

CHAPTER 10

Scaling Out and Scaling Up—The Importance of Watershed Management Organizations

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Introduction

In this chapter, we examine experiences resulting from the involvement of local organizations, stakeholders, and institutions in the management of watersheds. These experiences focus on the lessons learned and on the principles derived from the reference sites of the Communities and Watersheds Project of the International Center for Tropical Agriculture (CIAT, the Spanish acronym) that allow the increase of scale, especially of organizational type.

In the area of natural resources, individual producers on their own farms cannot solve problems that involve other scales. Thus, to undertake watershed management, the focus should be more on the relationship of people with natural resources (CIAT-Hillsides Group, 2000).

Local organizations are widely recognized as the most important actors of watershed management and are key players in scaling out and scaling up processes, which lead to involving more beneficiaries, in wider geographical areas, and in a quicker, more equitable, and long-lasting manner (Gonsalves, 2001). Local organizations perform other functions, such as:

- (1) They can be highly efficient in ensuring that rules are kept with regard to natural resource management (NRM).

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- (2) The participation of stakeholders in selecting appropriate technologies at local level promotes their adoption and adaptation in a more efficient way than when external organizations alone are involved.
- (3) Non-local entities become more efficient thanks to collaboration with local organizations because the latter reduce overall costs (Ashby et al., 2000).

Therefore, in watershed management, local organizations regulate the use of the resources, serve as a forum to air conflicts between different local interested parties, and act as a channel for the representation of stakeholders within and outside the intervention site when negotiating the use of resources. Local organizations can help promote technological innovation and adopt conservation practices—whether they demand individual or collective action—and can deploy a considerable quantity of resources, in cash or kind, needed for the sustainable management of watersheds.

The Context

In developing countries, watersheds present problems at different scales (farm, microwatershed, subwatershed, and watershed) and capitals (natural, social, human, economic, and financial). One of the most relevant aspects is the problem of organization for NRM (Figure 1).

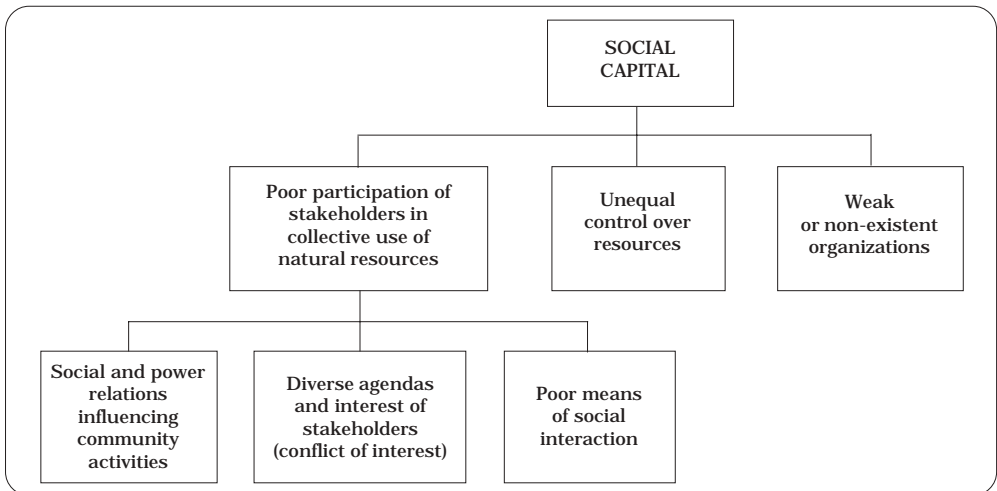


Figure 1. Social capital: Problems and their causes.

The main problems and their causes are identified in two components:

- (1) Little participation of stakeholders in the collective use of natural resources at watershed level (social and power relations influence community activities, diverse agendas of stakeholders, and poor social interaction of the local organizations).

- (2) The presence of weak and non-representative community organizations (poor coordination between local organizations, lack of methodologies that strengthen collective action, poor access to information, and little participation in technology design).

Because of the above situation, research and development (R&D) projects in agriculture and NRM have little impact in relation to dissemination to farmers, poverty reduction, sustainability of the development process, or on their impact on policy formulations. Thus, researchers and those involved in R&D face the challenge of maximizing impact and advancing the development process. In the present situation of reduced resources to support research and agricultural development, interest is growing in “enlarging the scale” (Gonsalves, 2001). Harrington et al. (2001) warn that if little attention is paid to increasing scale, or if research products in watershed management do not go beyond one scale, we will have failed by not benefiting many poor people in other areas. We “will have failed in our purpose of contributing to the alleviation of poverty, to improving food security, and to the protection of the environment”.

The above implies that we need to work with local communities and institutions to produce viable alternatives and benefits for a greater number of people, in wider geographical areas, and in a more rapid, equitable, and enduring manner.

Approaching social organizations

In analyzing the role of local organizations in watershed management, we need to consider:

- Socio-cultural factors (land ownership, gender, ethnic groups, religion, local knowledge, and family structure) that influence NRM; and
- Biophysical factors (topography, climate, soil types, and geology), which are essential for understanding biophysical constraints and potential management options.

The dynamics of woodlands, soil fertility and erosion, water quality and quantity, and their relation with human health, poverty, and social capital, reveal the interconnection between environment and the socioeconomic factors, and allow for the prioritization of problems. Some of the options and opportunities for preventing the deterioration of natural resources and for their restoration are: (1) water resource management, (2) agricultural diversification and intensification, and suitable soil management, (3) sustainable use of forest resources, and (4) organizational processes (CIAT-Communities and Watersheds, 2002).

The analysis of resource use alternatives and the forms of social organization helps us understand the circumstances under which local organizations can be efficient administrators of watershed resources.

Scaling Out

Scaling out is the replication of sites or projects to other locations at the same scale, for example, from one site to other sites, or from one watershed to another. In this section, we present two examples of scaling out. The first case shows the replication of particular forms of organization developed in Colombia to similar locations in Central America. The importance of this case lies in the different time frame needed for scaling out when the lessons learned in the reference site are used for replication.

