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JOHN R. BROWN*

“Whisky’s fer Drinkin’; Water’s fer Fightin’!” Is It? Resolving a Collective Action Dilemma in New Mexico

ABSTRACT

The water budget of New Mexico’s Middle Rio Grande region incurs annually a deficit of 55,000 acre-feet through groundwater mining. To address this unsustainable condition, a State-mandated regional water planning effort involving significant public participation is underway to produce a regional water plan. The action arena where this process is taking place may not be appropriately constituted to enable stakeholders to agree on and implement a comprehensive plan to “balance all desired and required uses with sustainable supply.” The heterogeneity of the actors and their interests and the complexity of the decision situations they face contribute to a high level of uncertainty about the outcome. Changing the rules of the game to encourage interested actors to negotiate partial solutions to the problem may increase incentives for participation and cooperation and allow more productive institutional arrangements to emerge.

Sin agua la tierra no vale nada.¹

[W]ater is...a resource whose characteristics tend to induce cooperation, and incite violence only in the exception.²

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1. New Mexico dicho or saying, which when translated means, “Without water the land has no value.”

2. Aaron T. Wolf, *Conflict and Cooperation Along International Waterways*, 1 WATER POLICY 251, 251 (1998). To be more accurate, the quoted sentence actually begins, “These patterns suggest that the more valuable lesson of international water is as a resource....” Wolf argues that in fact very few international wars are fought over water; most disputes are settled by negotiation and treaty. But I believe that the argument holds true when considering domestic water disputes, as well.

I. INTRODUCTION

Rivers in arid and semiarid lands engender cooperation and conflict. More often than not, the stories people like to tell about water stress the conflict. "Water-wise" people in the states of the U.S. intermountain west enjoy repeating a saying they usually credit to Mark Twain: "Whisky's fer drinkin'; water's fer fightin'!" The attribution is probably wrong.³ It is a trivial error, but it swirls in an eddy of more dangerous misperceptions. People talk casually—and unhelpfully—about water wars. But "fightin'" is only one way humans have faced the problem of providing and producing a reliable supply of water in a land where its variability and uncertainty sometimes suggest that human life may be impossible to sustain. In fact, cooperation was vital as people learned to devise and use a variety of techniques to bring water to food crops, as they have been doing in the Four Corners region for up to two millennia.⁴ At first, irrigation agriculture was used to supplement, and then later largely to supplant, hunting and gathering, enabling Pueblo Indians and later arrivals to adapt successfully to the vagaries of changing physical and political circumstances. In the process, people have often fought each other for control of the sources of water. Conflict is one part of the story. But more importantly, people have had to cooperate on an ever-expanding scale to capture water, to share its life-sustaining benefits, to protect themselves from its fury, and, more recently, to protect it from their increasing means to pollute it. It is their cooperation that has made survival possible.

The Middle Rio Grande (MRG) region's water supply can be viewed as a complex common-pool resource. It yields multiple private and public benefits to heterogeneous consumptive and non-consumptive users. Some uses are complementary; others compete. Each user may resist being bound by outcomes of a process that would significantly (1) reduce its share of the water supply, (2) interfere with its autonomy, or (3) raise its transaction costs. Each has an incentive to bargain fiercely to ensure that it is not a net loser in the principal constant-sum game: allocation of scarce water to its preferred uses. Actors likely to lose have incentives to withdraw and to use other political or judicial arenas to advance their claims.

These themes are currently being played out within regional water planning processes across the state. A review of efforts to

3. "A lot of people have searched for that quote in Twain's known writings and speeches and haven't found it yet—myself included! As such, it falls into that dreaded 'attributed' category." Email from Barbara Schmidt, Twain scholar, to John R. Brown (Sept. 22, 2000) (on file with author).

4. See DAVID E. STUART, *ANASAZI AMERICA* 35-39 (2000).

cooperate in the Middle Rio Grande offers an opportunity to examine the dynamics of conflict and collaboration. This article will focus on the MRG Water Assembly, an organization intended to engage broad stakeholder involvement in the process, and its relationships with a variety of stakeholder interests. Then it will critically examine instances of institutional conflict in assessing the Water Assembly's prospects for achieving consensus around an integrated, or holistic, comprehensive plan. Finally, it will explore the possibility that at least partial solutions to many of the problems identified earlier may be achieved by encouraging a more adaptive, polycentric⁵ approach to plan negotiations and development.

II. HISTORY OF THE MIDDLE RIO GRANDE REGION

During the American Territorial period from 1848 up until 1912, when New Mexico became the forty-seventh state to be admitted to the union, the territory experienced a quiet revolution in terms of both the conceptual basis and the operating rules for the governance and management of its water. The Indian Pueblos and Hispano acequia communities that had controlled the water locally and had developed among themselves institutions for its equitable allocation ceased to be the only appropriators of surface water from the Rio Grande and its tributaries. These widely scattered irrigation communities had worked out systems of rules, grounded in custom and tradition and in practical knowledge of the local landscapes and balancing use with supply, that had for at least a century and a half enabled them to survive. The rules were designed for a subsistence way of life. They required appropriators to monitor each other's behavior and to sanction those who took more than their share or failed in their responsibilities to the collective. The acequia association was the source of their limited rights to the resource they termed the "lifeblood of the community."

Anglo newcomers arriving in the last half of the nineteenth century challenged traditional institutional arrangements. They viewed the ecological adaptations to arid lands on which these institutions were based as primitive. The newcomers embodied an ethic based on America's manifest destiny that was fueled by the belief that they could

5. The term was coined by scholars at the Workshop in Political Theory and Policy Analysis at Indiana University to suggest that democratic self-governance does not require a single center of power, but should "be envisioned as an activity that goes on in many arenas simultaneously, at many scales of aggregation." POLYCENTRIC GOVERNANCE AND DEVELOPMENT: READINGS FROM THE WORKSHOP IN POLITICAL THEORY AND POLICY ANALYSIS xii (Michael McGinnis ed., 1999).

and, by right, should harness nature to meet human needs.⁶ They promoted more ambitious ideas about what could be accomplished by irrigation agriculture in New Mexico's river valleys, particularly the Rio Grande. After 1879, the newcomers arrived by railroad, rather than by oxcart or horse-drawn wagon, and in the 30-year period between 1880 and 1910 the state's population jumped by over 170 percent.⁷

To the arrivistes and entrepreneurs, local control of the state's water by small-scale irrigators meant waste and inefficiency. But the territorial legislature was not about to replace the old acequia system directly. Instead, legislators created new mechanisms—including water companies, irrigation districts, and later conservancy districts—through which control of major tracts of land and, more importantly, the water rights appurtenant to them, moved from community control into private hands, while authority to allocate such rights was centralized in the office of the Territorial (now State) Engineer.⁸ Passage of the Reclamation Act by Congress in 1902, ushering in the water development period, aided and abetted these trends.⁹

Rules and Rule-Ordered Behavior: "The Law of the River"

Today, Rio Grande water resources are allocated through a complex set of institutions—known as "the Law of the River"—a number of which are in conflict with each other when water runs short. A 1906 Treaty guaranteeing Mexico 60,000 acre-feet per year (except in the event of extraordinary drought or serious accident to the irrigation system in the United States) has legal supremacy but has not lately been the subject of much controversy, although this may change as transboundary issues gain in importance.¹⁰ The overriding mechanism for allocating water between New Mexico and Texas is the Rio Grande Compact. Formulas in the Compact determine how much water Colorado is required to deliver to New Mexico and how much New Mexico must deliver to Texas. New Mexico's delivery requirement is a function of the native flow of the Rio Grande at the Otowi gage, to the north of the MRG planning region.

6. For a discussion of utilitarian views of the environment in American social thought, see generally JEANNE NIENABER CLARK & HANNA J. CORTNER, *THE STATE AND NATURE: VOICES HEARD, VOICES UNHEARD IN AMERICA'S ENVIRONMENTAL DIALOGUE* (2002).

7. JOHN O. BAXTER, *DIVIDING NEW MEXICO'S WATERS, 1700–1912*, 81 (1997).

8. A fascinating account of how this occurred can be found in G. Emlen Hall, *Tularosa and the Dismantling of New Mexico Community Ditches*, 75 N.M. HIST. REV. 77 (2000).

9. BAXTER, *supra* note 7 at 104–09.

10. Convention for Equitable Distribution of the Waters of the Rio Grande, May 21, 1906, art. I–III, available at <http://www.ibwc.state.gov/FORAFFAI/body-1906conv.htm> (last visited Mar. 31, 2003).

Between these two points, New Mexico is entitled to deplete annually an amount of native Rio Grande water that depends on the flow at Otowi, but not more than 405 thousand acre-feet.¹¹

In addition to native flow, additional water comes into the Rio Grande from tributaries of the Colorado River across the Continental Divide. Brought by tunnels through the mountains, this water reaches the Rio Grande via the Chama River. One of the chief beneficiaries of this San Juan-Chama diversion project is the City of Albuquerque, as discussed below. Water is considered delivered to Texas when it passes over Elephant Butte Dam in southern New Mexico.

The compact, however, does not stand alone. Besides the United States–Mexico treaty noted above, federal laws, including the Clean Water Act and the Endangered Species Act; federal and state court decisions; and administrative rules complicate the regime. Some of these will be noted in the discussion of the actors and their strategies below. One generally important rule is the New Mexico State Engineer's long-standing requirement for conjunctive surface and groundwater management. Groundwater withdrawals result in river flow depletions, even though the effects may not be immediately noticeable. The amount can be estimated as a function of lagged past pumping. The State Engineer requires pumpers to offset these losses through purchase and retirement of other surface rights or by other means.¹² This becomes relevant in considering the City of Albuquerque's current municipal and industrial use and future plans, and their implications for other uses and users.

The institutions in place to govern the macro dynamics of river management and control—the Law of the River—act principally to allocate the resources of the Rio Grande as an interstate and international waterway, and also to achieve other federal policy purposes, many of which enjoy considerable local support as well as substantial opposition from some quarters. This suggests the source of possible conflict. Except for federally reserved water rights applicable to federal installations and Indian tribes, water rights are recognized by or created through the State of New Mexico. Reallocations to meet federal demands take water from holders whose appropriative rights are based in state law.

