide regular updates and reports of meetings with the different organisations in the development and implementation of their

work plans as well as the design and organisation of different capacity building events. As details of the new policy emerged, UMSS gave priority attention to the development of supporting actions, which had been raised by collaborating institutions, in particular, the 'NRM *Feria*', NRM Platform and a "Funding" Workshop where the new policy could be addressed. Although these were positive and interesting activities, that were required to build capacity to develop and implement institutional plans, limited follow up was provided to the collaborating organisations in the development, implementation and monitoring of their individual plans until SRI was able to reinforce the UMSS team in September 2002. This comprised support from an additional UK recruited researcher based full time in Bolivia[8] to assist with:

- Building ownership and institutionalise a scaling-up process between partners.
- Harmonising scaling-up plans and strategies within the normal planning and operations of the partner organisations, through encouraging increased collaboration and alliance building.
- Providing clearly targeted and well planned training and exchange opportunities without becoming too broad or getting off target in order to increase capacity
- Providing support in monitoring, follow up and evaluation of the process.
- Generating long-term capacity to monitor and review the different strategies being implemented.

Building ownership and institutionalising the scaling-up process required two main actions on the part of the Bolivian research team. Firstly, it required finalisation of the scaling-up plans with the collaborating institutions, in response to the Behrendt recommendations. Secondly it required consolidating institutional understanding of the concept of scaling-up and its significance in order to build motivation and ensure that these plans were considered useful and important. Institutions therefore revised their scaling-up plans to ensure that they were relevant and achievable within their existing institutional frameworks

The existing draft plans consisted of five main sections, which included the main scaling-up goal, strategies for achieving these goals, and indicators for measuring success. The main weaknesses of these plans related to poor understanding of the implications of the multiple dimensions of scaling-up. It was within this context that the plans were modified with a newly structured framework (Box 3).

[8] Notwithstanding the resignation of the main UMSS researcher shortly after this, the additional support was a major factor in ensuring project outputs were delivered.

Box 3: Components of scaling-up plans

A clear scaling-up goal, indicating what an institution will have achieved when scaling-up has occurred [e.g. poverty reduction]. In the draft plans, focus remained on 'disseminating technology or practice', rather than on the benefits that widespread uptake would achieve. Although poverty reduction is often the main goal behind most NRM institution's agendas, institutions did not measure their successes in terms of poverty reduction, but on the spread of their practices or technologies.

A scaling-up objective that would result in the fulfilment of the goal, for example institution X's goal could be fulfilled through 'the scaling-up of technology x in y communities and municipalities'. The premise being that X technology will lead to improved economic and environmental conditions.

Strategies identified from activities not yet undertaken within the list of opportunities and constraints identified in Phase I.

Activities to strengthen the chosen strategic elements. These were developed from the facilitating and limiting factors identified in the case studies. Several activities were identified by each collaborating institution to fit in realistically with their existing framework and capabilities.

Relevant measurable indicators for the monitoring and evaluation of activities. These were designed to measure the extent to which scaling-up was occurring as a result of planned activities. Indicators were developed to measure each step's success in fulfilling its objectives (Table 6)

Table 6: Framework for Institutional scaling-up plans

Scaling-up goal	**Example**	**Indicator**	**Example**
The institution will have achieved scaling-up when […] occurs	Institution X will have achieved scaling-up when wide scale adoption of soil and water conservation practices result in measurable economic and environmental improvements for hillside farmers	Measuring the impact of the objective? to the main goal	Number of families benefited through: -Increase in availability of fodder -Increase in crop production - Increase in availability of water
Objective			
objectives identified for achieving the goal	Institution X's objectives for fulfilling its goal is the scaling-up of technology X in y communities and municipalities	Measuring the impact of the factor to the objective	Number of institutions disseminating and implementing X technologies
Strategies			
Best options for achieving the objective	Among the best options chosen by institution X, 'involving other public and private institutions in the diffusion of X technologies' was one of them	Measuring the impact of the activities on achieving the factor	Amount of knowledge and interest gained in the workshop
Activities			
Chosen to fulfil each of the best options	Organising experience sharing and exchange workshops was chosen as a main activity for achieving the output	Milestones for ensuring that the activities are being undertaken	X workshops have taken place

Once the plans were better structured, the next step consisted of building ownership and institutionalisation of the plans. Given the logistical problems experienced at the start of the second phase, institutional commitment was low. Building ownership meant the project needed to be clear about what it was offering so that collaborating institutions could identify costs and benefits associated with the implementation of the plans. A number of activities were undertaken to support this (Box 4).