Participatory learning processes for community organization

To better understand the interactions in community-based watershed management, a review can be made of the work at reference-site level in Cauca (Colombia), San Dionisio (Nicaragua), and Yorito (Honduras) (Figure 2). These interactions have involved (1) technology design in production systems and NRM, (2) the development of decision-making support systems, and (3) implementation of participative learning processes.

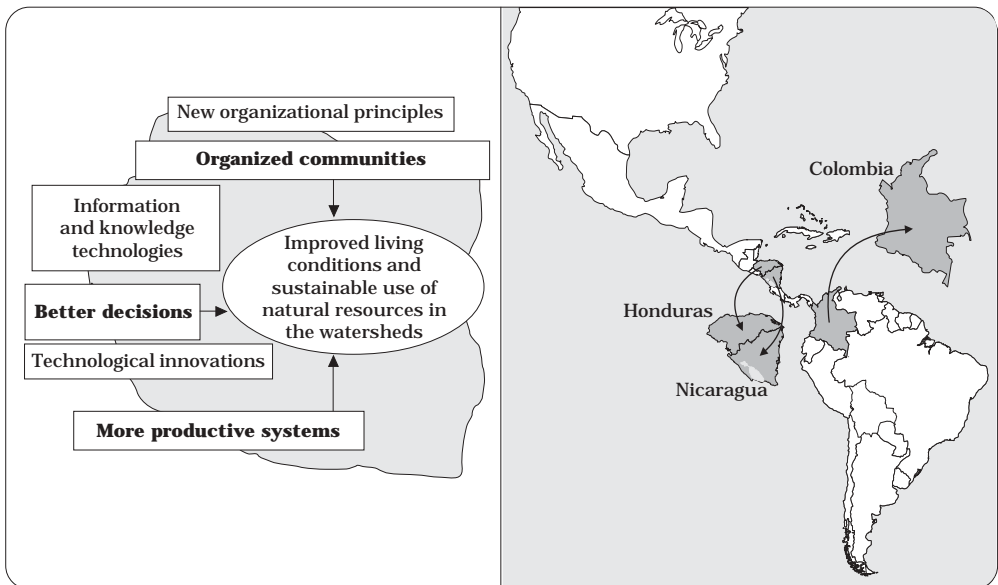


Figure 2. Reference sites in Cauca (Colombia), San Dionisio (Nicaragua), and Yorito (Honduras) and the watershed management strategy.

In the three sites, external actors initiated the watershed management process. In 1993, in the subwatershed of the Río Cabuyal, Cauca, Colombia, the Inter-institutional Consortium for Sustainable Agriculture in Hillsides (CIPASLA, the Spanish acronym) was formed, connecting institutions from the public sector, nongovernmental organizations

(NGOs), and farmers' associations. For CIPASLA to have an effective impact on the work area, the wide participation of the community was essential. To accomplish this, the committee of beneficiaries, the Association of Beneficiaries of the Subwatershed of the Cabuyal River (ASOBESURCA, the Spanish acronym), was constituted as speaker for the community. Within ASOBESURCA, user groups and stakeholders, such as the Communal Action Committees (JAC, the Spanish acronym), Committees for Local Agricultural Research (CIALs, the Spanish acronym), aqueduct officials, educators, and indigenous councils, should represent all the watershed population. This local leadership through the Federation of Beneficiaries of the Cabuyal Subwatershed (FEBESURCA, the Spanish acronym) allowed the mobilization of NRM actions.

Lessons learned in this organizational process for watershed management were later shared and applied in the Central America reference sites in the subwatershed of the Tascalapa River, Yorito, Honduras, and in the subwatershed of Calico River, San Dionisio, Nicaragua (Table 1). While the organizational process in Colombia went from 1993 to 1998 before showing effective actions, in Honduras and Nicaragua the process of social organization that began in 1998 showed positive results after 3 years. The lessons learned applied in the new organizational processes in Central America, along with the tools and methods to facilitate interactions between a broad range of stakeholders, were responsible for speeding up processes.

The second case of scaling out shows sites of the how Supermarket of Technology Options for Hillside (SOL, the Spanish acronym) have become a scenario for multi-institutional research, and a demonstration site for technological innovations, as well as the importance of participatory processes in the adoption of successful technologies. The participation of local organizations and development institutions has been a key component for taking "best bets" to other sites in different locations.

Local Organizations and Technological Innovations: The Case of the Supermarket of Technology Options for Hillside (SOL)

Involving local organizations and development institutions in the design of technological innovations for watershed management, and further planning for its implementation in the landscape, is now recognized as a key element in successful adoption and scaling out. One way to achieve this is the SOL strategy, which allows for the involvement of different actors at different levels. The SOL concept is based on (1) participation (design, planning, decision taking, follow up, and evaluation) integrating all stakeholders in the process, (2) multi-institutional alliances, and (3) a network of sites that covers a range from research to development practices (Orozco et al., 2002).

Table 1. Lessons learned and principles developed around organizational processes for watershed management.

