NATURAL RESOURCES SYSTEMS PROGRAMME
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BEST PRACTICE GUIDELINES

SCALING-UP SUCCESFUL PILOT EXPERIENCES IN NATURAL RESOURCES MANAGEMENT

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Best Practice Guidelines

Scaling-up successful pilot experiences in natural resources management

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Abbreviations and Acronyms

DFID	Department for International Development
Feria	Fair
GOs	Government Organisation
IIRR	International Institute for Rural Reconstruction
M&E	Monitoring and evaluation
Municipio	Local municipality (government)
NGOs	Non Government Organisation
NR	Natural Resources
NRM	Natural Resources Management
PEA	Participatory Extension Approaches
PLA	Participatory Learning and Action
PROMIC	*Programa de Manejo Integral de Cuencas*
PTAR	Participatory Training and Action Research
PTD	Participatory Technology Development
R&D	Research and Development
RNR	Renewable Natural Resources
SIBTA	*Systema Invocion Boliviano Technologia Agraria*
Sindicato	Sindicate
SSMP	Sustainable Soil Management Project

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Executive summary

What is scaling-up and why is it an issue?

1 In recent years there has been growing concern about the limited impact that natural resource management (NRM) technologies and practices have had on the lives of poor people and their environment.

2 At the same time donors are adopting strategies that recognise the key role of the informal economy, participation in political processes within a more accountable and transparent institutional framework, key requirements for scaling-up

3 The purpose of these Guidelines is to provide information for research and development institutions that will improve their scaling-up strategies for NRM reducing the time between technology development and its widespread use and benefit by farmers.

4 The currently accepted definition of Scaling-up is "*More quality benefits to more people over a wider geographic area more quickly more equitable and more lastingly"*. Central to this are the terms *horizontal scaling-up* which is the spread to more people and more communities and *vertical scaling-up* which is institutional in nature involving expansion to other sectors and stakeholder groups.

Research process

5 The Guidelines have been developed as a result of a two-phase approach. Phase I focused on identifying positive and negative experiences from case studies in Bolivia, Nepal and Uganda. Phase II focused on working with collaborating organisations in Bolivia to develop existing dissemination strategies into scaling-up strategies considering the lessons learnt in Phase I, helping to validate these lessons and build scaling-up capacity within Bolivia.

How to scale up

6 Although there is no simple recipe for scaling-up, there is a need to follow a process that gives attention to both institutional and community issues at key stages during the project cycle. Many of these must be started in the pre-project phase and continued through implementation and into the post project phases. Many research projects focus on uptake by intermediate and end users only at the end of the implementation phase and may not be in a position to exercise any influence in the post project phase. Such projects need to place increased emphasis on the preparatory and early implementation phases in undertaking a number of essential activities. These include:

- Ensuring the concepts and principles of scaling-up are understood by all stakeholders
- Ensuring understanding of the opportunities and threats of the wider environment
- Identifying target groups
- Developing an impact pathway with stakeholders identifying appropriate indicators that can be monitored and evaluated and can be used for assessing impact
- Ensuring close integration of research and development activities

- Ensuring resources availability for capacity building, communication and monitoring and evaluation
- Establishing cost sharing within strategic alliances
- Seeking existing local Government support to promote sustainability
- Ensuring realistic time horizons for establishing support mechanisms at community level
- Improving collaboration, networking and strategic alliances
- Building institutional and community capacity in key areas identified by relevant stakeholders
- Ensuring that institutional roles are well defined
- Ensuring use of participatory technology development approaches
- Ensuring the poorest and marginalised are included in the process
- Ensuring technology options are available that address the needs of all resource groups
- Improving feed back and accountability to local communities
- Ensuring farmers are aware from project outset the timeframe for interventions
- Ensuring local organisational capacity and access to inputs and technical support
- Ensuring indicators developed at planning stage are relevant and can be used

7 Many of these activities do not fall within a traditional research project, but are related to good development practice. Research can no longer be seen as a top-down approach for the development of improved technologies but needs to be seen as an integral part of an interactive development process involving a wide range of stakeholders. This necessitates far greater co-ordination and integration into local, national and regional development activities.

8 Use of the Guidelines is particularly relevant 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, which embrace themes relevant to scaling-up.

What is scaling-up and why is it an issue?

1 In recent years there has been growing concern amongst donors and development agencies about the limited impact that natural resource management (NRM) technologies and practices have had on the lives of poor people and their environment. Interventions have often failed to reach the poor at a scale beyond the target research sites (for example Ashby *et al.,* 1999; Briggs *et al.,* 1998; Bunch, 1999). Acknowledgement of this fact has resulted in a recent surge of interest in the concept and practicalities of 'scaling- up'.

2 At the same time many donors are moving from a series of free standing projects in different sectors (including natural resources) to strategic level support for recipient country efforts to define and implement effective poverty reduction strategies. For instance in Bolivia[1] such a strategy has a number of key themes including enhancing livelihood opportunities, human development, social protection, social integration and institutional development, all key components in any scaling-up strategy.

3 The strategy recognises the key role of the informal economy for poor people and provides for social inclusion and participation in political processes within a more accountable and transparent institutional framework. Such a strategy requires two important focuses which are both key in any scaling-up process.

