A Conceptual Framework to Link Collective Action, Scale and Poverty

Watershed management is carried out on a range of scales: a group of neighbors rehabilitating a water source by planting new tree species, a women's group working with an NGO to build a potable water system that draws water from a nearby river or a producer's association in the lowlands lobbying the government to restrict land or water use in the upper catchments to ensure stable and plentiful supply of water for irrigation. These examples of collective action for natural resource management (NRM) aim to deliver benefits at the specific scale at which they are undertaken. However, whether or not these benefits actually materialize, and how substantial they are, will be affected by the actions of others. The goal of watershed management should be the equitable, efficient and sustainable use of water resources between stakeholders.

It is important not to lose sight of where the poor fit into these decentralized, collective processes. Poverty itself is a result of dynamic, multi-scale processes. Outcomes at the individual scale both influence and are influenced by what happens at the community, regional or national scale (Barrett and Swallow 2003). Projects that seek to strengthen the role of the poor in watershed management need to be aware of these issues and create spaces in which the 'action resources' of the poor have value.

The CGIAR Challenge Program on Water and Food (CPWF) project, "Sustaining Inclusive Collective Action that Links Across Economic and Ecological Scales in the Upper Watershed (SCALES)," explicitly recognizes the relationship between collective action, scale and poverty in a watershed context.

The project has developed solutions to overcome barriers and foster equitable and sustainable management of watershed resources. Tropical watersheds are typically characterized by multiple, overlapping scales. Ecological, economic, social and political asymmetries make it difficult to achieve cooperation around watershed management at anything but the very local scale. Yet, multi-scale coordination and cooperation are essential to adequately address watershed problems.

Conceptual framework linking collective action, scale and poverty

The SCALES conceptual framework explores how collective action can contribute to poverty reduction in a watershed context. Key elements of collective action in watershed management are the multiple stakeholders and multi-scale social interactions among and between community groups, neighboring groups and institutions. There are also different dimensions of poverty and human well-being, lateral flows of soil and water and multidirectional flows of economic, political and social interaction (Swallow *et al.* 2006).

1. Watershed management is inherently multi-scale, and collective action around water management occurs at multiple scales, simultaneously.

The framework (Figure 1) is a conceptual model of a watershed divided into primary physical nodes (human-dominated zones: the upland, the midland and the lowland), with secondary institutional nodes (arenas of negotiation, conflict and/or collective action among adjacent water users) and tertiary institutional nodes. Within primary nodes, local collective action can occur around the management of springs, wells, potable water systems or small-scale irrigation schemes. Upstream-downstream externalities, also termed 'water transitions' or changes in quality, quantity

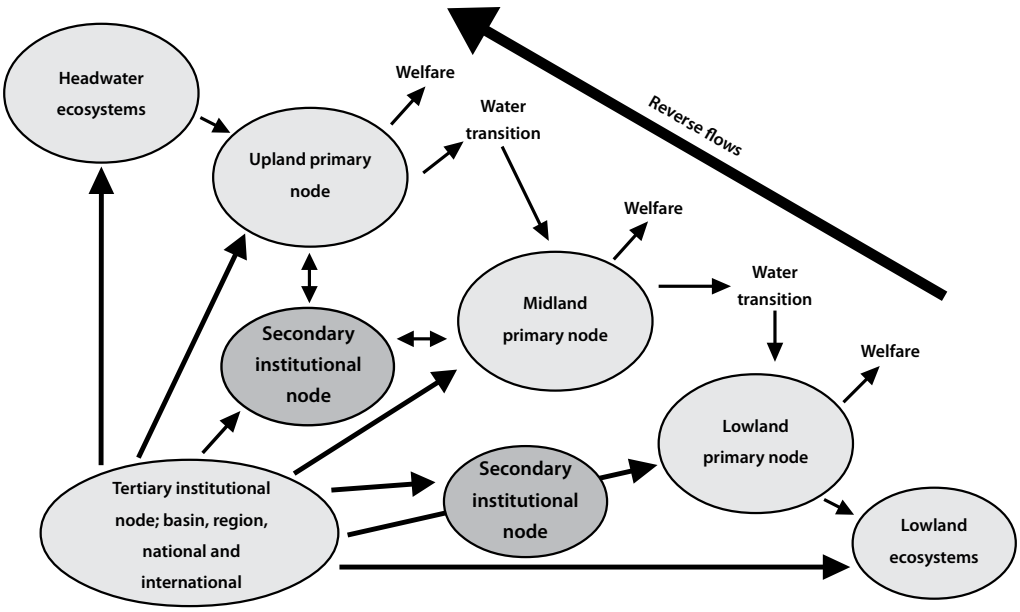

Figure 1. Conceptual framework of multi-scale collective action in watershed management

and availability of water, act between primary nodes. Such externalities are managed through secondary institutional nodes that span two primary nodes or tertiary institutional nodes that cover the watershed. Relationships are the same whether at the sub-catchment, catchment or basin scale, though with increasing complexity.