Steps in the process	Lessons learned	Principles
Identification of social actors and partners	<ul style="list-style-type: none"> - Methodological tools needed to facilitate stakeholder identification. - Different actors, interests, and the relationships between them must be identified. - Municipal authorities should play a key role in development processes. - At the start, partners with common objectives should be sought to establish medium-term commitments and guarantee continuity of the process. 	<ul style="list-style-type: none"> - Involve different stakeholder groups and provide for equal opportunity in the process (equity). - Establish collaboration with partners with similar interests and define commitments that generate synergism (coordination).
Facilitation of new organizational forms	<ul style="list-style-type: none"> - New organizational forms should be based on the community's demands and needs. - Organizational forms should not be imposed, but based on those already in existence. 	<ul style="list-style-type: none"> - Free will to get organized, and local culture should be respected (equity).
Strengthening existing local organizations	<ul style="list-style-type: none"> - Strengthening is not short-term; time and resources need to be invested. - Training leaders strengthens local organizations. - Paternalism creates dependence. 	<ul style="list-style-type: none"> - Effective leadership should be consolidated within the organization. - Space for reflection to take decisions should be guaranteed. - Paternalism and top-down assistance practices should be avoided.
Promotion of networks or associations of community groups	<ul style="list-style-type: none"> - Structures and decision-taking procedures of grass-roots organizations and their linkages need to be known. - Needs of each local organization must be identified in order to provide support. - Do not try to have all community organizations join the organizational processes from the start. 	<ul style="list-style-type: none"> - Networks improve communication and exchange of experience between organizations. - Networks require their own space for analysis and discussion.
Inter-institutional coordination	<ul style="list-style-type: none"> - Common objectives and concrete activities are required to achieve coordination. - Coordination among technical people is an effective path for improving coordination at inter-institutional level. - Organizational processes must be linked to decentralization to increase sustainability and impact. 	<ul style="list-style-type: none"> - Everyone should participate in planning, execution, and evaluation (participation). - Decisions should be consulted with all those involved (agreement). - Duplication must be avoided, and economic and human resource efficiency increased.
Generation of links at local, regional, and international levels	<ul style="list-style-type: none"> - When technological demands at local level cannot be met, links must be sought with other levels. - Links with other levels strengthen local organizations. 	<ul style="list-style-type: none"> - Co-management of resources should be established to ensure sustainability. - Reporting to the community generates transparency.

Presenting the technological options to producers motivates them and strengthens their willingness to innovate or adapt the technologies (Figure 3). The SOL operates as a network of SOL sites, connecting not only institutions and farmers, but also different sites within a watershed so that all research undertaken in a landscape can be known and disseminated through the participation of those interested. The final impact is the sum of partners' interactions.

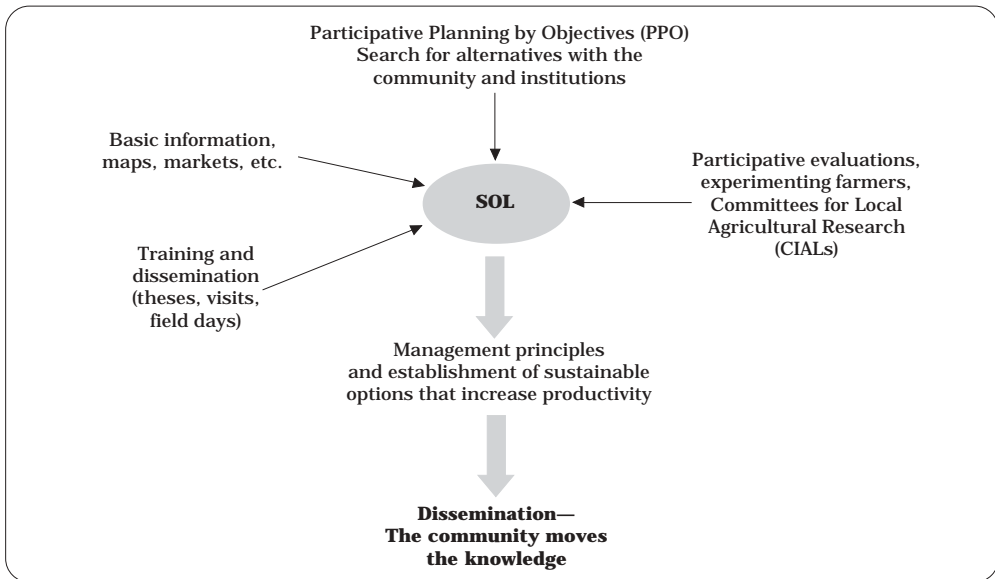


Figure 3. Components of the Supermarket of Technology Options for Hillside (SOL, the Spanish acronym).

If capacities for innovation are to be strengthened, farmers need not only a greater diversity of technologies, but also different methods and tools that they can use for discovering and disseminating best practices in a gradual increase of scale (Gonsalves, 2001).

An important characteristic of the local organizations in the improvement of watershed management is that they can institutionalize the local capacity for innovation through collectively organized experimentation with new practices, and can provide a means for receiving and interchanging information on technological innovations. Among R&D approaches we can cite those of the CIALs and Campesino a Campesino.

The following cases show how CIAT projects in the reference sites have achieved integrated work with the participation of a variety of partners and local organizations. Several CIAT projects, such as Communities and Watersheds, Participatory Research in Agriculture (IPRA), Rural Agro-enterprises Development, Soil Water and Nutrient Management, Land Use in Latin America, and Conservation and Use of Tropical Genetic Resources, and their partners have joint R&D activities at the reference sites. Here,

agricultural researchers, development institutions, and farmers come together along with local organizations to do strategic, applied, and adaptive research. Examples of the types of research carried out are multi-purpose forages, soil improvement, agricultural systems and crop rotation, live barriers, improved fallow, systems diversification and intensification, evaluation of soil erosion, and germplasm in different crops.

Three years after establishing the SOL sites in Central America, activities have been developed with the participation of different actors (farmers, local organizations, researchers, and development technicians) and at different levels—some in the phase of problem identification (Planning for Objectives Workshop and workshops for planning activities), others in workshops for presentation of results, and others in field evaluations. This participation has allowed for a balanced combination of demand-driven approaches with existing supply offers. Feedback from users helps redefine the research agenda, and encourages support groups and networks for information sharing.

In Cauca, Colombia, FEBESURCA is an example of the involvement of local organizations in the development of technological innovations. In 1993, FEBESURCA established CIALs to test technologies and adapt them to the local environment, combining local knowledge with successful technologies on thematic areas selected by the community. The development of small-scale dairies was also stimulated, and these in turn stimulated changes in land use. The introduction of commercial production linked the adoption of contour barriers, tree planting, and buffer zones just as local organizations had envisaged (Ashby et al., 2000).

