

## **Community-based principles for negotiating water rights: some conjectures on assumptions and priorities**

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*Increasing policy support for community-based natural resources management and institutional redesign has been followed by questioning of the feasibility, risks, and results of such approaches. The application of participatory approaches for improving basin-scale water governance would benefit from reconsideration in light of critical analysis of community-based natural resources management and institutional design principles for common-property resource management. Problems of pervasive politics and contextual contingency indicate the need for revising assumptions and expectations. A community perspective on the application of institutional design principles suggests distinct priorities from current policies for improving basin water allocation. Measures to support community involvement in basin water governance, such as legislative reform, legal empowerment, networking, advocacy, participatory planning, technical advice, and facilitation, may be more effective if fitted to community priorities in negotiating rights to water.*

*Key words: water rights, water allocation institutions, river basin governance, integrated water resources management, community-based natural resources management, institutional design principles*

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### **Introduction**

As governments and other organizations seek to improve the management of natural resources, participatory and community-based approaches have promised valuable advantages, and so have received increasing support in the policies of national and international agencies. However, experience and analysis indicate that the application of such approaches also faces serious problems and limitations.<sup>1</sup> This paper looks at the relevance of community-based approaches to water rights negotiation in light of critical analysis of community-based natural resources management and institutional design principles for common-property resources. It goes beyond the usual focus on the application of participatory approaches by government agencies in individual communities to suggest some practical implications of a community-oriented perspective on basin-scale water governance.

Rights to water may be negotiated in many contexts,<sup>2</sup> not just within communities, but also between communities and others sharing rivers, aquifers, and other common-pool water resources. Government assistance to develop irrigation and water supply systems may require agreements about how much water will be abstracted, as well as how access to enhanced supplies will be allocated. As competition for water rises along rivers, water users may take part in devising rules for how scarce water will be shared. If government agencies seek to formalize water rights, then quantities and conditions in permits may be negotiated. One source of water to supply the demands of growing cities is by reaching agreements for voluntary transfers from irrigators.

From the perspective of rural communities, negotiating agreements about rights to water may be a necessary condition for aid to improve water supplies for farms and homes. More likely though, is the need to defend access to water against threats from competing users. Drought intensifies conflicts, stimulating short-term and long-term efforts to modify rules and procedures regulating rights to water. Bureaucratic programs, such as basin planning or registration of water rights, may create risks that access will be impaired or lost unless water users act effectively to protect themselves. Legislative changes may imperil the legal status of community water rights. Various strategies may be open to communities,<sup>3</sup> including direct action to acquire more water and restrict others' access; litigating in court; participating in planning and other formal administrative procedures; lobbying to advocate their case to the public and politicians; and trying to reach agreements with other water users and with water management agencies. All these strategies are part of negotiating rules about who gets water.

## **Organization of the paper**

Community-based approaches to natural resources management offer important advantages in the development of basin and sub-basin-scale water allocation institutions, but problems of politics and history should be expected to constrain and complicate their implementation, as outlined in the next section of this paper. In the third section, application of a community perspective to institutional design principles suggests distinct priorities for negotiating water rights. The impact of measures to support communities will depend on how they fit with local circumstances and priorities, as discussed in the fourth section of the paper. The final section of the paper summarizes conjectures about community dynamics and priorities in securing access to water.

## **Advantages and limitations of community-based approaches**

Top-down approaches, emphasizing centralized government authority and control, often encounter limited effectiveness in managing water and other natural resources. There is now increased acceptance and support, for community-based approaches to natural resources management and conservation, at least in policy aspirations, but such approaches are also subject to growing critical scrutiny.<sup>4</sup> Efforts to strengthen community roles and devolve responsibilities to local bodies may be combined or conflated with deconcentration within government agencies.<sup>5</sup> Community-based approaches may be valued for their own sake, as ways to conserve and promote local cooperation and self-governance. Community-based approaches may also be pursued for practical reasons, as an instrument to achieve goals such as increasing equity or water productivity, or simply shifting costs away from government. Many of the advantages of community-based approaches potentially apply in situations where water rights are negotiated as part of basin water management:

- Water users possess detailed local knowledge about how they use water, their needs, and the possible consequences of changes. Community-based approaches cultivate channels through which this information can be considered in making decisions.
- Collective action to manage water weaves water users together in webs of relationships. These relationships build social capital of trust and shared understanding that facilitates cooperation.
- As part of their daily activities, it is often easy for water users to observe whether neighbours are fulfilling their commitments and obligations in using water. They can monitor and detect nearby violations with relatively little time and effort.
- Communities can selectively apply sanctions unavailable through formal institutions. The threat of being shamed or of losing one's reputation as respected and trustworthy may compel compliance. Water users possess strong incentives and willingness to struggle for their access to water.
- Community-based approaches may be able resolve many conflicts at a local level, by those most concerned, with little cost or complication. Such subsidiarity, customized to local circumstances, reduces the transaction costs of coordinating resource use and implementing agreements.
- Involving communities in decisions builds legitimacy and support, reducing risks of rejection and resistance. Participation realizes principles of democracy and empowerment.
- Water management may become more effective when it utilizes the capabilities of users, not just as individuals, but also as communities linked by ongoing relationship, with shared views and common interests that facilitate cooperation.

