

Author 1: Bryan Randolph Bruns
Affiliation: Consulting Sociologist
Mailing address: 58 Pattana Chang Puak Road, Chiang Mai 50300 Thailand
Fax: 66-53 412-152 Email: BryanBruns@compuserve.com

Author 2: Ruth Meinzen-Dick
Affiliation: Research Fellow, International Food Policy Research Institute
Mailing address: 1200 17th St., NW Washington DC 20036-3006 USA
Fax: 202-467-4439 Email: R.Meinzen-Dick@cgnet.com

Stream: Governance - Water/Watersheds/Irrigation
Discipline: Sociology (& Anthropology & Agricultural Economics)

Negotiating Water Rights in Contexts of Legal Pluralism: Priorities for Research and Action

Working Draft - April 10, 1998

Brief abstract. Strengthening negotiated approaches to water allocation is a priority for research and action. Institutional reforms should be grounded in an understanding of the complexity of how water allocation is practiced at the local level in contexts of legal pluralism. Water resource projects need to be capable of explicitly renegotiating rights among old and new users. Formalizing water tenure should be studied and developed as only one of several relevant approaches for improving water allocation institutions. More effective institutions are needed for enabling stakeholders to participate in basin water governance. Farmers and rural communities require defensible access to water as a crucial asset for their livelihoods. Alternatives to water expropriation need to be developed which can equitably and efficiently respond to the challenges of intersectoral reallocation. Action research should help develop appropriate institutional innovations for negotiating water rights in these contexts.

INTRODUCTION

How can water allocation be improved amidst contesting claims? Increasing competition and conflict over water brings pressures for reforming the social institutions which govern water allocation. At the same time, policies in many countries, including in South and Southeast Asia, are shifting away from an emphasis on top-down state control, and towards greater participation, decentralization, and strengthening of the roles for market

and civil society institutions in natural resource governance. Local irrigation organizations face external challenges to their rights to water, from beyond the boundaries of local management institutions. This paper is concerned with the potential of negotiated approaches to water rights for improving water resource allocation. Reforming water allocation depends on understanding how water rights work in practice at the local level, amidst the competing claims, complex interactions of state and local law, and multiple forums for disputing, which anthropologists have analyzed in terms of legal pluralism. Four contexts for negotiating water rights deserve particular attention, because of their practical importance, and as promising directions for research and action:

1. Renegotiating rights. Water resources development projects restructure local water rights, and risk undermining existing water allocation institutions or missing opportunities to improve equitable access to water, unless water rights are explicitly renegotiated.

2. Water tenure. There are increasing pressures for governments (or self-governance institutions) to more systematically recognize and formalize water rights.

3. Basin governance. Within river basins, increasing scarcity of water brings competition and the need for better coordination among multiple users sharing water sources. The scale and scope of problems for water resources governance expands across geographic, administrative and social boundaries.

4. Intersectoral reallocation. Cities and industries seek to serve their growing demands by shifting water from agriculture, while environmental concerns also challenge current agriculture-dominated patterns of water allocation.

The paper is particularly concerned with the challenges of water resources management in conditions such as those which prevail in much of South and Southeast Asia. Water allocation has been dominated by irrigation agencies. Water rights are generally unrecognized or poorly defined in state law. Courts are often weak, distrusted, or inaccessible as forums for dispute resolution. As well as drawing on published literature, the paper presents conclusions from a collection of case studies of emerging water conflicts (Bruns and Meinzen-Dick, forthcoming).

Organization of the paper. The next section of the paper reviews some reasons for increased attention to negotiated approaches. Concepts of legal pluralism are then briefly outlined for analyzing the multiple, dynamic normative frameworks which influence ideas and action in water allocation. The succeeding sections focus on the four contexts identified above, discussing priorities for improving understanding and negotiation of water rights. Figure 1 gives an overview of contexts and key issues, and the conclusions highlight priorities for further applied and action research.

REASONS FOR NEGOTIATION

Because of the mobile and variable nature of the resource, water allocation has always been a complex process, even within state-managed irrigation systems. Over the last decade, increasing scarcity and competition for water has placed greater pressure on the resource. Government and donor policies to increase user involvement have coincided with an increasing number and variety of water users, going beyond farmers within irrigation systems to include municipal and industrial users in basin management. This section reviews how these have created a need for negotiated approaches to water allocation.

From participatory development to empowerment. Experience with improving participation in irrigation has shown the feasibility (and limitations) of reform in water resource agencies, and that negotiated approaches to design and construction can be institutionalized (Korten and Siy 1988, Uphoff 1986). Discussions about the shape and location of water division structures have often implicitly or explicitly been negotiations about water rights (Ambler 1990). Sustaining government-initiated irrigators' organizations is difficult, as is scaling up and institutionalizing any cadre of social organizers within technical agencies. Third-party interventions such as facilitation by community organizers may be useful, but enhancing the capacity of stakeholders themselves to jointly formulate solutions is a more durable strategy.

Much of the discussion of user participation in water management (for irrigation or domestic supply) has focused on responsibilities, and occasionally on rights to infrastructure. Discussion of water rights has been largely absent, but is emerging as a serious second-generation issue (Svendsen 1997). Policy changes in many countries of South and Southeast Asia are moving further to decentralize decision making and increase local participation, generally by devolving authority to local government units, and specifically by turning over irrigation management responsibilities to water user associations. Government policy and practice are striving to move towards approaches which support local people in making and implementing their own plans, working with outside organizations as partners rather than as dependent clients. The pace and effectiveness of such changes varies, but overall these policy changes constitute a shift toward approaches which require negotiation, where those affected have not just a voice in what happens, but the power to say no, to require mutually satisfactory agreements before water resource development activities are implemented.