In San Dionisio, Nicaragua, various local organizations such as the Campos Verdes Association, CIALs, Union of Organized San Dionisio Smallholders (UCOSD, the Spanish acronym), and the soil fertility interest group have begun to grow in scale (from plot to landscape). They are testing technologies in germplasm (bean [*Phaseolus vulgaris* L.], maize [*Zea mays* L.], rice [*Oryza sativa* L.], soybean [*Glycine max* [L.] Merr.], sweet potato [*Ipomoea batatas* [L.] Lam.], and sorghum [*Sorghum bicolor* [L.] Moench]), green manures, soil fertility improvement, and conservation of water sources (Figure 4). In Yorito, Honduras, the Network of Yorito and Sulaco Local Organizations (REDOLYS, the Spanish acronym) and the CIALs are evaluating technologies, such as germplasm, coming from the SOL.

From these experiences, we can observe how the initial approach of the SOL, seeking to incorporate only demand-driven research activities, has resulted in answers to the real needs of rural communities.

Additionally, support to local organizations focused on specific issues has facilitated the evaluation of concrete techniques developed at SOL sites, and their expansion to farmers' plots and farms within the same watershed.

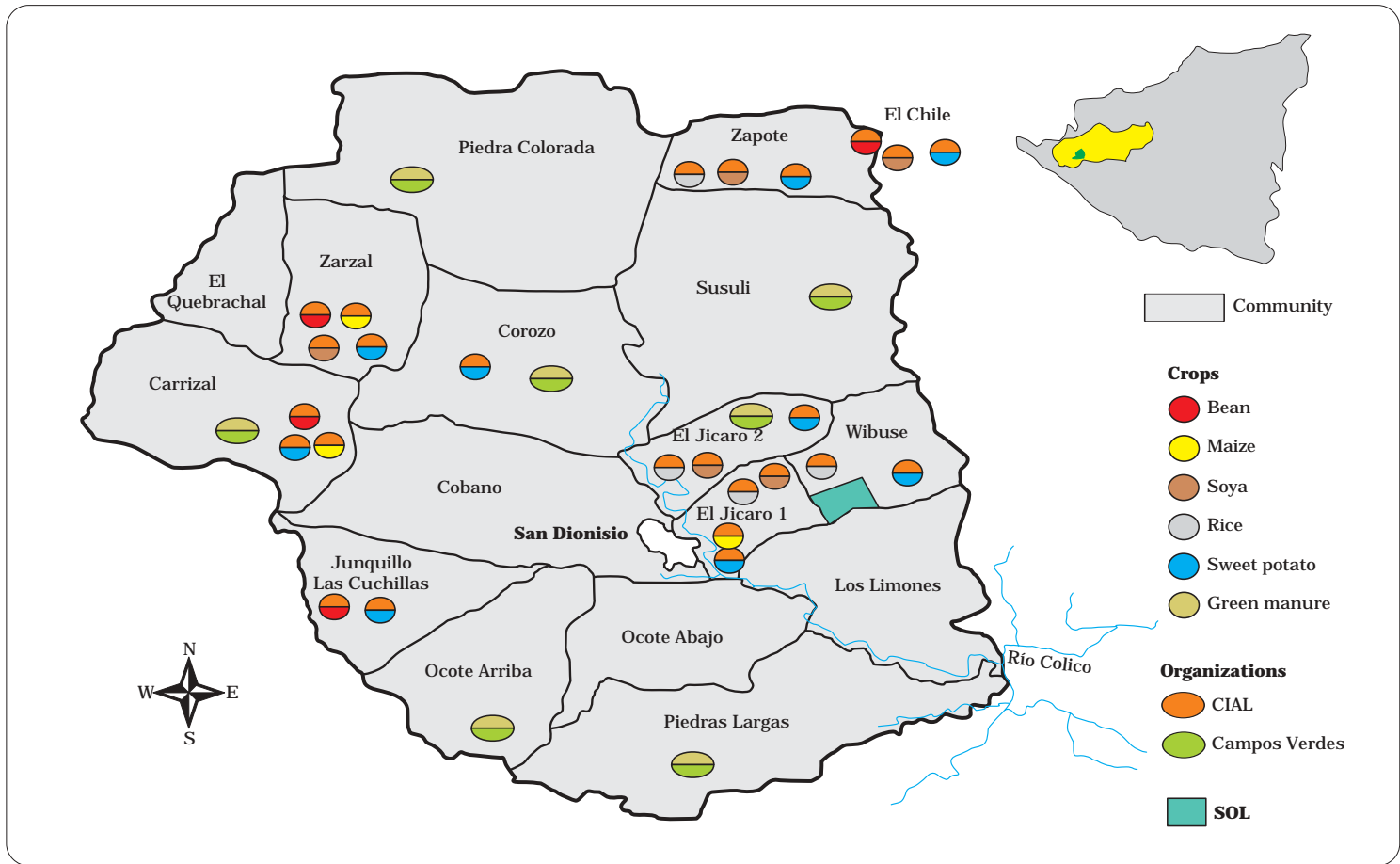


Figure 4. Technologies selected by local organizations from the Supermarket of Technology Options for Hillside (SOL, the Spanish acronym for Committee for Local Agricultural Research) site for evaluation in other micro-watersheds of the subwatershed of the Calico River, San Dionisio, Nicaragua. (CIAL is the Spanish acronym for Committee for Local Agricultural Research.)

Scaling Up

Scaling up refers to the expansion in the area of coverage, for example from site to microwatershed, from microwatershed to watershed, from watershed to region, from local to national levels. This section describes the importance of the participation of local organizations in expanding technological innovations in the reference-site's area of influence.

Watershed management generally goes together with a combination of natural resource conservation efforts. Communities in these watersheds depend on these resources, therefore one of the main challenges is to establish and maintain management practices that reconcile economic needs with long-term soil, water, and forest conservation practices (Ashby, 2000).