Box 4: Building ownership of scaling-up plans

- **Harmonising the plans with collaborating institutions existing plans** to ensure that they were not merely implementing the project's ideas without commitment on their part. It was within this context that each institution's strengths and weaknesses were identified and scaling-up strategies tailored to their differing situations. The main challenge of this activity was to successfully sequence and align the scaling-up plans with the already existing priorities, goals, objectives and activities of each organisation.

- **Identifying the resources needed** for implementing the scaling-up activities identified in each plan. As well as identifying the benefits that would accrue to each institution through scaling-up.

- **Building capacity in key areas** considered pivotal for strengthening the scaling-up process. The emphasis of this activity was on identifying clear objectives for vertical scaling-up, giving guidance on role definitions, while generating long-term capacity in the scaling-up process. Institutions agreed that the availability of on going opportunities for relevant capacity building would greatly facilitate the scaling-up process.

- **Production of a 'Scaling-up kit'** for each institution comprising:

- *An introduction to the conceptual framework*

- *A detailed explanation of the scaling-up plan*
- *Explanation of how the scaling-up plans fitted with the already existing priorities, goals, objectives and activities*
- *Statement of the main benefits that could be obtained from the plans as envisioned by the institution*
- *Three types of measurable indicators for measuring impact at the three levels explained earlier in the plans*

- **Disseminating scaling-up guides** through one-day promotional discussions with each institution's entire team. These included power point presentations, using supporting materials such as the video, leaflets and a calendar.

Activities identified by each institution to facilitate their scaling-up plans largely related to vertical scaling-up. It was within this context that the project focused on building capacity and validating a few of the key issues (summarised in Table 7 and detailed in Annexes F and G).

Table 7: Activities included in institution scaling-up plans

Activities	CIFEMA	PROLADE	PROMIC	PROSANA
Vertical scaling-up	√	√	√	O√
Integrating R&D	O		O	O
Improving accountability	√	√		
Seeking innovative funding mechanisms	√	√	√	√
Undertaking situational analysis	O	O	O	O
Improving collaboration, networking and alliances	√	√	O√	O√
Building capacity	√	√	√	√
Improving community approaches	O√	O	O	O√
Ensuring sustainability		√		√
Assessing impact			√	O√

Notes: √ = New activity undertaken as a result of this project, O = Activity, already undertaken in work plans

4.2.3. Processes through the life of the project documented and evaluated

Milestone: By Dec 02, processes documented and evaluated to provide guidelines for improved scaling-up practices

The implementation of planned activities meant that a process of scaling-up had been instigated within institutions (Table 8). However given the limited time available to the project, it was not possible to instigate a similar process with farmers and community organisations, nor was it possible to monitor the complete implementation of institutional plans and their impact. However the project was able to evaluate the effectiveness of the supporting actions taken.

Since most institutions did not have a functioning system for assessing the impact of their activities, the strategy for **monitoring and evaluation** of the processes created great interest. Of particular interest was the change from demonstrating impact from proving that planned activities had been undertaken (and quantified), to one where the new indicators measured the impact of each activity on the final scaling-up goal, and measuring changes over time. However given the time constraint and the difficulty in building ownership among the collaborating institutions it was not possible to generate long-term capacity for monitoring the different strategies being implemented. M&E indicators developed within the plans were divided into three categories, 1) monitoring activities in achieving output objectives; 2)monitoring of outputs on their efficacy for fulfilling the purpose; and, 3) the evaluation of change in NR status.

Monitoring was undertaken through institutional interview to establish, firstly, the extent to which the concept of scaling-up was understood and to establish the requirements for capacity building and, secondly, the extent to which plans were being implemented. This approach proved useful as it measured the trickle down effects of an activity from the institutional level, to the community and landscape level.

In order to identify the benefits from the NRM *Feria* and Funding Workshop, interviews were held with the different stakeholders to establish the extent to which the workshop's objectives had been achieved. If the workshop had had an impact at the institutional level, that impact was followed to the local level and, if there was an impact at the local level, then the landscape level impact was measured.

