

Institutional Practices to Scale Up Watershed Management Research



Given the intrinsic complexity of a dynamic resource such as water and the multiple relationships that its natural flow entails, water research requires taking into account different levels and scales of biophysical and socio-economic variables if inferences are to be applied elsewhere. This research explored the scale-dependent nature of water research projects and characterized their strategies for scaling up. Adoption of appropriate strategies could help accelerate the acceptance of the technology by target farmers. This, in turn, will increase the

availability of technology options and lead to more efficient use of existing natural resources to benefit the poor.

The main expected project outputs were institutional innovations, such as methods, processes and approaches for supporting decision-making by different stakeholder groups. Institutional innovations may be more flexible than other types of technologies, in that they can be applied in a range of biophysical environments.

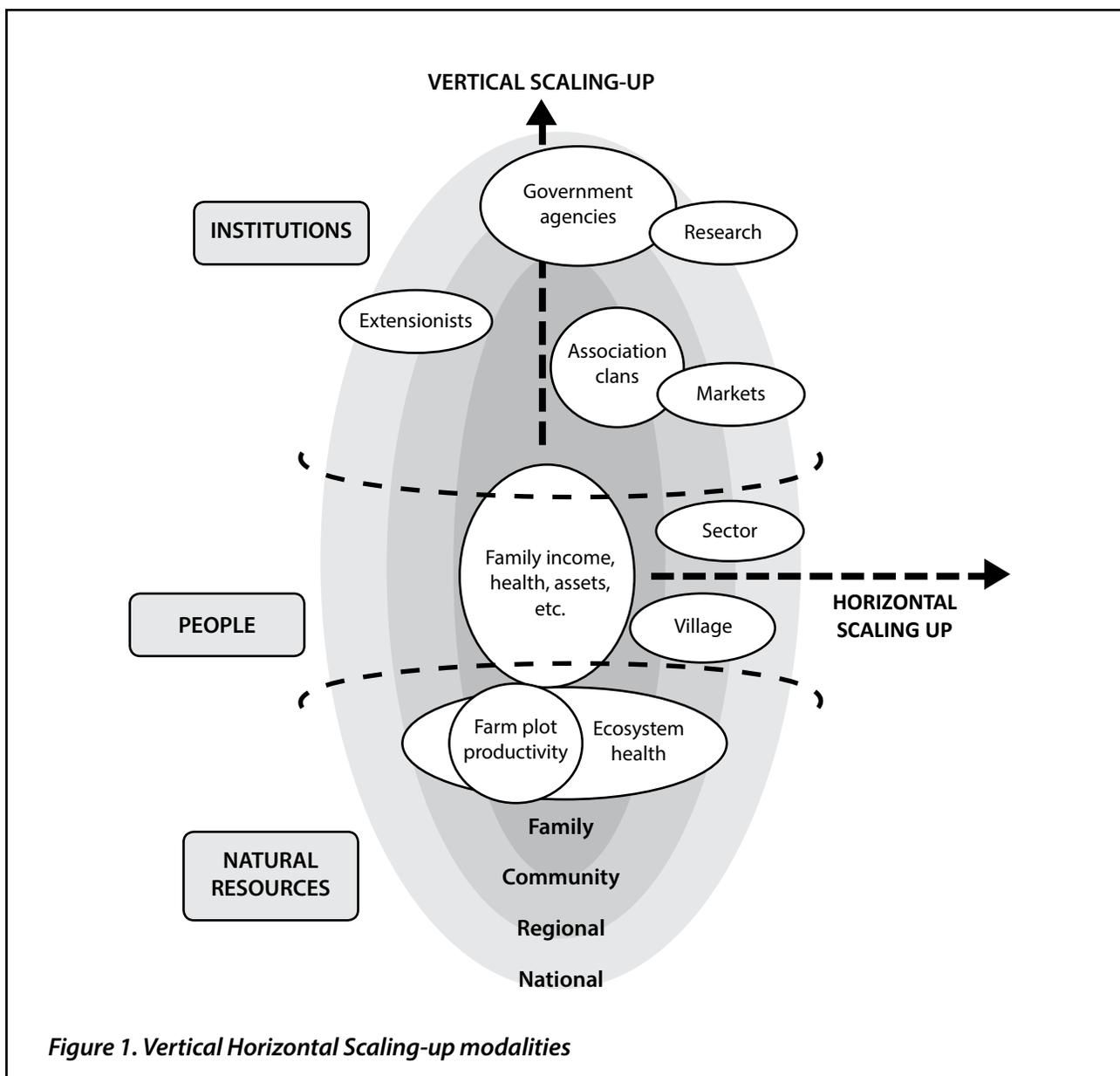
Methods

The methodology consisted of key literature consultation, an electronic discussion, a mid-term workshop with various stakeholders (e.g., researchers, NGOs) from Asia, Africa, Latin America and Europe and a detailed case study analysis (Gündel *et al.*, 2001). The leaders of 16 projects under the coordination of Water and People in Catchments Theme of the CGIAR Challenge Program on Water and Food (CPWF) were invited to answer a questionnaire designed to collect data and determine good practices for scaling-up research in natural resources. Eight of them

