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STEPHEN MUMME*

Innovation and Reform in Transboundary Resource Management: A Critical Look at the International Boundary and Water Commission, United States and Mexico

ABSTRACT

This study examines the prospects for administrative and functional reform of the International Boundary and Water Commission, United States and Mexico. A variety of changes along the border, demographic, political, and attitudinal, now impinge on the Commission's capacity to manage transboundary resource problems within its jurisdiction. To cope with these changes, the Commission must become more responsive to its various border constituencies. Specific opportunities for assuming new functional commitments are limited by the Commission's treaty mandate, though additional development is possible in several areas, to include sanitation and water quality, instream flow, and creative approaches to project financing.

INTRODUCTION

The International Boundary and Water Commission (IBWC) may well represent the finest example of functional cooperation in transboundary resources management between highly dissimilar countries anywhere on the globe. For over a century, the United States and Mexico, otherwise divided by history, culture, wealth, and a host of past antagonisms, have managed to find diplomatic, cooperative solutions to some of the most basic controversies in international affairs: the allocation of water, the division of disputed territories, and the management of a range of problems arising from contiguous development along their common boundary.

In the process the two countries have generated a set of enduring institutions, institutions that by and large have stood the test of time, insti-

*Stephen Mumme is Professor of Political Science at Colorado State University, Fort Collins, Colorado.

tutions that rank among the most deeply embedded problem-solving mechanisms across the spectrum of our bilateral relations.

This record, as so many observers have said before, warrants considerable praise.¹ Past successes notwithstanding, however, the IBWC is, like other institutions, a social artifact, imperfect at best, and captive to the vicissitudes of time. As a transboundary resource management agency, the Commission's jurisdiction and functions were formed at a historically propitious moment in response to contextually specific circumstances. As judicious as the Commission's various architects were, they could not have anticipated all of the changes that have come to bear on its mandate.

These changes, and the challenges they present to the IBWC's jurisdiction and functions, are the subject of this paper. The following pages examine the challenges confronting the Commission from an "ecological" perspective. The first section identifies the changing variables in the Commission's political environment with an eye to the challenges they present to older, well-established patterns of bilateral resource management. The second section considers the real constraints on the Commission's capacity to accommodate new demands and pressures on its jurisdiction and functions, as well as various possibilities for reform. The third and final section considers the range of options before the Commission, their prospects, and the likely consequences should the Commission fail to respond to its changing circumstances.

The Changing Ecology of Transboundary Resource Management along the United States–Mexico Border

It is important to recognize that while the Commission recently celebrated its centenary, its modern mandate, arising out of the 1944 United States–Mexico Water Treaty, is just 46 years old.² The 1944 Treaty, which functions as an organic stature for the IBWC, continues to define the limits and possibilities of the present Commission.

Generally, the arrangements created in 1944 have worked remarkably well. The IBWC is composed of two national sections, each responsible to its respective government for policy authority.³ The jurisdiction of the Commission is technically narrow, limited to those matters directly involving the boundary.⁴ Other concerns are the province of each country's domestic agencies. Within its narrow limits, however, the Commis-

1. A. Leibson, *The International Boundary and Water Commission*, 35 *Mexican-American Review* 30–34 (1967); *Rio Grande Water for Peace*, *Engineering News-Record* 33–37 (July 27, 1967); C. Sepulveda, *Colorado River Management and International Law* 59, 63–64 in *Environmental Management in the Colorado River Basin*, (A. Crawford & D. Peterson eds., 1974).

2. Treaty Regarding Utilization of Waters of Colorado and Tijuana Rivers and of the Rio Grande, Feb. 3, 1944, U. S.-Mex., 59 Stat. 1219 [hereinafter 1944 Water Treaty].

3. *Id.* art. 2.

4. *Id.*

sion's jurisdiction is exclusive and superior to the claims of any and all domestic agencies.

The functions of the Commission are explicitly defined; they fall within the three broad categories of (1) liaison-investigation, (2) adjudication, and (3) administration.⁵ Its liaison-investigative functions entail communication and coordination of activities between the two national sections; the initiation, investigation, and planning of actions and works deemed necessary to the implementation of goals specified by treaty or other, subsidiary, agreements; and supplying pertinent information to its member governments on their request.⁶ Its judicial functions are quite modest: they derive from the Commission's authority to "settle all differences that may arise between the two Governments with respect to the interpretation and application of [the 1944 Water Treaty] subject to the approval of the two Governments."⁷ The administrative functions of the Commission embrace all those activities that are necessary for the implementation of Treaty requirements and the subsidiary agreements reached under Treaty authority. These functions either are essentially bilateral in character or may be performed independently by the national sections. In one domain or the other the Commission and its sections are responsible for boundary demarcation, channel rectification, construction and maintenance of flood control, water storage, hydroelectric, and drainage works, construction and maintenance of sanitation and sewage facilities, scheduling water deliveries under treaty, stream gauging, and the diversion of waters for domestic functions.⁸ Insofar as the allocation of treaty waters is concerned, water rights are precisely set and priorities of use are well defined.⁹

Since 1945, both countries have found this arrangement workable. The officers of the Commission, through its national sections, have established a reputation for technical efficiency, procedural conservatism, and diplomatic skill in implementing treaty provisions and responding to a range of issues arising under the Commission's jurisdiction.¹⁰ In the past 46 years, however, a great deal has changed within the Commission's jurisdiction that affects its present capacity and functions.

Changes in the Commission's environment are complex but can be divided roughly into the categories of demographic and economic change, institutional and political change, and attitudinal change. The most obvious changes are demographic and economic in nature. Since

5. M. Jamail & S. Mumme, *The International Boundary and Water Commission As a Conflict Management Agency in the U.S.-Mexico Borderlands*, 19 Soc. Sci. J. 47-48 (1982).

6. 1944 Water Treaty, *supra* note 2, art. 24.

7. *Id.*

8. *Id.* arts. 2-24.

9. *Id.* arts. 3, 4, and 10.

10. S. Mumme, *Engineering Diplomacy: The Evolving Role of the International Boundary and Water Commission in U.S.-Mexico Water Management*, 1 J. Borderlands Stud. 73 (1986).

1945, the constituencies closest to the Commission, those congregated along the 2,000-mile United States–Mexico border, have quadrupled in size. In 1950, for instance, the combined populations of the eleven largest United States and Mexican border municipalities was 1,055,798.¹¹ By 1980 that figure had risen to 4,162,210.¹² New 1990 census data from Mexico and the United States will show even more dramatic figures for border cities, counties, and municipios. Population growth has been accompanied by an upward trend in border industrialization. Some taste of this rapid growth may be savored in the explosive growth of the *maquila* industry, in which the number of plants has grown from around 600 in 1965 to 1,480 in 1989.¹³ The rapid metamorphosis of border cities has generated constant pressure on urban services, to include water supply, sewage and sanitation, education, transportation, and social support.

Such changes affect the IBWC. Whereas the border economy and much of its population was substantially agricultural in 1945, it is today preponderantly urban and industrialized. Urban growth and its demands have qualitatively altered the character of public expectations bearing on the Commission's role and functions along the border.

Nor are changes in the Commission's demographic and economic environment exclusively derivative of the realities of urban growth. Upstream, throughout the major watersheds of the Rio Grande and Colorado River, economic development has meant more intensive patterns of water consumption and use. Intensive utilization of treaty waters is an important factor contributing to the reduction of water quality on these rivers.¹⁴ This is one of the important challenges currently confronting the Commission.

These changing demographics along the United States–Mexico border have caused a shift in the dynamic component of the Commission's agenda. While the IBWC has continuous water allocation related functions,¹⁵ its contemporary agenda is increasingly occupied with urban support services and water quality problems. Under its mandate to address sanitation and sewage problems of a binational nature,¹⁶ the IBWC has confronted a growing number of such problems along the inter-

11. M. Jamail & M. Gutierrez, *The Border Guide: Institutions and Organizations of the United States–Mexico Borderlands* 184 (1992) (revised edition).

12. *Id.*

13. Border assembly plants are known as *maquiladoras*, after the Spanish word *maquila*, denoting a mill or processing facility. The statistics cited are derived from the *La Industria Maquiladora de Exportacion*, 49 *El Mercado de Valores* 28 (May 15, 1989).

14. P. Friedkin, *A River No More: The Colorado River and the West* 291–315 (1981); M. Reisner, *Cadillac Desert* 483 (1986).

15. These include operations and maintenance functions associated with its principal hydraulic works at Amistad, Falcon, and Anzaludas dams on the Rio Grande, its oversight of drainage on the Colorado, and gauging and monitoring water supplies allocated under treaty. IBWC, *Joint Projects of the United States and Mexico through the International Boundary and Water Commission* (19481).

16. 1944 Water Treaty, *supra* note 2, art. 3.

national boundary. Problems related to salinity and water quality have also become more of a preoccupation. Demographic trends and certain lacunae within the language of the 1944 Treaty further underlie the Commission's interest in groundwater apportionment and problems of flood and drought management that are related to its jurisdiction.