Stakeholders in basin water governance. Concern for the role of stakeholders in water resource governance is relevant not just within irrigation schemes, but also in the larger context of basin water allocation. As long as water is abundant users can take water without having to worry about others. As scarcity increases, the linkages between users grow stronger, bringing increased competition and a need for better institutions to govern how water is allocated. Relying on government command and control alone to regulate water allocation along throughout river basins is neither feasible nor appropriate: effective approaches need an optimal combination of self-governance, state regulation, and market principles (Dudley 1992, Picciotto 1995, Meinzen-Dick and Rosegrant 1997). This means

not just consulting users about decisions made by state agencies, but learning how to constitute federations, forums, districts or other institutional arrangements which enable users to manage allocation (Blomquist 1992). Furthermore stakeholders and the public should be involved in planning and implementing any reforms, such as formalizing water rights or allowing reallocation through markets for tradable water rights. If stakeholder forums are empowered to formulate solutions and make decisions, then negotiation is essential.

Alternatives to expropriation. As cities grow they look for more water. Reallocating water from agriculture often appears to be the easiest source of additional supplies, especially if augmenting supplies through storage dams is deterred by high economic, social and environmental costs. In such circumstances, can farmers defend their access to water? If farmers give up water to others, can they receive adequate compensation? How can water be assured for environmental needs, to protect instream flows and water-based habitats? In most countries of South and Southeast Asia, the state asserts formal ownership of water, and so in theory has authority to reallocate water. Even without legal authority for expropriation, industries rely on their economic and political power to obtain water from farmers, legitimately and illegitimately (Kurnia, Avianto and Bruns forthcoming). Institutional frameworks for carrying out reallocation through voluntary agreements among users are usually nonexistent. Since agriculture typically uses over 80 or 90% of current supplies, it appears almost inevitable that other needs will be met by reallocation from agriculture to other users. The question is how this process will occur, whether it will be dominated by expropriation, or whether institutional innovations can allow transfers to occur through negotiation of mutually satisfactory agreements.

The unifying issue across these contexts concerns increasing the use of negotiated approaches to surface and ground water allocation, as a way to cope with emerging problems and opportunities. In terms of levels of collective action in common pool resource management (Ostrom 1990), this involves more than just specific operational decisions in water distribution. It requires collective choices made in renegotiating rights which regulate access to water, and constituting new institutional arrangements to deal with problems of greater scale and scope. In terms of institutions and governance mechanisms (North 1990, Ostrom 1994, Williams 1996), analyzing negotiation of resource allocation is of particular interest as part of comparing feasible alternative combinations of state regulation, market mechanisms and self-governance. The priority research questions concern explaining how changes in water rights are negotiated, and the outcomes of reforming water allocation institutions.

LEGAL PLURALISM

Thinking about water rights requires analyzing what water rights mean in practice. Water allocation depends on local institutions, not just formal state laws. Institutions for water allocation are path-dependent consequences of local history, and these institutions in turn influence the feasible routes for reform. Reforms are likely to be more effective and have lower transactions costs if they build on and enhance the social capital of local institutions

for water allocation, rather than destroying or disrupting them. State efforts to change how water is allocated are likely to be ineffective or counterproductive unless grounded in an understanding of the principles and practices which guide water allocation at the local level. Conversely, local communities face increasing pressures to deal with state law and competing users beyond the boundaries of local management institutions. Anthropological concepts of legal pluralism offer a rich source of ideas which can help build better intellectual foundations for analyzing water rights and their negotiation (Benda-Beckmann, Benda-Beckmann, and Spiertz 1997, Spiertz forthcoming, Guillet 1998).

Plurality. At the local level, water rights already exist in one form or another, often defined and applied in ways which differ significantly from whatever water rights may be recognized in formal law. Water rights take a variety of implicit and explicit forms, far beyond any simple contrast of riparian versus prior rights. Apparent chaos or absence of legally recognized rights is likely to be underlain by complex local rights institutions. Religious law can exert a wide influence, even if does not appear to be strictly adhered to. Even within state law, multiple laws and regulations often exist, possibly inconsistent with each other, and these may be applied differently by various agencies or levels of government. Project regulations, created by donors and implementing agencies, exert a strong influence on water allocation. Within local areas, water rights are often contested, and conflicting claims may be settled more based on who holds power rather than legitimacy or historical accuracy. Conflicts over the principles and procedures through which water is allocated occur within localities, as well as between state and community. Simplistic assumptions about uniform norms risk obscuring the plurality of water allocation institutions. Rules are applied and modified in these complex legal contexts.

Complexity of local law. Research on legal pluralism has challenged simplistic, static ideas about “customary law.” What may be recognized in formal legal terms as “customary law” captures only a small, and often distorted, part of the complexity of local law. Local law is rarely a single unified body of norms, but instead is composed of multiple legal fields, drawing on diverse sources of authority, frequently including kinship, religion and community power structures. Even if principles are not questioned, there may be much room for contention about how principles should be applied in practice. Rather than being static, local law is a living body of rules, employed by disputants to pursue their ends. Rather than existing in isolation, local law commonly is influenced by and influences state law. The costs of reaching and enforcing agreements, and the terms within which rules for water allocation are framed, are shaped by the complexity of local law.