Nowadays, a large array of technically sound practices exists (live barriers, green manure, agroforestry and agrosilvopastoral systems, and other soil improvement practices). Resource-poor farmers try to adopt these practices, sometimes with little success, because costs exceed local capacity (MARENA-POSAF, 2002). Vertical efforts to force the use of these practices, or to promote them through temporary subsidies, have not achieved a lasting adoption.

The following cases of scaling up show how reference sites have become scenarios for multi-institutional research and demonstration sites for technological innovations, as well as showing the importance of participatory processes in the adoption of successful technologies. The participation of local organizations and development institutions has been a key component for taking "best bets" to other sites in different locations.

From San Dionisio, Nicaragua, to several locations in different parts of the country

Scaling up involves a variety of actors. Therefore, it is not surprising that in various international workshops the importance of inter-institutional collaboration and collaboration between partners is emphasized. Many argue that agreements between partners are an essential element of a strategy for scaling out. It may be necessary to involve a wider range of organizations to reach a greater quantity of people in a horizontal scale—scaling out (Gonsalves, 2001).

The establishment of links between local and external organizations stimulates the development of actions at local, regional, national, or international scale. These links can be used to (a) establish agreements, (b) strengthen the local associations and organizations, and (c) link community organizations with others that support development. These links also include contacts for obtaining funds, interventions to overcome conflicts and obstacles in local communities, training in leadership of the

community organizations, and channels to ensure the availability and flow of information between the different levels. Examples of these links are CIPASLA in Colombia, the Local Committee for Sustainable Development of the Tascalapa River Watershed (CLODEST, the Spanish acronym) in Honduras, and the Campos Verdes Association in Nicaragua.

Involving more actors, including policymakers, decision makers, and planners at different levels, favors complementarity and facilitates capitalizing on the strengths of each one in the execution of joint projects.

With CIAT's technological and methodological help, over the last 2 years visits by local organizations, government organizations, NGOs, universities, and donors have increased to the reference sites. Figure 5 represents the different stages of this strategy followed by interaction with partners:

- (1) Approach partners with national or regional coverage, where institutional offers and demands are identified both at internal level, and at the level of the clients they serve.
- (2) Visit the reference site with the aim of gaining technical and methodological experience.
- (3) Identify products for partners that can be introduced, applied, or researched in other regions.
- (4) Elaborate an institutional work plan that promotes learning alliances and scaling out processes.

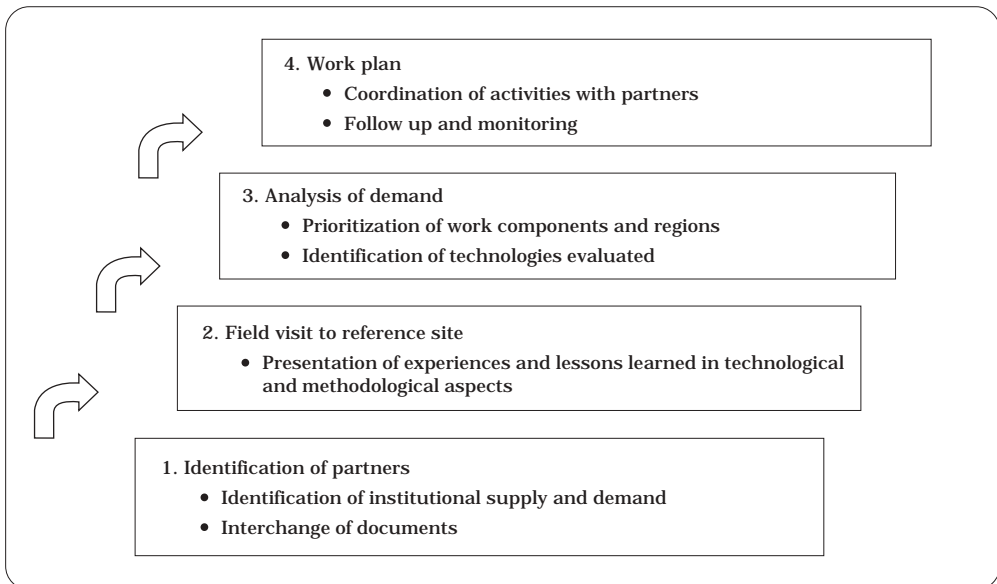


Figure 5. Steps in the strategy of interaction with partners.

The collaboration scheme includes, on CIAT's part, germplasm, methodologies, training, and teaching. With the steps outlined above we hope to enter into a process that allows the application of what is learned, monitoring and follow up of these experiences, mutual learning, and measuring the impact to evaluate and determine if work actually contributes to the improvement of people's quality of life.

In Nicaragua, during 2001-02, the following visits were made to the reference site:

- Groups of forage producers, CIALs, UCOSD;
- NGOs: Agricultural Development Fund (FONDEAGRO, the Spanish acronym) and Program for Sustainable Agriculture in Central American Hillside (PASOLAC, the Spanish acronym);
- Ministry of Agriculture and Forestry (MAGFOR, the Spanish acronym), National Institute of Agricultural Technology (INTA, the Spanish acronym), Ministry of the Environment and Natural Resources (MARENA, the Spanish acronym), and Socio-environmental Forestry Program (POSAF, the Spanish acronym);
- Universities: National University for Agriculture (UNA, the Spanish acronym) and National Self-governing University of Nicaragua (UNAN, the Spanish acronym), Matagalpa;
- Donors: Norwegian Agency for Co-operation for Development (NORAD), United Nation's Children's Fund (UNICEF), Swedish International Development Agency (SIDA), and Swiss Development Cooperation (SDC); and
- International organizations: Rural Water and Soil (ATICA, the Spanish acronym, Bolivia), INTERCOOPERACIÓN, CIAT-Hillside Agricultural Program (HAP, Haiti), and Development Alternative Inc. (DAI, Bolivia).