Table 8: Main approaches undertaken in Phase 2 in support of scaling-up

Research objective /approach	Strategies	Supporting activities	Achievements	Further issues identified	Future impact
Implementation and validation of key strategies					
Development of scaling-up plans	Vertical Scaling-up	*3 dissemination workshops* aimed at farmers; fieldworkers and senior staff Dissemination materials: -Scaling-up manual -Scaling-up kit -Video	Validation of key issues by farmers and field workers Validation of Scaling-up strategy by senior staff Communication of the scaling-up concept and strategy Increased ownership of the plans by institutions Better understanding of the benefits that would accrue to them if the strategy is implemented	For workshops to success consider the following: -who are we working with? -what is the base upon which their capacity will be built? -which approach will be relevant to their existing knowledge and skills? Used of communication techniques and tools adapted to the target's group vision of reality Special attention given to the selection of participants	Institutions in Bolivia make use of the scaling-up strategy The strategy allows them to incorporate key issues identified for scaling-up successful pilot NRM practices Wider impact of NRM practices and technologies
	Seeking innovative funding mechanisms	Workshop on funding	Increased institutional understanding of existing funding opportunities Development of practical methodologies for improved used of funding opportunities (data base with last up-dated information; up-dated funding information booklet) Lobbying of funding bodies for an increased recognition of NRM in poverty alleviation	Absence of key donors showed still top-down and donor-driven nature of development interventions Need for a lobbying body capable of dialogue and influence at policy decision-making levels	Funding bodies and governmental authorities canalise more resources in the NRM sector Institutions have readier access to funding opportunities Institutions are able to lobby funding bodies so research becomes demand lead
	Improving collaboration, networking and alliances	Development of a NRM Platform	Assumed responsibilities by members Platform became operative Five year plans developed Activities instigated for achieving the following issues: capacity building; lobbying to move NRM up the political agenda; inter-institutional collaboration and development of a data base	Importance of a key person driving the process Motivation of members until benefits are evident Involvement of a recognised body such as the University for: giving reputation to the body, providing a stable base, funding and providing institutional linkages at the national level	Institutions and civil society are empowered to influence policies at local, national and wider decision-making levels Increased sharing of experiences Increased accountability of R&D institutions towards the targeted populations
Building capacity of local professionals to promote scaling-up					
Short term training workshops on: Priority themes identified by collaborating institutions	Building capacity to scale up at an institutional and communal level	*training workshops on*: -Innovative funding strategies -Functional linkages with the municipal government and grassroots organisations 'NRM fair' -Strategies for involvement in national networks	Workshops provided an interactive environment for raising questions and share experiences Improves funding strategies Increased knowledge on how to benefit from political and institutional opportunities Increased community and municipal awareness of the significance of NRM issues Identification of national networks, alliances built between those and the Platform	Events like NRM fair should be held in rural areas Building capacity is limited by lack of financial resources and lack of expertise	NR degradation is prioritised in communities' municipal local agendas Communities make better use of NR Livelihoods improvement in environmental and economic terms

4.3. Strengthened capability of local professionals to promote scaling-up

4.3.1. Capacity building workshops

Milestone: By Sept 02 (Q2 Y2) workshops held and proceedings available

Following from the case study findings, the action research phase of the project placed much of its emphasis on capacity building at different levels. Given the project's time constraint, the focus was on short-term training, mainly delivered through workshops. Those areas recognised by the institutions as pivotal for scaling-up and in need of further consideration were identified and appropriate training workshops delivered. The main issues tackled were: developing functional linkages with the municipal government and grassroots organisations, strategies for effective inter-institutional experience sharing and involvement in national networks, seeking innovative funding strategies and improving strategic alliances and collaboration

i) *Seeking/introducing innovative funding mechanisms.*

Due to the rapidly changing Government and donor policies related to NRM research and development, a workshop on funding, bringing together donors and NRM institutions was considered to be the most effective approach for dealing with these issues. The workshop main aims were: to increase NRM institution's knowledge and understanding of existing funding opportunities in Bolivia and to develop practical methodologies for 'making the best' of these. Lobbying funding bodies to increase their recognition of the importance of NRM in poverty alleviation and encourage them to respond to the opportunities and constraints identified by NRM institutions. The extent to which the workshop objectives were met was limited by the absence of key donors, who failed to attend at the last moment. This highlighted the need for a lobbying body, -such as the platform- capable of dialogue and influence at the policy and decision-making level.

