Collective Action and Property Rights for Sustainable Development

Property Rights and Collective Action in Watersheds

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What's Special About Watersheds?

Watersheds define a terrain united by the flow of water, nutrients, pollutants, and sediment. Watersheds also link foresters, farmers, fishers, and urban dwellers in intricate social relationships. Both factors—the biophysical attributes and the policy and institutional environments—shape peoples' livelihoods and interactions within the watershed.

Watersheds are simultaneously managed at various social and spatial scales, from community-level catchments to transnational river systems and lake basins. The flow of water, soil, nutrients, and other materials across a landscape extends the consequences of decisions about resource use well beyond the individual land user or manager. These flows produce both positive and negative downstream outcomes (or externalities). Upstream pollution by agricultural chemicals can expose downstream users to economic and health costs. More positively, upstream soil erosion can transport fertile soil that can enrich downstream rice paddies or other fields. Because watersheds have such broad impacts at so many levels, they raise special issues for the management of resources through property rights and collective action.

Property Rights and Watersheds

Despite their complexity and diversity, all watersheds share two keystone resources: water and land. Property rights to these two resources are often interrelated, as when rights to agricultural land are accompanied by presumptive rights to its surface and groundwater. Often, however, water rights are more dynamic, flexible, and contested than land rights.

Whereas the supply of land is relatively fixed and certain, water supplies vary depending on rainfall, hydrologic conditions, and amounts extracted by other users. Economic and urban development increases demand for water for urban and industrial use as well as for agriculture. Water users with conditional, secondary, and insecure rights to water are most vulnerable to dispossession. Markets may increase the value of water and economic incentives for its efficient use, but the more water becomes a commodity, the greater the potential for dispossession of poor and vulnerable groups.

Property rights to land resources generally vary across the different types of land that make up watersheds. Insecure property rights to cropland can reduce incentives to invest in land improvements and conservation structures such as terraces or trees that could reduce soil erosion and sediment flows. Usually more important for watershed management outcomes are property rights to filters—small areas of land that help to check, divert, absorb, or stop an undesirable flow of soil, sediment, or pollutants within a watershed. Some types of filters, such as rice paddies and contour strips, are man-made and privately owned and managed, whereas others are naturally occurring and property can range from private to communal to public.

Rights to land, water, or other benefits need not be exclusive to be secure; they can be held in common or overlap with different resource users. Property rights to common or public lands such as wetlands, riverbanks, forests, footpaths, and grazing areas are sometimes insecure and contested. In these situations, community management, public regulation, or co-management by communities and local government agencies may be appropriate to enhance access and operation.

Insecurity or conflict over property rights may encourage extractive use of resources. Experiences from the Sumber Jaya catchment area of Indonesia illustrate the problems arising from ill-defined property rights. The management of upper watershed areas is still dominated by the state. The Forest Department manages 70 percent of the land where local people, classified as illegal squatters, live. Conflict over property rights generates uncertainty about reaping gains on investments in conserving resources and instead provides incentives for farmers to clear primary forest land and adopt farming practices that generate short-term rather than long-term returns.

Collective Action and Watershed Management

Effective watershed management requires various stakeholders to coordinate their use of and investments in these resources. Robust collective management depends on the level of existing community organization and social capital. Strong norms and social relations enable people to work together to achieve their goals. The size and social structure of communities sharing the watershed influence their ability to stimulate and sustain collective action. Smaller groups living closer together are often more unified than larger, dispersed ones in supporting effective collective action.

Achieving coordination often requires reconciling socially defined boundaries like villages with physically defined boundaries like catchments. Although there are technical reasons to use catchments as natural units when applying a watershed approach to natural resource management, organizing collective action along strict hydrological boundaries is difficult. Hydrological features of watersheds or subwatersheds rarely correspond to the village, the district, or other social or administrative unit. The best solution to this problem may be to work within social boundaries, applying a watershed approach. The "focal area approach" used in Kenya gives preference to social, rather than hydrological, boundaries, making it easier to stimulate collective action for managing the resources.

Furthermore, the scale at which the physical environment is optimally managed may not correspond to any one decision-making body in a community. In that case, collective action within existing institutions or through the creation of new institutions becomes critical for managing watershed resources. Decisionmaking does not have to be embedded in only one body at one level, but different management responsibilities can be devolved to different bodies. These options vary according to the size of the watershed, the populations occupying the watershed, and how the scale and interaction of resource flows affect people.

STAKEHOLDER PARTICIPATION IN WATERSHED MANAGEMENT

The extensive nature of resources and the interdependency of users within a watershed underscore the need for broad stakeholder participation in developing and implementing watershed management technologies and practices. When stakeholders do not have an opportunity to participate, the complexity of local realities and the promise of local solutions may be overlooked. Recent evidence suggests that participatory watershed development projects are more successful than externally managed, top-down, "one-size-fits-all" projects.

Achieving effective participation can be challenging because stakeholders often differ greatly in their social, economic, and political power and access. There is always the risk that more powerful stakeholders will negotiate solutions more beneficial to themselves. Downstream cropland owners may reap the benefits of improved water and reduced sediment flows, while less-favored groups, such as women and pastoralist households, find themselves restricted from grazing and collecting firewood in riverine areas. Including women and other less-favored groups in stakeholder consultations could lead researchers or policymakers to consider alternative land use and conservation strategies that would minimize negative impacts on them. Excluding them could undermine the effectiveness of policies if adversely affected groups fail to comply. Socially optimal resource management calls for collective action in negotiation, decisionmaking, management, and conflict resolution among all watershed stakeholders.

Effective democratic forums help provide poor and marginalized members of the community with a greater voice in these processes. Where such forums are weak, less enfranchised groups may need help in asserting their interests. New types of organizations that build on but do not duplicate existing ones and that incorporate more of the stakeholders with interests in watershed management have a key role to play in bridging gaps between local community organizations. External organizations can facilitate, support, and reduce the costs associated with these multi-stakeholder negotiation processes.

Stakeholders who participate in watershed management may also reap the rewards of enhanced human and social capital. By working closely with researchers, farmers can strengthen their technical knowledge about agriculture and natural resource management as well as their analytical capacities for evaluating different technologies. Working as a group, they can also improve their organizational capacity. As they gain the confidence to interact with researchers and extension agents, participating farmers become empowered to address their own problems by seeking out appropriate information or advice. Given the dynamic and long-term nature of watershed management, empowering local communities to take a leading role is essential.

Watershed systems are highly complex: resources frequently have many uses and users; resources and the institutions that manage them span multiple scales; and flows and movements of water, sediment, nutrients, and other substances such as pesticide and fertilizer chemicals cause the actions of a few to have far-reaching effects on many. Interdependencies and conflicts—latent or overt—are inherent in watershed management. If manipulated secretly, these interdependencies can cause suspicion, distrust, and possibly violence and retard economic progress. When addressed in an open, transparent, and dynamic manner, these interdependencies can be the foundation of political cooperation, economic development, and social cohesion. ■

For further reading see *Water Policy* (Vol. 3, Issue 6), April 2002; D. Grey, *Beyond the River: The Benefits of Cooperation on International Rivers*, (Stockholm: International Water Symposium, 2002); R. Meinzen-Dick and R. Pradhan, "Legal Pluralism and Dynamic Property Rights," CAPRi Working Paper 22 (Washington, DC: IFPRI, 2002), http://www.capri.cgiar.org/pdf/capriwp22.pdf; and B. R. Bruns and R. S. Meinzen-Dick, eds., *Negotiating Water Rights* (London and New Delhi: Vistaar and ITDG, 2000).

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