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**MANAGING TRANSBOUNDARY WATER CONFLICTS:
THE UNITED STATES
AND ITS BOUNDARY COMMISSIONS**

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MANAGING TRANSBOUNDARY WATER CONFLICTS: THE UNITED STATES AND
ITS BOUNDARY COMMISSIONS

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ABSTRACT: The management of transboundary water resources between the United States, Mexico and Canada is changing. For about 100 years the governments have depended on two institutions -- the International Joint Commission (U.S.-Canada) and the International Boundary and Water Commission (U.S.-Mexico). Forces for change in the roles of the IJC and the IBWC involve the policy movements reflected in the phrases Environmental Management, Ecological Processes, Bio-Diversity, Sustainability of Renewable Resources, and Global Climate Change.

With Ford Foundation support, a tri-national working conference was convened to consider; Emerging Boundary Environmental Challenges; Improving Management Capacity Of Governments And Commissions; Commissions Relation To States And Provinces; Improving Public Participation; Ecosystem Management; How To Accommodate An Uncertain Future.

Summaries are presented with initial thoughts on responses to the issues. Analysis is tentative; conclusions preliminary. The project is still underway and comments are invited. Commissions Relation To States And Provinces and the resulting effects on issue resolution and implementation are examined in more detail here to illustrate the tentative nature of the work. This topic is examined in relation to decisions for local water and related resource use at transboundary areas; and to how changes are affecting the way governments are approaching some classes of international boundary issues.

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INTRODUCTION

A Ford Foundation supported research project, The United States and Its Boundary Commissions (Mexico-Canada) at the University of New Mexico International Transboundary Resources Center is responding to the intense competition for the international water resources shared by the United States, Canada and Mexico. This competition has led to the establishment of two different international commissions, providing a North American experience with water resources which are divided by political boundaries that has world wide utility. These challenges are even more pressing in the context of growing population, industrial development, trade agreements and increasing competition for scarce resources. Of equal importance in the long term is the context of temporal and spatial aspects of global climate change.

The objectives are: 1) to assist in the quest for resolution of international conflict arising from the use of transboundary water resources, and 2) to provide for the better management of these limited international resources.

The general conflict arenas are defined primarily by the transboundary regions of the three countries and the ecosystems comprising the shared water resources and the related land, air and biological resources including the social systems.

Institutional adaptation is a central theme, essential to the avoidance and resolution of conflict. It suggests the sharing of information, models, and thinking about the two North American commissions. The center piece of the project is a tri-national working conference (April, 1991) of invited participants to consider selected issues, to identify new issues, to bring new viewpoints to bear, and to start developing and synthesizing project findings. This paper and your response to it is a further step.

Major topics were Emerging Boundary Environmental Challenges; Improving Management Capacity Of Governments And Commissions; Commissions Relation To States And Provinces; Improving Public Participation; Ecosystem Management; How To Accommodate An Uncertain Future.

This paper is in the nature of a progress report. Illustrations of the questions being examined and a first cut of recommendations are presented. Each topic was considered by two writers and the suggestions from each are identified. To give more of the flavor of the conference we give more space to Commissions Relation To States And Provinces. This considers the nature of local water use decisions at transboundary areas; describes the changes taking place; and illustrates how these changes are affecting the way governments are approaching international boundary issues.

Selected Issues: (1) Rationale Guiding Recommendations: (2) Illustrations of Issues Elements Examined and Recommendations

Three themes emerged in the prepared papers. First, the two Commissions, sometimes constrained by their charters, are limited in their flexibility to respond either to new challenges or to the tasks thought important and demanded by vocal publics.

A second theme was the bundle of needs identified both by the Commissions and the watching public to meet current and emerging issues of concern to public health and welfare. This includes the natural systems with which humans evolved that are linked to future well-being and which are thought not to be of priority concern by the governments in the further allocation of authority to the Commissions.

A third recognized a North-American ecosystem. A North-American trade agreement will demand that attention be given to effective management of the water and environmental resources at boundary regions under North-American arrangements. The impacts of some actions taken in one part of the continent are seen to impact the rest. For a growing body of issues the border is expanding to include the whole.

The approach to change is cautious. This caution is based largely on a recognition of the value of long standing treaties or other agreements, and a concern to not upset, or possibly destroy, political, economic or other well established consensual arrangements that have proven valuable in the management of transnational water and environmental resources.