2. Lateral flows of soil and water that cause water transitions are not the only resource flows in the watershed.

Economic, social and political resources are resource flows as well, which may flow from downstream to upstream. These 'reverse flows' can be related to the magnitude and the welfare impacts of the water transitions. The form that reverse flows take, and their welfare implications, will be conditioned by the nature of social and economic relationships within catchments and institutions at primary, secondary and tertiary scales.

The framework identifies the key hydrological and socio-political relationships across scales in watersheds. This does not provide insights on how people, individually and collectively, are likely to behave in such a context. Individual and group decisions take place in an action arena: a socially defined space composed of actors, action resources, rules and actions.

The diagram (Figure 2) presents a framework for analyzing individual and group decisions that take place in an action arena adapted to the watershed context (di Gregorio *et al*. 2004, Ostrom 2005).

An example of reverse flows

Downstream water users can use political influence to push for strict regulation of land use in the upper catchments to protect downstream water supplies. This can be at the expense of upstream livelihoods. Alternatively, a payment for environmental services scheme could achieve the same environmental outcomes with more positive impacts on upstream livelihoods.

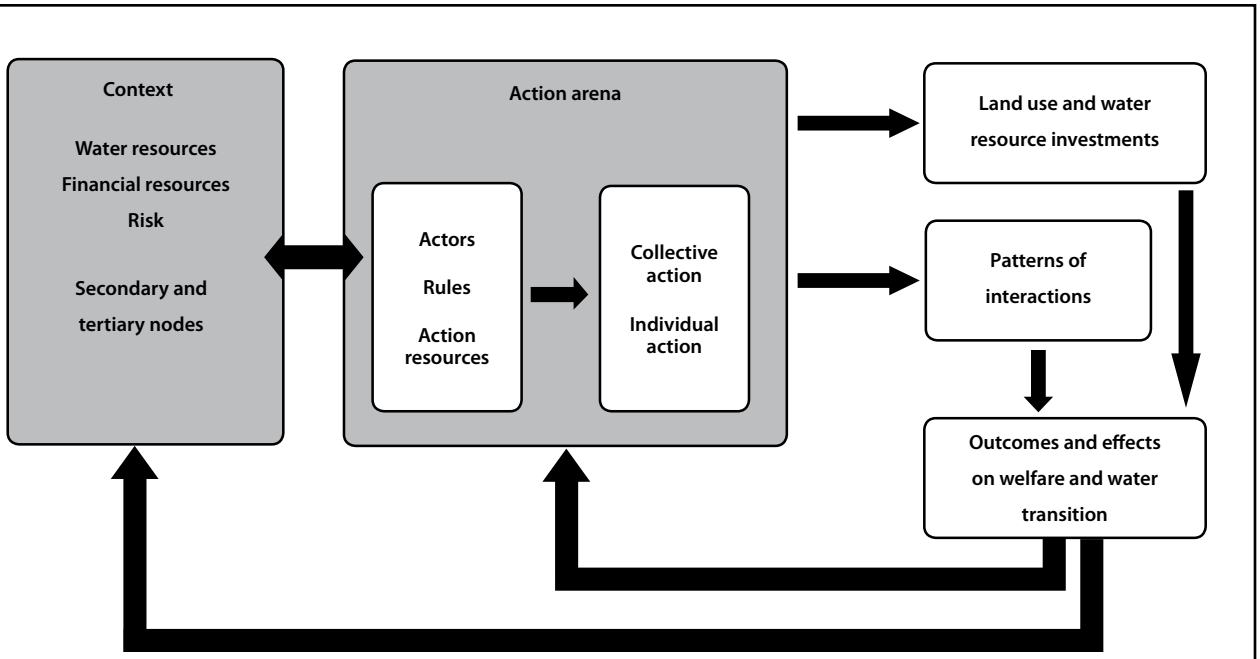

Figure 2. Actors, action resources, collective action and outcomes in a watershed unit

The rules that govern what actions are possible are embedded in institutions, which can be formal or informal, and can operate at multiple, often overlapping, scales. In a given action arena what influences an actor's ability to take action or influence others are his or her 'action resources.' These include assets, such as rights to natural, physical and financial capital, as well as the social and human capital that actors are able to draw upon. Personal characteristics such as leadership ability, charisma, ethnic origin, ideology or value systems are related to human and social capital but are worth identifying separately because they go beyond the instrumental way in which assets are normally regarded. For example, an ideology can influence one's own behavior or be used to create legitimacy or solidarity around a cause.

