
NATURAL RESOURCES JOURNAL

Volume 18
Issue 1 *Symposium on U.S. - Mexican Transboundary Resources, Part II*

Winter 1978

The Management of Water-Land-Environmental Resources at International Boundary Regions

L. B. Dworsky

THE MANAGEMENT OF WATER-LAND-ENVIRONMENTAL RESOURCES AT INTERNATIONAL BOUNDARY REGIONS

L. B. DWORSKY*

INTRODUCTION

This contribution to the United States-Mexico Working Group discussions at Oaxtepec, Mexico, March 10, 11, 1977 is in response to the charge given by the co-chairmen to make suggestions regarding the management of International Water Resources. It is no longer valid, however, to consider the management of water apart from the management of land and other environmental resources. Accordingly, the management proposals in this contribution will extend beyond water resources and will include a concern for land and selected environmental resources in the international region along the boundary of the United States and Mexico.

The paper first considers a number of forces for change in physical and conceptual terms. It then considers existing institutional responses to these forces. Finally, it outlines some alternatives for improving the management of the resources encompassed in the boundary region. (By boundary region I mean, at present, an ill-defined area on either side of the international border in which man and his works and the physical character of the land, water and air present mutual problems to both countries.)

FORCES FOR CHANGE

In the modern world change is the only thing of permanence, and we are increasingly aware that the rate of change in many matters concerning our societies is increasing continuously. Thus, problems that were relatively simple at one time have become more complex. And where once a problem might have been viewed apart from other problems, today the consequences of one problem on others is much better understood. For example, the use of land as the driving force that determines how water is to be managed is well recognized, although our ability to direct land use is still limited. The use of these two resources, land and water, are fundamentally related to the several forces that are changing the character of the boundary region.

The physical forces that are inducing change in the boundary

*Director, Cornell University Water Resources & Marine Sciences Center.

region include urbanization and economic development. The changing scene with respect to energy is an added major force. Resource scarcity—of land, water, energy, clean air and other environmental amenities including view, open space and natural scenic resources—is at the forefront of the several forces for change. The concern about the increased vulnerability of society to both resource scarcity and the use of highly sophisticated technology that requires very careful control is adding a new aspect that is reflected, on the U.S. side, in the debates on growth.

In the world of ideas, mention is made of three writings that exemplify forces for change with which we should be acquainted, even though we may not all agree for a variety of reasons. In a paper,[1] Lynton Caldwell makes reference to five socio-ecological concepts which he identifies under the phrases (1) unity of the biosphere; (2) unique nature of earth; (3) universality of man's natural and cultural heritage; (4) natural limitations of political fiat; and (5) man's obligation as custodian of the earth. Contemporary environmental policies at all government levels, he notes, are influenced by these concepts and they may be expected to weigh more heavily in the public policies of the future than they do of the present. And their influence will be greater to the extent that environmental disorders and disasters provide dramatic occasions for their being involved. His thesis, however, is that the present structure of concepts in relation to policies is not adequate to our need. The deficiency, he holds, is principally one of synthesis, of weaving the five concepts indicated into a comprehensive interpretation of man and his place in nature that is fully socially and politically operational. He concludes that the future, whatever it may be, cannot resemble the past that man has experienced in his relationship to a seemingly endless and inexhaustible Earth.

Additional forces for change exist in the field of international relations and David Le Marquand has carefully identified five factors that contribute to national policy.[2] These are presented as (1) image ("The image a country wishes to project can be important"[3]); (2) international law ("Closely related to . . . image is its attitude toward international law"[4]); (3) linkage ("Agreement with a neighbor . . . may be used to gain concessions for other binational issues . . ."); (4) reciprocity ("The desire for mutual commitment and

1. The information in the succeeding paragraph was taken directly from Caldwell, *Concepts in Development of International Environmental Policies*, 13 NAT. RES. J. 190 (1973).

2. The information in the succeeding paragraph was taken directly from LeMarquand, *Politics of International River Basin Cooperation and Management*, 16 NAT. RES. J. 883 (1976).

3. *Id.* at 889.