While basic trends in demographic and economic development in the borderlands provide the structural foundations of the changes affecting the IBWC, institutional, legal, and administrative changes at the domestic and binational levels have altered the forums of expression for public concerns. In the past two decades, many new agencies have been created at various levels of government with interests and mandates bearing on the Commission's work. Among these are new and evolving institutions concerned with the administration of state and municipal water supplies, health and sanitation functions, environmental concerns, and local level binational relations.¹⁷ While the Commission in its international capacity is protected from the welter of municipal, state, and federal statutes associated with this institutional growth, such growth has contributed to the complexity of its political environment. New domestic legislation has directly affected the national sections of the Commission, which are not immune to the applications of domestic law.

Perhaps the most obvious example is the case of the National Environmental Policy Act of 1969 (NEPA)¹⁸ and the Environmental Protection Agency (EPA) created in 1971. NEPA has had a substantial impact on the Commission as an agency but is most visible with respect to the Commission's public exposure and domestic influence on the functions of the United States Section. Under the 1944 Treaty, public scrutiny and participation in the Commission's operations is discretionary to the Commission.¹⁹ The Commission is responsible to its member governments and is empowered to seek public input as deemed necessary by the Commis-

17. A short list of such institutions would include the U.S. Environmental Protection Agency, Mexico's Secretaria de Desarrollo Urbano y Ecologia, the expansion of Arizona's Department of Water Resources, the City of San Diego's Office of Binational Affairs, and in the United States, state environmental protection agencies created since 1971. While no single source adequately enumerates this institutional growth along the border, some feel for these changes can be gleaned from Jamail & Gutierrez, *supra* note 11; *On the Border*, 4 Bull. Mun. Foreign Pol. 19 (1989-90); L. Herzog, *Planning the International Border Metropolis 67-94* (1986); and L. Herzog, *Where North Meets South* (1990).

18. 42 U.S.C. § 4331 (1976).

19. Nowhere in the 1944 Water Treaty is the IBWC required to hold public hearings or invite public participation in its investigations or deliberations. The Treaty does give the Commission authority to "establish a body of rules and regulations to govern its procedure, consistent with the provisions of this Treaty and of Articles III and VII of the Convention of March 1, 1989 and subject to the approval of both Governments." 1944 Water Treaty, *supra* note 2, at art. 24. The enabling act for the United States Section alludes to the public relations of the U.S. Section when it authorizes expenditures by the U.S. Commissioner for "attendance at meetings of organizations concerned with the activities of the Commission which may be necessary for the efficient discharge of the responsibilities of the Commission. . . ." IBWC, U. S. Section, *Laws Applicable to the International Boundary and Water Commission, United States Section 4* (1973).

sioners or the two governments. Under the treaty, however, there is no regularly prescribed procedure for public participation and review of the IBWC's operations.²⁰ The adoption of NEPA has altered that situation for the United States Section of the Commission with respect to one class of functions: construction projects undertaken by the agency. Under its Environmental Impact Statement rules, NEPA requires that the United States Section conduct public hearings on the environmental worthiness of proposed projects and subjects the domestic components of joint binational projects to a potential administrative veto by the EPA.²¹ Under this arrangement the United States Section, and, thus, the Commission as a whole, have been compelled to become more responsive to United States public concern. Similar dynamics may affect the Mexican Section in the near future under Mexico's new environmental law and supplementary *reglamentos*, which for the first time also require environmental impact statements for Mexican projects.²²

EPA's emergence as a major player in resource management along United States frontiers has also altered the diplomatic context of the Commission's functions. With its broad mandate to oversee and regulate the gamut of domestic environmental concerns, EPA quickly occupied the functional domain not already filled by other agencies. Along the United States-Mexico border concern with water quality, air pollution, hazardous and toxic substances, and solid waste (in other words, those functional areas falling outside or on the margins of the Commission's formal mandate) found a patron in the EPA. EPA's responsiveness to these concerns has forced the Commission, particularly the United States Section, to defend its special jurisdiction and to better define its functional limits.²³ EPA's federal presence has thus created a more competitive organizational environment than the IBWC had been accustomed to.

EPA's interest in environmental problems along the border has accelerated the search for diplomatic solutions. In the early 1980s, the EPA took the initiative in seeking a broad, comprehensive framework with Mexico for addressing the full range of transboundary environmental problems. In August 1983, a framework agreement for bilateral cooperation on transboundary environmental matters was signed by then presidents Ronald Reagan and Miguel de la Madrid.²⁴ This compact, which has

20. See *supra* note 19.

21. E. Rehbinder & R. Stewart, *Environmental Protection Policy* 54 (1988).

22. Mexico has recently enacted a new *reglamento* that requires environmental impact statements for new federal projects. See *Secretaria de Desarrollo Urbano y Ecología, Reglamento de la Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Impacto Ambiental*, 1 *Gaceta Ecológica* 32 (1989).

23. M. Jamail & S. Ullery, *International Water Use Relations Along the Sonoran Desert Borderlands* 18-19 (1979).

24. *Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area*, Aug. 14, 1983, U.S.-Mex., T.I.A.S. No. 10827 [hereinafter *Border Environmental Agreement*].

the status of an Executive Agreement, designates Mexico's Secretaria de Desarrollo Urbano y Ecología (SEDUE) and EPA as respective national coordinators for environmental problem solving along the border, establishes a bilateral consultative mechanism that must meet at least once a year, and formally involves a wide range of federal, state, and local government agencies in the design and implementation of transboundary environmental solutions that are appended as annexes to the framework agreement.²⁵ Under this arrangement, the IBWC, which retains a leading role in matters under its jurisdiction,²⁶ has been compelled to participate in a wider variety of issues outside its traditional functional domain. Likewise, the IBWC has been prodded to consult (and consult more frequently) with a wider array of public interests than ever before.²⁷

A final dimension of the Commission's altered operational environment is the complex of public attitudes that may be subsumed under the label "environmental concern." While no studies on environmental attitudes and values have been specifically targeted at the border region, it is safe to say that the border region generally reflects secular trends in public sensitivities for the United States and Mexico at large. The general trend has been in the direction of increasing environmental awareness in both countries.

There can be little doubt that such broad-gauged attitudinal changes in the environmental sphere have affected the IBWC. Not only is the border public more aware of its operations and functions than ever before, but it has looked increasingly to the Commission to help solve a number of transboundary environmental problems, even in areas technically outside the IBWC's formal jurisdiction. While it would be an overstatement to suggest that the Commission has become politicized, public frustration with the IBWC's performance has recently led to an unprecedented level of direct criticism of the Commission and its commissioners—witness a recent editorial in the *Nogales International* calling for the United States Section Commissioner's resignation.²⁸ Whether accurate or not, public perceptions of the Commission's limited responsiveness underlie the wave of recommendations in the 1980s for broadening its authority.

These alterations in the IBWC's environment are essentially irreversible and will shape its future into the twenty-first century. They are

25. *Id.*

26. *Id.*

27. Under the 1983 Border Environmental Cooperation Agreement, the IBWC participates in a number of functional working groups dealing respectively with air quality, hazardous materials, water quality, and other issues. The working group process alone has increased the Commission's contacts with the border public. *Id.*

28. K. Vandervoet, *IBWC Chief 'Chewed Out'* by *Congressional Quarter*, *Nogales Int'l*, Nov. 7, 1990, at 1; Hing, *McCain criticizes Gunaji on Lack of Concern for Wash*, *Nogales Int'l*, Nov. 7, 1990, at 11; *Time to Fire Gunaji: IBWC Chief's Arrogance*, *Nogales Int'l*, Nov. 7, 1990, at 4.

certain to be reinforced by current bilateral trends, most notably the initiative for a trilateral free trade agreement between Canada, the United States, and Mexico.²⁹ Such pressures have stressed and will continue to stress the IBWC's responsive capability. Compared to the past, today's Commission bears greater responsibilities, works regularly with a wider array of agencies, and contends with a larger, more knowledgeable, and certainly a more demanding constituency for its services.

Fundamentally, however, the Commission remains a technical agency whose primary functions are predicated on engineering skills and impartial scientific appraisal of facts. Its mission has been narrowly defined by treaty. Its success as an agency is based, at least in part, upon its commissioners' circumspect recognition of their functional limitations and full appreciation of the range of formal and practical constraints on the Commission's operations. In an important sense, the institutional survival of the Commission has been a function of converting its apparent weaknesses—a narrow range of jurisdiction and functions—into institutional strengths. These limitations shape what may reasonably be expected of the Commission if it is to conserve its strengths, develop its functions, and continue to serve its member governments as well as it has in the past.

CONSTRAINTS ON INNOVATION

In order to assess the possibilities for improving the Commission's capacity and responsiveness as a transboundary resource agency, it is essential to have a fair appreciation of its constraints, or, to put the matter another way, to know what cannot or should not be done by way of reform. To this end some discussion of the Commission's operational and political environment is necessary.