ii) *Improving strategic alliances and collaboration - The NRM Platform.*

Understanding how best to manage alliances and partnerships between actors proved to be one of the greatest challenges facing organisations committed to scaling-up in the field of NRM. It was within this context that the action research phase of the project placed much emphasis on helping participating organisations to plan and manage effective collaboration between actors. One of the main approaches taken was the development of a NRM platform. This platform was developed by the participating organisations and had four main aims, which were in-keeping with the lessons, learnt from the case studies:

- Providing relevant capacity building.
- Lobbying to move NRM up the political agenda.
- Co-ordinating more effective inter-institutional collaboration.
- Providing a database of relevant information on topics such as funding, existing NRM research, and current development projects.

In general the main advantage of this centralised forum was that it allowed different stakeholders to share comparative advantages and provided a single accessible location for centralising relevant information. The Platform was structured into three main sectors (Box 6):

Box 6: NRM Platform main sectors

Policy and regulations

The main objectives were the promotion and consolidation of the platform; co-ordination with other entities and institutions; research and systematisation of relevant up to date information in areas such as policy and funding; creating awareness raising and capacity building spaces within public spheres; lobbying at policy level.

Research and (systematisation)

The main objectives were identifying and processing supply and demand stakeholders for technologies, practices, and methodologies, as well as identification of unsatisfied demands.

Projects
The main objective was strengthening local capabilities in the sustainable use of natural resources.

Roles were agreed between participants and responsibilities allocated to each collaborating organisation with two responsible for each sector[9]. However, the participating organisations were unsure of how to proceed in order to make the platform operative. In response to this problem, the project supported a workshop on how to make the platform operative, making it into a recognised body, with power to influence decision making processes relevant to NRM at the local, municipal and national level and to benefit institutions as well as farmers through sustainable NRM alternatives".

iii) *Developing functional linkages with local government and community organisations*
For this purpose a 'NRM *Feria*' was held. The '*feria*' had several interrelated objectives, aimed at increasing stakeholder awareness of how to benefit from political and institutional opportunities. The day included workshops on how to develop community demands into projects and how to incorporate these into the legally binding municipal plans. Stalls and practical demonstrations by NRM organisations were also held with the intention of increasing community and municipal awareness of the significance of NRM issues and the range of technologies and practices available for tackling them.

iv) *Involvement in national networks.*
For this purpose, one of the collaborating institutions (Pusisuyo in collaboration with GNT) took the leadership and organised an event around a pivotal theme in Bolivia's NRM sector: natural protected areas. The workshop reviewed relevant national networks related to NRM and explored ways to use them for lobbying policy and decision makers on the need to improve NRM for poverty reduction and livelihood betterment. Participants included the collaborating institutions, community groups affected by NRM in protected areas and leaders from the different networks identified.

4.3.2. Dissemination material developed
Milestone: From July 02, most appropriate form of dissemination material assessed, developed and distributed.

A range of promotion materials were produced and distributed to relevant actors. These materials were developed in consultation with the collaborating organisations in order to ensure that they were useful. These materials included:

i) *A "scaling-up kit" for the development of a practical work plan (Annex M).*

ii) *A manual containing practical advice on the main scaling-up issues (Pequeña Guía).*
The manual (Annex L) was designed as a practical tool that institutions could use for undertaken a critical analysis of the manner in which projects are executed. The manual explained briefly the scaling-up concept within its multiple dimensions. Furthermore it introduced the conceptual framework, presented as a practical tool for identifying best option strategies required for a successful scaling-up process. The framework, following from the broad flow of a project design, was divided into three main phases: pre-project, implementation and post-project. Each phase systematised the straties identified in the first phase of the project. Each strategy was briefly outlined along with some useful tips on activities to be undertaken as well a list of experienced institutions in each strategy area.

[9] Within each of these sectors, qualitative and quantitative indicators were developed along with the main activities for achieving the goals, verifiable indicators, institutional responsibilities with target dates

iii) *A video on farmers' perceptions of the requirements for scaling-up.*

The video (PROAMP 2002b) expressed the concerns of Bolivian farmers with regards to NRM projects, which in general have not generated the expected impacts. Their views validated many of the findings made in the first phase. In the video the scaling-up strategy was presented as a tool that farmers could use for increasing the accountability of external agents to them, (allowing targeted groups to ensure that institutions were being responsive to their needs). The video was disseminated through the institutions and was broadcast on a local TV channel.

iv) *A calendar explaining the scaling-up concept.*

v) *Scaling-up leaflets (Annex K)*

These included a summary of the scaling-up concept, its context and implications; main contacts and a brief introduction to the NRM Platform.