- Empowering poor people to realise their human rights, through continuing to promote the uptake 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
- Increased incomes for the poor through enhanced competitiveness and productivity, based on an improved enabling framework, strengthened capacities and adequate social protection.

4 As a result Government, civil society and the private sector aim to develop and implement new initiatives in favour of making markets work better for the poor. Again scaling-up will be a key issue. Areas of donor financial support are likely to include:

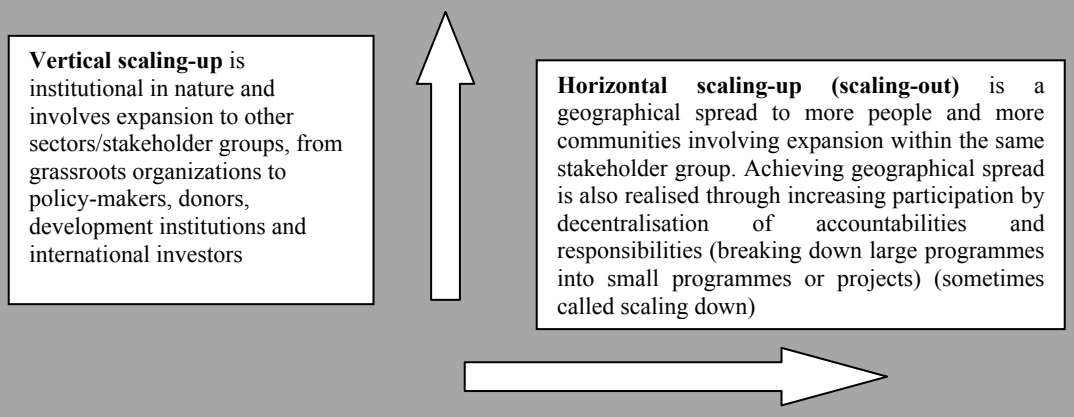
- Support to representative apex organisations, which represent the views or requirements of small producers.
- Contributing to a basket fund for sector wide financial support to Bolivia's new system for a demand driven agricultural research and technology transfer system (SIBTA) and its associated foundations

[1] DFID, 2002. Bolivia country strategy paper

5 In 1999 and 2000, pioneering international workshops in Washington and the Philippines (IIRR 2000), discussed concepts and principles for scaling-up in the context of agriculture and NRM. These workshops developed the currently accepted definition of scaling-up:

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

CENTRAL TO UNDERSTANDING SCALING –UP ARE THE TERMS HORIZONTAL AND VERTICAL SCALING-UP:



(Source: IIRR, 2000)

6 The approach implied by this definition contrasts with the traditional linear technology transfer model, in which creating impact at a wider level largely resided with the development of traditional documentary uptake material aimed at a very limited homogenized audience at the end of the project. Moreover research within this linear approach tended to be supply led, with those who conducted the research aiming to transfer their knowledge and sensitise stakeholders to the products that they had developed. Generally scaling-up was not considered at the beginning of a project, and did not take into account the dimensions of quality, quantity, time, equity and sustainability (Gündel *et al*, 2001).

7 Despite the innovative approach implied by the definition of scaling-up, relatively little information has been available on practical strategies to facilitate this process. These Guidelines discuss the experience and findings of recent research and communicate the key lessons that need to be incorporated into scaling-up activities.

Research Process

8 Research activities were divided into two distinct phases.

Phase one ('the case study phase')

9 This focused on using case studies to identify important factors which influence the scaling-up process, learning from the positive and negative experiences of a range of institutions in the process of scaling-up the impact of the technologies/practices that they had developed or piloted. Five studies were undertaken in Bolivia, one in Nepal and one in Uganda.

10 Each study consisted of a multiple-stakeholder analysis, comprising primary and secondary institutional analysis as well as community and individual farmer analysis. This provided a holistic view of the research and development process by taking into account the different experiences and perceptions of all the relevant stakeholder groups. The learning process was iterative and interactive with the knowledge provided by each stakeholder group influencing the analysis of the perceptions of the other groups.

11 The case studies were analysed to draw out key lessons (Middleton *et al*., 2002), which were presented to stakeholders at a workshop in Bolivia, during which, working groups considered key topics including:

- The relevance and practical implications of the case study lessons.
- Approaches for the monitoring and evaluation of scaling-up.

Phase II ('the action research phase')

12 This focused on working with collaborating organisations in Bolivia to develop existing dissemination strategies[1] into scaling-up. This provided opportunity to validate the lessons learnt from the case studies and build scaling-up capacity within local institutions.

How to promote scaling-up

13 The lessons for scaling-up have been distilled into a number of key strategy and activity areas, which must be addressed during the project cycle (Table 1). Suggestions, as to how and when each activity can be improved, have been made.

14 It is recognised that no single factor alone will ensures successful scaling-up, but scaling-up is likely to be quicker when these activities are initiated in the pre-project phase (Figure 1).

