1995 PHILIP C. JESSUP INTERNATIONAL LAW MOOT COURT COMPETITION

JUDGES' BENCH MEMORANDUM

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JUDGES' BENCH MEMORANDUM

Judges' Oral Argument Scoring Instructions

Each team is given 45 minutes to argue, of which no more than 10 minutes may be reserved for rebuttal or surrebuttal. No single advocate-agent shall argue longer than 25 minutes. Extensions of team time beyond 45 minutes, which in no event shall exceed 10 minutes beyond the total time allocated for presentation, shall be within the discretion of the judges. Strict anonymity of school identities shall be ensured as far as is possible. Teams shall be identified throughout the rounds only by number, not by names of schools.

During the oral argument, each judge should tentatively score each advocate-agent at the conclusion of his or her presentation. Following the argument, the judges may either retire, or may request that the courtroom be cleared by the bailiff, so that they may deliberate in complete privacy. Upon completion of their deliberations, **they shall individually and separately** mark their scoring summaries without comparisons to the scoring summaries of the fellow judges.

To the extent possible, judges are respectfully requested to evaluate each advocate independently rather than in comparison to the other advocates in the round (or, let alone those of other rounds the particular judge may have judged, previously). Each advocate is to be assigned a score between 50 and 100, inclusive. A score of 75 is considered generally to be average for the Jessup Competition.[1]

The following factors may be considered in assessing points without regard to order of importance, but are not limited to:

1) Correct and articulate analysis of the issues
2) Familiarity with international authorities
3) Responsiveness to questions
4) General knowledge of the substance and process of international law
5) Clarity of argument
6) Ingenuity of approach
7) Organization of argument
8) Persuasiveness and advocacy

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[1] Note: In the manner of the evaluation, a judge may wish to keep in mind a median standard on which to score all advocates such that the average of all the assigned scores, -i.e. a judge's personal scoring average - is 75, or close to 75. This is intended to avoid extremes, as upon completion of all scoring, the Competition Administration should be able to average out all of a particular judge's scores to reach an average score of 75, or close to 75, the targeted average score for the Competition.

9) Ability to argue by analogy from related aspects of international law
10) Knowledge of the Facts in the Compromis
11) Knowledge of the legal principles directly applicable to the Compromis

Judges should be familiar with the Statement of the Case (hereinafter referred to as the "Compromis"), the Bench Memo, and the teams' briefs (hereinafter referred to as "memorials") before assuming the bench. The judges' Bench Memo may be consulted carefully, as it is intended to provide a road map. However, the Bench Memo is not to be taken as a model answer.

Judges should penalize advocates who fail to keep within the scope of the argument. That is, the applicant's rebuttal should be limited to the scope of the respondent's argument proper, and respondent's surrebuttal should be limited to the scope of the applicant's rebuttal.

Since a team is not given any choice as to which side of the dispute it must argue in a given round, scoring should not reflect the merits of the case but should focus only on the advocacy skills and legal analysis of the participants. Additionally, inasmuch as the prayers of relief are composed of three parts, the advocate-agents should not be penalized by any judge for how the two principal advocate-agents for each side divide the parts of their argument in the main between themselves to meet the respective prayers of relief.

Judges should feel free to query advocate-agents on any point in the argument and to draw parallels to the Compromis, but should bear in mind the importance of affording the advocate-agent the opportunity to answer a question and to "make their case."

Introduction

This bench brief attempts to provide a review of the elements of the arguments likely to be presented by the advocate-agents and some additional background information perhaps useful both in the judges' evaluation and deliberation phase and the advocate-agents' argument and advocacy phases. It is urged that the judge with little background in international law, read the entire memorandum, paying particular attention to the additional, separate section on sources of international law. Others might wish to skip this section. The coverage cannot and is not meant to be exhaustive and complete, nor is it structured as an argument, in order to allow the judges latitude in formulating their own approach to questioning the participants. Some advocate-agents may present arguments not considered herein, others might approach the subject matter from a different angle, perhaps not completely anticipated herein. Creative, well-founded arguments are to be encouraged. Similarly, those who chose not to take all the elements set out below should not automatically be scored down or penalized, but should be judged according to the arguments made and according to the reasons they may advance for pursuing one or the other approach.