4.3.3. New knowledge promoted

Milestone: From Dec 02, research Outputs published in scientific journals

Research Outputs were made available through a presentation made at the ICIMOD-NRSP Nepal Workshop in February and subsequent paper (Middleton *et al*., 2003a) (Annex N) and Best Practice Guidelines (Middleton *et al*., 2003b) (Annex B)

In addition three dissemination workshops were undertaken for the dissemination of: the Gündel *et al*., 2001 document that was translated into Spanish by the project, as well as the synthesis report findings (Middleton *et al*., 2002). Each workshop was tailored to the needs of the different target groups. The main objectives of the workshops were:

- Introducing the scaling-up concept within all its dimensions and implications
- Making participants reflect on the importance of a sustainable use of the NR for improved livelihoods
- Introducing the scaling-up strategy
- Showing and validating the benefits of such strategy
- Building capacity on the use of this strategy
- Creating a space of reciprocal learning and understanding between different stakeholders

i) *Farmer and community leaders;*

The aim of the workshop was to strengthen institutional capacity of Bolivian farmers, through a better understanding of the scaling-up concept in the context of NRM. The scaling-up strategy was presented as a tool to ensure that institutions were accountable to local communities. The findings of the first phase were presented and scaling-up options discussed.

ii) *NGO field staff*

The aim of the workshop was to strengthen institutional capacity of field workers, through a better understanding of the scaling-up concept in the context of NRM. In this case the strategy was presented again as a tool to analyse the efficiency of projects in generating wider impact. In their case the findings from the synthesis report needed little variation. Again, scaling-up options were discussed with them and the usefulness of the strategy demonstrated.

iii) *Directors and senior staff from funding bodies and development organisations*

The aim of the workshop was to present the main project results, the different scaling-up options together with the views and lessons learnt from farmers, community leaders and field workers; the conceptual framework, and the whole strategy as a useful mechanism for increasing impact. The focus was on raising awareness among participants on the importance of making the strategy a requirement for NRM R&D projects.

In all the workshops two types of evaluation forms were undertaken, one during the presentations where participants gave their views on the scaling-up options while the presentation took place. The other consisted of personal evaluations from the overall workshop. Workshop proceedings were distributed within a week of the event-taking place (de la Fuente *et al.*, 2002a, 2002b and 2003). In general proceedings proved useful to the collaborating institutions that used the findings as a way of improving their approaches to scaling-up.

5. ENVIRONMENTAL ASSESSMENT

An environmental assessment was not a requirement at the time that the project memorandum was submitted

Significant environmental impacts of research activities

The research activities had no immediate environmental impact. However the increased awareness and initiation by collaborating institutions of the activities for scaling-up is likely to address issues of land degradation.

Significant environmental impacts of application of research findings

Application of research results by target institutions should lead to accelerated adoption and adaptation of appropriate and improved soil management practices at a community and landscape level. This should lead to reduced soil loss and improved soil fertility on existing cultivated areas. This should in turn lead to reduced deforestation of increasingly marginal areas.

Evidence of environmental impact

No evidence is yet available as collaborating institutions are in an early stage of using the lessons from this project.

Follow up actions recommended

The Best Practice Guidelines for Scaling-up produced by this project require to be translated into Spanish and both English and Spanish versions distributed to target institutions.

6. CONTRIBUTION OF OUTPUTS TO DEVELOPMENTAL IMPACT

Include how the outputs will contribute towards DFID's developmental goals. The identified promotion pathways to target institutions and beneficiaries. What follow up action/research is necessary to promote the findings of the work to achieve their development benefit? This should include a list of publications, plans for further dissemination, as appropriate. For projects aimed at developing a device, material or process specify:

6.1. Contribution towards NRSP's development Goal

NRSP and Project Goal: Livelihoods of poor people improved through sustainably enhanced production and productivity
NRSP OVI Measure of change in capabilities, assets and activities

Because of the dominant role of agriculture in many hillside areas, development strategies that aim to eliminate poverty and/or improve rural livelihoods need to rely heavily on agriculturally led growth based on sustainable productivity gains. As such sustainable, appropriate and viable natural resource management strategies implemented at a community or landscape level are urgently needed to improve rural livelihoods.