Former Chairman Maxwell Cohen must have had some of these concerns in mind when he presented his paper on the 70th anniversary of the Canadian/U.S.'s IJC especially when he observed that when successful the governments and the IJC have a realistic understanding and appreciation of the limits within which each may move without impinging on the proper role of the other. The standing and the work of the Commission depend upon its impartiality and independence. The credibility of the Commission in the eyes of government and the public depends upon the good sense of its judgments... Given the complexity that environmental-ecological values have imposed on all parties, and given the highly vocal public pressures from a variety of sectional interests, a certain mature understanding must be developed by the IJC on the one hand, and the governments on the other, as to how they deal with each other so as to minimize any sense of exceeding mandates at the same time as the Commission is not inhibited from exploring, in its wisdom, all the implications of issues properly before it... The Commission will be of little use to governments if it does not have wide public confidence, and it will not be able to maintain that confidence without a public belief in both

countries in the Commission's determined impartiality as well as its actual and legal autonomy.

Emerging Boundary Environmental Challenges

Questions include what new circumstances are redefining transboundary resource issues? Are new institutional arrangements needed to monitor these new conditions and to facilitate the coordination and administration of transboundary policies.

Answers to these questions involve comparative analysis of transboundary relationships using information from recent workshops on transboundary monitoring systems, early warning of adverse changes, water quality standards, uses and diversions of water, watershed protection, and ecosystem management. Environmental effects of transboundary movements of people and of trade are considered.

CALDWELL urged five options for the IJC; (1) "No significant change," (2) "Each party (government) acts to strengthen its own coordinative authority," (3) "The IJC and its Great Lakes Regional Office are given carefully limited coordinative responsibilities," (4) "The IJC is given specified executive powers with selective replacement of national agency initiatives in policy making," (5) "An autonomous Great Lakes authority is established by treaty, providing for a representative assembly, and limited powers to raise revenues and to issue and enforce regulations."

SZEKELY on the Mexico/U.S.'s IBWC notes that for groundwater "... the two governments have not yet commenced, or even planned, bilateral negotiations to agree on the rules that will govern their utilization." "...such inaction may be the first important symptom of the inability of the IBWC to deal with the new issues at hand." "...will the IBWC be adequately equipped to tackle such enormous new problems."

Attitudes expressed with regard to flora and fauna, and atmospheric issues follow the same general concern expressed for the water resource issue. However, greater stress is placed on the questions of bilateral versus multilateral arrangements, i.e., whether it still makes sense to maintain the La Paz National Coordinators and the IBWC as separate entities or "...whether a global body is possible or, necessary."

"...the three countries of North America will need to contemplate the creation of a Trilateral International Organization, entrusted with supervising the work of its members and coordinating the endeavors of their bilateral institutions in a coherent and compatible manner."

Are There Ways To Improve The Capacity And Responsiveness Of The Governments And The Commissions To Manage Transboundary Resources?

Questions include how well are the governments doing in managing boundary relations? Are they responding effectively to new and changing boundary environmental issues? How useful are the commissions to their governments? How responsive are governments to commissions; how responsive are both to the public?

The analysis considers commission use in relation to other institutional means such as diplomatic exchanges, ministerial talks for resolving transboundary problems, domestic legislation and the courts. It looks at the niche the commissions occupy in bilateral arrangements and provide some explanation of why the governments use the commissions as they do. Improvements in budget, personnel, leadership and other factors affecting capacity are explored plus other opportunities for promoting the objectives of good bilateral relations and effective responses to boundary environmental problems.

LEMARQUAND on the IJC, "Since the 1970's there has been a recurring theme that the Commission is not living up to its potential." "It has proven to be capable, independent, impartial. If given responsibility and support it could do more to realize the objective of stable boundary relations." "The Boundary Waters Treaty is inadequate to todays conditions, but it would be counter-productive to reopen it...impossible to negotiate as good a treaty today...sufficiently broad to allow the Commission to expand its role into the environmental field." "No reform should be made to confer upon the IJC management, regulatory and enforcement authority for the Great Lakes that would give the IJC supra-national authority to bind the governments."

Proposals for change include "1. setting the bilateral agenda... emerging issues (the watch dog role); setting boundary environmental quality objectives; revising orders of approval to meet changing circumstances; and calling to task the governments more vigorously for failures in meeting those objectives;" "2. giving the IJC a more formal role in transboundary environmental project assessment;" "3. performing a greater and more effective role in research and program implementation;" "4. reducing its dependence on governments for expertise and resources;" "5. encouraging greater public involvement in its work."