Advocate-agents will not have equal access to all of the source materials on the subject. Therefore, advocate-agents should not be unduly penalized for having different sources as long as those presented properly support the arguments made. It is also possible that one team may have a disproportionate amount of law on its side. This should not affect the judge's decision. Advocate-agents should be judged on the persuasive force of the argument they make with the law available.

A Brief Review of the 1995 Jessup Problem

The 1995 Jessup Problem concerns issues surrounding development and the use of transboundary water sources, in a context of transboundary pollution, state responsibility, and application of notions of equity to the issues in the Compromis to the extent the advocate-agents find such notions to exist and to be applicable in international law.[2] The claims which are the focus of the Compromis on the one hand derive from the collection, storage, and use of water from an international river,

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[2] Chemillier-Gendreau, Monique, Equity, (In: International Law: Achievements and Prospects. Ed. by Mohammad Bedjaoui. Paris, 1991, p.271- 282); Is There a Role for Equity in International Law? (Proceedings of the 81st Annual Meeting of the American Society of International Law. Boston, MA, 8-11 April 1987, p. 126-150); Sustainable Development: Changing Production Patterns, Social Equity and the Environment, United Nations Publications, E.91.II.G.5, 152 pp; Attfield, Robin, The Ethics of Environmental Concern. New York: Columbia University Press, 1983.

pursuant to a development plan sanctioned and financed by an international organization, and on the other from the transboundary pollution of the river by one of the nations which borders on the river's course, resulting from activities consistent with the development plan as approved by the financing international agency.

Although the international legal regime surrounding riparian rights has been relatively well developed, this particular setting is very much in a field which is still evolving rapidly and thus, the advocate-agents shall have to develop their arguments by analogy. An integral sub-set of questions are the balance between development, pollution prevention, or containment and remediation, and a nation's right to maximum beneficial use of its public resources, more especially its water sources. These questions arise, as the world's fresh water resources are put under increasing pressure from consumptive uses, and the conflict between pollution prevention and maximum beneficial use will escalate, as it does in the case at bar.

Behestoon will claim that Agistanus violated international law by polluting the Ozoonio River, both prior to and after the mining incident. Agistanus will claim that it has not polluted the Ozoonio, that if it is deemed to have diminished the water quality of the Ozoonio River, Behestoon would have had notice in the pre-appraisal and appraisal phase of the project that such diminution previous to the accident would not be of material consequence to Behestoon, given that Behestoon has alternative sources of supplies for fresh water from its desalination plants, and that, in any event, Agistanus has a sovereign right to develop its natural resources, which would make Behestoon's position paramount to an undue, attempted interference in Agistanus' sovereign rights. In the alternative, Agistanus may argue that even if Agistanus is held liable for the pollution following the mining incident, the liability will rest, either in part or in whole, properly at the feet of the Inter-Regional Agricultural Development Bank (IRADB) plan, as the bank failed to notify Agistanus of the existence of the toxic, subterranean waters which have caused the pollution. If put forth in this manner, this argument may be regarded a "red-herring," however, essentially for two reasons; (1) in the past, international financing agencies have not appeared, and do not appear, before the ICJ, and typically do not bear liability against third-party claims in the context of their capacity as the financing entity, and (2) Agistanus, as a nation state, would have borne state responsibility for its actions, would have had a duty of due diligence, and her apparent failure to investigate in further detail may well fall short of the proper discharge of this duty. A corollary point on the side of Behestoon is that Behestoon, being comparably more advanced technologically, and not having responded to mitigate the pollution, might quickly have seen an opportunity to "even the score" economically, by remaining relatively passive to the remediation of the pollution and ensuing environmental crisis, having lost use of the waters of the Ozoonio and having lost its effort to stave off construction of the dam.

A second point which may be raised or an approach which may be taken by one or the other advocate agent is to inject a race, or ethnicity, element into the argument. This may arise out of the events reflected in the Compromis, namely, the emigration of the Beshini several generations ago from Behestoon to Agistanus. Much has been written about the relationship between environmental law and race discrimination,[3] but this is not a central theme to this Compromis and advocate-agents, in being questioned appropriately, if they raise this point, ought to be discouraged from taking this approach.