Community-based approaches have sometimes been advocated and applied with inadequate attention to the variety of people involved in using and managing resources in local areas, and the intricate arrangements through which they compete and cooperate. Simplistic stereotypes of isolated, small, stable, and homogeneous groups sharing the same interests and traditional norms for preserving local resources often fit poorly with the complexity of how diverse local and external actors struggle to make and break rules about exploiting and replenishing resources that may be mobile and interconnect broad areas.<sup>6</sup> The conditions and limitations of community-based approaches need to be considered along with their advantages. Critiques of community-based natural resources management concentrate on core themes of conflict and contextual contingency, or, in simpler terms, politics and history.

**Conflict**

The concept of community itself is problematic, presuming local solidarity and cooperation that may well be absent or achieved only through substantial effort. Romanticism and ideological aspirations risk obscuring recognition of the tensions, strife, and flaws that characterize collective action past and present. Thus, for example, accounts portraying Balinese subaks and other irrigation communities as highly cohesive encourage exaggerated assumptions about what exists or may be feasible for water user associations.<sup>7</sup> Access to water and other resources is politically contested, so “management” is not a neutral technical exercise in optimizing water productivity, but also an arena for continuing struggle among competing claimants.

**Heterogeneity**

Assumptions of homogenous actors are invalid, with gender, age, wealth, and other distinctions differentiating communities. Within an irrigation system, head-enders have different interests and options than tail-enders. Theoretical and empirical analysis indicate that heterogeneity may impede or facilitate collective action,<sup>8</sup> but diverse situations of different actors inevitably shape perceptions and actions.

**Asymmetry**

Differences in knowledge, wealth, and power often (but not always) place communities at a disadvantage in negotiating with outsiders. They often have little room for manoeuvre. If an opportunity exists to negotiate, they may have few alternatives for maintaining or improving their access to resources, leaving them in a weak bargaining position.<sup>9</sup>

**Inequity<sup>10</sup>**

What helps people who are generally poor by national standards does not necessarily do much for those who are poorest within communities. Within communities, community-based approaches tend to reproduce or even worsen inequalities, although specific targeting measures may help to provide more benefits for those who are poorer. A degree of control by local elites, although not necessarily “capture,” is almost inevitable.<sup>11</sup> Poor people, women, ethnic minorities, youths and elderly, and others who are not part of local elites may be left out, neglecting their views and concerns. Biased decisions may reinforce and worsen inequities in access to resources.

**Incentives**

Participation imposes substantial transactions costs, particularly for the poor, and may not be worthwhile for participants, not just due to problems in organizing collective action but also due to the risks of manipulated and meaningless participation, and policies that transfer responsibility without authority. Furthermore, the incentives of leaders and of ordinary resources users are not necessarily consistent with conservation and sustainable use. In practice, transfer to local control may be almost as prone to biased access and neglect of longer-term sustainability as state control, unless adequately offset by local and external regulation to promote broader societal interests such as legal equality, social equity, and environmental conservation.<sup>12</sup> Rather than simplistic state withdrawal for full local control, the need may be to find an institutional mix that better combines community, market, and state action, as in forms of coproduction, co-management, or regulated autonomy.<sup>13</sup>

**Context**

The complexity of local resource characteristics, social relationships, external linkages, and other circumstances conditions the impact of interventions, making them prone to fail unless customized to context.<sup>14</sup> Uniform implementation and outcomes are unlikely. Attempts to impose solutions from outside often founder, because they fit poorly with local resource characteristics and institutions,<sup>15</sup> and are resisted as inappropriate and illegitimate. Existing institutional arrangements shape perceptions and the potential for modifying or replacing rules, so that paths for change depend on past and present perceptions and practices that are not easily altered. Institutional rearrangements that occur under exceptional conditions such as outstanding local leaders, strongly integrated communities, abundant funding, and skilled advice are hard to replicate, and prone to revert when the unusual conditions disappear.<sup>16</sup>

These and other factors constrain the applicability of community-based approaches, to natural resources management in general and water allocation in particular. Community-based approaches are not a panacea;

they do not offer a way to escape politics, bypass elites, or safely shortcut to social justice. However, the thrust of most critiques is not to say that community-based management is impossible, but rather to challenge invalid assumptions, oversimplified implementation, and unrealistic expectations. Revised assumptions, based on more realistic expectations, may contribute to developing better approaches.