11. Resolution Adopted by Rio Grande Compact Commission (Feb. 1948) Changing Gaging Stations and Measurements of Deliveries by New Mexico (amending art. IV of the Compact), *available at* http://southwest.fws.gov/mrgbi/Resources/RG_Compact/rg_compact.pdf (last visited Apr. 20, 2003).

12. Office of the State Engineer administrative guidelines now require applicants for new groundwater withdrawal permits to identify and retire 100% of offsetting water rights as a condition of approval. Middle Rio Grande Administrative Area Guidelines for Review of Water Right Applications, Sept. 22, 2000, *available at* <http://www.seo.state.nm.us/doing-business/mrgbasin/mrgbasin.html>.

Another source of institutional ambiguity in New Mexico is tension between the formal system of rules governing the allocation of water and administration of water rights and informal rules based on custom and tradition. Though property rights in water are based largely on a holder's ability to establish beneficial use more or less continuously from a priority date, New Mexico has a strong tradition that such rights are attached to appurtenant land, and that transfers should not be made too easily. Both individual and community interests have been asserted in successful objections to water right transfers from traditional agricultural uses, thus raising transaction costs and slowing the development of unfettered markets in water rights.

All this complexity might be of little concern, except that in the last decades of the twentieth century, these and other demands on the water in the Rio Grande—and on the aquifer to which it is connected—began to outstrip the annually renewable supply. It appears that in the twenty-first century, the existing regimes for managing and allocating New Mexico's waters will be inadequate to balance the state's needs effectively. Enter regional water planning.

III. REGIONAL WATER PLANNING IN NEW MEXICO

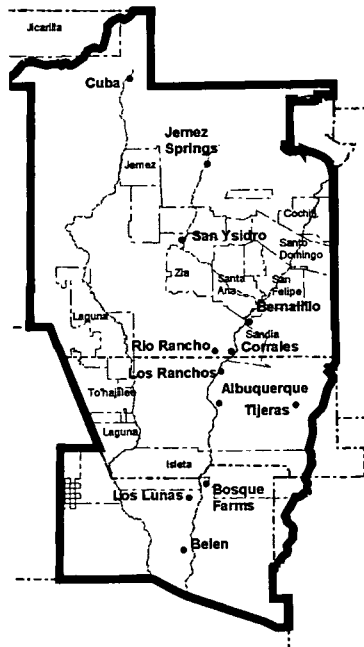
Regional water planning in New Mexico can be viewed as a set of local responses to specific circumstances in a physical and institutional context. Three overlapping contextual elements predominate. The first relates primarily to "place." The idea of place involves both the particular physical attributes of the situation in which water is understood to be a scarce resource and the characteristics that people assign to water itself in this environment. The second element involves the rules and rule-ordered relationships that govern the allocation of water within a complex intergovernmental and international system. As we will see, a single federal court decision in the legal arena acted as an immediate trigger that initiated regional water planning efforts throughout the state. The third element has to do with the influence of shared knowledge and understanding in shaping decision situations;¹³ that is, the extent to which a shared consciousness exists across communities of understanding among New Mexicans about the values they attach to water and their preferences for its governance.

13. See VINCENT OSTROM, *THE MEANING OF DEMOCRACY AND THE VULNERABILITY OF DEMOCRACIES: A RESPONSE TO TOCQUEVILLE'S CHALLENGE* 96 (1997).

Place

The MRG water-planning region occurs within three counties in west-central New Mexico within the drainage of the Rio Grande. The middle reach of the river is defined politically by the northern and eastern borders of Sandoval County at the upstream end and the southern border of Valencia County at the downstream end. The distance between these points along the river is about 160 miles.¹⁴ The region encompasses an area of 5495 square miles (slightly larger than the state of Connecticut), and contains a population of about 700,000, seventy-eight percent of whom live in the greater Albuquerque metropolitan area. Most of the lands of eight American Indian Pueblos lie within the region. (See Map 1.)

Map 1 – The Middle Rio Grande Water Planning Region



14. More commonly, the middle Rio Grande in New Mexico extends from the Otowi gage just below the confluence of the Rio Chama with the Rio Grande to Elephant Butte Dam. Socorro and Sierra counties, however, opted out of participating in the MRG water-planning region. When discussed in terms of the Rio Grande's entire reach, the upper basin extends from the headwaters in Colorado to Ft. Quitman, Texas (where it now typically dries up). The lower basin continues to outline the Texas-Mexico border to the Gulf of Mexico, fed by new water from the Conchas in Mexico and the Pecos from the Texas side. (In Mexico, the river is known as the Río Bravo.)

Though wide variation and unpredictability in precipitation amounts from year to year are well understood as facts of life in New Mexico, only in recent years has it become obvious that on most stream systems water use is rapidly approaching the physical limits of the resource. The growth of cities as major users has engendered new conflicts among competing uses and jurisdictions. There is little slack in the system as it is currently managed, and water managers face constrained choices. Moreover, the scope of water demand is no longer limited to the control of water rights by a narrow set of consumptive users; it has broadened to encompass increasing public concerns about issues of water quality and the health of riparian environments.

Rules

In the early 1980s, the city of El Paso, Texas, applied for a permit to appropriate ground water from New Mexico. The New Mexico State Engineer denied the application on the basis of a statute barring the export of the state's groundwater resources.¹⁵ El Paso sued, and a federal court ruled that the statute violated the interstate commerce clause of the U.S. Constitution.¹⁶ This decision prompted the New Mexico legislature in 1985 to create a constitutionally valid rationale to prevent the uncontrolled transfer of water out-of-state. The U.S. Supreme Court ruling, on which the federal district court relied in its *El Paso* decision, held that a state does have a right to limit water exports to protect the health and well being of its citizens, so long as its statutes "regulate evenhandedly to effectuate a legitimate local public interest."¹⁷

The linchpin of the legislature's effort was to amend several statutes by adding "conservation" and "public welfare" to existing requirements for non-impairment, as mandatory tests for the approval or denial of applications for new appropriations or transfers of water rights. Importantly, whether a proposed appropriation or transfer is deemed "not contrary to the conservation of water...and...not detrimental to the public welfare" applies to all applications, both interstate and within New Mexico.¹⁸

The legislature did not define "public welfare," or list specific priorities among uses. Like most western states, New Mexico asserts public ownership of "all natural waters flowing in streams and

15. *El Paso v. Reynolds*, 563 F. Supp. 379 (D.N.M. 1983).

16. *Id.* at 392. See also U.S. CONST. art. I, § 9.

17. Consuelo Bokum, *Implementing the Public Welfare Requirement in New Mexico's Water Code*, 36 NAT. RESOURCES J. 441, 453 (1996), citing *Sporhase v. Nebraska*, 458 U.S. 941 (1982).

18. See N.M. STAT. ANN. §§ 72-5-6, 72-5-7, 72-5-23 (Supp. 1985).

watercourses"¹⁹ and makes these waters "subject to appropriation for beneficial use."²⁰ Groundwater basins and aquifers are also public.²¹ The rule allocates water on the basis of the doctrine of prior appropriation: "Priority in time shall give the better right."²² The "basis, measure and limit" of such rights is beneficial use, with all such uses being treated equally.²³

Although by its 1985 amendments the legislature clearly intended to signal that not every beneficial use should necessarily be regarded as consistent with the public welfare, more than 80 years of precedent had sanctified the idea that property rights in water were based solely on priority in time. In other words, the value of a water right is to be measured only by its seniority, rather than any other measure of priority. Two years later, in passing the law that established a process and authorized funding for regional water planning, the legislature again ducked the issue, requiring only that planners give an "adequate review of water conservation and the effect on the public welfare."²⁴

Common Knowledge and Understanding

Competing claims on an increasingly scarce supply have led to heightened awareness among both traditional stakeholders and advocates for non-consumptive environmental and recreational interests that not only is the water supply over appropriated, but also that the existing institutions for managing water are inadequate to resolve the conflicts that are apt to arise in any situation of shortage. The results of a statewide survey conducted in 2000 by the University of New Mexico's (UNM) Institute for Public Policy suggest the outlines of an emerging public consensus, with clear majorities agreeing on the relative value of alternative water uses and policy preferences.²⁵ Neither the official prior

19. N.M. STAT. ANN. § 72-1-1 (1941).

20. N.M. CONST. art XVI, § 2.

21. N.M. STAT. ANN. § 72-1-2 (1907). *See also* N.M. CONST. art XVI, § 2.

22. N. M. Stat. Ann. § 72-1-2; *see also* N.M. Const. art XVI § 2.

23. N.M. CONST. art. XVI, § 3. In New Mexico, beneficial use has historically been thought to require the diversion of water for an economic purpose. The idea that "instream flow" for the benefit of the ecological system or the health of specific species might be considered "beneficial" has only begun to win grudging acceptance. No New Mexico law recognizes such a "use" of water, but a New Mexico Attorney General's opinion in 1998 suggested that nothing in the New Mexico Constitution, statutes or case law would preclude it. Opinion of Tom Udall, Attorney General, Opinion No. 98-01, March 27, 1998.

24. N.M. STAT. ANN. § 72-14-44C(6) (Supp. 1987).

25. JOHN R. BROWN ET AL., UNIV. OF NEW MEXICO INST. FOR PUB. POLICY, ATTITUDES AND PREFERENCES OF RESIDENTS OF THE MIDDLE RIO GRANDE WATER PLANNING REGION REGARDING WATER ISSUES: SUMMARY REPORT TO THE ACTION COMMITTEE OF THE MIDDLE

appropriation system of New Mexico water law nor its logical outgrowth, the development of market mechanisms for reallocating senior water rights based on willingness to pay, appears to offer a democratically acceptable basis on which to build new institutional arrangements, capable of addressing these conflicts in a way that takes such expressions of public preferences into account.