responded, as listed in Table 1. The questionnaire followed the frameworks by Gündel *et al.*, (2001) and the DFID-NRSP (2002) guidelines. The latter focused on communications and emphasized that for scaling-up to be feasible, research team's must be develop and implement sound communication strategics as an integral part of the research process. This would ensure that new knowledge will be available for uses (development practitioners, planners, farmers) informs that that they can utilize and adopt (DFID-NRSP 2002). Both sets of guidelines are complementary, and at the time of the research, were considered to be the state of art. Definitions were not provided in the questionnaire in order to avoid biases in the responses.

Table 1. Participating CPWF research projects

Title	Basin
8-Improving Water Productivity in Karkheh: Improving On-farm Agricultural Water Productivity in the Karkheh River Basin	Karkeh
17-IWRM for Improved Rural Livelihoods: The Challenge of Integrated Water Resource Management for Improved Rural Livelihoods, Managing Risk, Mitigating Drought and Improving Water Productivity in the Water-Scarce Limpopo Basin	Limpopo
20-Scales Sustaining Inclusive Collective Action That Links Across Economic and Ecological Scales in Upper Watershed	Andes Nile
23-Research Management for Sustainable Livelihoods Linking Community-Based Water and Forest Management for Sustainable Livelihoods of the Poor in Fragile Upper Catchments of the Indus-Ganges Basin	Indo-Ganges
24-Livelihood Resilience in Dry Areas Strengthening Livelihood Resilience in Upper Catchments of Dry Areas through Integrated Natural Resource Management	Karkeh
25-Companion Modeling and Water Dynamics Companion Modeling for Resilient Water Management: Stakeholders' Perceptions of Water Dynamics, and Collective Learning at the Catchment Scale	Mekong
40-Integrating Governance and Modeling Integrating Knowledge from Computational Modeling with Multi-stakeholder Governance: Towards More Secure Livelihoods through Improved Tools for Integrated River Basin Management	Volta Nile
46-Small Multipurpose Reservoir Ensemble Planning and Evaluating Ensembles of Small, Multi-purpose Reservoirs for the Improvement of Smallholder Livelihoods and Food Security: Tools and Procedures	Limpopo Sao Francisco



Horizontal and vertical scaling up

Horizontal scaling up is sometimes referred to as scaling out across geographical boundaries. It is the geographical spread to more people and communities within the same sector or stakeholder group, commonly referred to as dissemination.

Vertical scaling up is institutional in nature and involves expansion to other sectors/stakeholder

groups, from grassroots organizations to policymakers, donors, development institutions and international investors. Figure 1 shows the framework for this concept.

Gündel *et al.* (2001) identified prerequisites for successful scaling up that need to be fully considered at the research pre-project and implementation phases. One example is the framework checklist produced in a CGIAR-NGO workshop (Table 2). This framework recognized specific pathways for scaling up, starting from the identification of needs, to having people or events

Table 2. Framework checklist for planned scaling-up

The pilot stage	The 'sparks'	Managing the scaling-up process		The desired impact	The desired outcome
		Planning and implementing	Monitoring evaluation		
Small-scale initiative	Crisis, questions, success Individuals, champions Critical mass Political and initiatives Advocacy Markets Communities identify need to scale up Need to show impact Global trends	Vision is a dynamic Catalysts Actors (not targets) Decision and approach to scale up is based on various aspects—vision, successes, applicability Capacities Scale up ability to influence decision not just technology or process Identify strategies for local participation Spontaneous diffusions Factors	Requirements Monitoring Indicators Benefits Costs	More quality benefits to more people over a wider geographic area, more equitably, more quickly and more lasting	Empowerment and social change

Source: International Institute of Rural Reconstruction (2000).

to serve as 'sparks' or catalysts to initiate a planning stage, through to the management and outcomes of the scaling up process.