"Reforms should focus on what the IJC does well... not propose new functions that would alter the relationship the Commission has to its principal clients, the two governments... not likely to be dramatic, but they could prepare the Commission for increased responsibilities..." Such reforms include, the Commission's strength as "a third party advisor, a fact finder, an environmental assessment project evaluator, an overseer keeping certain types of issues off the binational agenda, a consensus builder, and

increasingly as an evaluator under the Great Lakes Water Quality Agreement ... areas of information generation in response to public and governmental needs, and in the use of objective evaluations in forcing the governments to be more politically accountable to their citizens in demonstrating progress in dealing with bilateral environmental issues."

MUMME on the IBWC "... functional expansion can be justified in terms of authority already conferred under treaty... expansion of the Commission's staff, water quality, and recreation and instream flow issues." "... issues of drought, flood, lesser surface streams and apportionment of water, and probably groundwater quality are defined as secondary... Yet they are... pressed by public opinion... The relationship of IBWC to EPA, the states, NEPA and other institutions imply needed new arrangements that IBWC should consider... any effort to address the Commission's jurisdiction and functions through international treaty should be rightly considered with a great deal of skepticism... 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."

**Is The Public Participation Process Adequate? If Not,
How Can It Be Improved?**

Questions include, is public participation having an impact on the governments? On commissions? Should more opportunity be made available? If so, how? What is the role of the several publics in decision-making? What can it be? Has experience provided a new foundation for future expectations from public participation?

The analysis considers the characteristics of openness of public participation, of public acceptance (social acceptability), of technological approval (environmental acceptability) and economic feasibility (financial acceptability) of government and commission actions.

BECKER offered recommendations in seven categories; access, constituency, credibility, soft international law, old institutions that are no longer sufficient, accountability and implementation, requirement for educated public and priorities.

Ecosystem Management

Questions include what is implied by the notion of ecosystem management? Do the traditional roles of the commissions still have a place within ecosystem management? How would the commissions roles of advising governments about potential boundary disputes be altered?

The analysis will consider the kinds of institutional changes that are required to adopt and implement ecosystem management, within and outside the traditional roles of the boundary commission.

FRANCIS on the IJC said directions are implied by "consideration of the whole" in the Great Lakes. A charter is proposed for consideration prepared by the Rawson Academy Of Aquatic Science, a value based set of goals to which the public, the IJC and the governments can subscribe.

DWORSKY proposes a pragmatic, highly specific program to achieve action toward an ecological approach to the management of the Great Lakes. Its major thrust is to avoid the incrementalist trap through participatory planning that prepares stakeholders for larger policy changes when issues generate crises and resulting policy windows then open. Planning would evolve working definitions of the specific ecosystems to be managed.

Five recommendations are; (1) develop a "state of the lakes" report from a Great Lakes perspective, i.e., an ecosystem "toward the whole" report, (2) the ecosystem needs definition to include water quality, water quantity, energy, economic development, and other environmental elements that have significant, definable impacts on each other, (3) provide a focus for leadership through an IJC Ecosystem Study Board, to explore unmet or emerging issues, (4) governments to use IJC to provide ecosystem management implementation guidance to Great Lakes governments, interests and the public, (5) no major change in Great Lakes management institutions until the nature and purpose of change becomes better defined.

How To Accommodate An Uncertain Future Through Institutional Responsiveness And Planning

Questions include what is the nature of boundary uncertainties for which governments and commissions ought to be prepared? What have we learned from experience about our ability to meet uncertainty? What new policies and new tasks need to be addressed if we are better to prepare ourselves to meet uncertainties? Are new or revised institutional initiatives called for?

In recent years new scientific knowledge in both micro and macro terms about the global environment and unprecedented shifts in national and global economic relationships have identified new forces for change of immense importance. Scenarios consider natural and man-induced change including climate warming, increased demands on finite resources, and loss of biological diversity and quality, maintenance of natural capital through sustainable development, incremental but cumulative erosion of resource potentials; and declines in water supply and quality.

SADLER identifies four building blocks for the IJC; implement existing policy, make sustainability principles operational through the ecosystem approach, reform the IJC and other bilateral institutions on the above basis, promote the science of sustainability.