## Applying institutional design principles

An important source of ideas about community-based natural resource management comes from research on community management of common-pool resources such as forests, fisheries, rangeland, and irrigation systems. Proposed principles of institutional design<sup>17</sup> synthesized findings from analysis of long-enduring institutions managing common-property resources, and are summarized in the first column of Table 1. The principles identify means to overcome the “tragedy of the [unmanaged] commons”<sup>18</sup> where individual self-seeking behaviour would lead to degradation and congestion, unless regulated through suitable institutional arrangements. While specific local rules for using a particular resource vary widely, the design principles proposed some general characteristics. Institutions were “crafted” consciously or unconsciously, primarily by resource users acting as insiders, through deliberate design, imitation, trial-and-error learning, improvisation, and other processes. Many of the cases examined by students of common property have been small communities, apparently managing resources through relatively autonomous self-governance, often analytically treated as relatively homogeneous and isolated from external political and economic forces. The principles emphasize “long-enduring” institutions, able to recover from shocks and adapt to changing conditions, especially since there may be no stable ecological equilibrium, nor a “one best way” to manage a resource.<sup>19</sup>

Further analysis has highlighted differentiation within communities, interactions with external social and economic forces, and implications of resources and livelihood strategies that extend beyond small localities.<sup>20</sup> The capacity of government intervention to disrupt local institutions for managing common property resources has been extensively documented, but less has been learned about ways that states can support and sustain local management.<sup>21</sup> Attempts to apply the principles of institutional design to prescriptively determine how institutions for river basin water allocation *must* be designed may fit badly with the complexity of local history and politics.<sup>22</sup> Institutional change may be less a process of careful and deliberate craftsmanship, and more a messy process of institutional *bricolage*, improvisational recombination of available arrangements.<sup>23</sup> Thus, applications on institutional design principles need to take into account the influence of including politics, history and the improvisational and contested ways in which institutions are modified (which may not necessarily draw on a deep folk or scientific knowledge).

Nevertheless, within an appropriately adapted approach, institutional design principles still offer a useful way to outline some of the challenges that face stakeholders concerned with governing shared water resources. While institutional design principles are insufficient by themselves to devise solutions, they provide a framework for analyzing some of the challenges facing communities seeking to negotiate rights to water in contexts of competition with other communities and significant state influence on water governance. Based on experience and analysis of common property resource management in general and water allocation in particular, some preliminary ideas can be proposed about priorities for communities negotiating rights to water.

**Table 2. Institutional design principles, issues, and conjectures on community priorities**

Principle	Issues	Community priorities
1. Clearly Defined Boundaries The boundaries of the resource system (e.g., irrigation system or fishery) and the individuals or households with rights to harvest resource units are clearly defined	Basins offer clear boundaries, but: Shortages are uncertain and concentrated in particular times and places Administrative boundaries, livelihood activities & other linkages crosscut basins	Coalitions for problemsheds

Principle	Issues	Community priorities
<p>2. Proportional Equivalence between Benefits and Costs</p> <p>Rules specifying the amount of resource products that a user is allocated are related to local conditions and to rules requiring labor, materials, and/or money inputs.</p>	<p>Competing claims to water</p> <p>Infrastructure subsidies distort linkages between receiving water and paying costs</p>	<p>Local water allocation practices accommodated</p>
<p>3. Collective-Choice Arrangements</p> <p>Most individuals affected by harvesting and protection rules are included in the group who can modify these rules.</p>	<p>Representation is required</p> <p>Platforms may be biased, manipulated or lack authority</p>	<p>Representation in decisions, in multiple forums, especially during crises</p>
<p>4. Accountable Monitoring</p> <p>Monitors, who actively audit bio-physical conditions and user behavior, are at least partially accountable to the users and/or are the users themselves.</p>	<p>Agency accountability weak</p> <p>Information technologies make more information available, but generate information overload</p> <p>Complex factors affect water availability</p>	<p>Local and scientific expertise to demystify information</p>
<p>5. Graduated Sanctions</p> <p>Users who violate rules-in-use are likely to receive graduated sanctions (depending on the seriousness and context of the offense) from other users, from officials accountable to these users, or from both.</p>	<p>Lack of relationships between distant users impedes trust and informal sanctions</p> <p>Formal sanctions hard to apply</p>	<p>Recourse if rights infringed</p>
<p>6. Low-cost Conflict-Resolution Mechanisms</p> <p>Users and their officials have rapid access to low-cost, local arenas to resolve conflict among users or between users and officials</p>	<p>Courts problematic for resolving water conflicts</p>	<p>Efficient mediation, backed by government authority</p>
<p>7. Minimal Recognition of Rights to Organize</p> <p>The rights of users to devise their own institutions are not challenged by external governmental authorities, and users have long-term tenure rights to the resource</p>	<p>National legal frameworks ignore or disrupt customary water rights and organizations</p> <p>Insecure tenure</p>	<p>Customary water rights recognized</p>
<p>8. Nested Enterprises</p> <p>(For resources that are parts of larger systems)</p> <p>Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.</p>	<p>Participation is costly</p> <p>Multiple government units and agencies</p>	<p>Community autonomy</p> <p>Strategic alliances</p>

Sources: The first column repeats "design principles derived from studies of long-enduring institutions for governing sustainable resources," as presented in Andries, Janssen and Ostrom 2003, which are based on Ostrom (1990: 90). For column two, see the paper, and also Cleaver and Franks 2003 and Ravnborg 2003.