CPWF Projects: Scaling Up Strategies

A selection of CPWF Water and People in Catchments Theme research projects were

subjected to a detailed analysis of their scaling up strategies. Project leaders were invited to answer a questionnaire, designed to collect data on good practices for scaling-up research in natural resources, which were selected from the frameworks by Gündel et al. (2001) and the DFID-NRSP (2002) report. The DFID-NRSP guidelines focused on communications and emphasized that "for scaling up to be feasible, research teams must develop and implement sound communication strategies as an integral part of the research

Box 1. Principles for scaling up identified in a CGIAR–NGO Committee, Workshop

Five major principles

- ◆ **Partnerships (catalyst role, networking, farmer-driven, stakeholders-actors)**
- ◆ **Financial sustainability (market development and access)**
- ◆ **Management: start small, simplify and build on success for effective management**
- ◆ **Policy support: change policies to create enabling environment**
- ◆ **Local capabilities should be based on existing local dynamics, capacity building-strengthening, organizational development, participation**

Followed by more detailed principles and approaches

- ◆ **Involvement of multiple stakeholders and coalitions and alliances**
- ◆ **Consensus building**
- ◆ **Sustainability considerations**
- ◆ **Market development, access and viability**
- ◆ **Indicators and measures of success**
- ◆ **Expanding capacity and use of participatory approaches**
- ◆ **Engagement with and sense of ownership at grassroots level**
- ◆ **Knowledge and capacity building and sharing at all levels, systematization of experiences**
- ◆ **Development of grassroots organization**
- ◆ **Accountability**

Source: International Institute of Rural Reconstruction (2000).

process. This would ensure that new knowledge will be available for users (development practitioners, planners, farmers) in forms that they can utilize and adapt” (DFID-NRSP 2002). Both sets of guidelines are complementary, and at the time of the research, were considered to be the state of art.

Results

Nature of project objectives

Four of the projects aimed to strengthen local capacity for innovation around equitable and sustainable management, four to support local stakeholder forums and five to implement scaling-up strategies. Only one of the projects did not have objectives directly related to scaling up. Half of the

projects addressed biophysical issues and the other half, mainly institutional ones.

Representativity

Representativity refers to the project catchments that have biophysical, social, institutional, and/or economic characteristics that can be found in other catchments in the tropics, in the same basin or in other basins. Thus, water access is restricted and is the primary cause of existing conflicts between uses and users at different locations in the watersheds. Poverty and the high dependence on agriculture were also identified. However, there are many other important characteristics that make the projects site-specific, which are important to consider and anticipate for scaling up.

Key characteristics for replication

A supportive institutional environment, in which natural resource management strategies are designed and implemented, is the most important factor in project replication. There is disagreement, however, about what this means since some projects think that the presence of institutions is important, while others responded that the lack of existing institutions was better for the project, since it left space for the creation of new ones. The existence of water externalities was mentioned, as well as poverty and dependence on income from agriculture. In terms of biophysical factors, a dry environment and water scarcity were considered important for most, although some mentioned a lower limit of annual rainfall.

Scale

All projects considered themselves as scale-dependent because of the kinds of problems they are dealing with, not only in biophysical terms but also in institutional terms. What happens at one scale has an influence on the others. There are social dependencies between scales due to projects' work with institutions such as households or catchment organizations. Water productivity was considered by itself a scale-dependent issue. Bringing these findings into a wider context required the identification of relevant audiences or institutions in charge of the use and/or dissemination of results. Institutional scale was considered as most important, especially since replication of the projects is linked with factors such as an appropriate institutional environment and the willingness of households, farmers and institutions to participate and to try innovations. The following table (Table 4) provides an overview of key scaling-up elements that were covered in the CPWF projects studied.

Other key socio-economic and political characteristics

- ♦ **Willingness of farmers to participate and incorporate innovations**
- ♦ **Markets poorly developed; land smallholdings with lack of clear property rights**
- ♦ **Socio-economic and ethnic heterogeneity in the composition of social groups**
- ♦ **Widespread existence of complex relationships between water users**

Outputs

The importance that projects place on institutional factors for replication is hampered by the relative lack of importance placed on institutional issues. The representativity of sites suggests that it will be difficult for projects to do systematic validation along non-biophysical scales.

This finding is a reflection of the complexity of the problems water research projects are dealing with. There are no simple, straightforward solutions.

On budgeting

Around 17% of the total budget (10% minimum and 30% maximum) is spent on scaling up. Some argued that this will depend on the type of project, and some others found this difficult to estimate. The average figure, however, obtained here is twice that recommended in Gündel's framework. Allocation of resources or reducing resources allocated to core research is recommended to anticipate scaling up.