Within each of these blocks apply; i. Identification of integrative concepts and indicators of sustainability, ii. Valuation of ecological goods and services, iii. Design human ecological models for simulating regional change, iv. Explore alternative instruments for environmental management in the context of achieving sustainability and coping with uncertainty, v. Investigate ... new and conventional resource and industrial technologies.

SZEKELY a wider scope for IBWC should include new mechanisms for management. (and)... "allow Mexico, Canada and the United States to have the capability of meeting..." on a trilateral basis.

How Have The Commissions Related To States And Provinces?

Questions include what changes have brought about the greater direct involvement of sub-national governments in boundary management matters? What is the nature of the new institutions established by the sub-national governments? What do the new institutions portend for the role of national governments?

The boundaries between the U.S., Mexico and Canada, far from being rigidly defined lines, have proven to be fluid concepts. The commissions were established in response to particular definitions of the boundaries, important at specific times. Pressure has been exerted to broaden their realm of activity. As a result, the size of the boundary area defined as being within their purview has been made to fit the issue under consideration. In particular, border states, provinces and other entities have become increasingly active in promoting their valid interests before the commissions. New international patterns of interaction have also emerged outside the institutional framework of the commissions in response to boundary definitions and issues which the governments and commissions themselves have not (or not yet) displayed a willingness to use. The analysis draws upon groundwater pumping, salinity, surface and ground water pollution, flow regulation, diversions and similar issues.

INGRAM and WHITE focus on the relations between Nogales, Sonora and Nogales, Arizona to explore the strengths and weaknesses in IBWC's position in dealing with repeated waste water crises. Similar situations appear to exist at most of the paired border towns. The U.S. Section of the IBWC brings to these problems a relationship with the Congress much like that of the Bureau of Reclamation and the Corps of Engineers in the 1950's. That relationship is now

under pressures similar to those that led to an extended hiatus in new projects for those agencies, particularly BuRec. Local leaders had come to expect IBWC to serve as the vehicle for federal funds to be invested in response to the water management opportunities they had identified. In addition the U.S. section of the IBWC served as the principle conduit of information about what Mexican federal authorities would or would not do in a joint approach to solve common problems, thus it earned state agency respect. For both the Congress and the local leaders, IBWC was the source of technical information on what were seen as diplomatic negotiations over technical problems. Conditions have changed dramatically.

Repeated occurrences of untreated sewage flowing in the creek beds could no longer be expected to occur without publicity. Media priorities have shifted. State and county agencies have grown in capability and expectations for their role have grown apace. Congressmen and local officials have greatly increased their concerns over border issues and have alternative channels of communication as a result. Waiting for a crisis to demonstrate that past agreements or capacity increases had now been overrun did not fit new expectations. Metropolitan, inter-municipal institutions are needed to respond to rather well understood trends.

In the last decade tens of thousands of Mexicans have moved into the region to find employment in the "maquiladoras," plants that produce largely for the U.S. market. The Free Trade Agreement promises to expand the profitability of shifting production to these low wage locations. Streams that zig-zag over the border are now recognized as part of a system that explodes the notion of a border. Nogales' water problems were never addressed in this light by the IBWC, the Congressional delegation or local officials. This institutional need for a metropolitan approach was highlighted by the most recent over loading of the treatment system, aggravated by Mexican failure to live up to agreements on sewer line extensions and maintenance. Not only will future growth complicate the problems but proposed improvements in water supply will add to sewage flows as use goes up among those now short of water. Many other actors including county and state officials took action before the U.S. Section could organize a response in the form of a stop gap plan, still not indicating steps toward a metropolitan approach.

They conclude that necessary attributes of the contemporary border decision-making arena are quite different than what led to success for the IBWC for many years. New conditions call for anticipating problems prior to an emergency, for combining social expertise with technical expertise, for open and participatory deliberation of issues rather than secrecy and closed decision-making. Capability is needed for use of a range of policy tools including participatory planning, regulation and technology transfer instead of a bias toward physical solutions.

Institutional arrangements need the capability of negotiating and funding local solutions instead of a dependance on federal action and funding, and need to carryout grass roots, informal, continuing binational communication rather than restricting communication through formal and established channels.

Creation of a regional institution of these characteristics might avoid another federal subsidy for waste producers and lead to the internalization of the costs of wastes and residuals in the price of housing and the products produced. Those who benefit from the low cost of Mexican labor should help pay the environmental costs of an exploding metropolitan region. Rather than a hinderance the border should be an asset in achieving such goals by providing the mechanism to capture attention and win a place on the policy agenda. The opportunity is no less than to serve as a model of successful regional innovation rather than the reverse.