4. *Id.* at 890.

obligation . . ."[5]); and (5) sovereignty (. . . "a countries [sic] natural reluctance to enter into an international agreement"[6]). The factors illustrate that there may be a number of objectives that might be pursued by governments when seeking international cooperation. In his concluding comments Le Marquand suggests that "[t]hought needs to be given to the types of planning strategies that would be appropriate to the political reality [of the physical situation] and the information requirements of the negotiations and political leaders."[7] Planning, he notes, ". . . must provide the information and assessments on the consequences of pursuing alternatives in terms of the range of objectives held by the national leaders."[8] Otherwise, ". . . without a full understanding of the consequences of interest to them from accepting particular alternatives they may be reluctant to commit their countries to an agreement."[9]

A third, and brief, comment, taken from Ludvig Teclaff is that "[t]he era when water resources could be developed in comparative isolation, with little regard for the effect on other elements of the environment, is finally coming to an end, both on a national plane and on an international plane."[10]

The question that confronts the United States-Mexico Working Group is not whether there are forces for change in the physical world and in the world of ideas, but whether we can propose practical ways to allow existing institutions to adjust to these forces while maintaining the strengths they have provided in the past. The next part of this contribution considers selected boundary institutions, particularly the U.S.-Mexico Boundary and Water Commission, as they now exist and as they may respond to some of the forces for change.

INSTITUTIONAL RESPONSE

Before looking specifically at the nature of existing boundary institutions in the boundary region it would be useful to postulate a set of tasks about which national and international agencies ought to be concerned. In an international boundary region such tasks may be engaged either separately by governments; by cooperative arrangements; or by substantial joint efforts. Without attempting to delineate how each task ought to be perceived, a set of tasks suggested by Enzo

5. *Id.*
6. *Id.* at 892.
7. *Id.* at 901.
8. *Id.* at 900-01.
9. *Id.* at 901.
10. Teclaff, *Harmonizing Water Resources Development and Use With Environmental Protection in Municipal and International Law*, 16 NAT. RES. J. 807, 858 (1976).

Fano[11] of the United Nations Centre for Natural Resources, Energy and Transport is worth reviewing as a check list. Fano's list of priority themes includes:

1. strengthening of arrangements for the definition of water policy and planning objectives;
2. improvement in the management of water demand;
3. strengthening the assessment of water supply;
4. promotion of the development of appropriate technologies;
5. targets, standards and strategies for the improvement of community water supplies;
6. strategies for efficient use and reuse of water in agriculture;
7. strategies for extreme conditions: flood and drought management;
8. management of shared water resources;
9. assessment of the environmental impact of water development programs and protection of human health and ecosystems; and
10. pollution management.[12]

The Governments of Mexico and the United States have been successful in constructing an institution capable of facilitating and implementing solutions to boundary water problems which have been addressed. The International Boundary and Water Commission, without attempting a legal description, has specific responsibilities for allocation and distribution among the two countries of the waters of the Rio Grande and Colorado Rivers. The responsibilities include supervising and carrying out allocation formulas by measurement or other monitoring procedures. Flood control and the maintenance of the rivers as boundary waters are also tasks assigned under the treaties governing the Rio Grande and Colorado Rivers. The sanitation and quality of rivers, too, under the 1944 Treaty, are matters in which the Boundary and Water Commission is involved.

The Commission has some responsibility for groundwater in relation to the Colorado River salinity agreement. Under that agreement, the Commission will study and explore the advisability of a treaty covering groundwater. Currently, the Commission is exchanging groundwater data in basins where there are problems. The salinity agreement opens the door also to the acquisition of information concerning economic development in parts of the boundary region. The Commission also has a start in the joint publication of information since it makes consolidated reports on stream-flow, water in storage, and similar data available for the use of both countries and

11. Fano, *The Role of International Agencies*, 16 NAT. RES. J. 957 (1976).
12. *Id.* at 960-65.

their citizens. These are all substantial tasks and provide a clear indication of the value and trust that the two governments place in the International Boundary and Water Commission.