Forum shopping. Culture may provide the concepts within which water rights are conceived as claims on resources, but this still leaves disputants substantial scope for choosing how to define their claims. Disputants choose where to pursue their claims, “shopping” among available forums. Where courts are weak, inaccessible or distrusted, disputants will likely choose other forums to deal with water conflicts. Negotiated approaches are a subset of the larger set of processes through which disputes are waged. Analyzing disputes in terms of legal pluralism offers relevant insights, and similar analytic frameworks may be applied to efforts to improve negotiated approaches. If organizations such as water users associations, WUA federations, or basin management bodies are

established or formalized these still have to compete with other forums through which disputants may pursue their interests.

Reconceptualizing rights. Moving from a state-centric perspective on law has profound implications for understanding how water rights are put into practice, and the options which may exist for reforming water allocation institutions. Ideas about the complexity of property rights in local practice do not have to be framed specifically in terms of legal pluralism (e.g. Vandergeest 1997). Some approaches in New Institutional Economics share a related emphasis on private governance rather than state ordering (Williams 1996). However, research on legal pluralism offers a substantial body of existing theory and research which can be drawn upon in understanding local conceptions about rights to resources, disputing in legally complex contexts and the interaction of state and local law. Decisions, such as how, or whether, to respond to new state-promulgated rules, and whether to create or utilize new forums, take place within these complex legal contexts.

Legal pluralism and negotiation. Recognizing legal pluralism points to a much broader context and extent of negotiation, that takes place not only in formally constituted forums, but even in determining which forums, which sets of rights and rules, will be called into play in each situation. However, acknowledging rights beyond those sanctioned by state law also changes the basis of power in negotiations. The state is no longer the sole source of “rights,” to be doled out and reallocated according to its own rules; rather, users come to the negotiations with claims on the resource that derive their legitimacy from a variety of sources.

CONTEXT 1: RENEGOTIATING RIGHTS

Old rights versus new rights. Research has highlighted the risks of ignoring existing water rights, or attempting unilateral expropriation and reallocation within water resources projects (Pradhan, Haq and Pradhan 1997, Pradhan and Pradhan forthcoming). Well-intended but poorly designed intervention intended to expand access to water may produce results which are not only inequitable, but counterproductive (Coward 1986). For example, van Koppen (forthcoming) shows how *Operation Riz* projects in Burkina Faso initially took land and water rights from the women who were the main rice producers and reallocated them to “families” (effectively men). This enabled men to increase their control over women’s labor and reduced women’s incentives to work, with a negative effect on productivity. In subsequent projects, the male elites called for women’s participation in project forums, which enabled women to negotiate for recognition of their prior rights when plots were allocated in the system.

Where water rights are unclear and contested between old and new users, developing satisfactory institutions and allocation rules can be a difficult, lengthy, and highly conflictual process (Brewer forthcoming). If improved infrastructure means that those near the head-end of the canal have no further need and commitment to share water with those downstream, then access to water could end up even worse than before intervention (Ostrom 1995). Those who lose rights may have the power to later reassert their rights

and exclude others from any improved access, especially once the special outside attention accompanying project intervention is gone. Even if expropriation “succeeds” in reallocating rights it may destroy the institutional foundations for subsequent management. However, allowing existing users to monopolize windfall gains of improved supplies may also be highly inequitable, helping only those who are already better off. State assistance ought to provide leverage for negotiating more equitable access to water, especially if this potentially could make everyone better off, and expanded access would strengthen the economic justification for investments.

Explicitly renegotiating water rights during project planning appears to be one option for dealing with the dilemma between respecting the rights of existing water users and providing access to new users. One of the first issues in negotiation is likely to be definitions of “equity,” including how much weight is given to historic use, past and current investment, and future needs. In practical terms there is a need for policies and procedures which analyze existing local principles and practices for allocating water (including contested claims) and negotiation of agreements which secure access to water for both existing and new users. Figuring out ways to do this, and better understanding the factors which influence what is and is not feasible in the way of expanding and reforming access to water, should be a high priority for research. This is linked to a larger research agenda concerning the problems which can accompany decentralization, going beyond simplistic views of homogeneous “communities” to address the distribution of decentralized power and benefits between poor people and local elites, or more abstractly, tensions between equity and local control.

Alternative dispute resolution methods. A substantial body of techniques is available for negotiation and other dispute resolution processes outside of court proceedings (Fisher, Ury and Patton 1991, Nierenberg 1981, Karrass 1992, Edelman and Crain 1993). In the field of water resources, little effort has been made to apply such approaches outside the western United States, but they offer promise for building capacity to negotiate (Stanbury and Lynott 1993, Bingham, Wolf and Wohlgenant 1994). Negotiation among disputants can often generate more creative and appropriate solutions than those imposed by a court or agency decision. Interest-based negotiation methods can help reframe bargaining in ways which better enable parties to achieve their goals, rather than being trapped by the zero-sum, win-lose assumptions of positional bargaining. Mediation, facilitation and convening forums are among ways in which third parties can contribute to more productive negotiation. Scoping processes can involve stakeholders from the beginning, to define issues, identify who should be involved, learn how they wish to be involved, and envision possible outcomes. Looking at how such techniques can be applied, how they need to be modified for different cultural and institutional contexts, and the advantages and disadvantages of such dispute resolution processes, is a priority topic for research and action.