Developing a Planning Framework

The 1987 legislation that authorized regional water planning reflects the New Mexico legislature's recognition that values about water vary widely among regions within the state, and that regions should be able to craft their own solutions in response to what water officials and experts deem to be a real threat to New Mexico's water supply. That said, very little policy direction was provided in the regional water planning (RWP) law itself, beyond the assertion that the state's "future water needs...can best be met by allowing each region...to plan for its water future."²⁶ Indeed, recollections of those involved at the time present a picture of a legislature reacting to a statewide crisis, while wanting to ensure that the districts and regions that they represented would not be adversely affected by attempts to expropriate "their" water.²⁷

The 1987 legislation assigned responsibility to the New Mexico Interstate Stream Commission (ISC)²⁸ for administering funding to a

RIO GRANDE WATER ASSEMBLY AND THE MIDDLE RIO GRANDE COUNCIL OF GOVERNMENTS (2000).

26. N.M. STAT. ANN. § 72-14-43 (Supp. 1987). In a literal sense, this is not quite accurate. Based on a report by the N.M. Water Resources Res. Institute and the Univ. of N.M. School of Law, *State Appropriation of Unappropriated Groundwater: A Strategy for Insuring New Mexico a Water Future* (Jan. 1986), the legislature did authorize the Interstate Stream Commission (ISC) to implement a program "to appropriate groundwater or purchase water rights on behalf of any of the various regions of the state" in order "to ensure an adequate supply of water for each region, as reflected in...[its] water use plan."

The ISC does own water rights and continues to obtain them but has not yet implemented this provision, since appropriations were to be made pursuant to shortfalls and "public welfare" needs identified in regional water plans, most of which are uncompleted. "In principle, state appropriation and resale was the concept, not unlike what California is doing with electricity now." Interview with F. Lee Brown, who led staff efforts for the N.M. Water Law Study Committee, under whose auspices the report was prepared (Apr. 16, 2001).

27. Interviews with knowledgeable actors including F. Lee Brown, Consuelo Bokum, and John Carangelo.

28. N.M. STAT. ANN. § 72-14-4 (Supp. 1997). Created in 1935, the ISC has broad powers to investigate, protect, conserve and develop New Mexico's waters and stream systems, both interstate and intrastate. The commission is authorized to negotiate compacts with other states to settle interstate controversies, match congressional appropriations, investigate and develop the water supplies of the state's stream systems, and institute legal pro-

"party or parties" within self-defined water planning regions. Such a region must contain "sufficient hydrological and political interests in common to make water planning feasible."²⁹ In determining funding eligibility, the ISC was to consider whether the source and potential place of use of the water were within the same hydrologic basin. If funding was requested on a joint basis, the ISC was to consider whether the parties had "demonstrated political and economic interests in common by entering into a binding intergovernmental agreement for carrying out the planning process."³⁰

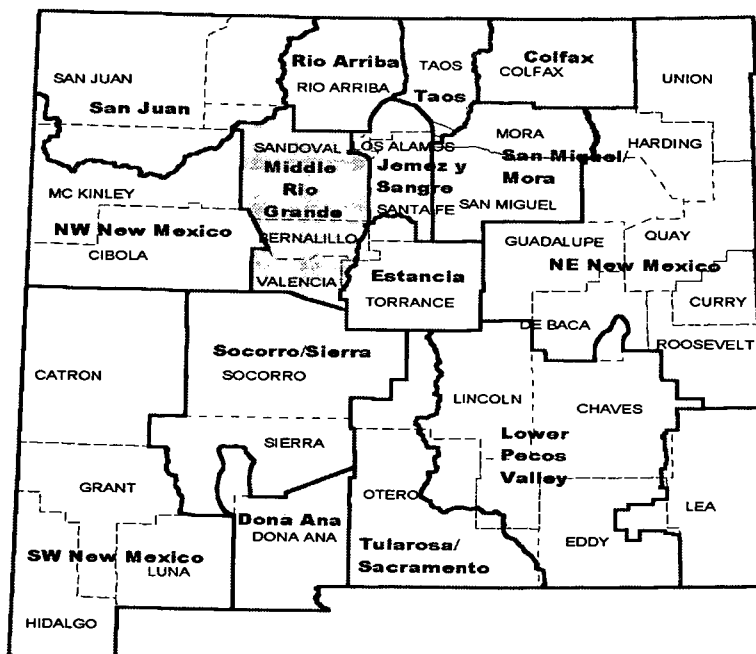
Given the ambiguity of the state legislature's guidance, regional self-definition and self-organization proceeded unevenly for several years. Regions with the greatest sense of having a common political stake and under the greatest threat of expropriation of their water were earliest to organize and produce some form of plan. It is no accident that the first plan submitted to the State Engineer in 1989 came from the Eastern Plains region (Region 1), four of whose seven very rural counties share a long border with Texas, as well as the shallow western edge of the Ogallala Aquifer. (See Map 2.) The Eastern Plains shared with some other multi-county regions the advantage of being able to adopt pre-existing (since the 1960s) state planning district boundaries. These regional planning coordination entities are loosely governed by councils of governments (COGs)—voluntary associations representing municipalities, counties, and in some cases tribes and special districts.

ceedings. Eight of its nine members are appointed by the governor for six-year terms and represent major irrigation districts or sections of the state. The commission elects its chair. The State Engineer is its ninth member and secretary and directs the work of its staff.

When the legislature created the regional water planning process in 1987 to protect New Mexico waters and to provide for regional growth and development consistent with the available water resource, the ISC became the agency responsible for granting RWP funds and overseeing regional water plans. Funding for planning in 16 regions was sporadic and never exceeded \$350,000 between 1987 and 1998. For Fiscal Year 1999, the legislature appropriated \$1,750,000 for regional water planning and for a companion program to develop a State Water Plan to integrate and reconcile the regional plans.

29. N.M. STAT. ANN. § 72-14-44D (Supp. 1987).

30. N.M. STAT. ANN. § 72-14-44F(2) (Supp. 1987).

Map 2 – New Mexico’s Water Planning Regions*

*Solid lines show planning region boundaries. Lighter dashed lines show county boundaries.

During the first five years following enactment of the RWP bill, regions formed and re-formed as they determined their shared hydrologic and political interests. Though many actors were local officials, voluntary organizations began to take shape, built around individuals with interests in water, whether agricultural, municipal, industrial, or environmental. For some, their motives included finding a way to accommodate different interests and reconcile conflicts. Others were willing to share their technical expertise in hydrology or other water-related fields. As one witness to the early efforts across the state describes it:

Regions had self-identified as best they could and were struggling to figure out what a plan was (or should be). They knew only they should figure out how much water they had, and would have in the future, and what they were using it for and how much they would need in the

future, and somehow reconcile [all of this] 40 years down the road. They also had to include tribes [in their region] in the process...and they had to have a representative planning body [or] steering committee. These last two things maybe weren't in the legislation, but somehow they were a given. In fact, the San Juan Basin RWP grant application was sent back [by the ISC] for revision because it did not mention Navajos.³¹

Into this fluid situation in 1992 stepped the Western Network, a non-profit consulting firm created to provide services in environmental and natural resource dispute resolution. Western Network staff, under a Ford Foundation grant, focused their first efforts on the Pecos River in eastern New Mexico. They soon discovered that planners in the three regions that include the Pecos watershed were frustrated by the lack of ISC guidance and eager to share information that could help make their plans compatible. A two-day working meeting in August 1992 was considered a great success as small-scale acequia-based farmers and large-scale irrigators from the Carlsbad Irrigation District, among a diverse body of users, discovered how much they had in common. Additional funding for what became the "Regional Water Planning Dialogue" facilitated similar processes with other regions, culminating in a statewide meeting in 1994, at which participants created a board and a mission statement and "whipped each other into a frenzy of community empowerment [and] grassroots planning."³²

From their first efforts with the three Pecos regions, Dialogue participants maintained an uneasy relationship with the ISC. The appointed commission and its staff had been reluctant to assert the authority of the ISC, given the legislature's finding that each region should "plan for its water future"; yet from the regions' viewpoint, funding support was meager, and decisions about what constituted an adequate proposal or plan element seemed arbitrary. Dialogue board members were ambivalent about whether they were watchdogs or partners with the ISC in facilitating regional processes. Regional planners sought guidance but also predictability from the ISC. Following the 1994 meeting, the ISC called on Dialogue board members to assist in

31. Interview with Lucy Moore, founder of the New Mexico Water Dialogue (Jan. 23, 2001). The 1987 legislation had required the ISC to develop criteria for regions to receive planning funds, including one criterion providing for "use of an appropriate planning process including opportunities for participation by those Indian tribes located within the various regions of the state" N.M. STAT. ANN. § 72-14-44C(2) (Supp. 1987).

32. *Id.*

designing a *Regional Water Planning Handbook*.³³ A key feature of the *Handbook* is a template of elements to be included in all regional water plans. Though specific provisions of the template are still subjects of some dispute, from an institutional analysis perspective the *Handbook* is significant in several respects.

Most regional water planning groups understood broad-based public participation to be necessary to the creation of any plan that might have a reasonable chance of being implemented by public authorities. The *Handbook* recognized these "rules-in-use" and built flexible but extensive requirements for stakeholder participation into the planning requirements. The idea that public participation is essential, not only to local legitimacy but to a proper understanding of public welfare, thus became no longer simply a working assumption of regional planners, but an accepted tenet of state water policy.

The template requires that regional planners gather and assimilate several sorts of information about the physical, economic, demographic, and historical characteristics of the region and its water uses; that they understand and document the legal and institutional constraints affecting the region; that they assess the water resources available in terms of the sources and amounts of water supply and its quality for both surface and ground water; and that they document current uses and project future demand by a 40-year planning horizon.³⁴ The requirement to develop shared time-and-place-specific information about these matters was explicitly designed to contribute to a common knowledge and understanding among participants of the collective action situation facing everyone in the region.