But the description of the forces for change, both in the physical world as well as in the world of ideas calls for a reevaluation of the needs of the two governments for an institution capable of meeting some of the current stresses, as well as those that will certainly occur in the future. There can be little disagreement with the views expressed by Ambassador Cesar Sepúlveda that "[t]he Commission has been good, but it needs to be better in order to face imperative and serious conditions, in order to avoid conflicts or to solve them where they arise."[13]

If our concern is with the management of selected resources in the boundary region of the Mexico-United States border for the mutual benefit of the two countries, this contribution suggests that it is time to provide the existing International Boundary and Water Commission with supplementary responsibilities explicitly granted by the two governments. Such supplementation is not intended to reduce the authority of each country in the boundary region. Neither is it intended to create a supranational agency.

Whether the supplementary responsibilities are provided to the existing Commission or elsewhere, the nature of the problems along the boundary will remain as issues confronting governments. Land and its use is and will continue to be the principal determinant of many of these problems. Added economic development will result from land use. Air pollution is already an issue and will get worse with time unless alleviated. Water problems not now of concern will have to be met, both above and below the surface. And environmental factors will become increasingly important as improvements in the quality of life for all citizens is sought by the two governments.

SPECIFICATIONS

This contribution suggests that the two governments, building upon the base of the existing International Boundary and Water Commission, grant carefully specified authority to the Commission to allow it to operate, as appropriate, as a center for:

1. information collection, analysis and dissemination;
2. alerting governments to emerging problems; and
3. integrating problems of land, water and selected environmental concerns and the required planning to facilitate

13. Sepúlveda, *Implications For the Future: Design of Viable International Institutions*, 15 NAT. RES. J. 215, 220 (1975).

solutions, and when specifically authorized by governments, to engage in programs to implement solutions.

The Center

A central entity to assist the governments in planning and implementing solutions to boundary region problems should be established. Such a center would not inhibit actions or interests of states, universities, municipalities, or private agencies but would, in fact, be of assistance to them. Some of the priority tasks outlined by Fano[14] for the water sector could be undertaken, and those already underway strengthened. A comparable list of priority tasks involving land and selected environmental issues appropriate to resource management could be developed to guide the work of the center.

Information

The acquisition of information and its analysis and dissemination consistent with a set of objectives is essential if the two governments are to be kept informed of trends and developments and issues that now need resolving or may need resolving in the future. The Commisison has already shown its capacity to undertake tasks of this kind in parts of the water area.

It is recommended that the two countries vest authority in the International Boundary and Water Commission either directly, or acting as an umbrella agency with respect to other exisitng governmental planning entities (comprising federal agencies or federal/state/local cooperative arrangements) to bring together the planning activities of the boundary region as they concern land, water, and selected environmental matters, for the purpose of developing a "watching brief" over such matters in the region.

Alerting Governments

The International Boundary and Water Commission has from time to time alerted governments about potential problems as they impact on the water resources of the boundary region.

It is recommended that the two countries vest the International Boundary and Water Commission with explicit authority to advise the two countries on courses of action to be taken by them on current or potential problems. The advisories that may be made should result from the information and planning activities (the "watching brief") authorized in the previous recommendation.

---

14. *Supra* note 12.

Joint Action

The International Boundary and Water Commission operates on two levels. Each country maintains its own Commission office; yet for some kinds of information it compiles, analyzes and publishes information on a joint basis for the benefit of both countries.

It is recommended that the two countries establish a Joint Center for the purpose of carrying out the above recommendations and such other responsibilities that may be desirable in order to more effectively provide for the integration as necessary of land, water, and environmental mangement in the boundary area. The integration activities of the Joint Center would involve mulitpurpose and multiagency interests. The rate of development of such integration could proceed under a scheduled program of priorities with experience as a guide. An important aspect of the Joint Center activities should be the development of information concerning the boundary region as a whole rather than separately by countries. (The experience of the Joint Office of the International Joint Commission of the United States and Canada at Windsor, Ontario may be viewed as a guide to the implementation of this recommendation.)

A Collaborative (Shadow) Entity

The U.S.-Mexico Working Group is an example of several existing groups engaged in studies to promote the welfare of the U.S.-Mexico boundary region. The value of such non-governmental groups is high and ways need to be found to utilize their skills. Benefits are derived from the open agenda they can promulgate; the lack of restraint of legislative mandates; and the openness of their critique function. More importantly, such groups provide a continuous flow of ideas and information that benefit governmental supported entities such as the recommended center.