Chief among the constraints on the Commission's capacity and responsiveness is its organic statute, the 1944 Water Treaty and the preceding agreements that treaty subsumes.³⁰ The most salient feature of the 1944 Water Treaty is that it is a bona fide treaty, backed by the full force of the two governments, and superseding in authority all lesser international arrangements and domestic legislation. As Norris Hundley so well describes, the 1944 Treaty was hammered out with great difficulty.³¹ It represents numerous compromises between the United States and Mex-

29. M. Kelly & D. Kamp, *Mexico-U.S. Free Trade Negotiations and the Environment: Exploring the Issues* (Texas Center for Policy Studies Discussion Paper, Jan. 1991).

30. The 1944 Water Treaty subsumes a number of earlier treaties, including the Convention of 1889, which established the original International Boundary Commission. See 1944 Water Treaty, *supra* note 2.

31. See generally N. Hundley, *Dividing the Waters* (1966).

ico, and among the various basin states tributary to the river waters apportioned thereunder. It is unnecessary to describe the diplomatic complexities associated with the 1944 Treaty since others have so admirably done so.³² It must be emphasized, however, that the 1944 Water Treaty confers on the Commission a degree of authority within its jurisdiction that is otherwise unprecedented in transboundary resource management along the border and that remains superior to any other binational agreement. Any effort to amend the 1944 Treaty, or alter it through another treaty, would require congressional approval in both countries. That would raise a political hornet's nest, with no assurances that the current state of affairs would be improved by the effort.

If this is so, then any effort to address the Commission's jurisdiction and functions through international treaty should be considered with a great deal of skepticism. While treaty level agreement may, in fact, be the only reasonable solution for resolving certain issues on the binational agenda (e.g., trade liberalization, labor migration, and drug trafficking), such efforts are less likely to succeed to the extent that they are linked to or directly affect the jurisdiction and functions already entrusted to the Commission.

With just a few notable exceptions,³³ then, recommendations for reforming the Commission's jurisdiction and functions must center, if only for political reasons, on modes of diplomatic agreement subsidiary to the Commission's organic act. Under these circumstances, the 1944 Treaty inevitably defines the limits of the possible. It follows, then, that innovation and reform must be compatible with the current institutional arrangements relating to the structure of the Commission itself as well as its jurisdiction and functions.

If this is the case, it is worth considering the merits of the present institutional arrangement. As currently structured, the Commission is composed of two national sections, each headed by a single commissioner who must by treaty be a licensed engineer.³⁴ Each section's executive staff

32. *Id.* In addition to Hundley's treatment of the 1944 Water Treaty negotiations see 1, 2 E. Coyro, *El Tratado entre Mexico y los Estados Unidos de America sobre Rios Internacionales* (1975); Secretaria de Relaciones Exteriores, *El Tratado de Aguas Internacionales* (1947); C. Meyers, *The Colorado River Basin, in The Law of International Drainage Basins* 486-607 (A. Garretson et al. eds., 1967).

33. The Commission's functions have arguably been enlarged through separate protocols and memorandums of understanding between EPA and SEDUE, the best example of which is the 1983 Border Environmental Cooperation Agreement. That agreement involves the Commission at least indirectly in considering a range of issues, such as commerce in hazardous substances, that do not technically fall within its formal jurisdiction. See *Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area*, *supra* note 24. As seen later in this article, it might also be argued that certain expansion of the Commission's present jurisdiction with respect to the management of drought, flooding, and groundwater warrant amendment of the treaty.

34. 1944 Water Treaty, *supra* note 2, at art. 2.

consists of two principal engineers, a legal adviser, and a secretary.³⁵ The commissioners and their executive staff are vested with full diplomatic privileges to facilitate implementation of their international mission.³⁶

This structure has worked well over the years and is politically compatible with the de facto state of affairs along the border. Given the frequently contentious relations among the United States border and basin states, and considering the difficulties of managing transboundary relations between two countries with different languages, cultures, and economic conditions, one can make a strong argument that a single-headed agency is the best organizational solution. Such an agency facilitates control over information, is more conducive to reaching consensus, more effective in mediating disputes between constituent interests, and more directly accountable to superior policy authority.³⁷ The single-headed structure is particularly compatible with Mexican public administration, which exhibits a marked tendency toward vertical patterns of command and control.³⁸ With respect to other requirements stipulated by treaty, the requirement that the commissioner be a licensed engineer has both enhanced the Commission's technical reputation and invested the commissioners with greater capacity for hands-on management of the agency's technical affairs.³⁹ And the investiture of its staff with diplomatic power has greatly facilitated the capacity of the two sections to cooperate and coordinate their respective activities.⁴⁰

The Commission's jurisdiction, as seen above, is confined to matters related to the boundary itself. While such restriction may seem to some too narrow, it has served to mark a clear jurisdictional boundary between the Commission's national sections and other domestic agencies. This exclusive claim has enabled the Commission to survive various efforts by other more powerful domestic agencies to encroach upon and thereby diminish the IBWC's organizational authority.⁴¹

35. *Id.*

36. *Id.*

37. H. Seidman, *Politics, Position, and Power* 57 (1970). For a more theoretically informed discussion of organizational structure see D. Katz & R. Kahn, *The Social Psychology of Organizations* 71 (1966).

38. W. Tucker, *Mexican Government Today* 121 (1957); M. Greenberg, *Bureaucracy and Development: A Mexican Case Study* (1970); J. West, *Public Administration and Local Coordination*, in *Borderlands Sourcebook: A Guide to the Literature on Northern Mexico and the American Southwest* 195-203 (E. Stoddard et al. eds., 1983); Cervantes del Rio, *Public Administration in Mexico*, 60 *Int'l Rev. of Admin. Sci.* 1-7 (1974).

39. Mumme, *supra* note 10; F. Rourke, *Bureaucracy, Politics, and Public Policy* 84 (2d. ed. 1976).

40. A. Liebson, *The International Boundary and Water Commission*, 35 *Mexican-American Rev.* 30-34 (1967); D. Jordan & J. Friedkin, *The International Boundary and Water Commission, United States and Mexico*, 5 *Int'l Conf. on Water for Peace* 192 (1967); *Rio Grande Water for Peace*, *Engineering News Record* 33-37 (July 27, 1967).

41. S. Mumme & S. Moore, *Agency Autonomy in Transboundary Resources Management: The United States Section of the International Boundary and Water Commission, United States and Mexico*, 30 *Nat. Res. J.* 678 (1990).

The IBWC's functional niche within the welter of competing national agencies and institutions is quite narrow but well protected. This condition limits the range of functional obligations that can be effectively pressed upon it. The Commission has absorbed new functions over the years, but these have been and must be solidly grounded in the 1944 Treaty, and to the greatest extent possible based upon widespread consensus for the extension of its functional range. It has been the Commission's experience that functional expansion in the absence of such support may jeopardize its authority in other more established realms.⁴²

In such a context the IBWC's commissioners have generally been loath to take the lead in generating functional claims, even when such functions were reasonably related to its treaty authority. Instead, the Commission has typically adopted a low-key, mediating approach, preferring to let its constituency generate the political support before weighing in support of any initiative with their respective national governments.

If the Commission's capacity for innovation is restricted by its formal mandate, it is similarly restricted by practical political and diplomatic realities. The need to build consensus among competing interests in support of its functional expansion has already been mentioned but warrants further discussion.

The political limitations bearing on the Commission derive from different sources in each country. In the United States, a strong federalism and powerful national Congress have been the basic arenas in which agreements related to United States-Mexican affairs have been forged. At the level of the border states, geographically western arid lands states with considerable influence in national natural resources policy, these constitutional features have combined with fundamental resource management priorities, principally land and water reclamation, to shape a certain consensus on the role and functions of the IBWC. Basic to this consensus is the notion that the IBWC must first and foremost protect the resource entitlements of the border and basin states.⁴³ Another basic notion is that the IBWC should answer first and foremost to the states, through Congress, rather than to the executive branch, in this case, the State Department.⁴⁴ In

42. *Id.* at 682-83.

43. The consensus among the border and basin states is seen in discussion and criticism of IBWC's initiatives over the years. While no one document is sufficient to demonstrate this consensus, a reading of congressional testimony before the Appropriations Committees of the U.S. House and Senate lends support to the notion of underlying consensus on the role and functions of the Commission. Another indicator, which might be called a crucial test of the consensus hypothesis, is seen in state level reaction in the solution of the salinity crisis. Here, several states were quite reluctant to support an extension of the IBWC's authority in order to deal with the salinity crisis, even though there were compelling reasons for doing so. For a good discussion of state responses in the salinity crisis see M. Holbert, *International Problems, in Values and Choices in the Development of the Colorado River Basin* 220 (D. Peterson et al. eds., 1978).

44. For discussion of the IBWC as a congressionally oriented agency see Mumme & Moore, *supra* note 41, at 670, 676.

order to generate support for its initiatives, then, the IBWC must attend to its uppermost priorities before other values are served. It must also generate broad-based support for functional expansion with its state constituency.