### Clearly defined boundaries

Watersheds delimit catchments within which streams merge to form rivers, delineating sub-basins and basins that appear to clearly define boundaries for water management. As water becomes scarcer in a basin, and augmentation of supplies becomes more difficult, the scope of interaction and competition between users increases, increasing the need for and potential benefits from coordination among those sharing a common resource. However, a series of other factors blur the clarity of basin boundaries.<sup>24</sup> Shortages become severe at particular times and places, affecting different water users differently. Administrative jurisdictions such as districts and provinces crosscut basins. Resource users engage in activities inside and outside of basins. Land-

use changes that affect water flows engage different sets of people and agencies. Health agencies have responsibilities regarding about water quality, while environmental agencies and groups pursue their agendas. Groundwater basins overlap surface basins. Irrigators steering water around hillsides and cities reaching out to augment their water supplies shift water between different sub-basins and basins. The physical linkages within a basin offer a foundation for management, but social and economic linkages follow different patterns, raising the transaction costs of coordination. Conceptual frameworks for integrated water resources management (IWRM)<sup>25</sup> offer the appealing prospect of coordinating solutions to many of these complexities but may presume or be interpreted to require ambitious projects for design and implementation of elaborate new institutional arrangements. From a community perspective, if negotiation is costly, it may be most important to engage those most affected by and involved in causing a particular problem. Thus, the most relevant scope may cover a *problemshed*,<sup>26</sup> rather than necessarily including an entire river basin or comprehensively integrating water resources management. Rather than clearly defined boundaries and complete membership, the immediate challenge from a community perspective may be to form an effective coalition among a fuzzy set of people with widely differing stakes in a problemshed.

### **Proportionality between costs and benefits**

Within communities, access to shared water infrastructure for household or irrigation use is almost always linked to obligations to contribute to investment or at least maintenance. However, subsidies for major water infrastructure encourage expectations of receiving benefits without paying costs. Users are likely to oppose formalization of water rights if it is seen as primarily a pretext to impose new charges. Few governments have enough political power to establish themselves as waterlords extracting marginal cost prices for water. Shifting to volumetric water allocation of surface water offers theoretical benefits, and practical problems in measurement and control that grow larger as the volumes involved get smaller. From a community perspective, arrangements that accommodate existing local practices, such as proportional sharing of shortages and measurement by time rather than volume, are likely to be preferable.

### **Collective-choice arrangements**

The scale of basins prevents direct participation of all stakeholders, but representation risks reinforcing biases.<sup>27</sup> The danger that participatory platforms<sup>28</sup> are co-opted, manipulated, and lack meaningful decisionmaking power makes it wiser to take a selective and strategic approach to participation, deciding whether or how to “come to the table,” and retaining options to work through multiple forums.<sup>29</sup> Representation is most crucial during crises, such as drought, when modifications in water allocation rules receive lots of attention.

### **Accountable monitoring**

Communities lack information about conditions elsewhere in a basin. Agencies with monopoly control over infrastructure may escape accountability, and tend to develop information systems that serve their internal purposes. Advances in information technology promise abundant information, and accompanying problems of information overload and difficulty in understanding the complex impact of land-use changes, return flows and other factors on streamflows. Local and outside experts can help demystify knowledge, improving the capacity of communities to make and monitor agreements.

### **Graduated sanctions and conflict resolution mechanisms**

Rights mean little unless there are ways to enforce them when they are infringed. Lack of social ties between distant communities limits the influence of sanctions based on reputation and repeated interaction, as does the asymmetry of water flowing downhill. A framework of government authority can enable strangers to contract credible commitments,<sup>30</sup> and this can include agreements about government-recognized water rights. However, legal proceedings that are prolonged, costly, hard to enforce, or construed in ways that fit poorly with the practical needs of water management make courts problematic for resolving conflicts, although they may offer useful bargaining leverage.<sup>31</sup> If effective conflict resolution mechanisms and sanctions are absent, then problems such as unchecked upstream abstraction and mining of aquifers may be inevitable.<sup>32</sup> Conditions in many basins mean that having any form of effective recourse is a higher priority for communities than minimizing transaction costs or carefully calibrating sanctions. In the absence of effective alternatives, mediation by government authorities plays a central role in dealing with disputes over water.

### **Rights to organize**

Formalization of water user associations in government-driven projects sometimes does more to disrupt than to sustain local collective action in irrigation.<sup>33</sup> Constitutional and legislative provisions asserting government

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sovereignty over natural resources, including water, are often construed to ignore or deny community rights, although advocates can develop other legal interpretations that support community-based property rights, (including both common and individual rights derived from community rights).<sup>34</sup> Legal mechanisms are available by which customary rights can be recognized, with legal standing, without requiring formal registration. Thus, for communities, finding ways to assert customary community rights is likely to be more important than registration of a government-prescribed organization or formalization of water rights.