The fact that Agistanus' manufacturing growth has helped to establish a healthy economy, virtually free of foreign debt, may give rise to the inference in the argument by one or the other advocate-agent, that if the current situation can be regularized, - a condition from which Behestoon will also certainly stand to gain, - development will catch up for Agistanus with more updated requirements, safe-guards, and utilize the latest technology, perhaps now more readily available than at the inception of the development project. If this point arises, it is of considerable importance to query the advocate-agent putting it forth, how this process may be initiated given the present legal regime and the environmental harm which has occurred, and what elements might have to be put in place to realize the legal aspects of such a complex international issue to be resolved so as to do justice to any of the contravening interests of one or the other state. The argument may then pit an argument that Behestoon be entitled to the continued, undiminished flow of water from the Ozoonio River, against a demand that Agistanus contribute to a permanent peace by perhaps agreeing to compensate Behestoon for some of the major damages which have resulted from the dam and Agistanus' development activities.

Environmental complexity and international environmental conflicts

The bench memo is also intended to familiarize the judges with some concepts for analyzing international environmental conflicts (IECs), as the 1995 Jessup Problem Compromis is intended to develop a framework to help and aid the participating international law students (and their panel of judges) in the understand ing of regional and global IECs, their evolution, development, and potential for

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[3] For some thoughts on this subject, see, Bullard, Robert D., Dumping in Dixie: Race, Class, and Environmental Quality. San Francisco, California: Westview Press, 1990; Reich, Peter L., "Greening the Ghetto: A Theory of Environmental Race Discrimination, 41 Kan.L.Rev. 272, Winter, 1992.

equitable resolution.[4]

Often, the ways in which natural resources are managed and allocated do not pay attention sufficiently to environmental side-effects of resource utilization, as a growing number of approaches to resource management are strictly short-term and need-driven, and do not fulfilbasic criteria of sustainability of development. Absent such practices, however, the goals of users at local, national, and international levels are increasingly likely not only to become incompatible, but also contentious, adversarial and hostile as to one another.

In this instance, Agistanus and Behestoon appear to be stable in the size of their population, but it is their respective national development policy which has given rise to the IEC,[5] which the Compromis attempts to exemplify.

In the Compromis there are two broad levels of conflict which can be differentiated. A *manifest* conflict might be one which is recognized and could lead to actual conflict behavior. As such, the stages in the Compromis prior to the granting by the IRADB of Agistanus' loan application might be considered to fall into this stage, because adversaries in manifest conflicts often will consider that potential costs of pursuing further their goals might be simply too high to be worth undertaking. In juxtaposition, a *potential* conflict might be one in which the respective positions may not yet be fully realized by both parties to the conflict; all the while their inherent positions are mutually incompatible, and result in conflict behavior. The stages of the Compromis, once the environmental accident has occurred and Behestoon and Agistanus are now all but forced to have to balance incompatible elements, would fall into this stage of an environmental conflict.

The world's natural resources being, for all intents and purposes, a finite entity, and not evenly distributed according to political boundaries, IECs often display many dynamics which extend beyond national borders, and involve either regional agencies (SOTO is one such example, in the case of the Compromis), or rise to the level of the United Nations (UN) or one of its constituent agencies for resolution. Thus, one can

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[4] Munro, Robert J., International Environmental Law (Collection of Bibliographic and Research Resources), Oceana Publishers (1990), 121 pp.; Guruswamy, Lakshman D., Basic Documents to International Environmental Law & World Order, a Problem-Oriented Casebook, Geoffrey Palmer and Burns H. Weston, editors, West Publishing Co. (1994), 1,200 pp.; Guruswamy, Lakshman D., International Environmental Law & World Order, a Problem-Oriented Casebook, Geoffrey Palmer and Burns H. Weston, editors, (American Casebook Series), West Publishing Co. (1994), 1,182 pp..