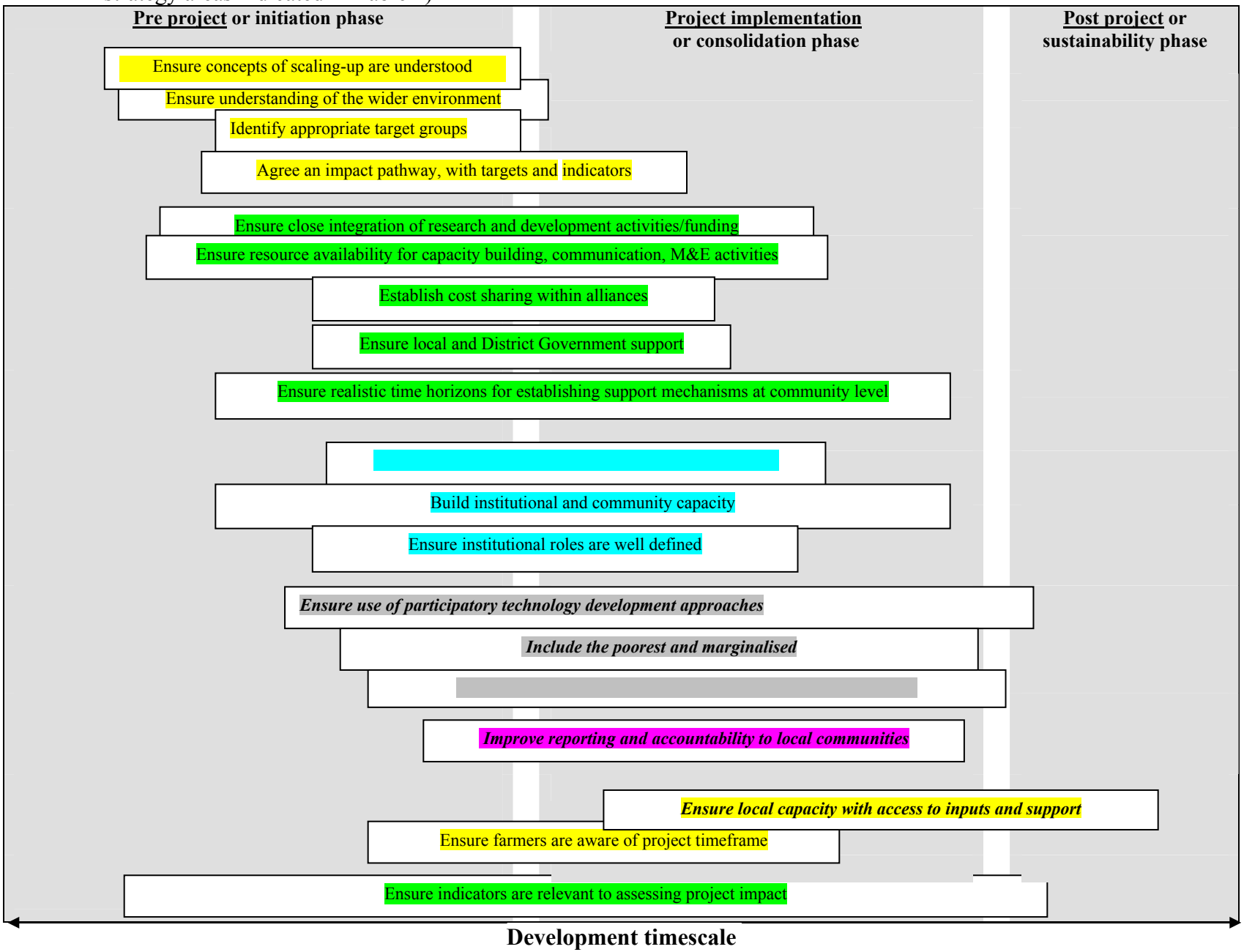
[1] **The difference between dissemination and scaling-up strategies:** Scaling-up strategies imply a multi-dimensional approach simultaneously taking into account political, social and economic factors in order to ensure a wide impact that is sustainable and equitable. It requires an iterative approach to learning and implementation, constantly responding to the ever-changing environment. On the other hand dissemination strategies have tended to be more narrowly focused on promoting specific practices and technologies to pre-determined groups.

Table 1: Key Strategy areas and activities to facilitate scaling-up.

Phase	Strategy area	Key activities
Pre project or initiation phase	1. Developing a strategy for scaling-up	- Ensure the concepts and principles of scaling-up are understood by all stakeholders - Ensure understanding of the opportunities and threats of the wider environment (including key demand, support and supply actor)s. - Identify target groups - 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	- Ensure close integration of research and development activities - Ensure resources availability for capacity building, communication and monitoring and evaluation - Establish cost sharing within strategic alliances - Seek existing local Government support to promote sustainability - Ensure realistic time horizons for establishing support mechanisms at community level
Implementation or consolidation phase	3. Increasing capacity of local institutions	- Improve collaboration, networking and strategic alliances - Build institutional and community capacity in key areas identified by relevant stakeholders - Ensure that institutional roles are well defined
	4. Addressing priority community constraints	- Ensure use of participatory technology development approaches - Ensure the poorest and marginalised are included in the process - Ensure technology options are available that address the needs of all resource groups
	5. Monitoring and evaluating outputs and activities	- Improve feed back and accountability to local communities
Post project or sustainability phase	6. Ensuring long term sustainability	- Ensure farmers are aware from project outset the timeframe for interventions - 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	- Ensure indicators developed at planning stage are relevant and can be used

Note: Different colours represent the seven key strategy areas indicated in Figure 1

Figure 1: Activities for planning and implementing scaling-up NRM technologies and practices (Different colours represent the seven key strategy areas indicated in Table 1)



Strategy for scaling-up

Ensure the concept and principles of scaling-up are understood by all stakeholders

15 The concept of scaling-up is relatively new. 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. Failure to fully understand the implications of the concept for institutional strategies and activities will limit the potential for scaling-up.