For the Mexican national section, the opposite tends to apply. Here, too, defense of Mexico's treaty water entitlement and territorial integrity are the uppermost priorities to which other values are subordinate. But Mexican border states have little influence in the affairs of the Mexican Section, which is above all responsive to the Mexican Secretaria de Relaciones Exteriores (SRE) and presidential control.⁴⁵ SRE's priorities are shaped through interactions with the president and other federal ministries, principal among them the Mexican Secretaria de Agricultura y Recursos Hidraulicos (SARH), the powerful ministry supervising national agriculture.⁴⁶ Because the Mexican Section need not overly concern itself with building local consensus, it much more directly articulates the concerns of national authorities. From a decisionmaking standpoint, its dependence on SRE for policy authority restricts its realm of discretion and reinforces its role as a technical advisory agency to Mexican government.

These different political orientations restrict what the Commission, in its international capacity, can do. Under the current arrangement, which maximizes the Commission's diplomatic ability to maneuver and enables each section to adopt a posture appropriate to its political circumstances, the latitude for reaching diplomatic agreement is enhanced. This is so, in good measure, because the Commission is able to limit the scope of political participation in its functions, to preserve a high degree of confidentiality appropriate to the separate agendas of the two governments, and maintain a well-defined order of priorities satisfying to its respective authorities. Modification of the present state of affairs is bound to complicate the relations between each national section and other players in its respective authority system.

Unfortunately, that may be a moot point. As our review of the Commission's external environment reveals, some innovation and change may be necessary, even inevitable. The challenge before the Commission is adapting to change in ways that simultaneously preserve its diplomatic advantages and protect its national clienteles' resource management values.

45. An in-depth description of the Mexican Secretaria de Relaciones Exteriores is found in L. Koslow, *Mexican Foreign Policy Decision-Making: The Mutual Adjustment of Needs and Independence* (1969)(unpublished Ph.D. dissertation). See also Tucker, *supra* note 38, at 182.

46. The role of the Secretaria de Agricultura y Recursos Hidraulicos in policymaking related to water is discussed in Enriquez Coyro, *supra* note 32; E. Lopez, Zamora, *El Agua, La Tierra, Los Hombres de Mexico* 65-94 (1977); Greenberg, *supra* note 38.

AN AGENDA FOR INNOVATION

Demands that the IBWC more effectively respond to transboundary environmental problems fall into three general categories: first, greater responsiveness to border constituencies; second, functional expansion; and third, increased financial capacity. Public demands for responsiveness, of course, are often related to demands for functional expansion, which may be contingent on budgetary support. Nevertheless, it is useful to consider each of these concerns separately.

The Need for Responsiveness

Over the past decade, the Commission has been criticized, mainly in the United States, for its failure to respond satisfactorily to various constituencies.⁴⁷ Not only is the Commission perceived to be unresponsive to certain constituencies, but its limited responsiveness is thought to diminish its capacity to participate in managing transboundary environmental problems, even those which may fall uncontroversially within its functional reach. The first aspect of this concern with responsiveness might well be labeled a public relations problem; the second aspect, however, is fundamentally related to effective performance of a treaty-mandated function, namely, to investigate and report on environmental problems related to its jurisdiction.

It may be useful to address the matter of the Commission's investigative authority before considering its public relations. Under the 1944 Water Treaty, the Commission is endowed with power "to initiate and carry on investigations and develop plans for the works which are to be constructed in accordance with the provisions of this and other treaties or agreements in force between the two Governments. . . ."⁴⁸ The Commission, therefore, has considerable latitude to initiate investigations and make recommendations for action to the parties. By comparison, its Canadian counterpart, the International Joint Commission (IJC), must await references by joint consent of its member governments before it can initiate investigations.⁴⁹

The IBWC has thus taken the lead in investigating water-related environmental problems along the border. Although they are not formally restricted otherwise, in practice the two commissioners have sought to develop the Commission's agenda through consensus. Matters referred to the Commission by the two governments receive priority. Other matters, which are brought to the Commission's attention by either one or both of

47. See Jamail & Ullery, *supra* note 23, at 18.

48. 1944 Water Treaty, *supra* note 2, at art. 24.

49. Treaty Relating to Boundary Waters, and Questions Arising between the United States and Canada, Jan. 11, 1909, U. S.-Gr. Brit., 36 Stat. 2448, art. 10, [hereinafter 1909 Boundary Waters Treaty].

the national sections, are considered on their merits for inclusion on the Commission's agenda. In each case the principal criteria for inclusion or exclusion is whether it has basis in the 1944 Water Treaty and related authorization. When the two national sections disagree as to whether a particular concern belongs on the Commission's agenda, the Commission tends to delay action until consensus is reached as to its disposition. The two Commissioners provide "checks and balances" which improve its effectiveness.⁵⁰ Unfortunately, this conservative, diplomatic approach gives the appearance of stodginess and immobility in responding to border environmental concerns. The Commission has been ill-prepared to deal with such criticism, due in part to its limited emphasis on public relations.

The public relations aspects of the Commission's operations have increased in importance with the shift in the Commission's agenda toward qualitative concerns and the emergence of new interests in the fabric of binational relations. NEPA and the 1983 Border Environmental Cooperation Agreement⁵¹ have provided new fora for these interests, generating new demands and expectations for the Commission's performance.

Despite these increased demands and expectations, the Commission has yet to intensify its public relations activities, nor does it have a formal obligation to do so. Under the 1944 Treaty the IBWC was endowed, if only by omission, with considerable discretion in public relations. Unlike the IJC, the IBWC is left in complete control of its consultative agenda, subject only to the dictates of its member governments.

Some comparisons to the organic provisions of the IJC may be instructive here. While the two commissions are given considerable discretion under treaty with respect to their procedural rules, the IJC is slightly more constrained by both rule and function. Under the 1909 Boundary Waters Treaty, which is its basic charter, the IJC is required to "fix such times and places for its meetings as may be necessary, subject at all times to special call or direction by the two Governments."⁵² The IJC is also much more an appellate, review, and regulatory board than is the IBWC due to its mandate to resolve differences related to the use of the Great Lakes.⁵³ The IJC must conduct numerous hearings and the treaty mandates that "all parties interested therein [in any proceeding, or inquiry, or matter within its jurisdiction] shall be given convenient opportunity to be heard."⁵⁴

50. Former U.S. Section Comm'r J. Friedkin, Address at the Roundtable on the International Boundary and Water Comm'n, Assoc. of Borderlands Scholars Annual Meeting, El Paso, Texas (Apr. 22-25, 1987).

51. 42 U.S.C. § 4331 (1976); Border Environmental Agreement, *supra* note 24.

52. 1909 Boundary Waters Treaty, *supra* note 49, at art. 12.

53. *Id.* art. 9, 10.

54. *Id.* art. 12.

These hearings requirements, which differentiate the IJC from the IBWC in public relations, are further amplified in the IJC's Rules of Procedure, updated most recently in 1964.⁵⁵ Under the Rules, the IJC's meeting schedule is preset at least twice a year (one meeting in Washington in April, another in Ottawa in October), it must give advance notice of any public meeting, and most of its records are to be publicly available at the permanent offices of the Commission.⁵⁶ Moreover, the IJC's Rules of Procedure provide that it may appoint "a board or boards, composed of qualified persons, to conduct on its behalf investigations and studies that may be necessary or desirable and to report to the Commission regarding any questions or matters involved in the subject matter of the reference."⁵⁷ These and other provisions in the Rules of Procedure contribute to a public access orientation for the IJC. The IJC disseminates a great deal of public information, encourages participation in its meetings, publishes a monthly newsletter to report on Commission activities and to advertise upcoming hearings, and in this and other respects is responsive to its border constituency.⁵⁸ While critics have argued that it could be even more responsive,⁵⁹ it is nevertheless considerably more accessible and responsive to the public than the IBWC.

In at least the United States case, enabling legislation empowering and funding the United States Section of the IBWC did not specify any consultative requirements, thereby reinforcing the discretion of the commissioner in this realm.⁶⁰ Such changes as have occurred which bear on

55. International Joint Commission, United States and Canada, Rules of Procedure and Treaty 4 (1980).

56. Such records include decisions, orders, formal opinions, applications, references, public notices, press releases, statements in response, statements in reply, records of hearings, and briefs and statements. See International Joint Commission, United States and Canada, Rules of Procedure and Treaty 4 (1980).

57. International Joint Commission, *supra* note 55, at 11. The IJC has established a number of advisory boards to assist it over the years. While some of these boards have been short-lived depending on their purpose, others have enjoyed a semi-permanent existence. Several Advisory Boards currently established by the IJC are the International Air Pollution Advisory Board for the Detroit-Windsor and Port Huron-Sarnia region and the Water Quality and Science Advisory Boards established pursuant to the Great Lakes Water Quality Agreement of 1978 as amended in 1987. On the former see Baily, *Air Board Releases Report on Detroit-Windsor Region's Air Quality*, 16 Focus 3-6 (Mar./Apr. 1991); on the latter see International Joint Commission, U.S.-Canada, Fourth Biennial Report (Mar. 1989).