[5] An IEC can be understood as an area of conflict, or a series of conflicts, that arise from the utilization of natural resources in one country with environmental consequences adverse for another country, or region.

distinguish three main geographical levels on which IECs usually play themselves out:

> 1- *Local.* Resources at the local level are poorly managed, resulting in a reduction of the productive capacity of the resource base, leading to circumstances which hinder its sustainable development.[6]
>
> 2- *Regional.* When an IEC rises to a regional level, one country's national interests are at odds with those of other nations, especially concerning:
>
> - those elements of IECs which arise within national boundaries, but have regional environmental consequences,[7] and
> - those elements of IECs which relate to areas of shared use and utilization of a shared resource.[8]
>
> 3- *Global.* The extension to IECs to global realms involve the management of international commons, and often are linked to other industrialized countries in an argument framework of a North-South context.[9]

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[6] In this instance, in the context of the Compromis, the waters of the Ozoonio were being used, long before there was a larger, IRADB-sponsored development plan in place for an expanded use of this resource. At that stage the uses of the waters of the Ozoonio River appear to have supported a reasonably stable base of semi-nomadic herders in Agistanus, as well as broadly based economic development in Behestoon. It is only once a paradigm shift has taken place, that the events which follow appear to create imbalance in the natural resource base, leading to turmoil legally and internationally.

[7] In this context, the environmental deterioration of the waters of the Ozoonio River following the agricultural and mining activities in Agistanus might be considered to fall in this category, as Behestoon has previously complained of this situation.

[8] In this context, the building of the dam might be considered the central activity which affected the shared resource, apparently in favor of Agistanus, even though both countries may previously have been sharing in this resource, but in a manner which appears to have been less conflict-laden.

[9] Quite clearly, in one way the IEC in the Compromis does not quite rise to the level of a full-fledged global IEC, although with the potential involvement of SOTO

(continued...)

The relationship between demand and availability of resources, i.e. the waters of the Ozoonio River, is central to the legal question of how natural resource systems should be managed to reduce the likelihood of IECs arising, since a failure to manage natural resource systems successfully can be regarded as one major cause of environmental degradation.

The way in which a society or a state views and treats its natural resource system will determine its policies and management practices, and may be reflected in its legal argument put forth in defense of these policies and management practices. At least three perspectives can be identified, which may result in different policies, and which may reflect themselves in the arguments as put forth by the advocate-agents. These are:

> 1- *a nature benign approach*, which considers the absorptive capacity (or resilience) of one or more natural resource systems,[10] as a safeguard against environmental stress - for example pollution or extractive activities from natural resources, - to continue the existing management practice with a "business as usual" approach.[11]
>
> 2- *a nature linear approach*, which assumes that an absorptive capacity of resource systems acts as a safeguard against an **irreversible** response to environmental stress, even though the resource systems are sometimes signalling the need for early intervention, and which often results in a "wait and see" approach to natural resource management.[12]

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[9](...continued)
and the UN one might well argue that it does. Additionally, the simple fact that the toxins, if unchecked, may well end up in the world's oceans, and whether Behestoon has an obligation to stave off such an event from happening would certainly be a global extension of the argument.

[10] In the context of the Compromis, the systems represented by the waters of the Ozoonio River, and the land resources both of Agistanus and Behestoon.

[11] This approach would quite clearly not work, as there is a hazardous, toxic plume making its way down the Ozoonio River.

[12] In the context of the Compromis, this stage is reached when Agistanus proves insensitive to Behestoon's claims about the deterioration of the water quality of the Ozoonio, and, partially, due to its obligations to the IRADB following the loan (continued...)

3- *a nature non-linear approach*, which recognizes that resource systems may absorb stress through absorption capacities, conceal responses, and then generate at times "environmental surprises."[13]

Underlying all three of the approaches is the question to what degree nations require scientific proof as a prerequisite for a policy response, or legal remedy; or, in the alternative, to what degree they regard science as only one element of the many elements comprising support of a legal issue. Certain conclusions follow from one or the other position, as one effect of the latter view is that if scientific proof is uncertain, or not obtainable, the element becomes less important, than other considerations, such as equity and insurance.[14]

IECs may also be understood contextually as disputes arising out of reciprocal and collective obligations among and between states. Typically, such reciprocal obligations result from agreements which have been negotiated between two or more states and which relate specifically to identified resources and fields of activity. The Compromis reflects no such reciprocal obligation arising *ex contracto*, as Agistanus and Behestoon have not signed any bilateral treaty regarding the use of the waters of the Ozoonio River. Collective obligations, while less clearly defined, typically relate to notions of a commons and other resources which are widely shared.[15]

In the entire structure of the Compromis, equity is an important underlying principle that can be used by either side as a source of obligations between states. By extension of this argument, if so advocated, the costs from the utilization of

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[12](...continued)
agreement, turns out to be non-responsive to remedy *in any fashion* the conditions complained of.