3. In a watershed context, decisions are made in multiple 'action arenas' at multiple and overlapping scales.

In these action arenas, both the rules and resources that have value in influencing outcomes may differ. The poor are often not without action resources, but their resources may be more useful in some arenas than in others. This is likely to be very context-specific. The better off, meanwhile, may engage in 'forum-shopping,' looking for the arena in which they are most likely to obtain a result favorable to their interest. Projects that seek to strengthen the role of the poor in watershed management need to be aware of these issues so that they can orient their work towards increasing the relevant action resources of the poor. Projects must also create spaces in which the action resources that the poor currently possess have value.

Participatory poverty analysis using the 'stages of progress' methodology

The SCALES project used the stages of progress (SOP) methodology to identify the poor and understand the role of water in their livelihoods (the next article presents this methodology in detail). SOP is a participatory methodology that relies on community definition of poverty at the household level. The methodology was developed to assess both the dynamics of poverty and the underlying causes.

The SCALES project applied the SOP methodology in the Fuquene and Coello watersheds in Colombia and in the Kapchorean and Awach basins in Kenya. Communities were purposefully selected in the upper, middle and lower parts of the watersheds

on the basis of incidence of poverty and the expected intensity of water conflicts. Interview questions focused on water use, conflicts and management at the household and community levels. In each community, quantitative and qualitative information was gathered from interviews with households and key informants and from observations by project staff in the field on movement in and out of poverty and the main causes. (Refer to other article in this source book where the SOP methodology is outlined in greater detail).

Key recommendations

Insights from the project provide important recommendations for considering poverty and collective action in watershed management.

1. Projects that seek to strengthen the role of the poor in watershed management need to be aware of the multiple and overlapping scales at which resource management decisions are made.

2. Pro-poor outcomes can be achieved by increasing the ability of the poor to influence decisions at a specific scale or in a specific forum or by shifting the scale or forum of a decision to one where the 'action resources' of the poor have more value.

3. Communication may be more effective than regulation in promoting collective management and when initiatives come from upstream rather than downstream communities.

Contact Person

Nancy Johnson (n.johnson@cgiar.org)

Partner Organizations

Centro Internacional de Agricultural Tropical
Consorcio para el Desarrollo Sostenible de la Ecoregion Andina (CONDESAN), Peru
Fundación Humedales, Colombia
International Food Policy Research Institute
Maseno University, Kenya
SANA
Semillas de Agua, Chile
Universidad de los Andes, Colombia
World Agroforestry Center
World Wildlife Fund, Colombia

Key Reference

Johnson, N. 2009. *Sustaining inclusive collective action that links across economic and ecological scales in upper watersheds.* CPWF Project Report. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food. http://hdl.handle.net/10568/3909

Tags: PN20: Sustaining Inclusive Collective Action

Bibliography

Barrett, C.B. and B. Swallow 2003. *Fractal poverty traps.* Working Paper. Cornell University, New York, USA.

di Gregorio, M., K. Hagedorn, M. Kirk, B. Korf, B., N. Mc Carthy, R. Meinzen-Dick, R. and B. Swallow 2004. Property rights, collective action and poverty: The role of institutions for poverty reduction. Paper presented at *Tenth Biennial Conference of the International Association for the Study of Common Property*, Oaxaca, Mexico, 9-13 August 2004.

Jensen, J. 2009. *Understanding the links between water, livelihoods and poverty in the Nyando River basin, Kenya.* MSc thesis, University of Florida, Gainesville, Forida, USA.

Johnson, N., J. García, J.E. Rubiano, M. Quintero, R.D. Estrada, E. Mwangi, A. Peralta and S. Granados 2009. Water and poverty in two Colombian watersheds. *Water Alternatives*, **2**, 34-52.

Onyango, L., B. Swallow and P. Teyie 2008. *Poverty, livelihoods and water resource interactions in the Nyando River basin*. SCALES Project Report.

Ostrom, E. 2005. The value-added of laboratory experiments for the study of institutions and common-pool resources. *Journal of Economic Behavior and Organization*, **61**, 149-163.

Swallow, B., N. Johnson, R. Meinzen-Dick and A. Know 2006. *The challenges of inclusive cross-scale collective action in watersheds. Conceptual framework of Theme 2 of the CGIAR Challenge Program on Water and Food.*

Woolley, J. 2010. Legacy of PN 20: *Collective action in (upper) watersheds.* Unpublished manuscript.