58. The IJC's monthly journal, Focus, is widely distributed and provides regular information on the Commission's activities. For evidence of the wide range of conferences and hearings conducted by the IJC, see any one of its annual reports, e.g., International Joint Commission, United States and Canada, Activities Report 36 (1986).

59. See, e.g., D. Beach, *Great Lakes Prognosis Critical But Guarded*, In *These Times* 6 (Nov. 8-14, 1989); General Accounting Office, State Department, *Need to Reassess U.S. Participation in the International Joint Commission* 8 (June 1989).

60. The two statutes bearing most directly on the powers of the United States' section of the IBWC are the Rio Grande River Study Act, 49 Stat. 660 (1935), and the U.S.-Mex. Treaty Act of 1950, 64 Stat. 846 (1950).

the activities of the national sections have been the result of initiatives like NEPA and the La Paz Agreement of 1983.

Though it is not really possible, nor likely, that the two countries will further specify the Commission's consultative functions under treaty, it is feasible for the two countries to expand the consultative requirements of the national sections through subsidiary agreement,⁶¹ amendment of the enabling statutes that govern its domestic conduct, or additional domestic legislation. The question is, Is this really desirable, and, if so, what form should it take?

Enhancing the Commission's responsiveness to a wider constituency, while carrying certain risks, such as increasing its exposure to the public at large and potential public criticism, makes sense. While new fora have been created, these fora do not provide regular access to the Commission. Broadened access to the Commission would therefore seem reasonable. Such expansion could take one or more of the following forms: regular, perhaps annual, open meetings or hearings with the officials and public of border communities, permanent national, even binational, advisory boards, or newsletters and other forms of public communication.

Whether one or another of these instruments would adequately satisfy the growing demand for greater responsiveness by the IBWC cannot be known with certainty at this point. In all likelihood they would fall short, if only because expectations of the Commission's performance and responsiveness have arisen in the context of inadequate public knowledge about the particular constraints on the agency's role in transboundary environmental management. But it is certainly in the interest of the Commission to take reasonable measures to increase the level of public input in response to growing demands. If it does not, there is every probability that such measures will be forced upon it. A recent initiative in this respect emanating from the office of Arizona Senator John McCain testifies to this fact.⁶²

It bears mentioning in this context that much of the responsibility for communicating an image of responsiveness falls upon the shoulders of the respective commissioners. Fortunately, over the years the IBWC has been blessed with effective leadership. Commissioners of the stature of Lawrence Lawson and Joseph Friedkin for the United States Section

61. Such subsidiary agreements are formalized as "Minutes" that constitute the official journals of the Commission. Under Article 25 of the 1944 Water Treaty, "[E]xcept where the specific approval of the two governments is required by any provision of this treaty, if one of the Governments fails to communicate to the Commission its approval or disapproval of a decision of the Commission within thirty days reckoned from the date of the Minute in which it shall have been pronounced, the Minute in question and the decisions which it contains shall be considered to be approved by that Government." 1944 Water Treaty, *supra* note 2, at art. 25.

62. Senator McCain's office is considering a bill that would, among other things, establish a binational advisory board on environmental issues that would regularly consult with the IBWC. Telephone Interview with staff assistant to Sen. J. McCain (R. AZ) (Feb. 26, 1991).

showed considerable skill in responding to an elite constituency of border and basin states executives, the offices of important regional resource management agencies like the Rio Grande Compact Commission and Committee of Fourteen on the Colorado River, and, of greatest importance, federal congressmen.⁶³ The IBWC was able to sustain such leadership in good measure due to its reputation for technical expertise, political neutrality, and its tendency to recruit future commissioners from within the Commission—thereby insuring that incumbents were familiar with the operating norms and procedures and institutional history of the Commission as a public agency.

Effective leadership, as students of organizational management are prone to observe, has both subjective and situational components that defy prediction.⁶⁴ It can be nurtured but not guaranteed. In the case of the Commission's two national sections, recent appointments have been more political than in the past, introducing outsiders into the management of their sections.⁶⁵ More important, however, is the fact that the challenges they face are really unprecedented in the history of the Commission. The growing complexity of the Commission's political environment imposes demands that can no longer be avoided without cost to the agency itself.

Demands for Functional Expansion

Calls for expanding the Commission's functional reach have emanated from a variety of sources since the mid-1970s. As argued above, the Commission's capacity to respond to such demands is highly restricted; indeed, its limited functional range under the treaty accounts for the insertion of other domestic agencies in transboundary resources management. Despite its limitations, however, there is yet some room for functional expansion by the Commission. In order to better consider these possibilities it is useful to divide the discussion into two categories: first, opportunities for expansion outside the context of existing treaty provisions; second, opportunities for expansion that arguably fall within its present treaty authority.

Opportunities for functional expansion outside current treaty authority are limited. Since the early 1970s, however, several issues have

63. See A. Lamborn & S. Mumme, *Statecraft, Domestic Politics, and Foreign Policy Making: The El Chamizal Dispute* (1988), for an in-depth look at the role of Commissioners Lawson and Friedkin in the crafting of the El Chamizal Agreement of 1963.

64. Rourke, *supra* note 39, at 95.

65. The IBWC's present Commissioner, Narendra Gunaji, comes to the Commission from a career in academia as a professional engineer-hydrologist. Letter from M. Ybarra, IBWC, U. S. Section (Oct. 20, 1986) (on file with the author). The Mexican Commission has recently seen the appointment, then transfer, of Ing. Carlos Santibanez, who had little previous experience with the Commission. Commissioner Santibanez was transferred in 1990 to head the *Comision de Limites y Aguas, Mexico y Guatemala, Mexican Section*, a move that must be interpreted as a political demotion. Conversation with A. Herrera, Mexican IBWC Commissioner, in Gasparilla, Fla. (Apr. 20, 1991).

been considered that fall within this domain, the best known of which involves transboundary groundwaters. Under Minute 242,⁶⁶ signed in 1973, the Commission was given authority to regulate groundwater in the San Luis–Yuma section of the lower Colorado River basin. Minute 242 also authorized the IBWC to enter into discussions aimed at reaching a comprehensive international agreement apportioning and regulating groundwater aquifers along the United States–Mexico border.⁶⁷ It is interesting to note that in the eighteen years since Minute 242, despite some discussion, there has been little real progress toward such an agreement. To the contrary, both nations have intensified withdrawals and waged, in effect, a quiet pumping war on each other in a race to claim the larger share of this scarce resource.⁶⁸

The barriers to a groundwater treaty are numerous and growing ever more intractable. First, any effort to apportion groundwater with Mexico will diminish the stock of water available to the border and basin states, particularly in the Rio Grande and Colorado River basins.⁶⁹ Transboundary groundwater is a common pool resource.⁷⁰ As with most common pool problems, individual beneficiaries have limited incentives to relinquish short-term benefits for long-term gains. Any groundwater treaty, indeed any treaty addressing any water-related environmental problems along the border, harbors the potential for opening up long settled distributive issues among the various basin states and between the United States and Mexico.⁷¹ This is a level of controversy that the states themselves as well as the two countries have a very large stake in avoiding. Taken as a whole, it is simply politically expedient to pump the water faster than your neighbor. Second, in recent years, water scarcity has become even more of a critical issue in the West than it was due to demographic trends, federal policy change, and drought.⁷²

66. *Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River*, International Boundary and Water Commission, Minute 242 (Aug. 30, 1973), 12 I.L.M. 1105 (1973) [hereinafter Minute 242]. For discussion and complete text of Minute 242 see *Minute No. 242*, 15 Nat. Res. J. 2 (1975).

67. *Minute No. 242*, *supra* note 66.

68. S. Mumme, *Apportioning Groundwater Beneath the U.S. Mexico Border* (1988); L. Rohter, *Canal Project Sets Off U.S.-Mexico Clash over Water*, N. Y. Times, Oct. 1, 1989, at Y3.

69. *Id.*

70. Common pool, or common property, resources are goods to which each party has access, the use of which by any party either diminishes or adds benefits to the others. Transboundary resource problems are usually of this type. The incentive to reach agreement rests in the parties' desire to avoid a "tragedy of the commons." As a rule, the fewer the parties to the common pool, the higher the marginal incentive of each party to seek a cooperative solution to the problem of shared utilization of the resource. See D. LeMarquand, *International Rivers: The Politics of Cooperation* 8–9 (1977).

71. Mumme, *supra* note 68.

72. S. Postel, *California's Liquid Deficit*, N. Y. Times, Feb. 27, 1991, at A19; M. Obmascik & E. Anderson, *California Urged to Idle Ag Acres*, Denver Post, Mar. 1, 1991, at B1.

Other issues that various critics have argued require additional treaty authority include drought, flooding, and the apportionment of waters in the lesser surface streams bisecting the international boundary. In the case of drought, scholars have expressed concern with the ambiguity of two essential concepts mentioned in the Treaty's drought provisions, those of "extraordinary drought" and "serious accident to the United States irrigation system."⁷³ Because these notions are not precisely specified in Article I,⁷⁴ dealing with definitions, it remains unclear just when a drought regime should be implemented, and how to determine the region to which it should apply.⁷⁵ The problem is most serious with respect to the Colorado River Basin, where the Treaty's ambiguity as to implementation is greatest. In this case, the problem might be settled by a subsidiary agreement under the authority of the 1944 document. The magnitude of the issue, however, suggests the necessity of a formal amendment to the 1944 Treaty. Anything less would probably not be acceptable to Mexico.