[13] In the context of the Compromis, there is the appearance of new toxins downstream.

[14] A useful illustration of this point might be the positions taken by small island states (such as the Maldives) in negotiations for a Framework Convention of Climate Change, signed in Rio in 1992. The representatives of small island states felt they did not require any further scientific "proof" that action was called for now, and therefore concentrated their work on the development of compensatory mechanisms related to insurance and equity issues.

[15] See, Sand, P., Lessons Learned in Global Environmental Governance, World Resources Institute, Washington, DC. (1990).

natural resources would have to be shared as equitably as the advocates might argue the benefits ought to be.[16]

As the apparent gap between demand and availability of natural resources gives rise to IECs with population increases, two approaches to resource management can be distinguished in the main.

In one approach, the shortage of resources, whether real or not, is a major barrier to continued economic development, and can have severe ramifications legally and developmentally for industrializing countries, in this instance Agistanus. This approach has met with criticism, because it tends to de-emphasize human response mechanisms such as technological development and the influence of custom and culture.[17]

In the other approach, the central theme is market mechanisms as a primary tool with which to regulate resource use, on the theory and presupposition that with a rise in the price of a dwindling, or stressed, resource market forces act as a counter-balance to avoid world-wide resource shortage problems, in this instance Behestoon's approach.[18] While this may work for resources for which there exists an alternative, the applicability of such an approach to a resource for which there is

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[16] The Brundtland Report noted that developing countries should be able to derive benefit from economic growth through utilization of their natural resources, which implies the inclusion of shared resources. World Commission on Environment and Development (WCED) and its report "Our Common Future" (1987), as restated in London, April 24, 1992.

[17] See, e.g., Forrester, J.W., World Dynamics, Wright-Allen Press, Cambridge, Mass. (1970); Goldsmith, E., Allen, R., Allaby, M., Davoll, J. & Lawrence, S., Blueprint for Survival, *Ecologist*, reprinted, Harmandsworth, Penguin (1972); Meadows, D.H., Meadows, D.L., Randers, J. & Behrens, W., The Limits to Growth, Universe Books, New York (1972).

[18] Globally, a relationship between stocks and supply costs may not be possible to prove, and may be improvable on the basis of past cost trends. Even though the average, factored cost of a resource may have fallen in relative temporal terms, and although with data available in the 1970's it appeared that this trend might not continue, it has in fact done so, as in terms of cost of labor and cost of manufactured goods, resources appear to be cheaper now, in absolute and relative terms, than they were in 1975. See, Barnett, H.J., Van Muiswinkel, G.M., Shechter, M. & Myers, J.G., Global Trends in Non-Fuel Minerals. In: Simon & Kahn, eds. (1984); see also, Rees, J., Natural Resources, Allocation, Economics and Policy, Rutledge, New York (1990, 2nd edition).

no ready substitute, such as water (or potable water), cannot be accepted uncritically.

The notion that market mechanisms might act to regulate the rate of resource extraction so as to prevent a physical depletion of a semi-renewable and stock resource, - a notion which is implicit in the Compromis in the position of the IRADB, - is also questionable, as economic systems which have allowed themselves to operate on the fringes of a democratic agora and largely without self-imposed restraint or external checks and balances, have shown to have had a significant, negative, long-term impact on the environment.[19] This phenomenon has been treated until now as free goods with little or no perceived market value, and has threatened the prospects for continued global development, with individual nations, or groups of nations, being pressed into making policy decisions and taking legal positions not willing to acknowledge the factors of using the resource base.[20]

Implicit in the position and approach of the IRADB is a notion which can also be challenged by either team of advocate-agents, namely, that the physical resource, the Ozoonio River, is diverse enough to sustain production of a full kaleidoscope of what might be considered essential goods and services. The resulting resource scarcity occurs at local, national, and regional levels, as some nations are unable to import or gain access to required materials or production technology and lack the management skills as a result of the existing global economic structures. Though the degree to which either Behestoon or, more especially, Agistanus might exert control over her own, sovereign natural resources may vary, the ramifications of such control affect its developmental aspirations and future intentions of either nation or both countries.