Separating water and land. State managed irrigation development typically assumes that water will be allocated in proportion to the available land (Chambers 1988), although distinctions may be made for areas allowed to grow more water intensive crops, such as

rice and sugar cane, in specific seasons. Research on locally-managed irrigation systems has identified alternative allocation methods using shares, where users have a right to a particular proportion of the available flow, but where water is not necessarily tied to a specific plot of land (Maass and Anderson 1978, Coward 1980; Sutawan forthcoming; Vermillion forthcoming). Such systems can give farmers flexibility and incentives to expand irrigated area and make more efficient use of available supplies (Yoder and Martin 1983). Separating water rights from land creates the possibility of allocating water, and the ensuing project benefits, to people rather than to land (Patel-Weynand 1997; Wood et al. 1990). If allocation on principles beside land is to be accepted as part of state-support projects then policies may need to be changed. While much research has been done on traditional share systems, it would be useful to know more about what happens when share systems are introduced or incorporated as part of project intervention (Wilkins-Wells 1996). Reforms separating land and water may bring not just opportunities, but threats to farmer managed irrigation, traditional smallholder cultivation systems and communal regulation of land and water tenure, especially if communal rights are privatized and made transferable (Guillet 1998 and Guillet forthcoming).

CONTEXT 2: WATER TENURE

Strengthening rights. Access to water is crucial to the livelihoods of individuals, households and communities, and is threatened in many contexts. Strengthening rights to use water represents one way of building assets, control over valuable resources. However expanding formal water rights is only one of several ways to try to strengthen rights to water or reform water allocation institutions. A legal pluralist perspective helps clarify how access to water is shaped not just by formal rights in state law, but by “rights” as they are defined in local contexts, diverse principles, rules and practices concerning who should receive how much water, when and where. Much more could be done to recognize and strengthen the capacity of the organizations and institutions through which water allocation currently occurs. Federations, forums and other new institutional arrangements for governing water allocation can be developed, without necessarily requiring formalization of rights. Research and action is needed to explore such approaches, as alternatives or complements to formalizing rights.

Advantages and disadvantages of formalization. As shown by experience with formalizing land tenure, formal rights by themselves may be neither necessary, nor sufficient, to secure access to resources. Depending on the circumstances, formalization may do more harm than good. Formal registration procedures are vulnerable to manipulation and abuse, especially by those who are better educated, richer and more powerful, although measures can be taken to improve accessibility. So formal rights are not sufficient by themselves to secure control of assets essential to local livelihoods. Working within the context of existing tenure institutions may be preferable to forcing a transformation into formal rights, i.e., formalization is not always necessary, and is far from the only choice. Capacity to defend rights against competing claimants is essential for rights to be meaningful. Research should assess the relative advantages and disadvantages of formalization, compared to other approaches to resource management.

Transforming rights. Strengthening of formal water use rights systems is being considered or attempted in many countries of South and Southeast Asia. Inventorying or formally registering existing rights invokes complex questions about the plurality of claims. Rights may be inadvertently or deliberately transformed in the process of being systematically recorded (Coward 1990, Sengupta forthcoming). Research can help to clarify the diversity of claims which exist and options for better accommodating diverse claims within more formalized water rights systems. There are important choices in how formal rights are defined, for example whether water rights are proportional or volumetric, tied to land or separable, and held by individuals or by collective organizations such as a WUA. Registering rights based on “customary” practice is desirable as a general principle. However, as discussed earlier, local rights may be complex and contested, so this may not be just a matter of documenting existing rights, but instead, in at least a significant portion of cases, a process may be needed for negotiating formal rights. If formalization were to be applied selectively, for example in specific basins, research could help clarify where it might or might not be worthwhile.

Efforts would also be needed to build the capacity of individuals (or organizations holding rights) to defend their rights. The work of Northern New Mexico Legal Services assisting *acequia* irrigators, who in principle hold very senior water rights, is an example of the challenges poor farmers and farming communities face in defending their rights during complex, costly and lengthy water rights adjudication procedures (NNMLS forthcoming). In essence establishing formal rights is a process of renegotiating rights amidst competing claims. Much needs to be learned about how to best do this, and when it may be preferable to wait or pursue alternative approaches rather than forcing formalization of water tenure.

CONTEXT 3: BASIN WATER GOVERNANCE

Enabling self-governance. As competition for water grows, irrigators must look outward, beyond the boundaries of their schemes, to deal with strangers in basin water allocation. Furthermore, they have to take greater account of multiple use within their schemes (Meinzen-Dick 1997), for example if changes in water use affect groundwater levels in wells relied on for domestic supply (Sadeque forthcoming). Numerous studies have documented the capacity of irrigators’ organizations to manage irrigation within individual schemes. Much less research has been done on how to accommodate other water uses within irrigation systems, or manage between systems, where the scale of for management is wider, the scope broadens to include other types of water uses, and interaction is with strangers sharing few or no pre-existing social ties.

One of the key tasks of governance is to create an institutional framework within which strangers can peacefully agree to cooperate and coordinate their actions (North 1990). However, relying on government agencies alone to allocate water in basins may fail to respond to the interests and priorities of water users, as well as incurring high transactions costs compared to having users cooperate to reach and implement decisions. At the least,

there is a strong case for increasing the extent of user participation in basin and sub-basin management. Therefore it would help to know much more about the extent to which such coordination already occurs, even if informally or ad hoc, as well as what problems and opportunities are created by greater user involvement. Sutawan (forthcoming) shows how, even in Bali, with a relatively homogeneous population and well defined individual water rights within strong *subak* irrigation management institutions, forming federations of subaks and negotiating water rights between groups is a feasible, but complex process, either in the context of projects that combined previously separate schemes, or in basin-level water allocation. In practical terms, action research is needed on how to form or strengthen federations, basin management bodies or other institutions, and how users can best be represented.