### **Nested organizations**

The logical structure of basins, sub-basins, and localities invites multiple layers of organization, but makes no guarantee that such a hierarchy will be effective, worthwhile or even feasible.<sup>35</sup> Water rights systems may be more successful if they avoid government micromanagement of water allocation within communities.<sup>36</sup> Legal frameworks can enable formation of special districts, with the necessary authority to manage water and mobilize funds, while leaving it up to water users initiate polycentric organizations on scales that fit their needs and capabilities.<sup>37</sup> Even if local government jurisdictions mismatch hydraulic boundaries, it may be hard to put new or modified rules into practice without their support. From a community perspective, local autonomy and external alliances are likely to be more important than establishing elaborately nested organizations.

If principles for institutional design are interpreted as necessary conditions for coordinating water use within basins, then the limiting and complicating conditions outlined above might be enough to simply conclude that participatory governance will be impossible. Even if institutional design principles are interpreted more modestly, as desirable conditions that favour good management, they still highlight the many challenges facing basin water management. In most cases, especially in the short-term, it is unlikely that all or even many of the principles will be completely fulfilled. The question then becomes not one of prescriptively designing an ideal institution, but of what communities, agencies, and other actors in water governance, improvising institutional design as insiders, can accomplish under the conditions that actually prevail.

### **Aiding community negotiation**

Water users who want to negotiate water rights may choose various means to pursue their interests. They may study relevant statutes and regulations, and gather other information on their own about water problems and potential solutions. They may organize themselves, working through existing local organizations or forming new organizations or coalitions. They may share experiences and coordinate with other groups, through informal contacts and more structured activities such as conferences or workshops. They may participate in planning activities related to water allocation. They may advocate their interests through the media or by directly lobbying politicians and agency officials. They may establish forums covering broader areas such as a basin or sub-basin and develop such organizations to provide effective platforms for negotiation. Complementing the means available to water users are various measures available to improve community participation in basin governance.

### **Legislative reform**

Legal frameworks empower if they recognize rights of existing user communities and enable legal recourse if rights are harmed. Obtaining legal status for user organizations may be useful in providing legal standing to sue in court or to participate in administrative hearings. More generally, transparency, accountability, and other characteristics of the rule of law in good governance provide conditions that enable stakeholders to act more effectively to protect their interests. From a community perspective, one major problem is that legislative reforms take a long time. Stronger rights to resources may be very valuable over the long term, not just for encouraging investment but the variety of ways they can help people secure and improve their livelihoods.<sup>38</sup> Passage of new legislation requires constructing political coalitions, institutional bargaining that is often contingent on propitious circumstances, which may be more a matter of luck than planning. If reforms are enacted, they may make a big difference, or not. Even after legislation is passed, implementing regulations are often needed. Government agencies may or may not be active about applying what has been put into law. If ambiguities or conflicts exist with other legislation, then legal rulings or amendments may be needed. However, even with carefully-drafted legislation, if courts are unable or unwilling to enforce legislation then regulation of social and environmental externalities is difficult.<sup>39</sup> For communities, minor modifications of

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existing regulations and long-term rights to resources may be more important than the medium-term legislative reforms that attract much attention from researchers, policy analysts, and reformers.

### **Legal empowerment**

Legal aid, legal education, and related approaches, sometimes referred to as legal literacy or legal empowerment, cover a range of activities to improve the capacity of people to understand and use legal systems.<sup>40</sup> This includes opportunities for creative use and reinterpretation of existing national and international law. While conventional “rule of law” efforts to develop good governance tend to focus on government officials, legal empowerment approaches emphasize improving the capacity of communities to know and use the law. Local people who develop some expertise can play crucial roles as paralegals. Legal aid may be provided by non-government organizations, law schools, and government programs.<sup>41</sup> Habits, concepts, and prejudices sometimes lead disputants to behave in ways that may not be conducive to reaching agreement. Specific techniques, such as interest-based negotiation, and assistance, from facilitators or mediators, may play a valuable role.

For communities whose water rights are under immediate threat, legal empowerment measures offer some of the most promising opportunities. A first challenge is to enable communities to be able to link with sources of assistance. Media publicity and networking, for example through civic organizations, should be able to play a key role. The second challenge, and likely the main constraint, is the availability of resources, such as funds and skilled lawyers. Governments may not be particularly enthusiastic about providing resources to those who want to challenge government actions. Legal empowerment requires detailed work on the ground, much less exciting and much more prone to failure than advocacy. In practice, it requires lots of compromise, deciding which struggles to prioritize, which goals seem achievable, working with government officials, and seeing what can be done within the constraints of an existing system. What may be most relevant for communities is to have knowledgeable local people and outside counsellors who know the existing legal framework, and what bases it may offer for communities for securing water rights.