The knowledge obtained during this project has shown that many successful research projects have focused primarily on dissemination activities associated with horizontal scaling-up. Even this has largely been regarded as a post project activity with little or no attention paid to the vertical component during the project. For this reason such projects are likely to remain isolated within the local context, having little chance of being further supported either by local or donor funds in a vertical scaling-up process.

This project identified a need to give attention to the vertical aspects, in particular improving the institutional capacity of collaborating institutions to support local communities seeking to improve their NRM practices at a wider community and landscape level. These lessons have been incorporated into scaling-up plans in Bolivia and are being implemented. The benefits to the communities with which they are working have not yet been ascertained.

6.2. Contribution towards achieving NRSP Purpose

NRSP Purpose: Benefits for poor people in target countries generated by applications of new knowledge to natural resources management in hillside production systems

OVI: By 2005 evidence of application of research products to benefit target communities by achieving one or more of:

- Sustainable production increase
- Less variable production
- Productivity increase
- Improved employment (numbers, income, quality)
- Improved access by poor people to RNR outputs

The ultimate beneficiaries of the work undertaken by this project are rural communities, individual households and their families, through identification of processes, by which, successful NRM pilot experiences can be scaled up. This should contribute to reducing the time between technology development and its widespread use by farmers, so that more people can benefit more quickly. At the time of project completion evidence was not available of productivity increases, increased employment or increased access by poor people to RNR Outputs. However the lessons learnt during the project are being implemented at institutional level. Monitoring for a further 2-3 years would be required to ascertain if NRSP Purpose has been achieved.

6.3. Assessment of project impact

Project Purpose Ways to accelerate and upscale positive pilot research experiences on soil, water and land resource management to the wider community developed and promoted.

Project OVIs By 2002/3, local professionals in NGOs and research organisations use these processes and

- Routinely make land management evaluations taking into account household and community assets, as well as production benefits in different parts of the landscape.
- Integrate new methods into policy decision-making processes.
- Use the processes and strategies in training courses.
- By 2002/3, local administrations (*municipios*) accept the contribution these processes can provide for scaling-up

i) <u>On intermediate beneficiaries and local professionals</u>

The intermediate beneficiaries are local professionals in public and private sector institutions who have gained a better understanding of the concepts and principles of scaling-up and are considering these within the wider political, social and economic environment in which they are working. The main target institutions have included:

- NGOs who are working with local communities on resource conservation and promoting production increasing technologies. In Bolivia, this included NGOs and development projects particularly CIFEMA, PROLADE, PROSANA and PROMIC and the local NGOs with which they were working.
- Local research institutions (especially the University of San Simón in Bolivia, with whom the project has been closely collaborating). In Uganda, this has included NARO and MAAIFF and in Nepal, NARC and Helvetas-SSMP.
- Representative farmer and community organisations such as local *Sindicatos* in Bolivia
- Municipalities or local/district government who in many countries have recently been given decentralised responsibility and sometimes resources to promote local development initiatives.
- International research centres concerned with hillsides areas. This has initially included ICIMOD in Asia, ICRAF in East Africa and CIAT in Latin America.

Outputs have been made available to collaborating institutions and stakeholders through close involvement during the research process. It will be necessary to ensure that these institutions receive final versions of the Best Practice Guidelines on scaling-up.

Guidelines are already in use in Bolivia[10] for scaling-up pilot research experiences and therefore improving the impact of ongoing future NR research projects with which they are involved. Developing impact pathways with intermediate targets with appropriate indicators has helped to ensure that realistic strategies for scaling-up have been developed. This

[10] . Training courses provided at UMSS already include elements of the Guidelines

means that local institutions supported by local Government bodies should be better able to deliver services to local communities in addressing priority community constraints and providing a greater range of options for maintaining or improving management of their natural resources. This reinforces Bolivian Government policy and ensures that local administration (*municipios*) accept the contribution these processes can make to delivering wider benefits.

ii) *On the thinking of research partners and stakeholders in the project*

Partners and stakeholders working on NRM research projects are now more aware that research they undertake needs to be relevant and contribute to local, national and regional development priorities in response to local demand. We anticipate that project partners and stakeholders will use the project findings to plan their scaling-up strategies in ways that are appropriate to their local conditions. Some of the scaling-up plans are already in implementation in Bolivia. However some support will need to be provided to ensure that the process approach is monitored and adapted to fit local circumstances. This will be particularly important for monitoring and evaluation of the collaborating institutions success in achieving the longer-term benefits of the processes implemented, if optimum learning is to be achieved.