The Compromis points to two key observations: one is related to the escalation of local conflicts into international conflicts; and the other relates to the way in which the number of parties involved in an IEC tends to increase as a conflict becomes more polarized. Since only limited studies of these dynamics are available, the particular characteristics of IECs are not readily comparable to other types of international conflicts.[21]

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[19] Nash, Roderick Frazier, The Rights of Nature - A History of Environmental Ethics, University of Wisconsin Press, 1989.

[20] See, Baumol, W.J. & Oates, W.E., The Theory of Environmental Policy, Cambridge University Press, Cambridge (2nd edition, 1988).

[21] The dearth of adequate data on IECs relates to inadequate existing conflict databases.

The dynamics of IECs and legal conflict management tools associated with

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Each side in preparing its argument will approach it in various ways and may place different emphasis and focus, ranging from *prevention* and *avoidance* for Behestoon, to *settlement* and *resolution* for Agistanus.

Prevention can be understood as an active planning process to identify sources of conflict, and to remove or minimize their cause. In the Compromis, the construction of the dam across the Ozoonio River, sanctioned as it is by IRADB, is one source of such conflict. Preventive measures might have included legal arrangements; policy charges and other activities at local, national and global levels on the part of Behestoon to diminish the potential for conflict.

Where the interests of the two opposing parties were averse as to each other, conflict *avoidance* on the part of Behestoon may have been a response level in a situation where incompatible and competing goals have emerged.

Prior to the mining incident, a prospect for conflict *settlement* may have aimed to abate later the symptoms of the conflict, but to the extent that a non-supportable agreement would probably have retained the re-emergent seed of conflict, it would have resolved nothing.

A distinction is appropriate between conflict resolution within the realm of legal obligations, and in largely unregulated areas. Countries which are parties to multilateral agreements are bound by them, and the effectiveness of such a regime is largely dependent on the identity of the signatories and a collective willingness on their part to comply as individual sovereign states. Generally, such compliance rests upon the enactment of national implementing legislation to carry out the obligations of specific international environmental agreements. The passage of such enabling legislation then depends largely on the domestic political will.

But custom and practice also give rise to international rights and obligations cognizable under international law, which in turn gives rise to different perceptions of the nature of rights and obligations established by custom and to significant problems for reaching international consensus on a particular course of action or code of conduct, anchored in international law.

As a goal in the context of the Compromis and the structure of the arguments to be presented, a *resolution* could be understood as a mutually agreeable position

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[21](...continued)
them share a number of common features. Generally, IECs undergo four phases of escalation: a first phase of *incipient conflict* which evolves into a phase of *latent conflicts*, which given certain circumstances might develop into a phase *acknowledged conflict*, finally culminating into *overt conflict*.

which eliminates the root causes of the conflict.[22]

Some Institutional Frameworks for the Resolution of IECs

The Compromis, in part, is also intended to focus the advocate-agents on ways in which international organizations, more especially the framework of the United Nations, can participate now, and might participate in the future, in preventing the occurrence of IECs, and in resolving them, once they have occurred. Though IECs have been responded to by many international organizations, such as, but not limited to, organizations and agencies of the UN, Bretton Woods institutions, regional organizations, and non-governmental organizations (NGOs), institutional arrangements which have been put in place, find themselves challenged by the complicated and complex international decision-making process which is required to address IECs effectively.

The United Nations and IECs

The UN system has attempted to build structures and institutions for many decades, to manage several types of arising conflict between the divergent interests of nations, although the UN's record in coping with these issues has not been particularly successful.[23] Despite a perhaps modest initiative in settling conflict globally, the UN has scored more fortuitously in stopping hostilities, or containing hostilities from spreading, once they have broken out. An implicit error in attributing failure to the UN structure, or to paint other inter-governmental organizations with too

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[22] The use of incentives may become necessary in recognition of the fact that environmental problems often reflect international political and legal realities, and are closely tied to economic development. Therefore, global environmental problems and their legal resolution must be also understood, addressed and settled in the North-South context. As the Compromis attempts to reflect the complex role that international environmental law might play in balancing economic growth with protection of the environment it further emphasizes the need to find new ways of addressing IECs legally.