Thus, both the state's mandates and its flexibility have helped to structure the "action situation" faced by actors in each region. The elements of an action situation that affect actors' choices of strategy are

33. N.M. INTERSTATE STREAM COMM'N, *REGIONAL WATER PLANNING HANDBOOK*, (1994) [hereinafter *HANDBOOK*].

34. The *HANDBOOK* uses the term "planner" broadly to refer to whoever is involved in any regional water planning process. The term does not imply a preference for leadership by a cadre of planning professionals. Instead, the *HANDBOOK* emphasizes the interest of regional participants for encouraging "local people to express local concerns and discuss the difficult decisions faced by every community in New Mexico." *Id.* at 3. However, the ISC (whose composition is affected by new gubernatorial appointments) and its staff have not been as consistent in their support of regional autonomy and local decision making over time. In 1998, after a hiatus occasioned by its concern that too much money had been spent with little result, the legislature provided new funding to support regional planning (\$1 million, plus \$750,000 for developing a state framework plan). However, increased concern for "accountability for funds and responsibility for plan products" led to changes in funding arrangements and to requirements in planning proposals for a "detailed work breakdown structure for (a) water supply assessment, (b) water demand analysis and (c) options for balancing supply and demand." Memorandum from Brian C. Wilson, Chief, Water Use and Conservation Bureau, to Files (Mar. 6, 1998).

complex and, as Vincent Ostrom reminds us, involve an "epistemic element—the place of common knowledge and communities of shared understanding in decision situations."³⁵ The requirements and opportunities afforded by the RWP process have had the effect of encouraging the development of broadly shared knowledge and understanding about the nature of the problem each region confronts.

IV. WATER PLANNING WITHIN THE MIDDLE RIO GRANDE VALLEY

The New Mexico legislature authorized regional water planning in 1987. Within four years, the MRG Council of Governments (MRGCOG) concluded, largely on the basis of studies conducted in the 1960s and 1970s, that the "demand for water is less than the sustainable water supply of the region."³⁶ MRGCOG produced a four-volume report and ceased working on the issue. Then, in 1993, a study by the U.S. Geological Survey showed that the Albuquerque Basin, the deep and extensive aquifer on which local governments were relying to provide a practically unlimited supply of water for urban growth, was far less extensive than had been believed for a quarter of a century and was being mined rapidly.³⁷

Additional assessments validated these findings. In the summer of 1996, the volume of the river was at one of the lowest levels on record; however, the dominant water diverter in the region, the Middle Rio Grande Conservancy District, continued its deliveries to farmers unabated. During the summer, a 45-mile reach of the Rio Grande below Albuquerque dried up, causing the death of about 40 percent of the endangered Rio Grande silvery minnow. These events, and the lawsuits and recriminations that followed, convinced major users and interest groups that coordinated action to balance demands with the supply of water at sustainable levels was required.

In 1997, a small group of concerned water professionals, including a number of faculty members from the University of New Mexico (UNM), orchestrated a request from the State Engineer to UNM's president. It asked the University to take the lead in creating a process for developing a regional water plan with strong community and stakeholder involvement. At this time, an attempt was also made to

35. OSTROM, *supra* note 13, at 102.

36. MIDDLE RIO GRANDE COUNCIL OF GOV'TS, REGIONAL WATER PLANNING IN STATE PLANNING AND DEVELOPMENT DISTRICT 3, VOL. 2: REGIONAL WATER RESOURCES 23 (1991).

37. CONDE THORN, DOUGLAS MCADA & JOHN KERNODLE, WATER RESOURCES INVESTIGATIONS, U.S. GEOLOGICAL SURVEY, GEOHYDROLOGIC FRAMEWORK AND HYDROLOGIC CONDITIONS IN THE ALBUQUERQUE BASIN (1993).

enlist the Indian Pueblos in the MRG region in joining the State Engineer in convening the First Assembly for Water Planning in the Middle Rio Grande (Water Assembly).

The first Water Assembly was convened in August 1997. It brought together educators, scientists and technical specialists from federal agencies and private consulting firms, local water managers and officials, farmers, business and industry representatives, environmentalists, and others to begin a process of evaluating the water situation facing the Middle Rio Grande region. It succeeded in energizing a diverse group of individuals who represented highly divergent points of view but who were in agreement that planning must be based on a shared understanding of the underlying facts about the water situation. The Middle Rio Grande Water Assembly (as it came to be called officially) set forth as its mission "to develop, through an open, inclusive and participatory process, a plan of sustainable water management strategies for the Middle Rio Grande Region and establish a process to implement the plan."³⁸

One of the first tasks of the Water Assembly's Action Committee, created in November 1997, was to charge a work group of hydrologists and other specialists—all volunteers in this effort—to develop a "water budget," an inflow-outflow model of the region's hydrologic system based on twenty-five year averages. This early product of the Assembly's work confirmed that the system was barely able to meet current needs and delivery requirements downstream, and that the Albuquerque Basin aquifer was being mined at a rate of about 70,000 acre-feet per year.³⁹ Population growth in the region's three counties was 21 percent during the 1990–2000 decade, while estimates for the "planning horizon" year of 2040 range from 1.1 to 1.33 million people.⁴⁰

Stakeholders and Actors

The 712,738 people⁴¹ who live in the region might all be considered stakeholders, but most, if they are able to turn on a faucet and get clean water, are unlikely to become active participants in regional water planning. Most, however, are aware that water use and

38. Middle Rio Grande Water Assembly Bylaws, art. IV, § 1 (1998) [hereinafter MRGWA].

39. Action Committee of the Middle Rio Grande Water Assembly, Middle Rio Grande Water Budget (Oct. 1999). The estimate of the rate of depletion has subsequently been amended to 55,000 acre-feet per year.

40. JIM GROSS, MRGCOG, A BACKGROUND FOR WATER PLANNING AND SUMMARY OF REPRESENTATIVE ISSUES (2000).

41. 2000 U.S. CENSUS (for Bernalillo, Sandoval, and Valencia counties in New Mexico).

supply are in a precarious balance and it is not difficult for local water authorities to convince citizens to act to conserve water during drought conditions. A relatively few actors, as a result, represent the interests of a variety of constituencies, or can claim to do so. Annual Assembly meetings typically attract about 150 people. The MRG water planners' listserv has about 150 subscribers. The number of participants in a series of six community conversations held in the fall of 2002 in each county to gather additional public input and to explore alternatives averaged around thirty. It is important not to discount the influence that citizens can exercise and to recognize that a process such as this one may raise awareness of an issue, provide information, and mobilize individuals to act. Citizens typically do so when they share a common understanding and in a variety of ways communicate their interests through pressure on their local officials. In the Water Assembly, however, the focus is on direct actors with stakes in the regional planning process or in its outcomes, whose actions help to shape that common understanding. The characterizations below of the first two sets of actors, the MRG Water Assembly and the Mid-Region Council of Governments, are more detailed than descriptions of other entities. These two are supposed to be partners in creating a regional water plan. Understanding their interests and the dynamics of their relationship is important to assessing the likelihood that the plan can succeed.

The Water Assembly

The Water Assembly's structure and mode of operation are important. The Assembly has emphasized the importance of bringing together people who may stand far apart on issues but who are willing to search together for common ground. The Water Assembly, consisting of any resident of the region who desires to participate, has convened annually, but its governing body, the Action Committee, meets once a month. The Assembly's bylaws give the Action Committee "broad and exclusive authority...apart from meetings of the Assembly itself."⁴² Until 2001, the Action Committee had been composed of representatives of three broad groups of actors in "approximately equal representation": specialists (hydrologists, engineers, biologists, economists, etc., in academia, private practice, and public agencies), managers (representing firms and agencies responsible for water provision or management), and advocates for any definable interest affected by water management, such as agriculture.⁴³

42. MRGWA Bylaws, art. IV § 1. (July 24, 1998).

43. *Id.* art. IV § 2. The Action Committee also reserved open seats for a fourth constituency, the Middle Rio Grande Indian Pueblos. The Pueblos have declined to

This arrangement seemed satisfactory to participants during the early phases of the process, when the Water Assembly's focus was directed toward understanding the dimensions of the problem—characteristics of the water supply, current demand, and projections of future demand. But by the fall of 2000, attention began to shift toward serious consideration of the objectives of the plan and how to achieve them. From various quarters it began to be recognized that participation in the process was not broadly based, and that the voices of a number of affected interests from environmentalists to farmers to developers were inadequately represented on the Action Committee. In early 2001, several proposals were introduced to broaden and strengthen the representation of advocates for different water uses.

The Water Assembly's bylaws were amended in April 2001, and in June 2001 a special Assembly meeting chose representatives for three new groups of advocates or constituency groups—"agricultural, cultural and historic," "environmental," and "urban users and economic development"—each of which was to elect five members to the Action Committee.⁴⁴ The diverse interests represented within each of the groups are barely masked by their names. Most notably, the interests of current urban residential water users and those of the development community are markedly divergent. Actors representing developer interests moved strategically during the convocation to capture all five seats for this constituency on the Action Committee and have successfully rebuffed attempts at several meetings of the Committee to revisit the rules that permitted their seating.⁴⁵

Cutting across this structure are working groups. Chaired by Action Committee members, they draw as well on the interests and skills of others. A Public Participation and Communication work group has been responsible for developing a public education roadshow, annual Water Assemblies and other forums, and several series of community conversations, typically held in two locations in each of the three counties in the Region. These have drawn increasingly larger numbers of citizens as drought conditions have worsened in the last two years.

participate (see discussion *infra* in section titled *The Six Middle Rio Grande Pueblo Indian Communities*).

44. MRGWA Bylaws, art. IV, § 2. (Apr. 18, 2001). The specialists and managers constituency groups remained, but new representatives to the Action Committee were selected by all of the groups.

45. *Id.* at art. IV, § 6. "Constituent groups are responsible for filling the membership of their group." *Id.* They are not subject to any overriding rules mandating balance. "Capture" by a faction is therefore a function of political organization. The Action Committee is responsible to vote on the nominations of members from constituent groups but to date has not done so.

A technical work group, now reconstituted as the analysis team, produced the water budget described above⁴⁶ and exercised oversight of a contract that produced a study of current demand.⁴⁷ The analysis team evaluated the findings of a water supply study prepared under a contract from the Army Corps of Engineers and the Interstate Stream Commission.⁴⁸ From this process there emerged a shared body of information about the realities of the water situation in the MRG and a common understanding of the goals that unite and divide them. Moreover, through working together over the course of three years, the individuals and entities involved developed trust in each other's commitment to a fair process.