### **Networking**

Networking between communities cross-fertilizes experiences and coordinates joint efforts. As discussed earlier, one of the main challenges for water management is the scale of conflicts that can extend across broad areas. Local people may be able to make use of existing linkages with other areas, through relatives and friends living elsewhere, formal organizations, political contacts, and other contacts. Outsiders may be in a good position to foster linkages between distant groups with few existing connections. An outside organization may be able to convene a workshop, seminar, or other activity that brings people together across a basin or sub-basin. However, networking for its own sake risks dissipating time and energy on prolonged discussion. Reforms that offer a voice in consultation processes, but not genuine power, e.g. representation on advisory basin committees, may be useful, or may consume effort out of proportion to outcomes, especially if they require high costs in time and money to congregate dispersed networks of participants. Networks might be most useful when engaged for specific objectives such as sharing solutions and lobbying government agencies and legislatures.

### **Advocacy**

Advocacy draws attention to community concerns, concepts, and roles in managing water. Outside groups may help make advocacy more effective by providing links with reporters, forums to discuss issues and strengthening capability to prepare and deliver messages. If access can be obtained to media or decisionmakers, then advocacy may be able to mobilize allies and reframe issues in ways that favour community concerns. Advocates may play influential roles in policy debates at the national and international level. Advocates concerned about adverse impacts on communities have had successes in blocking passage of new water laws in countries such as Thailand, Sri Lanka, Peru, and Ecuador.<sup>42</sup> In the case of Indonesia’s recent water law, key provisions regarding water rights were revised in hopes of better protecting poor farmers’ access to water, in response to concerns of NGOs, academics, and some parliamentarians. However, communities themselves cannot earn a living from advocacy, and rather than endless ideological struggle are likely to prefer pragmatic engagement that expands meaningful opportunities. Time scales for local advocacy may differ from those of organizations that would like to aid them. On the one hand, communities want pragmatic solutions to immediate problems, and so may have less interest in medium-term struggle for policy reform and intricate



basin planning. On the other hand, communities may pursue in their efforts over decades or even centuries outliving opponents, overcoming temporary setbacks, and applying patient persistence to achieve their local objectives.<sup>43</sup>

### **Participatory planning**

Opportunities can be opened for stakeholders to take part in preventing and resolving problems, increasing input from stakeholders, promoting dialogue, facilitating joint problem solving, and structuring processes through which decisions can be made jointly with user representatives. For water rights, this may apply across a range of activities from managing a particular crisis, seasonal planning for water allocation during periods of scarcity to long-term basin planning. A participation audit could assist an agency to assess the ways it allows and support participation, and whether stronger, more empowering participation may provide greater incentives for stakeholders. Stakeholders may not know about opportunities for participation, and even when they know, may be sceptical about what potential there is for genuine influence. Signs of credibility, such as participation of senior agency staff and honesty about how final decisions will be made may provide important signals. Methods for reducing the transaction cost of participation, particularly the time required, can make a difference, for example providing information, accepting input and engaging in dialogue through multiple forms, rather than restricting interaction to stylized approaches such as conventional public hearings. Many efforts labelled as participation or decentralization fail to convey genuine power, while others that do transfer power, money, and other resources fail to consider the risks of local abuse, inequities, overexploitation of resources and other problems. A key question is “who decides?” Empowerment is far more meaningful if both sides must agree, or when decisions are delegated, authority transferred, or local institutions enabled to make decisions on their own, while governments and civil society also act to provide appropriate regulatory checks and balances.

### **Technical advice**

Training enriches skills, such as in techniques for negotiation and dispute resolution. Technical advice provides relevant information. Lack of technical information is often a key constraint. For example, technical analysis can help to clarify how much water is available and how it is being used. This may help correct misconceptions and focus attention more precisely on feasible solutions. Participatory rural appraisal, participatory geographic information systems, scenario models and related methods offer a variety of techniques for blending local and outside knowledge, in ways that can be relatively fruitful and efficient in terms of local people’s time. Information technologies such as remote sensing, databases, modelling, e-mail, and websites are reducing the costs of monitoring, but still face limitation including limited funding for acquiring data, scientific uncertainty, and information overload for those who want to use such data. Information is useless if it seems irrelevant, incomprehensible, or confusing. Most people are busy with their lives and are not interested in becoming technical experts. Specific studies, focused on problems perceived as important and framed in ways that reflect community concerns are much more likely to be worthwhile than more academic and general research. For a community, an attractive option may be to have their own expert, to have the resources to at least partially offset the weight of expertise that government agencies can mobilize.