It is recommended that a collaborative, separate (shadow) entity be established for an initial period of five years to cooperate with and facilitate the activities of the recommended center. The composition of the collaborative entity requires definition. It is likely that university personnel will form its core. The role of government cooperation and cooperation from the private sector, including foundations, needs further elaboration by the Working Group.

SUMMARY

The forces that are impacting on the international boundary region of Mexico and the United States need to be more effectively managed. The existing International Boundary and Water Commission has

provided a very important and useful vehicle in selected aspects of the water area until the present time. The management of international problems has, however, been addressed primarily to solving highly visible, if not crisis, problems. For the future, foresight and carefully designed programs can provide a basis for action to prevent international issues from occurring with concomittent benefits to the citizens of both countries.

The problems presented along the Mexico-United States boundary are complex technical matters and are burdened by the difference in stages of economic development of the two countries. Programs and solutions to problems must recognize this difference as well as the problems of equity, technical assistance, cost sharing and financial aid.

The recommendations made in this contribution are presented to stimulate debate and discussion on the integrated management of land, water, and selected environmental problems in the boundary region of the United States and Mexico. The deliberations and final recommendations agreéd to by the Working Group can be of great value in stimulating further formal action by the two governments.

RESUMEN

Existe la necesidad de mejorar el manejo de los esfuerzos que están empaquetando en la región de la frontera internacional de México y los Estados Unidos. La Comisión Internacional de Limites y Aguas ha sido un vehículo muy importante y útil en aspectos escogidos en el área hasta el presente. El manejo de problemas internacionales, sin embargo, ha sido dirigido principalmente a resolver problemas muy evidentes, casi de crisis. Para el futuro, prevista y programas desarrollados cuidadosamente pueden establecer un basis para acciones a evitar problemas internacionales, con beneficios concomitantes a los ciudadanos de los dos paises.

Los problemas que se presentan a lo largo de la frontera entre México y los Estados Unidos no son simplemente asuntos técnicamente complejos; también necesitan la consideración de las diferencias en etapas de desarrollo económico entre los dos paises. Los programas y las soluciones para problemas deben evaluar estas diferencias tanto como los problemas de equidad, asistencia técnico, repartimiento de gastos, y ayudo monetario.

Presentan las recomendaciones que siguen para estimular discusiones en el manejo integrado de tierra, aguas, y problemas ambientales escogidos en la región frontera de los Estados Unidos y México.

1. Los dos paises deben dar a la Comisión Internacional de Limites

y Aguas la autoridad a coordinar las activades de planear en la región frontera como tratan de tierra, aguas, y escogidos asuntos ambientales con el fin de recoger información y vigilar sobre tales asuntos en la región, en una manera directa o como una agencia "paragua," sobre otros agencias gubernamentales que ya existen para planear, que incluyen agencias federales o federal/estado/local.

2). Los dos paises deben dar a la Comisión Internacional de Limites y Aguas la autoridad explicita a aconsejar a los dos paises en las acciones que se puedan tomar en problemas actuales o posibles. Estes avisos deben resultar de las actividades de informar y planear autorizadas en la primera recomendación.

3). Los dos paises deben establecer un centro conjunto para poner en acción las dichas recomendaciones y cualesquiera otras responsibilidades que puedan ser útiles a proveer más eficazmente para la integración como necesario de manejo de tierras, aguas, y ambiente para el área frontera. Las activades de integración del centro conjunto envolvieren grupos de muchas agencias y de muchas intenciones. El rato de desarrollo de tal integración pudiere proceder bajo un programa de prioridades que usan experiencia como una guía. Un aspecto importante de las actividades del centro conjunto debe ser el desarrollo de información sobre la región frontera total en vez de información sobre partes específicas.

4). Los dos paises deben establecer una agencia distinta pero colaborativa para cinco años, con el fin de cooperar con y facilitar las activades del dicho centro. La composición de esta agencia probablamente será, en mayor parte, de gente universitaria. La cooperación de gobierno y del sector privado, que incluye fundaciones, necesita más estudio.