Upon this shared foundation, the Water Assembly through its Action Committee began in 2000 a process of weighing alternative actions. An Alternatives work group developed a database of specific proposals and suggestions that have grown out of the work of the public participation and technical work groups and the various public forums. This is intended to lead to creating a set of scenarios—alternative strategies to achieve the goal of “balancing all uses with renewable supply.” But at the same time the changes in constituent group representation appear to have set back development of the epistemic community that had emerged among Action Committee members. Newly installed representatives of development interests, in particular, have been reluctant to accept findings to which they had not been a party. Others have responded negatively to what they regard as the arrogance of the development bloc. The strength of that shared foundation is being tested.

The Mid Region Council of Governments⁴⁹

The Mid Region Council of Governments (MRCOG), a voluntary association of counties, municipalities, and special districts within an earlier established state planning district, sponsored some water planning efforts in the early 1990s. These efforts were overtaken by

46. Action Committee of the Middle Rio Grande Water Assembly, *supra* note 39.

47. JOHN SHOMAKER & ASSOCIATES, INC. HISTORICAL AND CURRENT WATER USE IN THE MIDDLE RIO GRANDE REGION (2000).

48. S.S. PAPADOPULOS & ASSOCIATES, INC., MIDDLE RIO GRANDE WATER SUPPLY STUDY (2000), available at <http://www.sspa.com/ashu/rio/start.htm> (last visited Mar. 15, 2003).

49. Until recently the organization was known as the Middle Rio Grande Council of Governments (MRGCOG), but it has been infelicitously renamed because one of its member counties (Torrance) is not within the Middle Rio Grande watershed. The water-planning region retains the earlier name. “Middle Region” may not have been used because of connotations that its population consists of Hobbits, or for fear of copyright infringement.

studies⁵⁰ that showed groundwater supplies to be far more uncertain than heretofore understood. Local governments retreated from acting collectively as they sought to sort out the implications of these findings for their own jurisdictions. When the Water Assembly was organized in 1997, MRCOG staff recognized that a new effort, and potentially new funding from the State, was possible. They quickly offered to come to the aid of the newly founded organization with staff support and the capacity to act as its fiscal agent. Much of MRCOG's work involved regional planning, most recently its Focus 2050 exercise in regional land use planning, and the organization viewed itself as "uniquely positioned to establish a linkage between water planning and other regional planning efforts."⁵¹

In 1998, the MRCOG Board of Directors established the Middle Rio Grande Water Resources Board (WRB), comprised of "public and tribal water rights holders" within the region, to "be responsible for *preparing, coordinating, and adopting* a regional water plan in the defined planning area."⁵² To some among the Water Assembly's leadership, the first two elements of the WRB's mission appeared to duplicate, to take credit for, or to assume authority over the Assembly's work. That the Board should adopt the Water Assembly's plan was not an issue. Opinions within the Water Assembly's Action Committee varied regarding its relationship with MRCOG and its WRB. Some viewed MRCOG's proposal to assist the Assembly and act as its fiscal agent as a thinly veiled attempt orchestrated to secure for MRCOG's own staff the limited state funding available for regional water planning. However, the prevailing view among Action Committee leaders was that the importance of securing local officials' support for recommended policy changes necessitated that the Water Assembly enter into a cooperative arrangement with MRCOG, since the implementation of any regional plan would finally depend on the buy-in of its member local governments.

In an attempt to address these issues, the Water Assembly and MRCOG signed a Memorandum of Understanding (MOU) in December 1998. The MOU established a "partnership in order to develop the Middle Rio Grande regional water plan."⁵³ It acknowledged the Water Assembly's "special base of knowledge" and its ability to provide "an open public forum to conduct essential dialogue on the values of water and visions of future water needs," and recognized the Assembly's role

50. See, e.g., Thorn *et al.*, *supra* note 37.

51. MRGCOG, ANNUAL REPORT (1999).

52. MRGCOG, RESOLUTION 98-5, 3 (1998) (emphasis added).

53. Memorandum of Understanding for Cooperation in Regional Water Planning from the MRGCOG to the Water Assembly, § I (Dec. 10, 1998) (on file with author).

to "design and implement, with the assistance of MRCOG staff, a region-wide public involvement and public education program."⁵⁴

The MOU stated that the Water Assembly would "participate directly" in Water Resources Board decision-making, by providing for all "plan-related action items" to be "considered jointly" by the Board and the Assembly's Action Committee.⁵⁵ It also provided for "administrative and certain key staff support" to the Assembly (contingent upon funding), including administering contracts needed to complete the plan.⁵⁶

Since that time, the working relationship between the two organizations has been beset by conflicts. Normally, MRCOG might be expected to have no independent interest in any particular water-planning outcome apart from the collective interest of its member governments. In fact, however, both institutional and individual self-interests have been in play: principal-agent issues, turf struggles between MRCOG staff and Water Assembly volunteers, power disparities among MRCOG members, and informal guidance from Interstate Stream Commission staff have all served to undermine the relationship.

MRCOG's decision in 1998 to create the WRB had contradictory implications in terms of perceived threats to the Assembly's autonomy. The terms of the resolution establishing the WRB⁵⁷ on their face challenged the Assembly's mission of developing a Regional Water Plan "through an open, inclusive and participatory process." On the other hand, the WRB included a number of officials who had also participated as volunteers in the Action Committee, and who would be able to oversee the work of MRCOG's water staff.

Tensions between the Water Assembly and MRCOG over issues of direction and control of the planning process have resurfaced periodically since the MOU was adopted. The terms of the MOU have been clarified to define the partnership as being between the Water Assembly and the WRB and to recognize the Assembly as "the single negotiating table for non-governmental organizational and public" input. In September 2001, MRCOG appeared to have defined for itself a far less directive role in the development of the regional water plan, one focused on "performing administrative and coordination functions," while the WRB and the Water Assembly together would be "responsible for the technical oversight and planning and [RWP] production."⁵⁸

54. *Id.* § II.

55. *Id.* § III.

56. *Id.* §§ V-VI.

57. MRCOG RESOLUTION 98-5, *supra* note 52, at 3-4.

58. Memorandum from MRCOG Acting Executive Director, to All Concerned, *re*: Approach to Water Planning Program Coordination (Sept. 15, 2001) (on file with author).

However, conflict intensified during 2002, when MRCOG asserted that its "Water Resources Board is providing oversight and policy direction" to the RWP.⁵⁹ More substantively, several Assembly activists came to believe that MRCOG exerted undue influence on the process for selecting a contractor to evaluate benefits and costs of proposed alternative actions and for determining the scope of services the contractor would perform.

Middle Rio Grande Conservancy District

The Middle Rio Grande Conservancy District (MRGCD) was created in 1925 in response to the saturation of irrigable land in the middle Rio Grande valley because of aggradation of the river and a rise in the water table, which had rendered a good deal of the valley's land unusable, and increased the threat of flooding.⁶⁰ As a result, a small group of property owners in the valley, backed by the Albuquerque Chamber of Commerce, persuaded the legislature to pass the Conservancy Act of 1923. Under this Act, the MRGCD was created in order to provide flood control, irrigation, and drainage for the lands of the Rio Grande valley. Though most small farmers, fearing they could not pay the assessments that would be required, opposed creating the District, the project went ahead. Ultimately the MRGCD took over the works of 72 formerly self-governing acequias and dispossessing 40 percent of the District's constituents of their land. However, over time the District has succeeded in reclaiming over 40,000 acres, making them suitable for irrigation or other development as well as protecting the land and its residents from flooding.

In achieving these goals, the MRGCD also acquired permits to divert the water necessary to irrigate more than 130,000 acres, although fewer than 70,000 acres are in production today. Because of a special provision in its enabling legislation, the water rights and permits held by the MRGCD are not subject to the forfeiture and abandonment statutes applicable to other water right holders for nonuse. Though this provision may be subject to constitutional challenge,⁶¹ a greater threat is the fact that rights on the Rio Grande have not been adjudicated and the courts could significantly alter the quantity of the District's permitted rights. It

59. MRCOG ANNUAL REPORT (2002).

60. MIDDLE RIO GRANDE CONSERVANCY DISTRICT [hereinafter MRGCD], WATER POLICIES PLAN 4-5 (1993).

61. See Lisa Brown, *The Middle Rio Grande Conservancy District's Protected Water Rights: Legal, Beneficial, or Against the Public Interest in New Mexico?*, 40 NAT. RESOURCES J. 1, 1(2000).

is thus in the interest of the MRGCD to put as much of its water as possible to beneficial use.

As the amount of acreage farmed declines, the MRGCD is seeking to broaden its mission and the public's understanding of what constitutes beneficial use. In recent documents, the MRGCD has portrayed itself as a guardian of riparian habitat, an essential partner in protecting the ecology of the river through its lands and ditch systems, an enhancer of recreation values, and a major source of recharge to the Albuquerque aquifer.⁶² Moreover, the MRGCD wants to be viewed as a trustee of the "most valuable asset in the valley—the water of the Rio Grande. Eventually the growth of Albuquerque and the other towns of the middle valley will depend on the water...being available for the communities of the Rio Grande."⁶³ To this end, the MRGCD established a water bank in 1995 to keep its 258,860 acre-feet of permitted rights in beneficial use, enabling it to lease unused water on short-term contracts to agricultural or other entities or individuals while retaining title to the rights. A recent report stated,

Future Albuquerque area population growth and its planned surface water development will increase net river depletions at the expense of some current MRGCD surface water use. We would expect that Albuquerque will enter the water rights or water purchase or rental market as a buyer of MRGCD water.⁶⁴

The rules under which the District operates leave unclear whose interests it represents. Though the majority of its "constituents" hold small tracts of land, the seven-member MRGCD Board of Directors is composed primarily of relatively large landholders. The Board is elected by property owners within the benefited area, though they do not have to live there. Eligible voters choose directors representing the county where they own property, and one member-at-large. While each of the other counties have one member, Bernalillo County (home to Albuquerque) gets three, though it has only 17 percent of the irrigated acreage in the District, according to the District's current estimate. Valencia County has 42 percent. Voting in MRGCD elections is a cumbersome process, and as a result, few eligible voters actually cast ballots. Although this system might seem to favor the interests of irrigators, the District's literature also stresses that it holds "important

62. MRGCD, *supra* note 60, at 35-45.

63. *Id.* at 43.