iii) *On Policy approaches*

Use of the Guidelines is particularly important as many donors including DFID are now moving from supporting free-standing projects in different sectors (including natural resources) to providing strategic level support for recipient country efforts to define and implement effective poverty reduction strategies. For instance in Bolivia (DFID, 2000) this strategy has already embraced a number of key themes many of which are relevant to scaling-up. These include enhancing livelihood opportunities, human development, social protection, social integration and institutional development and have given emphasis to

- The use of participatory approaches to poor peoples' empowerment, including support to networks and organisations that are seeking to enhance such approaches, particularly those working directly with the poor and excluded
- Increasing incomes for the poor through enhanced competitiveness and productivity, based on improved enabling frameworks, strengthened capacities and adequate social protection.
- Supporting representative community organisations, which represent the views or requirements of small producers.
- Contributing to a basket fund for sector wide financial support to Bolivia's new system for a demand driven agricultural research and technology transfer system (SIBTA) and its associated foundations

National planners and donors will need to ensure that:

- Longer pre-project planing phases are planned to allow scaling-up activities to be planned and initiated. This could be funded as separate activities or undertaken by R&D institutions before projects are proposed to funders.
- There are close links with regional development programmes and close co-ordination with donors in line with Regional, National and Local priorities.
- Research and development activities are closely linked with long term funding commitments, tied to intermediate targets
- Capacity building, multi-disciplinary partnership development and institutionalisation are given high priority within integrated research and development approaches.
- Funds for monitoring, evaluation and impact assessment systems will need to be substantially increased.

The Outputs of this project are therefore particularly relevant to DFID;s development goals in Bolivia.

iv) *On Techniques (that people can use covering strategies of men and women)*

The project underestimated the need for capacity building needed at both institutional and community level within the research process. If scaling-up plans are to be realistic, ownership and empowerment at all levels remain key priorities. This requires improved facilitating skills on the part of primary institutions to ensure that both secondary institutions

and community leaders actively participate in the process and do not become silent observers. At the same time leadership skills and roles need to be developed to ensure accountability at all levels.

Clearly the use of participatory approaches remains central to achieving local ownership. Unfortunately researchers all too often subscribe to use of participatory methods, but fail to achieve the reality in pursuit of their own or perceived donor agendas. Participatory techniques can be time consuming for institutions, communities and individuals. This necessitates careful consideration of each activity to ensure it does in fact contribute to improved understanding, seeking and testing of solutions and ultimate scaling-up.

7. PUBLICATIONS AND OTHER COMMUNICATION MATERIALS

Journal articles (pending publication)

Middleton, T., de la Fuente, T. and Ellis-Jones, J. (in press). Scaling-up successful pilot experiences in natural resource management: Lessons from Bolivia. *Paper presented at a Workshop held in Kathmandu, Nepal,* 24-25th February 2003.

Extension leaflets, brochures, policy briefs and posters

de la Fuente, T., Sanchez, J., y Quinteros, W. 2003. *Pequena Guia sobre la Ampliacion. Adaptandose a los nuevos tiempos.* Manual preparado por el eqipo PROAMP. Enero de 2003.

PROAMP. 2002a. *Estrategias de Amplicaión papra la investigacion en el manejo de recursos naturales*. Preparado por el eqipo PROAMP, 2002.

PROAMP. 2002b. *Feria de oferta tecnologica para la conservacion de los recursos naturales.* Preparado por el eqipo PROAMP. 2002.

Manuals and Guidelines

Middleton, T., de la Fuente, T., Ellis Jones, J., Sanchez, J., Quinteros, W., Garforth, C., and Goldey, P. 2003. *Guidelines for scaling-up*. Silsoe Research Institute.