More ambitious than just incorporating users in agency procedures for basin water allocation is the question of whether governance of basins or sub-basins can be entirely managed by users. Groundwater management in southern California (Blomquist 1992) offers one of the few well-studied examples of how such problems have been resolved in the context of self-governance. Multiple, sometimes overlapping units, public, private and user-controlled, cooperated in a “polycentric” pattern of governance, emphasizing horizontal coordination rather than vertical hierarchy. Blomquist identified important enabling conditions concerning the characteristics of the resource, and the role of the state in delegating management authority and providing technical backstopping. Representative basin governance organizations exist in many countries, such as France, Spain and Chile among others, although apparently with stronger technical agency roles. It would be useful to know more about what affects their performance.

Institutional change is an evolutionary process, involving incremental changes and learning from trial and error (Ostrom 1990, Blomquist 1992). Efforts to improve basin water management may be more fruitful if they start from urgent problems and build from there to evolve institutional capacity rather than trying to establish a comprehensive framework. It may be better to conceive of reform in terms of punctuated institutional coevolution, rather than bureaucratic adjustment of regulations within an equilibrium condition. Research and pilot activities can develop institutions, which then might be drawn upon in responding to crises, rather than assuming that change will mainly occur within a top-down process of carefully deliberated policy reform.

Crossing boundaries. Water flows across administrative boundaries, creating hydrological networks, which often fit poorly with the administrative jurisdictions which hold political authority. However basin management authorities organized on hydrological lines are unlikely to be effective unless supported by the power of administrative authorities. One of the key institutional challenges is how to suitably combine these principles in governing water resources. One aspect of dealing with this conflict is to avoid approaching the issue as an either/or choice, and instead look for “both/and” solutions (Uphoff 1991) which can integrate both principles. Furthermore the boundaries of “problemsheds” may be larger or smaller than basins, or cross-cut hydrological and administrative units. Instead of conventional hierarchical arrangements,

polycentric governance may be better equipped to deal with problems with diverse scope and scale (Ostrom, Schroeder and Wynne 1993).

As soon as water resources management looks beyond the narrowest of concerns with allocating available flow, it becomes linked with forestry, land use, environmental quality and other topics, crossing the sectoral boundaries of government agencies and academic disciplines. A further set of boundaries which need to be crossed are those between government and those outside of government, including both farmers and the private sector. In many countries a necessary first step is inviting those from outside government to join the discussion, rather than treating water allocation as something to be arranged between government departments. In addition to formal councils with stakeholder representation, various other techniques may also be useful. Multiparty negotiation is much more difficult than bilateral, especially if conducted in the glare of publicity (Lewicki, Hiam and Wise 1996). Community advisory panels (CAPs) with representation from different kinds of stakeholders, can help in creatively analyzing problems and formulating potential solutions (Cohen 1997). Forums such as panels or stakeholder workshops can be initiated by university research projects or NGOs, without requiring the legal basis of formal councils. Existing management institutions often lack the scale and scope to address the challenges of water allocation. Institutional innovation is needed, and action research to pilot new institutional arrangements could play a key role in expanding the alternatives available for dealing with challenges crossing multiple boundaries, geographic, social and intellectual.

CONTEXT 4: INTERSECTORAL REALLOCATION

Defending access. Expropriation of water, reallocation with little or no compensation to those who lose water, threatens rural livelihoods. Farmers may be in a weaker political and economic position than urban interests, but are still not lacking means to resist having their water taken away. The much higher economic value of water in non-agricultural uses, and the relatively small size of such new demands compared with the large volumes currently used in agriculture, creates at least the possibility for win-win agreements for water reallocation. Leasing and other innovative institutional arrangements could provide attractive alternatives to selling rights or having them expropriated (Moore 1997). Research is needed on what is currently happening in terms of intersectoral reallocation, and what constructive examples exist for managing reallocation. In addition to more conventional research approaches, much could be learned through an activist approach working with communities whose access to water is threatened (NNMLS forthcoming).

Water markets. Water markets are emerging in many areas in the absence of legal legitimization, and often in the context of deliberate avoidance of formal regulation (Shah 1993). Informal trading of water, spot markets, may evolve spontaneously without requiring formal water rights. Informal markets can provide substantial, although unequal, benefits in expanding access to the resource (Meinzen-Dick forthcoming). Permanent trading of water rights, crossing beyond local boundaries, is only likely to be feasible where such rights are recognized in state law. If the gains from reallocating water are

limited, and permanent transfers infrequent, then reallocation might occur without requiring the establishment of the institutional apparatus for full-fledged water markets. Establishing tradable water rights and water markets is advocated as one way of dealing with the need to reallocate water, allowing it to occur through voluntary transactions (Rosegrant and Binswanger 1994). Tradable rights give incentives to shift water to those able to pay the most for water, strengthening incentives for economic efficiency and taking the opportunity costs of water into account.