64. FRANK A. WARD ET AL., N.M. WATER RES. RESEARCH INST., INSTITUTIONAL ADJUSTMENTS FOR COPING WITH PROLONGED AND SEVERE DROUGHT IN THE RIO GRANDE BASIN 43 (2001).

natural assets of the middle valley in trust for the public."⁶⁵ Some critics have questioned whether the current institutions for governance of the MRGCD are compatible with either conception of its mission.

City of Albuquerque

The City of Albuquerque is the dominant pumper of water in the region, but all municipalities with public, private or hybrid water utility systems are drawing on groundwater and face the problem of unsustainable mining of the Albuquerque aquifer. The city intends, within five years, to replace most of its pumping with withdrawal and treatment of surface water. Albuquerque has contracted for 48,200 acre-feet of San Juan-Chama water, which, for the past 30 years, it has not used for its own needs. This flow has been instrumental in enabling New Mexico to meet its Compact obligations. The city is proposing to divert twice its share of San Juan-Chama water and to return half of that to the river as treated effluent through its wastewater treatment facility (as it currently does with its pumped groundwater).

Absent a proportionate decrease in diversions by other users, the city's diversion is likely to have a significant effect on actual river flow. Albuquerque has embarked on a conservation program that has reduced municipal and industrial water use considerably, although per capita consumption is still much greater than in El Paso or Tucson. The city is an active participant in the RWP process but is also moving ahead quickly with its own plans while keeping the Action Committee informed.

The Rio Grande Silvery Minnow

This endangered species of fish, whose range is now limited to a reach of the river south of Albuquerque, can serve here as a stand-in for a set of actors whose interests are principally environmental—the U.S. Fish and Wildlife Service, the Alliance for the Rio Grande Heritage (a coalition that includes a broad spectrum of environmental organizations), and others. Press accounts of the drying of the minnow's habitat in the summers of 1996, 2000, and 2002 portrayed the issue as a struggle between fish and farmers. Emergency measures occasioned by litigation have resulted in reduced diversions by the MRGCD and emergency releases of water stored upstream.

An interim solution for a three-year period beginning in 2001 involved an agreement by the Rio Grande Compact Commission

65. MRGCD, *supra* note 60, at 45.

allowing New Mexico to store up to 100,000 acre-feet of water in upstream reservoirs during the spring runoff to provide more water to the river when the silvery minnow is threatened. In the fall of 2002 it appeared that the minnow might indeed be extirpated within its native habitat. A federal judge invoked the Endangered Species Act to order an emergency release from a reservoir storing diverted San Juan-Chama water. On appeal from the City of Albuquerque, whose mayor claimed ownership of the water⁶⁶ despite its current lack of infrastructure to put it to use; the MRGCD; and the State of New Mexico; the Tenth Circuit Court of Appeals stayed the ruling. Though this situation illustrates the uncertainty of a policy environment characterized by multiple and conflicting property rights regimes or institutions, the action arena in which the conflict is being conducted is not that of regional water planning, and the situation remains too volatile to explore further in this article.

The Six Middle Rio Grande Pueblo Indian Communities

Eight sovereign tribal entities—Pueblos—occupy land within the MRG water-planning region. Two of these, Jemez and Zia, are located on the Jemez River, a tributary of the Rio Grande. The other six—Cochiti, Santo Domingo, San Felipe, Santa Ana, Sandia, and Isleta—occupy villages along the main stem of the Rio Grande. The largest of these Pueblos has a resident population of about 3000, the smallest about 500. Each is a self-governing entity, but the six Pueblos located along the Rio Grande have formed a consortium to act collectively with respect to the regional water planning effort: they pay attention to it but do not participate. Regional water planners have had difficulty understanding the reasons for this and express frustration because ultimately decisions made regarding Pueblo water rights are likely to affect those of every other user on the river. Yet the situation seems to offer the tribes fewer incentives to participate than to stay out.

Pueblo members would seem to have no interest in “owning” the problem defined as balancing use and supply. Over centuries they have adapted to whatever water came down the river, using very little of it. As individuals and families, Pueblo people know they use (and waste) far less than city or suburban dwellers.

Tribal leaders, on the other hand, have different incentives. Irrigated agriculture is in decline, and water right claims made on the basis of their historical uses or practicably irrigable acreage face an

66. Tania Soussan, *Cities and Farmers Vow to Fight*, ALBUQUERQUE J., Sept. 20, 2002, at A1.

uncertain reception by the federal courts.⁶⁷ Pueblo leaders therefore must prove up their claims by demonstrating the importance of their water use for economic development—the creation of viable homelands for their people. The effect is to encourage the development of water-using projects—golf courses, resort hotels, and the like—that put “facts on the ground” to justify claims to a larger quantity of water. Prior to quantification of their rights, the Pueblo leaders have no incentive to participate in arrangements that would imply a need for less water.⁶⁸

Historically-justified suspicion of the motives of the State with regard to Indian land and water rights is reinforced periodically by decisions of the State Engineer that fail to acknowledge tribes’ water rights or the impact of those decisions on them. The tribes view the RWP process as state-mandated and ultimately state-controlled. However, tribal water rights are neither derived from the state but are prior to and independent of state regulation, nor are these rights affected by requirements of the Rio Grande Compact.⁶⁹ Though Pueblo rights are not yet adjudicated, and therefore not quantified, tribal leaders view those rights as better protected in a federal, rather than a state-sponsored, arena.

The Pueblos have been offered a place at the Action Committee table as a separate constituency. However, they are not constituencies but sovereign governments. No other governments, as governments, are at the table. The other actors cannot make credible, government-to-government commitments, yet any attempts on the Pueblos’ part to co-operate may be viewed by others as commitments that could be used at some point to compromise their rights. In a rights-based context, the Pueblos feel they have little room for discussion.

These descriptions of the actors and their interests are obviously incomplete and overly general. Nonetheless, they provide some insight into the complexity and heterogeneity of the interests at stake in

67. The adjudication of pueblo water rights involves assigning both a quantity of water and a priority date. In the over appropriated Rio Grande, both are critical. The outcome for the Pueblos is far from certain, however, even for rights they may be allocated under a theory that the rights guaranteed by the Treaty of Guadalupe Hidalgo—the amount they historically used—should govern. Spanish law provided for balancing and protecting the interests of various parties, and the U.S. Supreme Court has in recent years sought to balance Indian and non-Indian interests in its rulings. See CHARLES DUMARS, MARILYN O’LEARY, & ALBERT UTTON, *PUEBLO INDIAN WATER RIGHTS* (1984).

68. Fidel Lorenzo of Acoma Pueblo spoke at a Water Assembly Action Committee meeting, January 19, 2000, of the danger of “inadvertent quantification” if the Pueblos were to participate as full players in regional water planning forums.

69. This characterization of the Pueblos’ position is based on a statement delivered by Roy Montoya, administrator of Santa Ana Pueblo, on behalf of the Middle Rio Grande Pueblos Water Coalition, to the 3rd Water Assembly, Albuquerque, N.M., Mar. 27, 1999.

attempts to achieve an equitable allocation of water through collective action.

WHITHER THE MRG PROCESS?

Creating Conditions for Collective Action

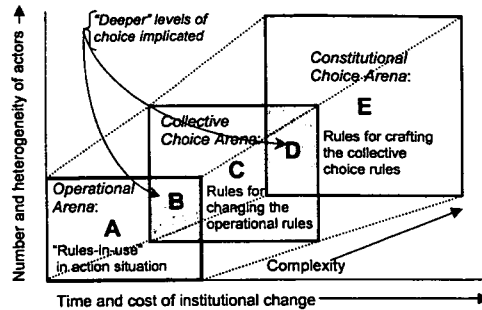
Crafting an arena or political space that individuals will find conducive to collective action is an exercise in institutional design. Institutions are patterns of interaction structured by rules, norms, and shared strategies that provide incentives for behaving in predictable ways in recurring action situations.⁷⁰ Institutions are the rules-in-use in an action situation—here, the imbalance between the water supply in the MRG and the demands on that supply—that determine the likelihood that people in that situation will either cooperate or defect.

Operational rules help to order people's day-to-day actions in the real world. Unless their basic interests are threatened, it is relatively easy for individuals to decide to adjust operations within those rules. It is somewhat harder, more costly, and time consuming to change the operational rules. They have been put in place according to collective choice rules that provide the criteria for making or changing them. To change the rules about how collective choices are made—the scope of decisions, who is allowed to participate in making them, how they are made, and under what conditions—is more difficult still. Collective choice rules are themselves outcomes of even more basic prior decisions in the realm of constitutional choice that comprise the foundational principles of any collective entity. Note that each of these conceptual arenas of choice can be found in collectivities at any scale, from local arenas such as the Water Assembly to nation states and entities formed by international treaties.⁷¹ Figure 1 illustrates these conceptual relationships.

70. See generally Elinor Ostrom, *Institutional Rational Choice: An Assessment of the Institutional Analysis and Development Framework*, in THEORIES OF THE POLICY PROCESS 35 (Paul A. Sabatier ed., 1999).

71. See generally Larry L. Kiser & Elinor Ostrom, *The Three Worlds of Action: A Metatheoretical Synthesis of Institutional Approaches*, in STRATEGIES OF POLITICAL INQUIRY 179 (Elinor Ostrom ed., 1982); MICHAEL D. MCGINNIS & VINCENT OSTROM, DEMOCRATIC TRANSFORMATIONS: FROM THE STRUGGLE FOR DEMOCRACY TO SELF-GOVERNANCE? 8-11 (1999).