Table 2 presents a summary of the scaling out process initiated with different partners in Nicaragua during 2002. The main themes that partners identified are germplasm, silvopastoral systems, market options, SOL strategy, CIALs, watershed focus, collective action methodologies, and training.

Figure 6 shows the scaling up of technologies and methodologies developed by CIAT and partners from the San Dionisio reference site towards other regions of the country, such as the departments of Jinotega, Matagalpa, Boaco, Chontales, Managua, Estelí, Nueva Segovia, León, and Chinandega.

The combination of a strategy to involve partners and local organizations in the research process facilitates partners' understanding of the technologies being developed. It also allows them to see that the research process is demand driven, and that what is researched is useful for development processes.

Table 2. The scaling out process with different partners in Nicaragua, 2002.^a

Partner	CIAT projects involved	Theme	Site
CARE International	Agro-enterprises	Market options	Matagalpa, Estelí
	C&W	Integrated watershed management, SOL	Subwatershed Río Pueblo Nuevo (Estelí)
	Forages	Germplasm, silvopastoral systems, training	City of Darío
FONDEAGRO	Forages	Forage grasses, legumes, and trees	Paiwas, Río Blanco, Ubu Norte
POSAF	C&W, Forages, Participatory Research in Agriculture (IPRA)	Establishment of SOL sites, training	Subwatersheds: Dipilto and Jicaro, Estelí, Molino Norte, Jiguina, Río Grande, Cuenca Sur, and S. Francisco Libre
NORAD	C&W	Non-protected areas of the Mesoamerican Biological Corridor	Central America
UNAN-Matagalpa	Forages	Germplasm and training (three theses)	Matagalpa
INTA	C&W, IPRA, Forages, Agro-enterprises	Watersheds focus, improvement of soils, Committees for Local Agricultural Research, forages, monitoring, and follow up	Matagalpa-Jinotega, Estelí-Madriz-NS, León-Chinandega, Boaco-Chontales, Masaya-Carazo
PRODEGA	Forages	Germplasm and training	Boaco-Chontales
UNICEF ^b	C&W	Training on Decision Support Tools for natural resource management	Juigalpa, Matagalpa, Estelí
ATICA	C&W	SOL, market options	Bolivia
HAP	C&W	SOL PES	Haiti

a. For acronyms, see page 287.

b. Training and “action plans”.

Institutional and local capacity development

To go up in scale, strengthening local capacity for innovation is as important as the technologies themselves (Gonsalves, 2001). In many cases, local organizations do not achieve their objectives because they cannot develop their potential for self-management (leadership, direction, execution, and planning). This is because of the lack of internal building capacities, especially for developing complex innovations, such as tools for soil management and dealing with markets, among others. To overcome these weaknesses, capacities for adaptation must be developed within the institutions and in local communities (Menter et al., this volume).

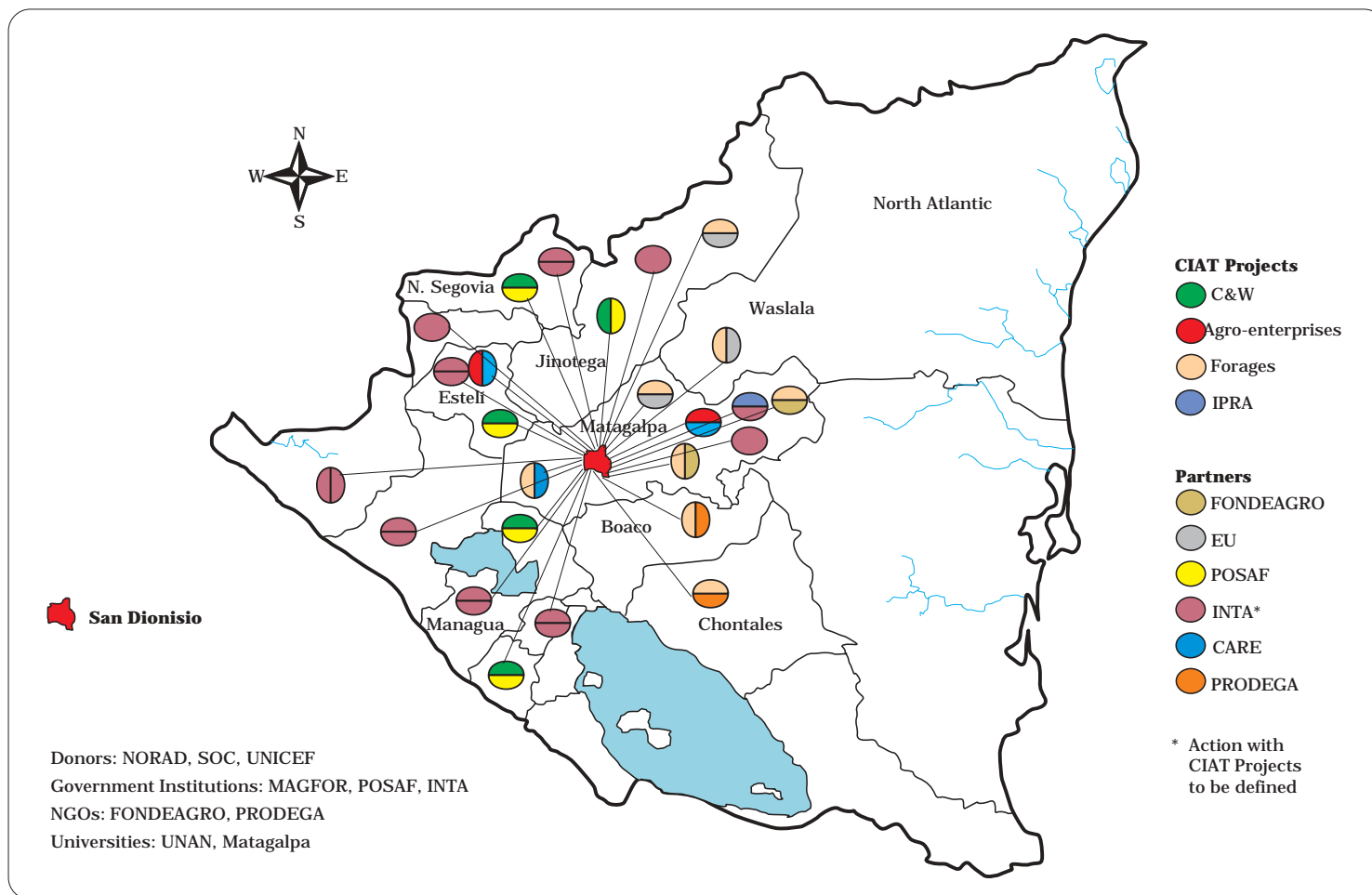


Figure 6. Scaling up from the reference site to other regions of the country. (For acronyms used, see page 287.)