### **Platforms**

Facilitation assists formation of forums or platforms for negotiation. Availability of particular forums or platforms<sup>44</sup> can make negotiation possible, providing focused arenas within which problems can be discussed, alternatives considered, and agreements formulated. This may occur as part of other activities, as discussed earlier in terms of participatory planning, or through establishment of special-purpose organizations, such as alliances of concerned groups, basin committees or water councils. Groups can be brought together to discuss issues and consider establishing arrangements for cooperation. Facilitators may help to convene stakeholders and strengthen organizations. However, ostensibly neutral processes convening stakeholders to create consensus based on shared information and improved communication risk perpetuating and worsening existing differentials in power, wealth, and status. Outsiders intending to preferentially aid particular groups, e.g. poor people, women, ethnic minorities, or other disadvantaged groups may want to take a careful and strategic approach to the development of platforms, as may communities themselves.<sup>45</sup> Such a strategic approach may involve selective alliances, controlling release of information about community conditions and objectives, waging struggles in multiple forums, and pragmatic compromises conceived of as only temporary concessions during continuing contests over rights and resources.

## Concluding conjectures

Critical analysis of community-based natural resources management and institutional design principles provides a basis for proposing some tentative ideas, as working hypotheses or prior conjectures,<sup>46</sup> about how communities may be expected to act to secure rights to water. Such conjectures would need further adjustment to apply to specific cases where communities are involved in basin water governance, but may offer a useful starting point for discussion, research, or practical application. Accurate assumptions and realistic expectations about community priorities could reduce the risks of waste, disruption, and disappointment due to inappropriate interventions.

Critiques of community-based natural resources management and institutional design principles clarify some of the challenges and constraints to interventions intended to influence change in water allocation institutions. The scale of competition over water makes negotiation of credible commitments contingent on government sanctions. Coalitions and compromises to forge cooperation among heterogeneous users may reflect and amplify differences due to wealth, power, gender, ethnicity, and other characteristics, unless there are particular conditions and arrangements that promote equity. Political contests over claims to water, budgets, and related resources often impel participatory reforms more towards allowing voice in agency decisions than towards partnership or authoritative empowerment for communities.

Principles for institutional design are more relevant if suitably adapted to the context of community perceptions and practical priorities. Communities may be more concerned about *problemsheds* than clearly defined catchments, *protecting local practices* more than precise proportionality of rights, costs, and benefits, *representation during crises* more than participation in deliberative platforms, *effective recourse* to redress harm to rights more than carefully calibrated sanctions, *administrative mediation* more than consensus or courts, *recognition of customary rights* more than formal registration; and local *autonomy and strategic coalitions* with local governments and other allies more than elaboration of nested hydraulic enterprises.

A community perspective on water governance suggests that the dynamics of community collective action to secure water rights are likely to be:

- Primarily *defensive*, concerned with protecting against threats to existing claims,
- Constructed of heterogeneous *coalitions*, within and between communities,
- Employing *mixed strategies* using multiple claims and forums, and
- *Opportunistically* improvised in response to particular crises.

Therefore, interventions aimed at optimizing and reallocating water use, assuming shared interests, attempting to monopolize water allocation decisions in a single forum, and pursuing comprehensive, anticipatory planning, i.e. ambitious projects for basin master planning, and integrated water resource management, may fit poorly with the dynamics of community collective action, and so be prone to being ignored, resisted, and rejected. More modest institutional modifications, better fitted to the dynamics of community collective action, that help secure rights and resolve urgent crises, may meet greater success.

Interventions in basin governance intended to support community-based natural resources management and strengthen local organizations may have better prospects if carefully fitted to the contours of institutional landscapes and oriented towards promising pathways for institutional transformation. From a community perspective, short-term *regulatory adjustments* that solve immediate problems, and long-term *rights to resources*, may be more important than medium-term reforms to build basin management organizations. Targeted training for local *paralegals* and access to *legal aid* may do more to make laws effective than extensive broadcasts, brochures, and lectures. Facilitating a few *strategic links* to outside groups and agencies may do much more for community capacity than intensive internal organizational development. Lobbying in opposition to changes that threaten to further disadvantage people may be helpful, but advocacy that pragmatically engages meaningful opportunities for people to sustainably improve their lives may do even more for them. Participatory planning that honestly promises influence over decisions creates credibility, but *empowerment* that establishes partnerships, delegates decisions, transfers authority, or enables autonomy, within appropriate regulatory checks and balances, may do even more to improve basin resource governance.

Information technologies are expanding availability of information, but to make abundant information useful communities need access to *appropriate expertise* to apply knowledge to serve their objectives. Platforms may facilitate formation of acceptable agreements, but be only part of developing a *portfolio of community strategies* to negotiate rights to water.

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### Notes

<sup>1</sup> See, for example, Agrawal and Clark 2001, Knox and Meinzen-Dick 2001, Young 2001, Ribot 2002, Agrawal 2003, Mosse 2003, Cleaver and Franks 2003. Sengupta 2004, Shah 2005, Mansuri and Rao 2005

<sup>2</sup> Bruns and Meinzen-Dick 2000, 2001.

<sup>3</sup> Danvers compares strategies of litigation, participation in project planning, and negotiation used by three American Indian groups in New Mexico, noting the tendency of strategies to converge.