[23] Clark, Ian, The Hierarchy of States: Reform and Resistance in the International Order. Cambridge (etc.), Cambridge University Press, 1989. VII + 253 pages.; McWhinney, Edward, The New Thinking on the United Nations and Contemporary International Law. (In: From Coexistence to Cooperation: International Law and Organization in the Post-Cold War Era. Ed. by Edward McWhinney (et al.). Dordrecht (etc.), 1991, p.18-28.)

broad a brush, arises out of the premise that such organizations might be perceived to have an autonomy which in fact they do not possess.

In looking closer at the history of the role of the UN in resolving or managing conflict, three themes can be identified, it seems: (1) UN as a helpful forum of diplomacy, in general;[24] (2) the UN involvement as legitimization of efforts at finding conflict resolution in international law;[25] (3) the UN as mediator. Unresolved, generally, as well as in the context of the Compromis, is the underlying question whether the UN structure in any one of the three roles can be conducive in the promotion of development for industrializing countries,[26] or is set up properly to develop management procedures and coping mechanisms for IECs. For example, despite the fact that such developments have led to UN resolutions and declarations, recognition of liability and responsibility for transboundary environmental degradation and pollution has remained undefined.

Historically, the UN structures were established to prevent and remove threats to global peace. In this context, the UN has found itself working increasingly on social and economic issues underlying notions of development, rather than security and conflict resolution. Although the system was intended to respond to transgressions of peaceful co-existence between states through collective security measures and to help prevent conflicts between states through organized and orderly responses, with a decline in East-West tensions, the focus has shifted more attention to a perceived, and perhaps also intended, North-South disparity.[27]

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[24] Carrol, John E.,(Ed.), International Environmental Diplomacy: Management and Resolution of Transfrontier Environmental Problems, Cambridge University Press (1990), 304pp.

[25] Falk, Richard, Explorations at the Edge of Time: The Prospects for World Order. Philadelphia, Temple University Press, 1992. IX + 255pp.

[26] See, Eghbal, M.,"*Depletion of the World Ozone Protection - True Progress: Looking For a Place Where We Can Stop*," Dickinson School of Law, 1 Dick.J.Evtl.L. & Pol'y 66 (1992), FNs 198, 211.

[27] East-West tensions in the UN which emerged in the 1950's remained unresolved, and instead underwent a transformation and subsequent emergence in the form of North-South tensions in the 1960's. With a relative decline in the late 1980's in East-West tensions, the impact of North-South tensions on many contentious issues which had remained, appeared to increase. An alteration in the balance of voting power in a UN whose membership had increased as a result of the fragmentation of the former East Bloc, and now included many new industrializing

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The Security Council

Preeminent among the many organs of the UN, the Security Council has emerged as the central security organ of the UN in conflict settlement and resolution. This emphasized status can be related to certain advantages which it has over the General Assembly - a smaller size, a certain number of permanent members, a capacity to carry on its business continuously, and the primary role assigned to it under the UN Charter.[28] With its 15-member composition, the Security Council is foremost responsible for maintaining collective peace and security, for the protection of which the UN Charter sought to restrict as much as possible the unilateral right to use force in international relations.

Recent debates on the meaning of the term 'security' have argued that 'ecological security' not only is an integral part of any concept of global security, but that it might be well to include the term as part of the Security Council's mandate. When coupled with the right to self-defense in the event of Security Council deadlocks, which is anchored in the UN Charter, this could have serious implications,[29] since Security Council actions have in recent years been plagued with a lack of consensus among its permanent members. Although the Compromis reflects that the threat to Behestoon's environmental security has tended to move her toward exploiting the chance to take unilateral action, she has refrained from doing so. In the context of international law and the decision-making process between nations, the term environmental security itself is relatively vague.[30]

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[27](...continued)
countries, tended to shift voting blocs in favor of those countries which also served to hasten a corollary and new debate over conflicts between member states over how the evolving UN system should be managed, more especially focused on the General Secretariat. A Group of 77 nations at the UN (a coalition of 77 industrializing countries, also known as the G-77) promoted an agenda in various fora and through various means which reached its summit in the mid-1970's in what has become commonly known as the New International Economic Order (NIEO).