Figure 1
Relationships Between Conceptual "Arenas of Choice"



Rectangles A, C, and E are analytically separable "arenas of choice." Actors making "real-world" decisions within the operational arena A are bound by rules established through prior collective choice decisions. Some decision situations, however, fall within the "gray area" B and require changes in the collective choice arena C that alter the incentives or strategies available to them in the operational arena. Likewise, some collective choice situations (in area D) cannot be resolved without more fundamental changes in institutional arrangements in the constitutional arena. The greater number and heterogeneity of actors and interests involved at "deeper" levels increases complexity, making decisions more costly and time consuming.

Within the water planning action arena created by the Water Assembly, its Action Committee, the MRCOG, and its Water Resources Board, it should be relatively easy for participants to agree to take actions to adjust their operations within existing operational rules. Actions that require changes in those rules are subject to the collective choice rules of each of the entities represented as well as those constituting the rules for the action arena itself—the bylaws of the Water Assembly, the memoranda of understanding regarding the partnership, etc. But agreements at any level, and particularly those that require or result from changing collective choice rules, are only likely to be possible if the action arena provides sufficient incentives to cooperate for participants to moderate the core beliefs shaped by their own institutional affiliations. To succeed, the MRG water planning action arena itself must be structured by collective choice rules that contribute to, rather than inhibit, resolution of conflict over actors' core beliefs.

Current Status

The general course of action of the MRG Water Assembly⁷² involves a negotiation process intended to lead to “the balancing of stakeholder and general public needs.” The Plan refers to a yet-to-be-identified “means for integrating the negotiating results into the action/scenario evaluation process,”⁷³ designed to achieve the goal of “balancing demand with renewable supply.”⁷⁴ The final product of further planning steps is to be a bundle of actions that make up a selected or recommended scenario. The process leading to that ultimate choice involves identifying criteria to be used to quantify “values” assigned to each action, then “summing” them to an “overall value for the scenario.”⁷⁵

The document describing this process is short on steps and responsibilities. Although the beginning of this stage of the process involves analyzing and evaluating alternative actions, final decisions about the plan’s content are supposed to result from negotiations among members of the Assembly’s Action Committee. However, the Action Committee does not represent governments (though several federal agency and local public officials have participated as individuals in its deliberations). Thus any plan agreed upon will reflect non-governmental organizations and interests. The decisions will not be authoritative. Instead, the resulting plan will, if agreements can be reached, be a set of recommendations to the Water Resources Board about the management of water in the region. Many of these recommendations are certain to focus on changes in water operations within existing rules and institutional arrangements—actions to promote efficiency and conservation of water. But it is likely that broader decisions will be required of local governments and others to balance the region’s water budget. Some may be made by voluntary agreements. Others may be imposed by the State (e.g., through legislative action arising from development of a state water plan) or even by federal regulatory, statutory, or judicial action.

Some participants expect that close contact between the Water Assembly’s leadership and MRCOG’s Water Resources Board will result in enough interaction with local governmental actors while the plan is being developed to gain the WRB’s *de facto* buy-in to the outcomes of the process. The plan’s stated aim is to provide “well coordinated

72. MRGWA, Regional Water Plan for the Middle Rio Grande Region, ver. 0.5 (Feb. 2, 2001), available at http://www.waterassembly.org/pdfs/plan_wa3905w.pdf.

73. *Id.* § 4.4.

74. *Id.* § 8.2.

75. *Id.* § 9.0 to 9.3.

guidance to Local, State, and Federal officials in...making and implementing public policies and regulations" for the region.⁷⁶ The leadership hopes that the plan's recommendations, once adopted by the WRB, will be sufficiently compelling that governments and public authorities in the region will find it difficult to resist adopting them as policy.

Why the Process May Fail

There is reason to question whether such a comprehensive approach can succeed. Current institutional arrangements provide few incentives for the actors to work within the AC's "negotiating table" as an action arena. Three instances of potential institutional failure will serve to exemplify the problem.

1. Within the Assembly itself, collective choice rules are embodied in the bylaws. Changes in the bylaws were intended to assure representation of a broad spectrum of interests in the Action Committee. Instead, some saw them as enabling a narrow constituency to capture a significant share of Action Committee seats, marginalizing other voices. One consequence of this has been to politicize the decision process within the Committee itself, forcing voting on issues on which many members would prefer to try to achieve consensus. Those feeling excluded have threatened to challenge in court the legitimacy of any plan that is not to their liking.
2. The unease and distrust that characterize the Water Assembly's partnership with the MRCOG and its Water Resources Board stem in part from uncertainty about the rules that define their relationships and authority. No single set of actors at the regional level has authority to approve or implement a regional water plan.⁷⁷ The state legislature intended, in mandating and funding regional water planning, to enable regions to plan for their water future. The *Handbook*⁷⁸ outlines a set of requirements for what such a plan should contain but provides few clues

76. MRGWA, *supra* note 72, Preface.

77. Authority for managing the State's water rests with the State Engineer or the Interstate Stream Commission except to the extent that rights to its use have been appropriated and are recognized by the State. This would seem to leave planning to a conversation among appropriators, would-be appropriators, and the State Engineer, contradicting the purpose of regional water planning.

78. HANDBOOK, *supra* note 33.

about how it will be put into effect. A number of current and former participants have argued that regional water plans will be worth little unless they address the institutional arrangements required to govern how the selected alternatives will be carried out.⁷⁹

Embedded in the very idea of regional water planning was the New Mexico legislature's tacit admission that existing institutional arrangements, which rely primarily on administering water rights by seniority and which avoid defining the public welfare of the state or the regions, are inadequate to resolve the underlying issues of how the state's scarce and unpredictable supply of water ought to be allocated. Water right holders and claimants clearly have a stake in the outcomes of planning, but so also do the vast majority of New Mexicans who have no such rights. The *Handbook* is equivocal about *how* to empower people in each region to engage in real decision making around water allocation and uses. Among its "required assumptions" for planners is "that New Mexico and federal water law will not change,"⁸⁰ but it also provides for the possibility of well-justified exceptions to those assumptions, and it specifically invites regional planning entities to "propose changes to New Mexico water law." It seems unlikely that the MRG process as it is now structured will facilitate agreement on broader recommendations—including changes in operational and collective choice rules—for deciding how water should be managed in the Region.

3. The Middle Rio Grande Pueblos, as noted earlier, have little incentive to participate in a state-initiated process that may threaten their sovereignty and inadvertently quantify their water rights. Their "prior and paramount" water

79. The Water Assembly's recommendations, when adopted by the Water Resources Board, are also to become a component of a "statewide water plan, built on the information in sixteen regional water plans." Though the structure is to be built from the periphery toward the center, this process offers a unicentric or hierarchic vision, within which the principal role of the regional plans is to support and justify the statewide plan. Ensuring that the regional plans are structured according to the official template helps to ensure their compatibility and conformity to the state plan. The logic of this approach is obvious, since the original purpose of creating regional plans was to provide justification for the *state* to be able to fend off other states' (i.e., Texas's) attempts to appropriate New Mexico's water by showing that New Mexicans have already put in place plans for using it—to make credible the assertion of the public welfare argument for disallowing water transfers out-of-state. *Id.* at 2.

80. *Id.* at 7.

rights, although yet unquantified, are likely to be substantial. Ongoing negotiations (with federal support) in other venues provide in the Pueblos' view more favorable arenas for advancing their interests. For the MRG water planners, however, lack of certainty about the status and quantity of the Pueblos' rights and how they may choose to use them constitutes a fundamental obstacle to achieving a comprehensive regional plan.

Given these and other institutional constraints, a challenge facing the Water Assembly and its partners has been how to constitute an action arena for negotiating a plan so that all parties with significant interests will have incentives to cooperate in taking collective action. How this arena is constituted can, as the above examples show, affect participants' beliefs about the efficacy of collective action, and thus their calculations about whether to continue to cooperate. Though the Assembly has committed itself rhetorically to an "open, inclusive and participatory process," questions continue to be raised about its essential fairness as well as about whether it can achieve a collectively desired outcome worth the investment of participants' time and energy.⁸¹

Lessons from Watershed Planning

The experiences of regions engaged in watershed planning across the United States can be instructive in understanding conditions for facilitating stakeholder cooperation. Though watershed planning often focuses on concrete environmental objectives and projects other than water supply and uses, the Water Assembly's leadership has encouraged participants to think of the MRG water-planning region as a watershed. As described by Blomquist and Schlager, in holistic, integrated watershed management, planning begins with the premise that a watershed is a natural system within which all actions affecting either demand or supply are interdependent. This physical unity supposedly makes the watershed the appropriate level at which to situate institutions for water resource management. Since watershed-

81. For parties to be willing to invest time and energy in a negotiating process, each must be able to trust that the process is fair, including ensuring that each interested party has an adequate opportunity to express its views and make them understood, that the decision making rules won't be stacked against it, and that it has an avenue of recourse if decisions are taken in violation of the rules. Because participation is costly, parties must also be reasonably assured that the process has a probability of achieving a desired outcome and that they can rely on the credibility of commitments made by other parties—*i.e.*, once taken, decisions will be fairly carried out by those responsible. These conditions are similar to those in an "assurance game." See ELINOR OSTROM, ROY GARDNER, & JAMES WALKER, *RULES, GAMES, AND COMMON-POOL RESOURCES*, 294-97 (1994).

wide decision-making organizations usually don't exist a priori, they should be created. This approach is comprehensive; all significant stakeholders should participate and decision making should be by consensus. Policies should be integrated and coordinated, presumably by a single entity, a "watershed authority."⁸²

The logic of the approach the Water Assembly is pursuing suggests its intention to adopt and recommend to policy makers a single, comprehensive, plan to balance all uses with renewable supply. Does this imply a need to create a new political entity at the regional level to manage the water resource? Perhaps not.⁸³ But whether or not a single regional water authority is required to implement such a unitary plan, can conditions for collective action noted above be met feasibly and fairly in a "watershed" of three-quarters of a million people with diverse preferences, information, and endowments?