<sup>4</sup> See, among others, Agrawal and Gibson 2001 for a review of community-based conservation, Agrawal 2003 for a recent review of research on common-pool resource management, and Mansuri and Rao 2005 for a recent synthesis of peer-reviewed studies of community-based and community-driven development and related approaches.

<sup>5</sup> Knox and Meinzen-Dick 2001, Mosse 2003, Ribot 2003

<sup>6</sup> Agrawal and Gibson 2001

<sup>7</sup> For a nuanced empirical and theoretical discussion of conflicts in Balinese subaks see Spiertz 2000.

<sup>8</sup> Mansuri and Rao 2005, see also Olson 1971.

<sup>9</sup> Fisher and Ury (1991) define power in negotiation operationally in terms of the “best alternative to a negotiated agreement” (BATNA), the outcome available if agreement is not reached.

<sup>10</sup> Mansuri and Rao 2005

<sup>11</sup> Mansuri and Rao (2005) note that elite control may be almost inevitable. Like most of the literature, the notion of “capture” is used in a rather unexamined way. Capture is assumed to be undesirable and detrimental, and not clearly distinguished from other forms of local political support or “buy-in.” There literature does not apply insights from the study of regulated industries that capture by regulated interests may be a less important phenomenon than the tendency of new institutions to pursue their bureaucratic interests in expanding budget, staff, and authority (“turf”). Analysis of elite roles would also benefit from more attention to competition between elites and “circulation of elites.”

<sup>12</sup> Ribot 2001.

<sup>13</sup> For coproduction, see Ostrom 1997 and Lam 1997. Berkes (1994) discusses co-management. For a review of various ladders, levels and spectra of participation, including regulated autonomy, see Bruns 2003.

<sup>14</sup> Mansuri and Rao 2005.

<sup>15</sup> For institutional “fit,” see Young 2002.

<sup>16</sup> Shah 2005, see also Bruns 1992.

<sup>17</sup> E. Ostrom 1990.

<sup>18</sup> Hardin’s 1998 commentary corrected his earlier (1968) article to clarify that the tragedy is a problem for “unmanaged” commons, those without institutional arrangements (state or community) to regulate access.

<sup>19</sup> Ostrom 1999, Anderies, Janssen, and Ostrom 2003.

<sup>20</sup> Agrawal 2003.

<sup>21</sup> Sengupta 2004.

<sup>22</sup> Cleaver and Franks 2003. Ravnborg 2003 (Cited with permission).

<sup>23</sup> Cleaver and Franks (2003) cf Levi-Strauss’ original discussion of bricolage (1966 [1962]) available at <http://varenne.tc.columbia.edu/bib/info/levstcl066savamind.html>.

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- <sup>24</sup> For example, see Cleaver and Franks 2003.
- <sup>25</sup> Agarwal et al. 2000 and Rodgers and Hall 2000 describe IWRM.
- <sup>26</sup> Halaele and Knesse 1973
- <sup>27</sup> Wester 2003
- <sup>28</sup> Steins and Edwards 1998. Boelens et al. 2002.
- <sup>29</sup> Edmunds and Wollenberg 2001 critique the neutrality and inclusiveness of forums. For challenges in transferring meaningful authority over irrigation management see Vermillion 2001 and Bruns 2003. “Shopping” among forums need not require choosing only one, instead a disputant may employ a portfolio (or basket) of forums.
- <sup>30</sup> North 1990.
- <sup>31</sup> See, for example, Sengupta 2002.
- <sup>32</sup> See Shah 2005, Shah et al. 2001.
- <sup>33</sup> Bruns 1992, Mosse 2003, Shah 2004
- <sup>34</sup> Lynch 1998
- <sup>35</sup> Ravnborg 2003.
- <sup>36</sup> Guillet 1998.
- <sup>37</sup> Blomquist 1992. For polycentric governance, see V. Ostrom 1997. Applications to water resources include E. Ostrom 1990, 1992, Blomquist 1992 and Tan-Kim-Yong et al. 2005.
- <sup>38</sup> de Soto 2000.
- <sup>39</sup> Bauer 2004.
- <sup>40</sup> Lynch 1998, Harwell and Lynch 2002.
- <sup>41</sup> See, for example, NNMLS 2000.
- <sup>42</sup> Gunatilake and Gopalakrishnan 2002, Trawick 2003, Bauer 2004:146.
- <sup>43</sup> Maass and Anderson 1978.
- <sup>44</sup> Steins and Edwards 1998, Boelens 2002.
- <sup>45</sup> Edmunds and Wollenberg 2001
- <sup>46</sup> The ideas developed informally here are roughly analogous to Bayesian priors in statistics, identifying the most likely expectation of outcomes based on the best currently available knowledge. In particular, rather than naively expecting an equal (or even pro-poor) per capita distribution of benefits, it seems more likely to expect that outcomes will reproduce existing distributions of power and benefits (or skew them even more). The more interesting question is to what extent outcomes can be affected by specific measures for targeting, empowerment, advocacy, etc.