Capacity is defined as the ability of individuals and organizations to perform their functions effectively, efficiently, and in a sustainable manner (UNDP, 1998). Capacity is also a set of attributes, capabilities, and resources of an organization that enables it to undertake its mission. Linked to the concept of capacity development is that of facilitation. This concept implies the provision of assistance and support to organizational processes by external and internal agents. Facilitation may involve stimulating, motivating, guiding, and providing technical or political support to the implementation of organizational processes.

Decision support tools for NRM—which integrate local knowledge through the participation of farmers and communities in their development—are examples of tools that can be incorporated into the organizational learning systems. In fact, these tools are being used in planning, decision making, and monitoring and evaluation at the local level.

Research results coming from joint efforts with local organizations and partner consortia at the reference sites have allowed the development of information, methods, technologies, and support tools for decision taking in NRM. More than 400 technical personnel of nearly 40 institutions in Honduras, Nicaragua, and Colombia have received training in the use of these research tools. Figure 7 presents the strategy followed by CIAT to build capacity and social capital at local level of both community organizations and institutions.

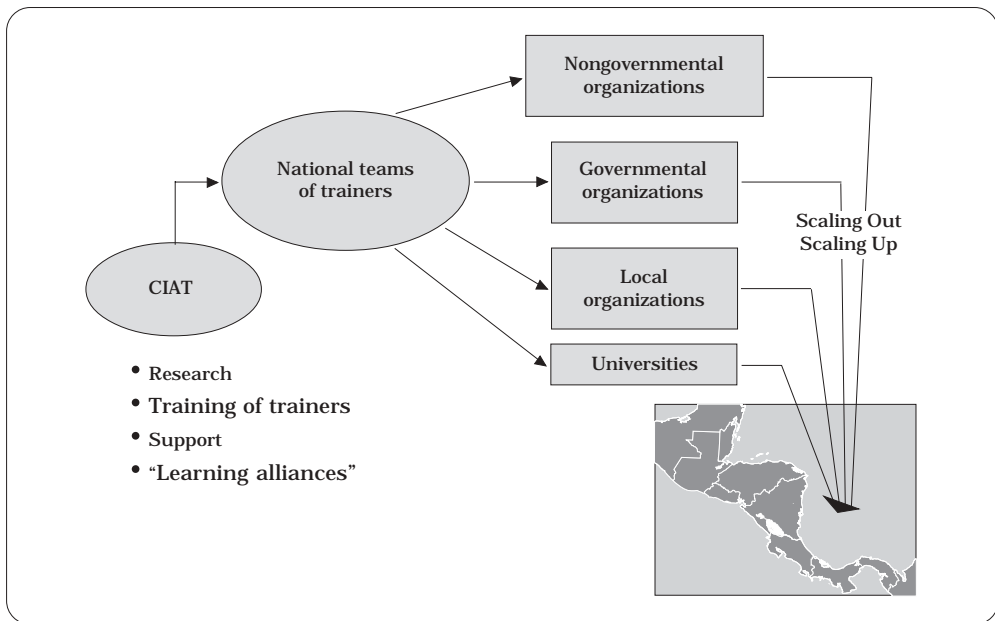


Figure 7. Strategy followed by the Communities and Watersheds Project of the International Center for Tropical Agriculture (CIAT, the Spanish acronym) for capacity building at local level.

Figure 8 shows the regions in Honduras and Nicaragua where the methodological instruments, such as Local Indicators of Soil Quality, Participative Mapping, Groups of Interest, Levels of Well-Being, and Market Options, were applied with local organizations and communities.

As a result of capacity building for watershed management at local organizational level in Nicaragua, the Campos Verdes Association—after fieldwork with the Participative Mapping and Local Indicators methodologies—identified critical microwatersheds (Quebrachal, Junquillo, Las Cuchillas, Piedras Largas, and Corozo) affected by problems in soils, forest, and water. This activity ended with the development of an environmental action plan at the subwatershed level. MARENA-Nicaragua and the Danish International Development Agency (DANIDA) approved a US\$70,000 project for the improvement of soils and reforestation of water sources. As a result, 28 ha were reforested at water source sites, 30 ha rehabilitated with soil management strategies (barriers, irrigation channels, and dikes), and communities developed new attitudes regarding slash-and-burn practices. Another local organization, UCOSD, using the participatory Market Options Identification methodology, identified with communities five of the best commercial opportunities in the region—*quequisque* (*Xanthosoma sagittifolium*), *chiltoma* (*Capsicum annuum*), melon (*Cucumis melo* L.), black bean (*Lablab purpureus* [L.] Sweet), and *chilla* (sic. *Linum usitatissimum* L.).

Capacity building for local organizations and R&D partners is required to enhance the scaling out and scaling up processes. Training in the use of tools that have been developed with community participation has facilitated the adoption of new technologies by a wide range of organizations and farmers at different scales.

Implications for CIAT

Research carried out during the last few years at the three reference sites, located in subwatersheds of Colombia, Honduras, and Nicaragua, has allowed local and international researchers to learn together with local stakeholders about the dynamics of natural resources in the watershed, gradually integrating diverse local and technical views, and developing a platform for joint learning and action.