The process of selecting representatives (or categories of interests to be represented) in a negotiating process is itself a political act, and it can lead to formulating a plan that reflects only an elite consensus. Moreover, any aggregation rule proposed, whether majority rule or any other criterion that recognizes an individual's or group's claim on watershed resources, is likely to open opportunities for some individuals or groups to gain advantage over others—institutionalizing distinctions in physical or in social, economic, or cultural position.⁸⁴

Furthermore, if the aggregation rule is consensus, and if the plan is intended to be a single, comprehensive solution to the problem of balancing uses with renewable supply, then every decision required to achieve the solution must be agreed to by everyone at the negotiating table. This may be impossible. What we have seen about conditions for collective action tells us that people will not come to or stay at the table if

82. William Blomquist & Edella Schlager, *Watershed Management from the Ground Up: Political Science and the Explanation of Regional Governance Arrangements* (1999) (unpublished manuscript) (on file with Indiana University, Workshop in Political Theory and Policy Analysis).

83. Developing a workable plan may not require creating a central authority, even under a holistic approach, if it is flexible. Buying in to the plan may be as simple as a city agreeing to take local actions such as revising ordinances or land use plans, in conformity with the plan's objective. Sharing information about steps one is taking to implement the plan could enable others to monitor and learn from the action, assess how well it works in achieving results, and make course corrections. Because of uncertainties, entities may be willing to commit to long-range goals but not specific targets. If an all or nothing standard is adopted, an entity may withdraw rather than participate at all, defeating the intent of the plan. There might be an ongoing role for the Action Committee in monitoring and evaluating various initiatives, developing scorecards, and reporting to the public. There may be conditions under which parties to an agreement might want to give the MRCOG's Water Resources Board or another region-wide public entity authority to enforce an agreement or resolve a dispute. However, this would require changes at the constitutional level of choice.

84. Blomquist & Schlager, *supra* note 82, at 44.

they perceive the price as too high in terms of their own interest, or in relation to the price another party is being asked to pay.

At its best, the dispute resolution arena offered by the MRG planning framework is only one choice available to most parties. In both 2000 and 2002 the struggle over water for farmers' fields or for the silvery minnow was played out not in negotiations among actual farmers and advocates for environmental values in the regional planning process but in federal court.

It seems likely that the more tightly the Action Committee tries to specify the planning objectives and define the set of alternatives considered feasible, and the more the leadership tries to achieve the correct balance of interests at the table, the less attractive this action arena will become for negotiating practical steps toward solving the region's problems. The time and energy the Action Committee spent on the issue of representation, including creating new constituency groups, appeared to some a waste of time, and to others an effort by leadership to decide who the relevant stakeholders are and to award them a defined number of seats at the table.

Despite its apparent rationality and consistency, Blomquist and Schlager argue that integrated watershed management is seldom undertaken in fact.⁸⁵ Instead, real watershed management in western states has evolved in a messier, bottom-up fashion. In four cases in California and Colorado, various self-organized communities of interest, including informal associations and incorporated cities, came together in response to problems at the watershed or sub-watershed level. These different communities claimed their *own* places at the table. Already organized, they either withheld or granted cooperation and resources in making inter-organizational or inter-governmental water resource management arrangements. Some of these arrangements encompassed the whole watershed, while some involved only bi-lateral cooperation or self-initiated action.

85. Managing water resources is, of course, only a part of watershed management. Most collaborative resource management partnerships are concerned with a broad range of environmental issues involving multiple resources. They tend to focus on projects such as creating and implementing habitat conservation plans or coordinated resource management plans. Evaluations of these efforts have not examined the nature of the institutions that emerge from these collaborative efforts. Instead, they focus on either the difficult process of ensuring fair representation of stakeholder interests, or on whether the projects are successful in terms of their own objectives, usually protecting or restoring an aspect of watershed health. An example of the former can be found in Christine W. Coughlin et al., *A Systematic Assessment of Collaborative Resource Management Partnerships* (Ann Arbor, School of Natural Resources and Environment, University of Michigan, 1999), available at <http://www.snre.umich.edu/emi/pubs/crmp.htm> (last visited Apr. 1, 2003), which selected 10 case studies (from a database of 450 collaborative partnerships across the United States) for qualitative analysis that dealt largely with process issues.

Blomquist and Schlager conclude that in many real-world situations watershed planning is not about the creation of new, watershed-wide entities that undertake integrated resource management. Instead, successful watershed management institutions are adaptive and build on relevant local knowledge. These institutions often involve new arrangements among preexisting sub-regional or region-wide groups with particular interests at stake, enabling them to respond to specific issues affecting the watershed.

CONCLUSION AND RECOMMENDATIONS: A POLYCENTRIC REGIONAL WATER PLAN

These observations about how many regional arrangements are actually forged suggest how water planners might avoid the pitfalls—the disincentives to successful collective action—inherent in overreaching for a holistic solution while not abandoning the goal of achieving a sustainable balance between all uses and the available supply of water.

For the Middle Rio Grande, the first step may be to redefine the role of the Water Assembly's Action Committee, which serves as the Assembly's board of directors. As such, its principal responsibility should be to assure the integrity of regional water planning as an inclusive public process open to all interests. With its limited membership and voting rules, it should not try to become the action arena—the "single negotiation table at which all non-governmental and public involvement in the plan occurs."⁸⁶ Nor should it act as gatekeeper regarding who may legitimately sit at the negotiating table.

Instead, the Action Committee might announce the following:

This is the situation we are facing, and here are the mission and goals to which we've agreed so far, in the interest of leaving to future generations the resource endowments with which we have been blessed. Anyone proposing an action or policy decision that contributes to accomplishing our mission (or achieving any goal that supports it) is welcome at the table under the auspices of the Assembly to try to achieve agreements on collective action with others so inclined. We will do what we can to facilitate your efforts.

Such an approach would build on the collective understandings reached to date while admitting that no one has the total solution to such a complex issue. It would preserve local and organizational autonomy,

86. Memorandum from Lee Brown (Water Assembly Chair) to Larry Blair and Dennis Foltz, 1 (MRGCOG), (Sept. 29, 2000) (on file with the author).

encourage cooperation and coordination among groups and entities that see it as worthwhile and in their interests to do so, and thus legitimize the process. Moreover, it would encourage innovation, adaptation, and learning.

Such an arena might better accommodate a complex action situation. The mission, goals, bylaws, and experiences of the Water Assembly constitute an overall constitutional framework of rules, norms, and shared strategies. Within this framework, self-organized sets of actors have incentives to make agreements that can become pieces of an evolving and adaptive plan. Clearly, not all such agreements may be complementary, and there will be issues to work out through negotiation across non-complementary interests. But at those points it will become clear who needs to be at the table: individuals, groups, entities that have interests at stake in the particular issue at hand. Negotiations under these auspices cannot be limited to non-governmental actors, who could only make recommendations about actions that require decisions by authoritative governmental bodies. This is because people in negotiating situations need to be able to make credible commitments to each other. If the Water Assembly is unable to provide an arena for such work by itself, it may be possible for the Water Resources Board and the Assembly to do so together.⁸⁷

This approach may not yield a neat, comprehensive solution to the problem of balancing all uses with renewable supply. But it is probable that there is no single magic bullet, only partial solutions to particular problems, where the scale of any arrangement depends on the scale at which the problem is perceived. More than 15 years ago, Helen Ingram observed that despite the fact that watersheds are viewed as discrete systems, "[t]he 'appropriate geographical and other boundaries within which to identify interests...should be drawn from an understanding of the stakes rather than river basin boundaries....[T]he experience of impacts is often discrete and localized.'"⁸⁸

87. The Action Committee and the WRB may have more specific responsibilities in defining collective choice rules, for example, how tightly to specify plan objectives and timetables. Despite a sense of urgency on the part of many activists, putting strict timeframes and deadlines on achieving the plan's goals may be counterproductive. Within specific negotiated agreements and arrangements, deadlines are obviously needed, since commitments to taking actions cannot simply be open-ended promises to get around to it someday. For some situations, *not* specifying timeframes may make achieving agreements easier, reducing the sense of threat. Actors will have different discount rates, resulting from the nature of their interests. Collective action is only possible when enough people recognize that pursuit of their interests at the expense of others is very likely to result in a worse outcome for everyone. They must also believe that what they gain by cooperating won't come at too high a price.

88. Helen M. Ingram et al., *Guidelines for Improved Institutional Analysis in Water Resource Planning*, 20 WATER RESOURCES RES. 3, 326 (1984).

Is a holistic or an adaptive approach to regional water planning in the MRG preferable? Empirical studies comparing the success of these two approaches in creating fundamental institutional change are lacking. Blomquist and Schlager's cases⁸⁹ suggest that, in practice, arrangements that stick are made among those parties that have real interests in working them out, are adaptive to concrete situations, and are often the result of responses by those whose water supply already has been impacted.⁹⁰

The open negotiating arena suggested here offers the likelihood of improvement over the *ad hoc* responses to water resource issues cited in the cases Blomquist and Schlager discuss. For those who are ready to work on solutions, the Water Assembly's work to date provides an essential foundation of shared knowledge about the action situation—the fundamental issues that underlie the specific problem situations all the user interests face—and a range of alternative actions and policy proposals whose potential impacts have already received some analysis. To the extent that parties can begin with these premises, they can enter the arena already in possession of the best available information about the situation they face and with a common understanding about the limits they might agree to work within to craft solutions, even partial ones.

Second, it offers the possibility that operational level agreements that may be made between parties within the broad framework of a regional plan can be supplemented and enhanced by being embedded in a context that allows for or encourages institutional innovation. The Water Assembly and the Water Resources Board remain aware of this larger context. They are in a position to advocate and facilitate changes in the collective choice and constitutional arenas of action that can advance cooperation and promote governance arrangements that are scaled appropriately to the problems at hand.

89. Blomquist & Schlager, *supra* note 82.

90. *Id.* at 38-39. See also Gary D. Libecap, *The Conditions for Successful Collective Action*, in LOCAL COMMONS AND GLOBAL INTERDEPENDENCE: HETEROGENEITY AND COOPERATION IN TWO DOMAINS 161 (Robert O. Keohane & Elinor Ostrom eds., 1995).