Reports and data records

Citation for FTR

Middleton T., de la Fuente and Ellis-Jones, J. 2003. *R7866, Scaling-up field level pilot research experiences Final Technical Report*

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9. PROJECT LOGICAL FRAMEWORK

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
Goal			
Improved hillside farming strategies relevant to the needs of marginal farmers developed and promoted.	By 2003, this new knowledge incorporated into strategies to increase the local availability of food and/or fodder supplies and adopted by target institutions in two targeted countries.	- Reviews by programme manager. - Reports of research team and collaborating/target institutions. - Dissemination products - Local national and international statistical data - Data collected and collated by programme manager.	Target beneficiaries adopt and promote systems and approaches. Enabling environment exists. Budgets and programmes of target institutions are sufficient and well managed.
Purpose			
Ways to accelerate and upscale positive pilot research experiences on soil, water and land resource management to the wider community developed and promoted. This will give emphasis to the processes required	By 2002/3, local professionals in NGOs and research organisations use these processes and - Routinely make land management evaluations taking into account household and community assets, as well as production benefits in different parts of the landscape. - Integrate new methods into policy decision-making processes. - Use the processes and strategies in training courses. - By 2002, local administrations (*municipios*) accept the contribution these processes can provide for scaling-up	- Reviews by Programme manager. - Organisational plans of NGOs and research organisations. - Reports of methods in use by target institutions. - Funding requests incorporating the use of the processes.	Target beneficiaries adopt methods and approaches. Budgets and programmes of target institutions are sufficient and well managed.
Outputs			
1. Processes for scaling-up successful pilot NRM management and technologies at community and individual level analysed and understood with key constraint and success factors identified. 2. "Best Option Strategies" for scaling-up developed and tested through participatory action research. 3. Strengthened capability of local professionals in collaborating institutions to promote scaling-up. *(promotion and dissemination activities)*	By December 2001, processes evaluated and key opportunities and constraint documented. By June 2002, institutions in at least three target sites in Bolivia and at least one other country are actively using the options in a participatory manner. From June 2002, dissemination materials for use jointly prepared by UK and overseas partners From December 2001, new knowledge promoted and disseminated to research and development professionals in both collaborating and target institutions.	Quarterly and annual project reports. Research programme reports Peer reviewed publications Dissemination material	Lack of political support for target institutions and leadership changes willingness to utilise new approaches and strategies Collaborating institutions have the resources to use these Outputs

Activities	Milestones	
Processes of scaling-up identified 1.1 Scope of review agreed with HS1.3.1b	By Nov 00 , scope of review agreed	Institutional stability at UMSS-Bolivia and collaborating institutions in Nepal and Uganda
1.2 Selection of case studies through institutional review and discussions with key stakeholders.	By March 2001 case studies selected	All NR user groups within the watershed/landscape participate in the research activities
1.3 In each case study processes of NRM innovation and scaling-up from the individual, community, NGO and researcher perspectives analysed and evaluated.	By December 01) key issues in scaling-up identified and documented -(5 in Bolivia, 1 in Nepal and 1 in Uganda)	Farmer groups and local government supports the collaboration., recognising that land management is an important policy issue Potential and/or actual conflicts between NR user groups can be resolved.
Strategies for scaling-up developed and tested 2.1 Knowledge sharing workshop to review findings from Output 1, to facilitate the selection of appropriate areas for action research on appropriate options	By Feb 02), workshop proceedings available, at least 3 areas selected and tasks developed for Activity 2.2	
2.2 Processes tested, refined, and taken up. (This includes Scaling-up options detailed, discussed, and prioritised with farmers, community organisations, local professionals and district administration in project target sites)	By Dec 02), strengths and weaknesses of best options, findings evaluated and results reported	
2.3 Processes through the life of the project. Documented and evaluated	By Dec 02) processes documented and evaluated to provide guidelines for improved scaling-up practices	
Capability of local professionals strengthened 3.1 Capacity building workshop(s) held for local professionals on strategies for scaling-up impact	By Sept 02 (Q2 Y2) workshops held and proceedings available	
3.2 Dissemination material will be developed with collaborators and made available and promoted to local professionals	From July 02 (Q, Y2), most appropriate form of dissemination material assessed, developed and distributed.	
3.3 New knowledge developed with promoted to development and research professionals.	From Dec 02 (Q3 Y2) , research Outputs published in scientific journals	
		Case studies can be identified that allow development and take-up over a one year period.

10. Key words

Scaling-up processes, pilot research, best practices, increasing capacity, case studies, stakeholders, opportunities and constraints.

Annex A

Lessons learnt on scaling-up from case studies

Annex B

Best Practice Guidelines: Scaling-up successful experiences in natural resources management