Three main conclusions can be drawn from the scaling out and up experiences. An important one from the work of several CIAT projects working in Latin America in the last 9 years is that the SOL is a research for development tool that fulfils the local demand for new agricultural technologies and NRM practices for increased food security and a healthy environment. The SOL, as a research tool, needs to be supported and strengthened, and at the same time it needs to be autonomous and self sustained. CIAT has a role to play in the process of leaving the operation of the SOL in the hands of local stakeholders. Currently, local organizations

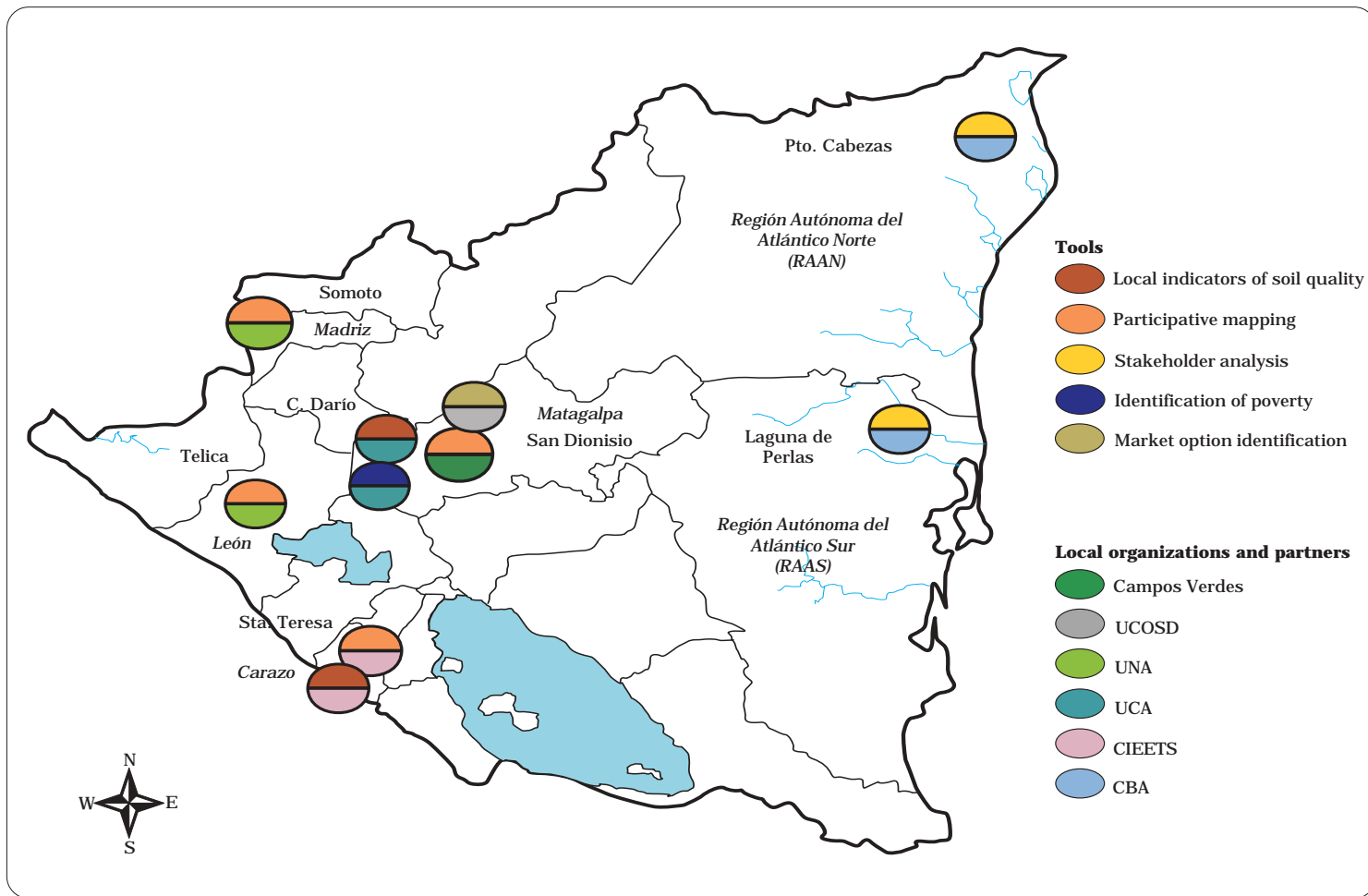


Figure 8. Natural resource management tools used by local organizations in Nicaragua. (For acronyms used, see page 287.)

have more to contribute to the research process, and CIAT can begin to reduce its participation, particularly in the maintenance of a research site. Local partners and organizations can provide research sites that keep the network functioning. The success of the SOL depends on the bonds that are created between local organizations, and these bonds should be made without the influence of external organizations such as CIAT.

Local organizations clearly carry out scaling up and scaling out also. The implication for R&D practice is that the processes of selection and support to these local organizations become critical. CIAT and its R&D partners need to work jointly to better judge and provide winner farmer organizations with the skills and capabilities for the accomplishment of their goals.

Finally, CIAT would benefit from a better understanding of NRM as a collective endeavor. This would imply strengthening collective action processes through the analysis of the social interaction of the farmers concerned around a particular common problem. This analysis has begun in San Dionisio-Nicaragua and Yorito-Honduras around the issue of decreasing soil fertility. However, much remains to be understood and designed to provide solid grounds for collective action.

Since scaling out is a process mainly conducted by partners, their participation becomes demanding in terms of CIAT's personnel. This implies the risk of diverging research resources to scaling out processes, and reducing research activities.

In terms of "going to scale", alliances will facilitate CIAT with scenarios in which the methodologies are implemented, adapted, and improved; where impact is measured, and where learning for the use of analysis and development tools are in the hands of development partners. This makes it clear, before traditional donors, that funds invested in research bear fruit.

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