16 Those organisations concerned solely with research often considered scaling-up to be synonymous with a dissemination activity encouraging horizontal spread, which they considered late in the project implementation phase. Institutions with a deliberate scaling-up plan tended to attach more importance to the vertical aspect, in particular undertaking activities concerned with building inter-institutional alliances, raising the priority of NRM in local or District Government, and utilising existing legislation and policy. These require deliberate planning and action early in the project or programme cycle and need to be understood at community and institutional level.

17 To facilitate increased institutional capacity in scaling-up, it is important that concepts are clearly communicated and developed by stakeholders.

COMMUNICATING AND DEVELOPING SCALING-UP CONCEPTS AND STRATEGIES

In Bolivia workshops tailored for the needs of different target groups proved to be an effective approach for communicating scaling-up concepts and strategies:

For ***extension workers and NGO field staff,*** the strategies and activities outlined in these guidelines needed little change. The Workshop enabled them to gain a better understanding of how the implementation of the activities could improve project execution. However they felt that they did not have the power to implement the strategy.

For ***farmers and community leaders,*** the key activities were appropriately modified so the scaling-up strategies could both empower them and serve as a tool for ensuring that institutions are accountable to them. However for the strategy to be implemented, further capacity building would be required. Appropriate communication techniques and tools need to be used and if necessary different community groups targeted separately.

For ***senior staff from funding bodies and development organisations,*** the main findings and the scaling-up strategy were presented as a means for increasing impact. The focus was on raising awareness among participants on the importance of making the strategy a requirement for NRM projects.

Such workshops can be used for developing 'scaling-up plans' with collaborating institutions

Ensure understanding of the opportunities and threats of the wider environment

18 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, legal, institutional, social, and cultural factors identifying the strengths, weaknesses, opportunities and threats associated with each. At the same time key demand, support and supply actors should be identified and a stakeholder analysis undertaken.

19 Research and development institutions need to be aware of and build on each other's existing work rather than each individually undertaking their own situational analyses which can be costly and time consuming. Joint analysis will provide for better understanding with the target communities allowing for a better integration of scaling-up plans.

20 Institutions need to be aware of the potentially positive implications of new legislation that provides for participatory approaches[2]. Opportunities can be lost for building on existing development activity and for benefiting from available local or district Government funding. Institutions that develop strategies for channelling their NRM activities through local government have potential for achieving greater impact provided NRM issues have high priority in local government expenditure plans.

Identify appropriate target groups

21 Many countries recognise that poverty reduction will not be possible without the social integration of the poor and excluded as well as their active participation in decision making processes. Reducing the exclusion of minority groups such as indigenous people, religious minorities, women and youth is central to achieving this objective. Meaningful participation of these groups is an important component of any scaling-up strategy early in the project planning is necessary if adequate participation is to take place.

Develop an impact pathway for scaling-up with stakeholders

22 Organisations will experience difficulties in planning for scaling-up if they are unsure of the relevance of the concept to their specific situation. A vision for an impact pathway (Figure 1) needs to be developed by stakeholders that identifies indicators appropriate for monitoring and evaluation for each of the activities they plan to undertake. These should allow each institution to define their role in scaling-up and to develop relevant 'scaling-up targets' for themselves. Once a scaling-up goal has been identified, a logical planning sequence can be followed, developing appropriate objectives, outputs, activities and indicators for achieving this. So as to remain relevant and realistic, scaling-up plans need to build upon the strengths of existing institutional plans and not regarded as separate plans.

[2] Bolivia's Poverty Reduction Strategy in 2001 expressed through the National Dialogue builds on the Popular Participation Law (1994) giving voice to a long tradition of community organisation ad networks of social support.

23 In the case of NRM practices or technologies especially land management 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.

24 It is 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.

25 It is therefore important in assessing potential 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. Such an approach can guide the information requirements of surveys, which can be used for impact assessment after project completion.

26 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 also 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 2).

27 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 could 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 scaling-up activities. The main strategies and associated activities 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