Establishing tradable water rights and markets might increase, not decrease the need for negotiation. The common pool characteristics of surface and ground water resources, difficulty in exclusion and rivalry in consumption, mean that the issue is not one of being able to simply privatize water, but of finding effective combinations of market mechanisms, state regulation and self-governance institutions. Trading water itself requires negotiation, which often cannot treat water as a generic commodity, but must deal with the location specific characteristics of supply and demand, i.e. there may be a high degree of asset specificity (Williamson 1996), or even bilateral monopoly (Alston 1970). As discussed earlier, formalizing rights is more complicated than just documenting “existing rights,” and would require substantial negotiation. Advocates of water markets have recognized that it may be more efficient for rights to be held, or at least managed, collectively, for example by water user associations. However such organizations are likely to require internal negotiation to agree on any transactions. Trades may also affect communities which lose water, downstream users, and other third parties. Negotiation may be necessary to find ways to prevent or mitigate adverse impacts. Therefore, strengthening negotiation capacity, and formalizing rights compatible with existing local allocation practices, are likely to be essential prerequisites for any attempts to establish water markets. Research on transformations in water rights as water markets emerge, and the implications of policy reforms to create tradable rights, is a priority for further study, as well as looking at the transactions costs of establishing water markets compared with other approaches for managing intersectoral reallocation.

Community capacity. Empowering communities to negotiate their rights to water raises serious challenges. Research is needed to escape myths, trying to clarify, empirically and conceptually, what shapes community capacity to deal with threats, whether from outsiders seeking to exploit disadvantages of poor information, economic or political weakness, and discourses dominated by legal-bureaucratic conceptions; or from leaders and other elites who may use their roles to pursue private interests in ways which sacrifice community concerns. If negotiators act as agents for communities, will they adequately represent the interests of those they are supposed to serve? How do women, the landless, or marginalized ethnic groups gain a voice -neither directly or through negotiators? A shift to negotiated approaches brings new demands on institutions for collective action, focusing on external relations across boundaries. Formalizing water tenure raises issues similar to those concerning efforts to privatize fisheries, rangeland or forests. If rights are made transferable will they quickly be lost to wealthy outsiders? Should rights be held individually, or collectively as common property? Can communities cope with

speculators? What factors affect the capacity of communities to deal with markets for resource rights?

CONCLUSIONS

The situations examined in this paper will become more prevalent in the years ahead. Figure 1 summarizes the key issues and challenges posed by each. Addressing these through negotiated approaches that take into account the plurality of claims on water resources is more complex than imposing (or attempting to impose) allocation by the state, but in the long run the negotiated approaches are likely to be more effective and equitable. In this concluding section we identify priorities for further research and action to address these challenges.

Building capacity to negotiate. Policies for decentralization, stakeholder participation and strengthening civil society institutions in governance, including in natural resource management, are creating conditions which favor increased emphasis on negotiated approaches to water allocation. Institutional innovation is needed to strengthen the capacity of water user organizations, government agencies and other stakeholders to pursue negotiated solutions. Forums need to be created and strengthened which can deal with the scope and scale of water conflicts. More effort should be made strengthen negotiating skills, applying and adapting available techniques. Research and applied activities also need to look the limits of negotiated approaches, particularly the options available when one party seeks to use its power to impose an outcome.

Understanding legal pluralism. Attempts to reform water rights are likely to fail unless grounded in an adequate understanding of how water allocation is practiced at the local level. Concepts of legal pluralism offer a fertile source of ideas about how state and local law interact, and how disputes are negotiated. Research drawing on these ideas can clarify the factors shaping processes and outcomes of renegotiating rights, appropriate ways to strengthen water tenure, how to make new organizations and institutions accessible and effective, and how local institutions for regulating resource rights respond to the opportunities and threats of markets.

Action research. Learning process approaches to pilot experiments played a crucial role in devising new methods for improving participation in irrigation, combining insights from researchers and practitioners, and linking field experiments with policy reform. Research methods for understanding of water allocation conflicts and institutions include rapid appraisal, case studies, ethnography, surveys and stakeholder workshops. Action research approaches offer the most promising directions for learning and institutional innovation in water allocation. Renegotiating rights as part of water development projects requires explicitly creating agreements about rights which often have only been dealt with implicitly. Consideration about formalizing water rights should be linked to field studies and pilot activities to clarify the advantages and disadvantages of formalization and alternative approaches to strengthening rights, involving stakeholders, and resolving

disputes. Where formalization seems desirable or inevitable, there is a need to learn how to make formalized tenure appropriately compatible with existing practices, equitably accessible, and defensible. Basin management institutions need to learn how to make participation efficient and worthwhile for stakeholders, working across geographic, administrative and cultural boundaries. Action research, by university researchers or NGOs, helping communities defend their access to water could yield many lessons about how to find better alternatives to expropriation.

Water allocation is inherently and inescapably a negotiated process amidst contesting claims, whether in the context of user self-governance, agency administration or water markets. More emphasis on negotiated approaches can contribute to better understanding and better capacity to respond to the challenges of increasing competition for scarce water resources. Research can clarify the advantages and disadvantages of negotiated approaches compared to institutional alternatives. Negotiated approaches offer a promising direction for research and action to facilitate better governance of water allocation and reallocation.