Flooding is another major preoccupation. Although the 1944 Treaty aimed in part to mitigate flooding through the construction of a series of dams and control projects on both the Rio Grande and Colorado River, serious flooding has since occurred, most recently in 1983 on the Colorado River.⁷⁶ Under the 1944 Water Treaty, Article 17, the upstream country is obligated to "furnish the other government, as far in advance as practicable any information it may have regarding extraordinary discharges of water," but neither government "shall have any claim against the other in respect of any damage" resulting from flooding.⁷⁷ Unfortunately, the conditional phrase "as far in advance as practicable" is vague and subject to conflicting expectations. In the 1983 Colorado River case, considerable damage to lower Colorado River communities was wrought due to poor management upstream.⁷⁸ This case demonstrated the need for better interagency coordination at the bilateral and domestic levels in anticipating and responding to flood-related emergencies. While it might be argued that a treaty level agreement should be sought to help mitigate

73. See, e.g., C. Sepulveda, *Instituciones Para la Solucion de Problemas de Aguas de Superficie Entre Mexico y Los Estados Unidos*, 18 Nat. Res. J. 134 (1978); A. Utton, *Overview*, 22 Nat. Res. 744 J. (1982).

74. 1944 Water Treaty, *supra* note 2, at art. 1.

75. Sepulveda, *supra* note 73, at 140.

76. *Oversight Hearings Before the House Comm. on Interior and Insular Affairs on Colorado River Management*, 98th Cong., 1st Sess (1983) [hereinafter *Oversight Hearings*]. Additional flooding problems on the Rio Grande in the Presidio Valley prompted the IBWC to reach Minute 247. *International Plan for the Protection of the Presidio-Ojinaga Valley Against Floods of the Rio Grande*, International Boundary and Water Commission, Minute 247 (Feb. 7, 1975) [hereinafter Minute 247].

77. 1944 Water Treaty, *supra* note 2, at art. 17.

78. *Oversight Hearings*, *supra* note 76; S. Whiteford & L. Montgomery, *The Political Economy of Rural Transformation: A Mexicali Case*, in *Micro and Macro Analysis: Issues in Anthropological Research* 147 (B. DeWalt ed., 1985).

flood damages, most observers, including IBWC officials, think this is not necessary.⁷⁹

Failure to apportion lesser surface streams' waters is a lacunae of the 1944 Water Treaty's provisions.⁸⁰ Occasional efforts have been made in the past to address this issue and it has some foundation in the 1944 Treaty, which attempted without success to reach an agreement dividing water in the Tia Juana River watershed.⁸¹ With respect to the Tia Juana River, the Treaty, in Article 16, recommended the "equitable distribution" of its waters and the development of "storage and flood control" measures to benefit basin water users.⁸² Failure to subsequently agree on a binational approach, however, led to unilateral efforts by each country to capture the basin's waters. Other efforts to apportion waters of streams such as the Santa Cruz and San Pedro rivers along the Arizona-Sonora border failed due to strong opposition by Arizona's political leadership.⁸³ To complicate the situation, this issue has more recently been tangled up in the groundwater question since these streams are major contributors to recharge in the transboundary groundwater basins along the border.

With respect to each of these issues, drought, flood, lesser surface streams, the impediments to a treaty-level solution are practically identical to those mentioned above in the case of groundwater. While these issues have become increasingly important, they remain secondary to the core values of most United States border and basin states who feel that as upper basin contributors to the basic watersheds, they have little to gain and much to lose by reopening or revising the 1944 agreement. Thus, it is doubtful a solution will be reached at this level.

Despite this negative prognosis for functional expansion, there are a variety of areas where the Commission's functional expansion can be justified in terms of authority already conferred under treaty. These areas include expansion of the Commission's staff, water quality, and recreation and instream flow issues.

Expansion of the Commission's staff requires no additional formal authority.⁸⁴ Under the 1944 Treaty, the Commission is given considerable discretion with respect to auxiliary staff, subject always to the approval and support of its member governments.⁸⁵ The Commission's

79. Interview with J. Friedkin, Commissioner of the U.S. Section in El Paso, Tx. (Apr. 24, 1987); comments by Commissioner Friedkin on the 1983 Colorado River flood, *Oversight Hearings*, *supra* note 76, at 769.

80. The issue was raised during the 1944 Water Treaty deliberations but set aside as complicating the principal questions before the negotiators. Most discussions centered on the case of the Tijuana River. See Hundley, *supra* note 31, at 133; Coyro, *supra* note 32, at 898.

81. 1944 Water Treaty, *supra* note 2, at art. 16.

82. *Id.*

83. S. Mumme, *Regional Power in National Diplomacy: The Case of the U.S. Section of the International Boundary and Water Commission*, 14 *Publius* 127 (1984).

84. For an argument for expanding the Commission's staff capabilities see, C. Sepulveda, *Implications for the Future: Design of Viable International Institutions*, 15 *Nat. Res. J.* 220 (1975).

85. 1944 Water Treaty, *supra* note 2, at art. 24.

staff has varied in size and quality over the years in response to the various needs of the Commission and its national sections. This variable pattern may be expected to continue into the future contingent on the functional obligations of the Commission and the willingness of its member governments to allocate resources for these purposes.

The Commission's authority to deal with matters of water quality is potentially quite broad under the 1944 Treaty, but it has been interpreted rather narrowly by the Commission.⁸⁶ The basis for its role in regulating surface water pollution is grounded in the authority of Article 3 of the 1944 Water Treaty, which requires the IBWC to "give preferential attention to the solution of all border sanitation problems."⁸⁷ In the case of salinity problems, such authority is more tenuous and derives from Minute 242, which purports to provide a "permanent and definitive solution" to the problem of transboundary salinity.⁸⁸

Under the authority of Article 3, the Commission is empowered to reach particular agreements on a wide range of water quality problems along the border.⁸⁹ In 1979 its authority in this area was enhanced by Minute 261, which instructed the Commission to give a high priority to this class of problems.⁹⁰ The Commission continued to proceed cautiously in interpreting its broadened mandate. While numerous issues are eligible for consideration under Minute 261, the Commission has inclined toward a case-by-case approach to water quality problems located mainly within its traditional focus on sanitation and sewage.⁹¹ Even here, however, the Commission has been careful in asserting its authority. Minute 279, which prescribes a joint international sewage treatment plant to deal with water pollution of the Rio Grande below Laredo, Texas–Nuevo Laredo, Tamauli-

86. A. Utton, *Mexican International Waters* (draft manuscript) (forthcoming).

87. 1944 Water Treaty, *supra* note 2, at art. 3.

88. Minute No. 242, *supra* note 66.

89. 1944 Water Treaty, *supra* note 2, at art. 3.

90. S. Mumme, *The Background and Significance of Minute 261 of the International Boundary and Water Commission*, Cal. W. Int'l L. J. 223, 229 (1981).

91. Within this orbit it has addressed sewage problems at San Diego–Tijuana, the pollution of the New River at Calexico–Mexicali, expansion of the binational Nogales Sewage Treatment plant, groundwater pollution from sewage ponds at the twin cities of Naco, and the pollution of Rio Grande waters by sewage effluent from a number of cities situated along its course. See the following agreements: *Recommendations for the First Stage Treatment and Disposal Facilities for the Solution of the Border Sanitation Problem at San Diego, California–Tijuana, Baja California*, International Boundary and Water Commission, Minute 270 (Apr. 30, 1985), 26 I.L.M. 18 (1987) [hereinafter Minute 270]; *Joint Project for Improvement of the Quality of the Waters at New River at Calexico, California–Mexicali, Baja California*, International Boundary and Water Commission, Minute 274 (Apr. 15, 1987), 27 I.L.M. 574 (1988); *Conveyance, Treatment and Disposal of Sewage at the Nogales International Sewage Treatment Plant under Minute 227*, International Boundary and Water Commission, Minute 276 (July 26, 1988), 28 I.L.M. 286 (1989); *Recommendations for the Solution of the Border Sanitation Problem at Naco, Arizona–Naco, Sonora*, International Boundary and Water Commission, Minute 273 (Mar. 19, 1987), 27 I.L.M. 574 (1988) [hereinafter Minute 273]; and *Joint Measures to Improve the Quality of the Waters of the Rio Grande at Laredo, Texas/Nuevo Laredo, Tamaulipas*, International Boundary and Water Commission, Minute 279 (Aug. 28, 1979) [hereinafter Minute 279].