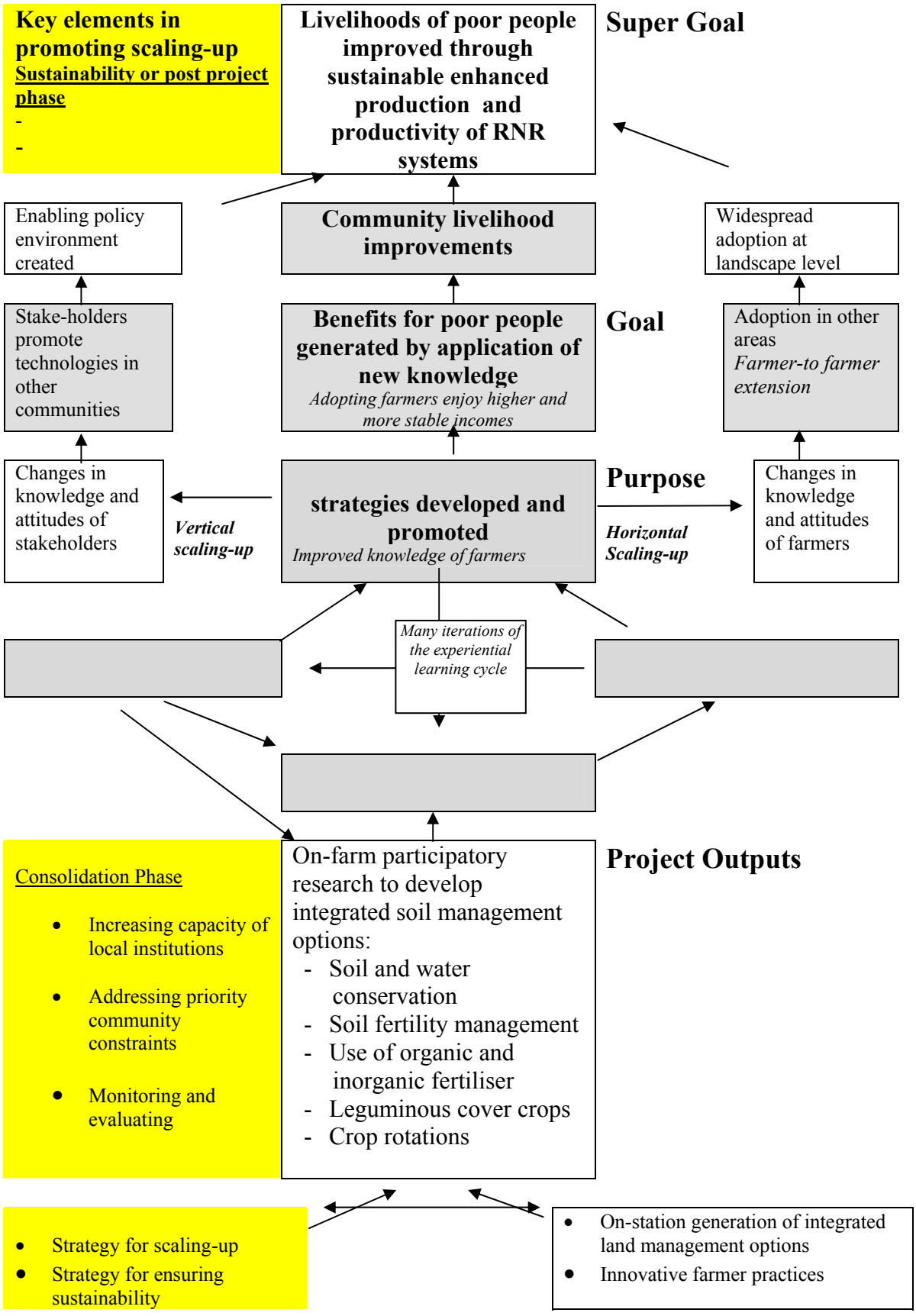


Figure 3: Impact pathway for RNR projects in Hillside Systems

SCALING-UP PLANS

In Bolivia, the implementation of scaling-up plans with four collaborating institutions proved to be an effective approach for practically implementing some of the activities and evaluating their impact so their contribution to scaling-up could be measured. Drawing from this experience some useful recommendations for implementing scaling-up plans include:

- Ensuring that the plans have a logical structure, including**:** ***clear scaling-up goal*** – what is that, which the institution will have achieved when scaling-up occurs; a ***scaling-up objective*** –for the fulfilment of the goal*;* ***strategic elements*** –chosen from the lessons learnt in the case studies; ***activities*** –to strengthen the chosen strategic elements; and ***relevant measurable indicators*** –for measuring each step's success in fulfilling its objectives.
- Harmonising the plans with institutions existing plans –, to sequence and align the scaling-up plans with the already existing priorities, goals, objectives and activities of each organisation.
- Identifying jointly with the institution the benefits accruing to them through the implementation of the strategy.
- Increasing the opportunities for relevant capacity building.
- Making use of a scaling-up package containing an easy and practical explanation of the strategy, the concept, and the conceptual framework, along with the possible benefits and the indicators for measuring impact.
- Dissemination of the plans through one-day promotional discussions with an institution's entire team. Other supporting materials such as leaflets, videos and so could accompanied the talks.

Strategy for ensuring sustainability

Ensure closer integration between research and development activities

28 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. 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.

Ensure resource availability for capacity building, communication, monitoring and evaluation

29 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

30 The way in which funding is planned and managed was shown to influence the success of the scaling-up process. The experiences of the research organisations involved in the case studies showed that short term funding and poor integration between research and development were limiting planning horizons and reducing the opportunities to plan or budget for key scaling-up activities. Scaling-up processes will be more successful where there is long-term financial commitment, tied to achievement of intermediate milestones. Longer term funding provides a level of institutional stability required for developing short, medium and long-term plans for scaling-up activities. This should include capacity building, network formation and building strategic alliances. Failure to plan, fund or undertake scaling-up activities, particularly those which span the project implementation phase such as, M&E, situational analysis, networking and capacity building will inhibit scaling-up.

Establish cost sharing mechanisms within strategic alliances

31 In building alliances, institutions should consider cost sharing as a funding mechanism within strategic alliances. This requires close definition of roles and inter-institutional agreements.