Alternatives include a critical areas approach with an independent management entity for each designated area along the border; or a larger role for EPA, building upon the La Paz Agreement by introducing further annexes that set up new working groups with state and city representatives. Some dream of international cities with shared planning, infrastructure and officials. Obviously altering the design and mission of the IBWC deserves more debate. The debate over the Free Trade Agreement, particularly the concerns over environmental impacts that can be expected without major institutional adjustments, provides a policy window for just such adjustments in the role of the Commission.

ALLEE describes rather different circumstances on the U.S./Canadian border. The IJC has evolved some of the roles now needed by the IBWC. This may have been made easier by the fact that it has never had a direct role in construction and operation, planning and funding of water management facilities.

Sub-national governments play an important and expanding role in the way the IJC operates. Topics refereed for study by the governments, such as toxics (under the Joint Water Quality Agreement where IJC has a monitoring role), lake level control and diversions for consumptive use, are as likely to produce a policy response at the state/provincial or local level as at the federal level. For example, most of the original concern for study of diversions was expressed by the governors and premiers. Concurrent with the issuing of the IJC study results, they issued a warning to those who might covet this water supply, consistent with the state/provincial role in water allocation. The study had been carried out with substantial state/provincial input.

Phase II of the lake levels study has been turned over to a state/provincial staffed study board after a federal agency staffed board demonstrated again to the stakeholders that physical changes in the channels and structures were neither technically nor

financially feasible. Now the kinds of land use and other management adjustments that are the domain of sub-national governments are being considered in more detail including the potential roles of the IJC as an agency for technology transfer and regional organizational support. Local intergovernmental cooperation and other capacity building strategies need to be tested.

Concern for toxics that have made fish cleaning stations for sportsmen potential "Superfund" sites has produced unique state/provincial responses. Agreements have been forged between New York and Ontario on the clean up of known sites leaking toxic leachates into the system. The states/provinces have subscribed their shares of a \$100 million Great Lakes Protection Fund to support the development of innovations in toxic chemical management including a variety of social science topics. Some of the credit for these and related policies at the sub-national level must be given to the designation of multiple areas of critical concern by the IJC in each of the states and provinces and the instigation through the IJC of citizen and local official study groups to develop Remedial Action Plans (RAPs) for each area. State/provincial support of the RAPs has varied greatly but in every case there had to be an impact on the momentum of policy reform.

These activities incubate policy issues so that when crises and conflict allow policy windows to open there is a better chance for non-incremental policy changes to result. Stakeholders have been brought along in an evolutionary process that facilitates value shifts and inter-interest accommodation. IJC's "bread and butter" function is in the support of binational management boards for a variety of circumstances where negotiation at the technical level is possible because the policy and value issues have evolved to a point where a working level of stability exists and delegation to the technicians is possible. These boards are staffed about as frequently with state as with federal experts and municipal officials are frequently included. Lake level management, stream flow controls, water and air quality surveillance are the focus of most of the boards. Frequently when a dispute is referred to the IJC for resolution, it has continued to play a role in its management over the years. The federal governments have reduced their interest in using the IJC over the last decade turning to more direct bilateral negotiations. Opportunities for expanding the role of the IJC are thus substantial but uncertain.

Recommendations include expanding the RAP approach to topics other than toxic contamination sites as a means to facilitate political participation of the citizens of one country in the institutions of the other, a process well underway in other spheres and particularly important in the development of Congressional responses to joint problems. Facilitation of cross border cooperation particularly by recognizing problem solving groups

should be studied by examining the hundreds of examples that now exist where anecdotal evidence suggests that greater formalization would remove uncertainties and improve effectiveness. An independent IJC board for ecosystem reviews would prove an educational device that would spur sub-national policy development particularly if alternative dispute resolution techniques could be added to independent technical judgments. Add a mechanism to provide greater accountability for federal response to the recommendations of the IJC particularly on the U.S. side whose response is invariably the most important. The U.S. Water Resources Council could be revived to take on this among other roles. Congressional oversight may be even more important but would require more cohesiveness on water and related environmental issues by the border delegation. The growing role of the non-governmental organizations and related para-diplomacy make this a possibility.

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