pas, stipulates "that the Government of Mexico require all industries discharging wastewater to the joint sanitation project facilities to provide appropriate pre-treatment to assure efficient operation of the proposed treatment plans."⁹² Some observers have argued that this provision should involve the IBWC directly in regulating pretreatment practices in Nuevo Laredo.⁹³ The Commission has been content to approach such problems indirectly, working through domestic, generally local, agencies in each country rather than to involve itself directly in the business of regulating polluters.⁹⁴

It remains unclear whether Minute 261 could be utilized to expand the Commission's functions in the area of groundwater quality. Thus far, the Commission has addressed the issue only indirectly by dealing with surface sanitation conditions that might affect groundwater quality. In the Naco case, overflow from Mexican sewage ponds threatened to contaminate drinking water supplies for the city of Bisbee, Arizona.⁹⁵ In the case of Nogales Wash, raw sewage threatens the aquifer associated with the important Santa Cruz River basin.⁹⁶ Other groundwater problems, such as the contamination of groundwater by agricultural pesticides in the vicinity of Yuma, Arizona, have not been addressed by the Commission, which has not yet found evidence of its "transboundary" character.⁹⁷

Another dimension of the water quality problem is salinity. Binational conflict over the salinity of waters delivered to Mexico in fulfillment of treaty obligations was the most contentious issue in binational relations during the 1960s.⁹⁸ The specific source of the Commission's authority to address salinity problems is grounded in several agreements reached in

92. Minute No. 279, *supra* note 91, at § 20.

93. Telephone Interview with G. Ormsby, Researcher, National Toxics Campaign (Feb. 27, 1991).

94. Recently, the American Medical Association's Committee on Scientific Affairs called for the expansion of the IBWC's regulatory role in maintaining water quality along the border. Recognizing IBWC's limits, however, AMA also called for the development of a permanent binational environmental commission with broad authority to perform such regulatory functions. See G. Espinosa, *Aumenta la Contaminación en la Frontera Mexico-EU, Señala la AMA*, *Excelsior*, June 28, 1990, at 5A.

95. Minute No. 273, *supra* note 91.

96. The IBWC's slow response to the hazard represented by contamination of Nogales Wash has provoked strong criticism of the Commission. See Vandervoet, *supra* note 28; K. Vandervoet, *Nogales Wash Flows Unchecked*, *Nogales Int'l*, Apr. 18, 1990, at A18; K. Vandervoet, *Is Nogales Wash Toxic*, *Nogales Int'l*, May 2, 1990, at A1. See also D. Kamp, *Implications of the Nogales Water Quality Scenario* (Feb. 16, 1991) (unpublished paper, Border Ecology Project, Naco, Az.); D. Kamp, *Capsule Summaries of Selected U.S.-Mexico Environmental Problems and Strategies*, presented to the Congressional Study Group on Mexico, Session on U.S.-Mex. Ecology: Respecting No Frontier (Oct. 18, 1989) (unpublished report by the Border Ecology Project, Naco, Arizona).

97. For discussion of the Yuma area groundwater problems, see *Groundwater-pollution outlook grim*, *Arizona Daily Star*, May 2, 1982 at B2; J. Kay, *Pecan Groves Use Feared Pesticide: Temik Has Tainted Water Elsewhere*, *Arizona Daily Star*, Aug. 6, 1982, at B1.

98. D. Furnish & J. Ladman, *The Colorado River Salinity Agreement of 1973 and the Mexicali Valley*, 15 *Nat. Res. J.* 83, 94 (1975).

the mid-1960s with respect to the waters of the Rio Grande and an agreement reached in 1973, Minute 242, which sought a "permanent and definitive solution" to the salinity issue on the Colorado River.⁹⁹ The general foundation of its authority in this area is controversial, however, and based on a broad reading of the Treaty's intent rather than its specific language—which was designed to insulate the United States from any claims on the quality of the waters delivered Mexico under Treaty.¹⁰⁰

Despite agreements already reached on salinity problems along the boundary, the incidence of highly saline waters in both the Rio Grande and Colorado River basins continues to rise. On the Colorado, under Minute 242, the agreed upon salinity standard for water delivered to Mexico under treaty is 115 ppm above or below the salinity level at Imperial Dam.¹⁰¹ This sliding scale approach distributes the burden of salinity equitably but does not address problems arising from the absolute increase in salinity basinwide. Increasing salinity is due to diminishing flow on the Colorado occurring as the result of the full appropriation of Colorado River water upstream in the past decade.¹⁰² Thus, it is likely that the two countries will need to arrive at additional agreements to mitigate the effects of salinity in the future.

A final area of potential functional development is that concerning instream uses of water. Under the 1944 Treaty, Article 3, the Commission "may be called upon to make provision for the joint use of international waters," to include matters related to "[f]ishing and hunting" and "[a]ny other beneficial uses which may be determined."¹⁰³ While neither the Colorado River or the Rio Grande in their limitrophe reach¹⁰⁴ are nationally known for their recreational opportunities (fishing, boating, sightseeing), regional demand for such uses has increased over time. The management of such functions has largely been left to domestic agencies in each country, but the IBWC could be called upon to supplement management and regulatory functions along the international stretches of these rivers should the two countries so agree. At the very least it will be involved in the consideration of binational problems involving these uses.¹⁰⁵

99. Minute No. 242, *supra* note 66.

100. Meyers, *supra* note 32, at 579.

101. Minute No. 242, *supra* note 66.

102. H. Dregne, *Salinity Aspects of the Colorado River Agreement*, 15 Nat. Res. J. 43 (1975); N. Evans, *Salt Problem in the Colorado River*, 15 Nat. Res. J. 55 (1975). See also, *Acuerdo Bilateral Mexico-EU Para Reducir la Inficion del Rio Colorado*, Excelsior, Oct. 18, 1988, at E2.

103. 1944 Water Treaty, *supra* note 2, at art. 3.

104. As they form the boundary.

105. The case of the proposed Amistad National Recreation Area provides a useful example. Administration of this park is entrusted to the Interior Department's National Park Service, but IBWC's potential role and its 1944 Water Treaty authority are preserved. See Committee on Interior Insular Affairs, *Establishing the Amistad National Recreation Area in the State of Texas, and for Other Purposes*, H.R. Doc. No. 967, 101st Cong., 1st Sess. 1 (1989).

In sum, the development of the Commission's water quality functions remains the most dynamic part of its expanding agenda. The Commission's authority for functional expansion in this area is grounded in its 1944 Treaty mandate and enhanced by subsidiary agreements. In the other issue areas mentioned above, its formal authority is either less specific, or grounded in the domestic authority of one or the other sections, or entirely wanting. The absence of explicit authority is a formidable constraint on the Commission's functional growth.

Financing Transboundary Projects

In recent years, reform advocacy centered on the Commission has sought to enhance its fiscal capacity to address certain issues. The financing of transboundary projects has always proven to be a delicate, politically sensitive issue due to the considerable discrepancy in levels of economic development along the border and its effects on Mexico's capacity to participate in solutions to binational environmental problems. Embedded in proposals for enhancing the Commission's fiscal capacity to deal with certain problems is the assumption that while it has often had the functional authority to address such issues, its need to generate political support for budgetary authorizations was a major constraint on its ability to act.

It is important to note in this regard that the Commission has, over the years, developed a unique and equitable approach to the problem of generating binational support for joint projects. Since 1951, when the Commission developed the first joint international sewage treatment facility to serve the twin cities of Nogales on the Arizona-Sonora border, its approach to binational financing has been predicated on the principle of apportioning costs in relation to benefits.¹⁰⁶ Under this formula, greater demand for binational sanitation solutions on the United States side of the border was interpreted to mean greater liability with respect to the cost, enabling the United States Section to assume a larger portion of the fiscal burden for project development. The specific cost-benefit formula and allocation of costs was in each case negotiated between the two countries using this general guideline.

During the 1980s, however, the Reagan administration took issue with this approach to financing binational solutions, arguing that Mexico should pay its fair share of the cost of binational projects.¹⁰⁷ The major

106. *Enlargement of the International Facilities for the Treatment of Nogales, Arizona and Nogales, Sonora Sewage*, International Boundary and Water Commission, Minute 227 (Sept. 5, 1967) (including Joint Report of the Principal Engineers Concerning the Necessity for Enlarging the International Facilities for the Treatment of the Sewage from Nogales, Arizona, and Nogales Sonora 4-5); J. Friedkin, *The International Nogales Sanitation Project at 4* (paper presented before the Arizona Water and Pollution Control Association, on file with author) (May 31, 1971).

107. *OMB Raps EPA for Offering to Finance Mexican Border Pollution Controls*, Inside EPA 1-6 (Mar. 13, 1984).

result of this approach was a retreat toward unilateral solutions.¹⁰⁸ The difficulty of building binational support for transboundary projects on a nonsubsidy basis slowed the pace of negotiating binational solutions at the level of the IBWC and led to what many observers believed to be sub-optimal solutions to problems under consideration. It has also led to a new emphasis on the need to provide adequate fiscal resources for coping with transboundary environmental problems.