Seek existing local Government support to promote sustainability

32 Of the various funding strategies available, securing local government funding together with inter-institutional cost sharing agreements appears to enhance the sustainability of the process. In the case of government funding, opportunities could be enhanced by stimulating demand for technologies at the community level whilst simultaneously raising awareness of NRM issues within local governments. For instance, the provision of competitive fund for scaling-up activities in Nepal for awareness raising[4], capacity building and institutional networking facilitated secondary organisations in undertaking positive scaling-up activities.

BUILDING AWARENESS AT LOCAL GOVERNMENT AND COMMUNITY LEVELS)

In Bolivia small-scale technology fairs proved to be a useful approach for stakeholder interaction, prioritising NRM in communities' municipal local agendas and increasing stakeholder awareness of how to benefit from political and institutional opportunities. Stalls and practical demonstrations by NGOs can increase community and municipal awareness of the significance of NRM issues and the range of technologies and practices available for tackling them. This can include discussions on how to develop community demands into projects and how to incorporate these into the legally binding municipal plans. These types of events are a good tool for lobbying at the local level especially where decentralisation legislation or decentralisation is taking place.

33 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.

[4] Helvetas-SSMP programme has included this.

SEEKING IMPROVED FUNDING MECHANISMS

In Bolivia a workshop on funding, 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. 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 impact assessment that can be demonstrated so that funding bodies cab asked for support.
- Lack of funding to undertake scaling-up activities and respond to target group demands.

The main lessons identified a need for:

- 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.

Ensure realistic time horizons for establishing support at the community level

34 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. Most institutions feel they need to provide longer-term support, particularly with regards to building a critical mass of awareness and interest, and monitoring the impact of their plans, but rarely have the resources to do so.

35 Timeframes of project interventions will affect impact and sustainability since they will influence the nature and quality of activities undertaken. Long-term commitment can be a facilitating factor both at the community and institutional level. Long term projects are able to take a more strategic view of scaling-up and to plan for it early in the project cycle. At the community level, long-term institutional support is likely to be a key factor facilitating technology uptake providing farmers with a point of reference when they have difficulties or queries.

36 This requires that community capacity be built to organise themselves to manage project interventions on their terms, to manage new technologies/practices and to ensure sustainability after project completion keep things going when projects end.

37 Achieving impact at a landscape level is a slow process even when all the necessary inputs are required. Only one case study[5] demonstrated environmental benefits at a watershed level. This had taken 10 years with high levels of control and support.

Increased capacity of local institutions

Improve collaboration, networking and strategic alliances

38 Inter-institutional collaboration (from grass roots to local government level) is the backbone to successful, sustainable scaling-up. It can facilitate the scaling-up process by ensuring that responsibility for reaching more people is not only in the hands of the "primary institution". Although many organisations show evidence of working with different partners, achieving effective inter-institutional collaboration in practice can be a complex and problematic activity. Opportunities for effective collaboration can be limited by the lack of resources for inter-institutional communication and planning. Institutions are often too busy with their own activities and important collaboration activities are delegated to junior members of staff. Such constraints can be overcome when all the collaborators are committed to achieving the same goal and where there is a key institution facilitating the process by providing capacity building and supporting network formation.

39 A key stakeholder (or the '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:

- Increase opportunities for institutional knowledge sharing and collaboration.
- Create networks of collaborators who have regular interaction to share experiences and resolve problems as they arise.
- Form strategic alliances with local government

40 Scaling-up approaches are strongly influenced by the orientation of the 'primary institution'. This highlights the importance of improving linkages between research and development organisations. Development organisations with a more process-based approach are more successful in scaling-up than technology focused research projects. One of the key factors, limiting the development of scaling-up strategies in research projects, was the fact that they did not consider themselves to be responsible for scaling-up. Their purpose was seen to develop and possibly disseminate appropriate technologies at a pilot level. Although low budget research projects cannot be expected to achieve the same level of networking and capacity building as large development projects, they can improve their chances of impact by collaborating with such organisations. By incorporating scaling-up into their institutional goals, research institutions will become increasingly aware of their need to link with development and

[5] PROMIC in the watersheds surrounding Cochabamba

government organisations with their increased capacity for networking and achieving wider impact. There is clearly a need for technically orientated organisations to become more process-orientated in their work.

41 The development institutions in the case studies demonstrated the importance of developing networks of stakeholders with well-defined roles and responsibilities and legally binding agreements. Development of such networks was enhanced through the early identification of and consultation with demand supply and support stakeholders. Regular meetings to discuss issues arising and to share experiences also improved the effectiveness of networks.

IMPROVING COLLABORATION, NETWORKING AND DEVELOPING STRATEGIC ALLIANCES

In Bolivia, understanding how best to manage alliances and partnerships proved to be one of the greatest challenges facing organisations committed to scaling-up. It was within this context that emphasis needs to be placed on helping participating organisations to plan and manage effective inter-institutional collaboration. Inter-institutional collaboration can be promoted through the establishment of a NRM platform. Such a platform was formed by the participating organisations in Bolivia with four main aims:

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

This centralised forum facilitated different stakeholders to share their experiences and comparative advantages, providing a single accessible location for accessing relevant information. Crucial to its success was a key person or institution 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 platform members was vital for its survival. The involvement of the University of San Simón, proved beneficial since its reputation gave the platform credibility, providing a stable base, and some resources with institutional linkages at the national level.