Figure 1. Overview of negotiating contexts and priority issues

Contexts	Reasons for negotiation	Challenges	Action research priorities
1. Renegotiating rights	policies for decentralization and empowerment	old users versus new users	feasibility of renegotiation
2. Water tenure	efforts to formalize rights	protecting existing rights	whether and how to reform tenure
3. Basin governance	need to involve stakeholders	increasing self-governance	forming forums
	problems with wider scope and scale	managing across boundaries	applying polycentric principles
4. Intersectoral reallocation	cities want farmers' water	defending access to water	working with threatened communities
	potential for win-win agreements	alternatives to expropriation	community capacity to cope with markets

REFERENCES

- Alston, Richard M. 1978. *Commercial Irrigation Enterprise : The Fear of Water Monopoly and the Genesis of Market Distortion in the Nineteenth Century American West*. Ayer.
- Ambler, John. 1990. The Influence of Farmer Water Rights on the Design of Water-Proportioning Devices. In *Design Issues in Farmer-Managed Irrigation Systems*, edited by R. Yoder and J. Thurston. Colombo, Sri Lanka: International Irrigation Management Institute.
- Benda-Beckmann, Franz von, Keebet von Benda-Beckmann, and H. L. Joep Spiertz. 1997. Local law and customary practice in the study of water rights. In *Water Rights, Conflict and Policy*, eds. Rajendra Pradhan, Franz von Benda-Beckmann, Keebet von Benda-Beckmann, H. L. Joep Spiertz, S. Khadka, K. Azharul Haq, 221-242. Colombo, Sri Lanka: International Irrigation Management Institute.

- Bingham, Gail, Aaron Wolf, and Tim Wohlgenant. 1994. *Resolving Water Disputes: Conflict and Cooperation in the United States, the Near East and Asia*. Washington, D.C.: USAID Irrigation and Support Project for Asian and Near East.
- Blomquist, William. 1992. *Dividing the Waters: Governing Groundwater in Southern California*. San Francisco: Institute for Contemporary Studies.
- Bruns, Bryan Randolph and Ruth Meinzen-Dick, editors. Forthcoming. *Negotiating Water Rights*. New Delhi: Sage.
- Chambers, Robert. 1988. *Managing Canal Irrigation: Practical Analysis from South Asia*. New Delhi, India: Oxford IBH.
- Cohen, Nevin. 1997. Implementing community advisory panels: Essentials for success. *Interact: The Journal of Public Participation* 3 (1): 30-37.
- Coward, E. Walter Jr. 1980. Irrigation Development: Institutional and Organizational Issues. In E. Walter Coward, Jr. (ed.) *Irrigation and Agricultural Development in Asia: Perspectives from the Social Sciences*. Ithaca: Cornell University Press.
- Coward, E. Walter, Jr. 1986. Direct or Indirect Alternatives for Irrigation Investment and the Creation of Property. In K. William Easter (ed.) *Irrigation Investment, Technology and Management Strategies for Development*. Boulder, CO: Westview Press.
- Coward, E. Walter, Jr. 1990. Property Rights and Network Order: The Case of Irrigation Works in the Western Himalayas. *Human Organization* 49 (1):78-88.
- Dudley, Norman J. 1992. Water Allocation by Markets, Common Property and Capacity Sharing: Companions or Competitors. *Natural Resources Journal* 32 (Fall):757-778.
- Edelman, Joel, and Mary Beth Crane. 1993. *The Tao of Negotiation: How to Resolve Conflict in All Areas of Your Life*. London: Piatkus.
- Fisher, Roger, William Ury, and Bruce Patton. 1991. *Getting to Yes: Negotiating Agreement Without Giving In*, 2nd ed. New York: Penguin Books.
- Guillet, David. 1998. Rethinking Legal Pluralism: Local Law and State Law in the Evolution of Water Property Rights in Northwestern Spain. *Comparative Studies in Society and History* 40:1:42-70
- Guillet, David. forthcoming. Water Demand Management and Farmer Managed Irrigation Systems in the Colca Valley of Southwestern Peru. In W. Loker, ed., *Globalization and the Rural Poor in Latin America: Crisis and Response in Campesino Communities*. Boulder: Lynn Rienner.

Karrass, Chester L. 1992. *The Negotiating Game: How to Get What You Want*. Revised edition. New York: Harper Collins.

Korten, Frances F., and Robert Y. Siy, Jr. 1988. *Transforming a Bureaucracy: The Experience of the Philippine National Irrigation Administration*. West Hartford, Conn.: Kumarian Press.

Lewicki, Roy J., Alexander Hiam, and Karen Wise Olander. 1996. *Think Before You Speak: The Complete Guide to Strategic Negotiation*. New York: John Wiley and Sons.

Maass, Arthur, and Raymond L. Anderson. 1978. *...And the Desert Shall Rejoice: Conflict, Growth and Justice in Arid Environments*. Cambridge, Mass.: MIT Press.

Martin, Edward, and Robert Yoder. 1983. Water Allocation and Resource Mobilization for Irrigation: A Comparison of Two Systems in Nepal. In 1983 Annual Meeting Nepal Studies Association, Twelfth Annual Conference on South Asia. University of Wisconsin, Madison, Wisconsin.

Meinzen-Dick, Ruth S. 1997. Valuing the Multiple Uses of Irrigation Water. Pp. 50-58 in Melvin Kay, Tom Franks and Laurence Smith (eds.) *Water: Economics, Management and Demand*. London: E&FN Spon.

Meinzen-Dick, Ruth S. Forthcoming. Public, Private and Shared Water: Groundwater Markets and Groundwater Access in Pakistan. In Bryan Bruns and Ruth S. Meinzen-Dick, editors. *Negotiating Water Rights*. New Delhi: Sage.

Meinzen-Dick, Ruth S., and Mark W. Rosegrant. 1997. Alternative Allocation Mechanisms for Intersectoral Water Management. Pp 256-273 in Jurgen Richter, Peter Wolff, Hubertus Franzen, and Franz Heim (eds.) *Strategies for Intersectoral Water Management in Developing Countries--Challenges and Consequences for Agriculture*. Feldafing, Germany: Deutsche Stiftung für internationale Entwicklung.