While general interest in exploring alternative, creative, financial instruments for supporting the Commission's functions has been expressed in various fora for at least a decade,¹⁰⁹ actual proposals have been few. Recently, however, this has changed. Since taking the helm of the United States Section, the current commissioner, Nandera Gunaji, has made a major contribution in this area by supporting the Commission's long-standing approach to project financing and exploring new avenues of bilateral and interagency cooperation in financing transboundary sanitation projects.¹¹⁰ Other initiatives have come from border state congress-

108. The erratic history of the San Diego-Tijuana joint sewage project testifies in part to the problems arising from a less flexible approach to financing border projects. This project, which from an engineering standpoint should have been constructed on a gravity flow basis with the principal facility located downstream in the United States, was originally foregone in favor of a Mexican-financed sewage facility located upstream in Tijuana. Mexico's initial rejection of a joint sewage facility was related to its inability to pay an equivalent share of the projected \$730 million cost. The facility Mexico eventually built suffered from numerous breakdowns, resulting in a continuing health threat to U.S. residents downstream, and was not adequate in itself to accommodate Tijuana's rapidly growing sewage production; in fact, a second treatment plant was originally part of the Mexican plan. Finally, in 1990, the two countries reached an agreement, Minute 283, by which a joint sewage facility will be built in the United States to deal with continuing sewage problems and replace a planned Mexican facility that U.S. engineers considered to be suboptimal and less reliable as a mechanism of managing Tijuana's growing sewage production. The allocation of costs for this latest binational solution to the sewage problem appears to follow along the lines of apportioning costs relative to benefits. See S. Mumme & J. Nalven, *National Perspectives on Managing Transboundary Environmental Hazards: The U.S.-Mexico Border Region*, 3 J. Borderlands Stud. 52 (1988); *Conceptual Plan for the International Solution to the Border Sanitation Problem in San Diego, California-Tijuana, Baja California*, International Boundary and Water Commission, Minute 283 (July 2, 1990) [hereinafter Minute 283].

109. See, e.g., Kamp, Capsule summaries of Selected U.S.-Mexico Environmental Problems and Strategies, presented to the Congressional Study Group on Mexico, Session on U.S.-Mex. Ecology: Respecting No Frontier (unpublished paper by the Border Ecology Project, Naco, Arizona) (Oct. 18, 1989); Metzner, Water Quality Issues of the San Diego-Tijuana Border Region II (San Diego State University, Institute for the Regional Study of the Californias, Border Issues Series No. 5, 1989).

110. Commissioner Gunaji's leadership in the area of project financing was a key factor contributing to the IBWC's recent success in reaching a "permanent and definitive" solution to the long-standing San Diego-Tijuana sewage problem. Financial elements of the project include A) allowing Mexico to substitute its financial participation in the joint plant for its earlier commitment under Minute 270 to construct at its own expense a second domestic sewage treatment plant at Rio El Alamar; B) allocating to each country responsibility for covering the costs of construction, operation, and maintenance of the conveyance infrastructure in its domain; and C) providing Mexico the option of covering all or part of its costs by supplying electrical energy for the operation of the international treatment plant. Commissioner Gunaji has also worked out a mechanism for cofinancing the U.S. obligation on the project. His efforts in this regard represent the kind of creative problem solving that will be increasingly necessary in cobbling together binational funding solutions. See, Minute No. 283, *supra* note 108.

men. In 1989, Arizona Senator Dennis DeConcini introduced legislation to create a binational contingency fund to deal with air pollution along the United States–Mexico border, attached as an amendment to the 1990 Clean Air Act.¹¹¹ While this legislation was unsuccessful, DeConcini's Arizona colleague, Senator John McCain, has recently introduced a similar proposal that would create a \$10 million contingency fund at EPA, and a \$5 million contingency fund at the IBWC that could be drawn upon to quickly respond to potential environmental emergencies along the border.¹¹²

It is important to recognize that the Commission itself must be cautious in approaching this issue. While the Commission does favor its traditional approach of allocating costs in proportion to benefits, it has been careful to justify its budgetary requests on a per-project basis, with careful consideration of the various competing interests involved. The United States Section, which must gain the support of various congressional committees for its proposals, has developed a reputation for carefully justifying its proposals based on established, well-defined treaty authority and broadly based political support from its border and basin state constituency. Its fiscal conservatism has shielded it from "pork-barrel" criticism and contributed to its reputation for success in negotiating the complicated United States budgetary process.¹¹³

The Commission's caution notwithstanding, the search for additional budgetary resources is likely to persist in view of the growing demands on the Commission in the 1990s and public frustration with the Commission's slow-paced, but politically expedient, approach to building support for its binational activities. Its mandate with respect to implementing the several hazardous emergency contingency agreements now in place along the border underscores the importance of having the fiscal capability to respond quickly, without returning to Congress in each instance.¹¹⁴ Greater financial discretion would also contribute to its ability to initiate investigations and generate proposals for binational environmental solutions within its functional competence. Various environmental organizations feel that enhancing the Commission's fiscal capability is critical to improving its overall responsiveness, particularly in light of the

111. Kamp, *Senate OKs Border Air Cleanup*, *Bisbee Daily Rev.*, Mar. 23, 1990, at 1; Sen. D. DeConcini, *Senate: Statements on Introduced Bills and Joint Resolutions*, 135 Cong. Rec. 516,371 (daily ed. Nov. 20, 1989).

112. Telephone Interview with staff assistant to Sen. McCain, *supra* note 62.

113. Mumme & Moore, *supra* note 41.

114. S. Mumme, *La Paz Agreement: Progress and Problems in Managing the Border Environment*, 2 *Transboundary Resources Rep.* 1 (1988). Under Annex II to the 1983 Environmental Cooperation Agreement, the National Coordinators are empowered to form a binational Joint Response Team to address hazardous materials emergencies along the border. While the IBWC would under most circumstances participate in this group, no additional funding has yet been allocated for such functions.

greater economic integration between the two countries that is expected to intensify contemporary trends along the border.

CONCLUSION

It should be clear from the preceding review that transboundary resource management along the United States–Mexico border is presently in a state of flux. Driven by secular trends related to growth and increasing economic integration, Mexico and the United States are challenged to provide solutions to a diverse range of environmental problems. As the oldest and best-established binational resource management organization in United States–Mexican relations, the IBWC has a vital role to play in the process of conserving natural resources and combating pollution along the international frontier.

As an international resource management agency, however, the Commission's jurisdiction and functions have been narrowly conceived and carefully defined so as not to conflict with those of domestic agencies in each country. While the Commission has substantial discretion to initiate investigations and shape its issue-agenda, its original and still primary mandate remains the allocation of treaty water and resolution of disputes concerning the location of the boundary. In the new context of heightened environmental concern along the border, the Commission's traditional approach to environmental management has been hard pressed.

Much of the difficulty seems to arise from the inherent tension between a management approach that is historically oriented toward the distribution of resources along border and growing pressures which have thrust the Commission into a more visible and contentious regulatory role in addressing transboundary environmental problems. A new and growing constituency of "nontraditional" interests, including border municipalities, civic groups, and environmental organizations, have "discovered" the Commission and sought to push it in the direction of a more activist role in ameliorating transboundary resource and pollution problems. As the only genuinely binational institution available it is natural that the IBWC should become a pole of attraction for interests seeking federal assistance in coping with localized problems along the border.

The Commission's capacity to respond to such pressures is confined mainly to water related problems along the border. Even in this particular sphere, where it already has considerable authority for functional development, the Commission's experience over the years in defending and enlarging its organizational turf leads it to react conservatively in the face of demands for change. Viewed strictly from an organizational standpoint, such behavior has proven successful in preserving its core functions

and enabling the Commission to reinforce its reputation as a policy-effective, technically efficient organization.

The changing political environment affecting the Commission, however, has altered the equation. No longer can the Commission opt out of controversy, retaining a low profile while brokering differences between the two countries for its respective federal and state governments. As seen above, NEPA, the La Paz Agreement, and the new activism of local organization have thrust the Commission into the limelight. Failure to respond to these pressures in a constructive fashion may well jeopardize the IBWC's well-earned reputation along the border and provoke a political backlash that would further diminish its effectiveness.

It is important to recognize that the Commission's mandate does constitute a considerable restraint on its ability to undertake functions outside its traditional domain. The political priorities of the two countries and the various subnational units of government, particularly on the United States side of the border, also inhibit the Commission's development. The emerging regime for binational environmental management must therefore engage a wide range of organizations outside the Commission's limits. Under the La Paz Agreement, the EPA and SEDUE have for their respective countries already begun to occupy policy space provided by the Commission's limited mandate. States, municipalities, and non-governmental organizations are also filling the void. Within the Commission's functional limits, however, there is a sizable realm for functional development and innovation.

In sum, as the Commission faces the future, it cannot stand still. While a large part of its commitments remain vested in its many operational and maintenance activities and dedicated to the discharge of traditional functions, it must respond to its changing environment. In particular, it must become more responsive to a growing and more diversified public and more accustomed to playing a regulatory role in coordination with other domestic agencies and government to government initiatives. Such adjustments should strengthen the agency as it moves into its second century of transboundary management.