Build institutional and community capacity

42 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.

43 Stakeholders require capacity in technical, social and organisational areas for scaling-up. Organisations with a deliberate policy of capacity building from the grassroots to local government level will achieve greater impact. Where lack of capacity is limiting scaling-up, weaknesses need to be identified and appropriate training provided. Capacity building at community level in organisational and technical issues is vital for the on-going implementation and management of NRM practices. It provides members of the community, whether they are farmers or local community organisations, with confidence and the ability to make decisions and to manage their own NRM projects.

Ensure that Institutional roles are well defined

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

Address priority community constraints

Ensure use of participatory technology development approaches

45 Many institutions are already improving their approaches to community level technology development and dissemination using participatory methods that bring together local and scientific knowledge. These include PEA, PTD, PLA, and PLAR., which have many similarities.

46 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 understand the concepts underlying the technologies or practices. Such awareness raising will stimulate farmer demand for NRM practices and provide greater understanding of the negative impact that NR degradation has on their livelihoods.
- 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, using farmer criteria for evaluation.
- 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[6].
- Provide longer-term innovative means of technical and organisational support at the community level. These should give consideration to local entrepreneurs and farmer-to-farmer extension based on local groups and elected lead farmers, working through existing community groups and organisational structures where they exist.

[6] Incentives can mask the true cost of a practice and motivate rates of involvement of farmers who are not really interested. In some cases this results in high short-term adoption levels, which can not be maintained.

WORKING WITH EXISTING COMMUNITY LEVEL INSTITUTIONS

In Bolivia, working through the farming syndicates and associated groups ensured that most farmers were aware of new project activities and felt more confident about getting involved. In the context of the Laws of Popular Participation and Decentralisation the formation of a strategic alliance with the municipal government was vital for achieving widespread impact at the community level.

47 Unfortunately many farmers complain that approaches are often not genuine. Participation must empower, building trust and feed back information to farmers and communities from participatory activities.

ENCOURAGING GENUINE USE OF PARTICIPATORY APPROACHES

Since almost all institutions now claim to use participatory approaches, their new scaling-up plans tended to focus more on issues relating to vertical scaling-up, where they felt that their weaknesses lay. However farmer feed back at a scaling-up workshop contradicted this vision. At least half of a workshop's 40 farmer participants felt that many so-called 'participatory' approaches were merely cosmetic. They felt that most approaches were still top down, with institutions being concerned about farmer participation in their project activities rather than considering how their institution could participate in the community development processes. In particular, research institutions were considered to be overly focused on developing or spreading their particular technologies or practices without considering whether these were really appropriate for improving livelihoods in a given area or community.

Ensure the poorest and marginalised are included

48 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.

49 Despite wide variations in livelihood strategies, farmers who participate, are involved in decision making or adopt or innovate technologies are often the better resourced in the community. New technologies usually require additional resources (such as labour, cash often from non-farm sources, land as well as level of education). Key factors influencing adoption include access to such resources. Often the poorest in the community were not in a position to them. In this context, particular attention needs to be given to vulnerability of poor producers and to increase their capacity to participate in and benefit from NRM.

50 The poorest resourced have less risk bearing capacity, less access to productive resources, less education and less exposure to information. The main limiting resources were cash or credit, land, water and time/labour. Education levels were important since educated people had better access to written information and wider exposure to activities beyond the community. Isolated families and those who migrated tended to be excluded as they often could not attend community meetings and missed out on important information and activities. Migrant workers and those less dependant on agriculture for their income were less motivated to improve NRM practices. If technologies developed are to benefit the poorest, then NRM organisations need to understand these livelihood factors, which are leading to their exclusion and develop strategies, which will counter

them. This reinforces the message that timely situational analysis is important if the equity aspect of the scaling-up concept is to be fulfilled.

Ensure technology options are available within the resource levels of the poorest.

51 Ensure 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.

52 Community level analysis in the case studies demonstrated that the nature of the technology promoted was a key factor influencing adoption and hence scaling-up. Technologies based on adding value to existing practices were popular since farmers could more easily understand the ideas and processes behind the technology. In some cases, use of locally available resources facilitated adoption and maintenance of technologies. Poor availability of key materials was shown to limit adoption of otherwise popular technologies. Technologies requiring relatively high investment of cash, labour or time were less readily adopted by farmers with limited resources. In all cases the key factor limiting adoption of NRM practices was the lack of short-term benefits. In some cases this was overcome by developing technologies with multiple benefits.

Monitoring and evaluation

Improve feed-back and accountability to local communities

53 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.

54 Unfortunately local development activities are often dictated by the agendas of external development institutions, namely researchers, NGOs and donors, who tend to be primarily accountable to donors with little accountability to their target beneficiaries. At the same time, many countries have long traditions of community organisations and networks of social support. A key challenge is to strengthen development institutions to deliver efficient, effective and accountable services to local communities.

55 Since many NRM interventions are sector specific based on an institutional perception of community needs, little consideration is given to other community priorities. Often they have little or no control over the development projects that they are offered or over their relationships with the intervening institutions. This often results in piecemeal project interventions and duplication of work. Such duplication can be reduced and the relevance of interventions increased by working through existing broad-based community groups. Where one development institution develops mechanisms to give the community greater control over interventions and to consider NRM issues within the context of broader community needs, they have been enthusiastically received at the community level. Clearly local democratic processes are important in ensuring local leaders remain accountable to local communities.