Table 3. Good practices for scaling up as applied by CPWF-T2 projects (Gündel et al. 2001)

			Has this element been considered by your project? (Yes/No/ NA: No Answer/P: Partially)							
Project Phase	Scaling-up-process-elements	Strategic elements toward successful scaling up	25	24	20	23	40	17	46	8
		1. Engaging in policy dialogue on pro poor development agendas	Yes	No	Yes	Yes	Yes	No	NA	
		2. Identify community, institutional and environmental enabling and constraining factors to scaling up	Yes	No	Yes	Yes	Yes	No	NA	
		3. Appraisal of institutional capacity of agencies involved in scaling up required	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Pre-project	Identifying target groups	4. Identifying appropriate research objectives and outputs within development processes to ensure widespread uptake	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
		5. Identify indicators and planning, monitoring and evaluation methods to measure impact and process of scaling up	Yes	No	No	Yes	Yes	No	No	NA
		6. Building networks and partnerships to increase local ownership and pathways	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		7. Develop appropriate funding mechanisms to sustain capacity for expansion and replication	Yes	No	No	No	Yes	No	Yes	Yes
		8. Building capacity and institutional systems to sustain and replicate	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Implementation	Partnership forging	9. Demand-supply and support actors identified	NA	Yes	No	Yes	Yes	P	Yes	NA
	Networking	10. Other resource organizations contribute with products and by building technical capacity	No	Yes						
	Raising of awareness	11. Multi-media dissemination of findings	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Policy dialogue	12. Aggregate and assess findings from individual projects and derive policy-relevant information	No	Yes	Yes	Yes	Yes	No	Yes	Yes
	Monitoring, evaluation and support studies	13. Central to scaling up processes in providing evidence to influence policy makers, in deciding what should be scaled up and how this might be achieved	No	Yes	Yes	Yes	Yes	No	Yes	Yes
	Exit strategy	14. Concerted action required on regional level	No	No	Yes	Yes	Yes	Yes	NA	No

Table 4. Good Practices for Scaling Up Applied by CPWF-T2 Projects (Gündel et al., 2001)

			Has this element been considered by your project? (Yes/No/ NA: No Answer/P: Partially)							
Project Phase	Scaling-up-process-elements	Strategic elements toward successful scaling up	25	24	20	23	40	17	46	8
	Dissemination	15.Should involve the target group as disseminators	Yes	Yes	No	Yes	Yes	P	Yes	Yes
Post project	Impact assessment	16.Built upon monitoring and evaluation. Representatives of target group become part of assessment team. Technical and livelihoods assessment required	Yes	Yes	No	Yes	Yes	Yes	NA	NA
		17.If any other scaling-up strategy(ies) foreseen or currently in use by your project, please add it/them in here	NA	NA	No	No	NA	NA	NA	NA

Challenges

Challenges in scaling up these research results include

- ◆ Institutional factors such as institutional instability
- ◆ Lack of appropriate local capacities, which is prevalent in almost all the projects
- ◆ Reluctance to change, particularly replication of projects and its scale dependence
- ◆ Lack of appropriate information
- ◆ Lack of knowledge about what is ‘actionable’ at institutional levels
- ◆ Limited amount of resources to invest in capacity building required for implementation of projects outputs and
- ◆ External sources of uncertainty, attributed to market fluctuations and climate variability.

Institutional uncertainties are not exogenous factors that affect success or failure but rather are aspects of the institutional environment

upon which successful scaling up will depend. For example, if the stability or capacity of certain types of institutions is critical for success, then it is necessary to assess criteria that are likely to be met in the areas in which the project is targeting its outputs.

Conclusion

The importance of a people-centered vision to scaling up is prevalent from this review. Introducing a quality dimension to the definition without neglecting the quantitative dimension and highlighting the importance of time, equity and sustainability dimensions are of particular importance in the natural resource management context.

A majority of research cases took a narrow perspective on scaling up and emphasized the existence of knowledge and technologies. The challenge is to improve how to get these

technologies out to the target groups over a wider geographical area (horizontal scaling up). Many of the development-oriented cases acknowledged the multi-dimensional nature and complexity of scaling up, and stressed the importance of institutional processes and learning, and the need to include a range of stakeholders from various sectors.

Scaling up is about creating sustained poverty alleviation and increasing local capacity for innovation on larger scales. The review and case studies showed that there are no simple rules to achieving scaling up. Attempts focus either on geographical and quantitative dimensions of scaling up, or on institutional processes. These two are not mutually independent pathways, but synergistic and overlapping. A key finding is that research has to be integrated within wider pro-poor development processes.

While no blueprint methods for scaling up can be found, the report concludes from case studies and wider experiences that creating an

impact from research results has, in the past, focused heavily on the 'post-project' stage. Many of the key strategies that were identified as prerequisites for successful scaling up need to be addressed extensively during the pre-project and implementation phases. The strategic framework that was developed places its main emphasis on the preparatory and implementation stages of research. Many of the elements are not within traditional research activities, and are often related to good development practice, but nevertheless have a direct bearing on success in scaling up research. These results convey that projects see the value in institutions and institutional environments, but they cannot characterize and understand them as extensively as they can the biophysical environments. This suggests that projects could benefit from the greater involvement of political or social scientists.

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Tags: CPWF Theme 2; Water and People in Catchments

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