Moore, Deborah. 1997. Environment, Equity and Efficiency: Global Challenges for the 21st Century. *Common Property Resource Digest* 1 (43):7-9.

NEDA (Netherlands Development Assistance). 1997. *Rights of Women to the Natural Resources Land and Water*. Women and Development Working Paper 2. The Hague: The Special Program Women and Development, Department of International Cooperation, Ministry of Foreign Affairs, The Government of The Netherlands.

Nierenberg, Gerard I. 1981. *The Art of Negotiating*. New York: Pocket Books.

NNMLS (Northern New Mexico Legal Services). Forthcoming. Stream Adjudications, Acequias, and Water Rights in Northern New Mexico. In Bryan Bruns and Ruth S. Meinzen-Dick, editors, *Negotiating Water Rights*. New Delhi: Sage.

North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. New York: Cambridge University Press.

Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Ostrom, Elinor, Larry Schroeder, and Susan Wynne. 1993. *Institutional Incentives and Sustainable Development: Infrastructure Policies in Perspective*. Boulder: Westview Press.

Ostrom, Elinor, 1994. 1994. *Neither Market nor the State: Governance of Common-Pool Resources in the Twenty-first Century*. IFPRI Lecture No. 2. Washington, D. C.: International Food Policy Research Institute.

Ostrom, Elinor. 1995. Constituting Social Capital and Collective Action. In *Local Commons and Global Interdependence: Heterogeneity and Cooperation in Two Domains*, edited by R. O. Keohane and E. Ostrom. London: Sage.

Patel-Weynand, Toral. 1997. Sukomajri and Nada: Managing Common Property Resources in Two Villages. In Kerr, J., D. Marothia, C. Ramasamy, K. Singh. *Natural Resource Economics: Theory and Application in India*. New Delhi: Oxford IBH.

Piciotto, Robert. 1995. Putting Institutional Economics to Work: >From Participation to Governance. Washington, D.C.: The World Bank.

Pradhan, Rajendra and Ujjwal Pradhan. Forthcoming. Negotiating Access and Rights: A Case Study of Disputes over Rights to an Irrigation Water Source in Nepal. In Bryan Bruns and Ruth S. Meinzen-Dick, *Negotiating Water Rights*. New Delhi: Sage.

Pradhan, Rajendra, K. A. Haq and Ujjwal Pradhan. 1997. Law, rights and equity: Implications of state intervention in farmer managed irrigation systems. Pp. 93-110 in Rajendra Pradhan, Franz von Benda-Beckmann, Keebet von Benda-Beckmann, H. L. Joep Spiertz, S. Khadka, K. Azharul Haq (eds.) *Water rights, conflict and policy*, International Irrigation Management Institute, Colombo, Sri Lanka.

Rosegrant, Mark W. and Hans P. Binswanger. 1994. Markets in tradable water rights: Potential for efficiency gains in developing country water resource allocation. *World Development* 22 (11): 1-11.

Sengupta, Nirmal. forthcoming. Negotiation with an Under-informed Bureaucracy: The Case of Water Rights on System Tanks in Bihar. In Bryan Bruns and Ruth S. Meinzen-Dick, *Negotiating Water Rights*. New Delhi: Sage.

Shah, Tushaar. 1993. *Groundwater Markets and Irrigation Development: Political Economy and Practical Policy*. Bombay, India: Oxford University Press.

Spiertz, H.L. Joep. forthcoming. Water Rights and Legal Pluralism: Some Basics of a Legal Anthropological Approach. Bryan Bruns and Ruth S. Meinzen-Dick, *Negotiating Water Rights*. New Delhi: Sage.

Stanbury and Lynott. 1993. Irrigation Management and Conflict Resolution. Unpublished paper.

Svendsen, Mark. 1997. Second Generation Problems of Privatized Irrigation Systems. Pp. 409-419 in Kay, Melvin, Tom Franks and Laurence Smith (eds.) *Water: Economics, Management and Demand*. London: E&FN Spon.

Uphoff, Norman. 1991. *Learning from Gal Oya: Possibilities for Participatory Development and Post-Newtonian Social Science*. Ithaca, NY: Cornell University Press.

Uphoff, Norman. 1986. *Improving International Irrigation Management with Farmer Participation: Getting the Process Right*. Boulder, CO: Westview Press.

van Koppen, Barbara. Forthcoming. Gendered Water and Land Rights in Construction: Rice Valley Improvement in Burkina Faso. Bryan Bruns and Ruth S. Meinzen-Dick, *Negotiating Water Rights*. New Delhi: Sage.

Vincent, Linden. 1997. Communities and catchments: perspectives on intersectoral water management and use at different levels. Pp 187-206 in Jurgen Richter, Peter Wolff, Hubertus Franzen, and Franz Heim (eds.) *Strategies for Intersectoral Water Management in Developing Countries--Challenges and Consequences for Agriculture*. Feldafing, Germany: Deutsche Stiftung für internationale Entwicklung.

Wilkins-Wells, John. 1996. Legal and Policy Considerations in the Promotion of Common Property Organizations (Water Users Associations) in Low Income Nations. Berkeley, CA: Paper presented at the Sixth Conference of the International Association for the Study of Common Property.

Williamson, Oliver E. 1996. *The Mechanisms of Governance*. New York: Oxford University Press.

Wood, Geof, D., Richard Palmer-Jones; Q. F. Ahmed, M. A. S. Madal, and S. C. Dutta. 1990. *The Water Sellers: A Cooperative Venture by the Rural Poor*. Hartford, CT: Kumarian Press.