56 The experience of developing scaling-up plans with the collaborating institutions reinforced the fact that there was an urgent need to build capacity in this area. There was particular confusion over how to develop effective indicators for monitoring progress and measuring impact. Often, it was thought that proving a planned activity had been undertaken was sufficient for demonstrating impact. Moreover, where there was no necessity to demonstrate impact, institutions did not feel motivated to invest time and money in the process. This highlighted the importance of the increased donor emphasis on impact. Where measuring impact beyond the project lifetime is a requirement for funding, institutions will be more motivated to plan and implement affective monitoring and evaluation strategies.

Long term sustainability

Ensure farmers are aware from project outset of the timeframe for interventions

57 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.

58 Farmers are often dependent on institutional presence for continued implementation and dissemination of NRM practices. Lack of on-going institutional support is a widespread complaint made by farmers and can lead to collapse of project-led initiatives. Thus institutional dependency needs to be overcome if scaling-up is to be sustainable.

Ensure local organisation capacity and access to inputs and technical support

59 The more successful cases showed that in order to overcome this problem, farmers need ready access to all the necessary elements, which enable them to adopt, adapt and disseminate technologies and practices, which they have found attractive. These elements include increased organisational capacity, access to appropriate materials for implementation and maintenance and technical support for when problems arise.

60 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 and be built into the participatory approaches being used.

61 Key areas which need to be addressed prior to project completion include

- Ensuring that farmers have ready access to the necessary input supplies through local suppliers.
- Ensuring local organisational capacity, before project completion.
- Ensuring access to technical support after project completion.

Post project impact assessment

Ensure indicators developed at the planning stage are relevant and can be used

62 M&E indicators need to be developed from the start of the project cycle and incorporated into plans at two levels

- At institutional level to assess effectiveness and measure impact.
- At community level to strengthen community control of the process

63 This reinforces the need for simple but robust targets/indicators that are relevant and measurable so that M&E requirements are clearly understood both by local communities and development organisations. Four types of indicators are identified for measuring: adoption/adaptation; changes provoked; accessibility; and sustainability.

64 Monitoring and evaluation indicators have been developed for each the nineteen activities concerned with scaling-up (Annex 1). 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.

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

- The 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.
- A measure of improved livelihoods. 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).

66 M&E implies early identification of those responsible, together with adequate resources for this activity to be undertaken.

67 None of the case study institutions had functioning systems for assessing the impact of their activities. This lack of effective systems for measuring impact made it difficult to ascertain the extent to which promoted technologies were spreading and whether they were providing the desired benefits to local communities. Where monitoring and evaluation had occurred it had been limited to measuring outputs within the project lifetime. The main factors limiting the development and implementation of monitoring and evaluation strategies identified by the institutions were: confusion over who should be responsible for

M&E and how it should be undertaken, uncertainty over the definition of useful and accessible indicators and lack of funds earmarked for M&E activities.

Conclusions

68 Processes for scaling-up successful pilot NRM management and technologies at community and individual level were analysed, through the case studies identifying key constraint and success factors. During the action research phase emphasis was placed on using these lessons in strengthening the capability of local professionals and institutions, building motivation, developing and implementing scaling-up strategies and validating the some of the factors identified from the case studies. As a result, local institutions are better able to continue this process and identifying the benefits of implementing this strategy

69 The key questions and answers, which we have addressed, include:

Question	Answer
- What would impact look like?	- An impact pathways should be established (Figure 3)
- What are the intermediate steps that will lead to this impact?	- These relate to elements of vertical and horizontal scaling-up (Figure 3)
- What strategies and activities should a project or its partners undertake to promote scaling-up?	- 19 key activities have been identified related to seven strategy areas, which must be considered in scaling-up plans
- 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

70 Although activities have been set within pre-project, implementation and post project phases, it was clear that many of the activities needed to be initiated during the pre-project and initiation phases and needed to be continued into the implementation and post project phases.

71 We have learnt that the main requirements for scaling-up are:

- Ensuring the concepts and principles of scaling-up are understood by all stakeholders
- Ensuring understanding of the opportunities and threats of the wider environment
- Identifying target groups
- Developing an impact pathway with stakeholders identifying appropriate indicators that can be monitored and evaluated and can be used for assessing impact
- Ensuring close integration of research and development activities
- Ensuring resources availability for capacity building, communication and monitoring and evaluation
- Establishing cost sharing within strategic alliances
- Seeking existing local Government support to promote sustainability
- Ensuring realistic time horizons for establishing support mechanisms at community level
- Improving collaboration, networking and strategic alliances

- Building institutional and community capacity in key areas identified by relevant stakeholders
- Ensuring that institutional roles are well defined
- Ensuring use of participatory technology development approaches
- Ensuring the poorest and marginalised are included in the process
- Ensuring technology options are available that address the needs of all resource groups
- Improving feed back and accountability to local communities
- Ensuring farmers are aware from project outset the timeframe for interventions
- Ensuring 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)
- Ensuring indicators developed at planning stage are relevant and can be used

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Annex 1: 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

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 evlaution 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