[28] See, Riggs, R.E. & Plano, J.C., The United Nations and World Politics, Dorsey Press, Chicago (1988).

[29] Schrijver, N., International Organization for Environmental Security, *Bulletin of Peace Proposals*, vol. 20(2) (1989).

[30] But see, Security Council Resolution 668 (condemnation of Iraq's invasion of Kuwait in 1990).

The General Assembly

While the General Assembly, in the past, has been a traditional forum for a wide panoply of important legal, socio-economic, and political issues, it has become increasingly both a forum for discussion of environmental issues and the site of conflict and attempts at conflict resolution among UN members. As it is a large and at times cumbersome forum, its debate- and decision-making processes more often than not turn into booster sessions for one side or another rather than a constructive process toward promoting negotiated settlements between parties of divergent interests.

At times, the General Assembly has succeeded in initiating third party roles which have gone beyond legitimizing one position or another.[31] To assist in negotiations among adversaries, the services of the President of the General Assembly or one of the General Assembly's officers can be provided, or the General Assembly may also appoint a UN mediator, a step which may also be undertaken either by the Security Council or the Secretary General. But it must also be remembered that General Assembly Resolutions are not binding, and therefore lack judicial force.

The Economic and Social Council (ECOSOC)

As a principal organ of the UN, the Economic and Social Council (ECOSOC) has wide-ranging responsibilities and addresses coordination of social and economic issues involving the International Monetary Fund (IMF), the World Bank Group, and the Food and Agricultural Organization (FAO).[32] Yet, ECOSOC and its 54 members have played a minor role in the past as it is unable to carry out its mission at effective co-ordination when other institutions formulate and implement policy. The industrializing countries have appeared to show a preference for the plenary (Second and Third) Committees of the General Assembly and the UN Conference on Trade and Development (UNCTAD), instead of ECOSOC as a forum in which to discuss environmental and economic issues.[33]

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[31] See Riggs, R.E. & Plano, J.L., The United Nations and World Politics, Chicago (1988).

[32] Kaufmann, J., Conference Diplomacy - An Introductory Analysis, UNITAR, Martinus Nijhoff Publishers, Dordrecht (2nd edition, 1988).

[33] UN document E/1990/14, 22 January, 1990, Basic Programme of Work of the Council: Implementing Council Resolutions 1988/77 and 1989/114.

While several proposals are circulating to revive ECOSOC, it is quite apparent that it will require a considerable initiative to restore and improve its effectiveness.[34] A reform of ECOSOC has been subjected to many arguments, but these arguments have not borne any fruit. At the moment, conditions may be more conducive to reforming the Council's mission. Institutional changes which have been outlined in UNCED's Agenda 21 envision for ECOSOC a coordinating role on environmental matters, with any implications for its role in the prevention and remediation of IECs yet to be defined.

The International Court of Justice

The International Court of Justice (ICJ) at the Hague in the Netherlands is considered to be one of the judicial institutions which might lend itself to conflict resolution of IECs.[35] The UN Charter names the ICJ as one of its six principal organs, and its 15 members are selected by the Security Council and the General Assembly. AllUN members therefore are *ipso facto* parties to the ICJ statute, though previous decisions of the ICJ have no precedence value. The ICJ carries out its function independently of other UN organs, and bases its decisions on principles of international law rather than the dictates of international politics.[36]

The ICJ's role in matters of international conflict resolution, especially in the case of IECs, has been fairly weak to date, with over half of the contentious cases it has considered having gone to adjudication on the merits. The remainder was dismissed either on grounds of lack of jurisdiction, lack of standing to raise the legal issues, at the request of the parties themselves, or because of a defect in procedural issues. In the case at bar, there are not apparent jurisdictional issues, as the

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[34] See, Schrijver, supra.

[35] See, Riggs and Plano, supra; Evensen, Jens, *The International Court of Justice Main Characteristics and Its Contributions to the Development of the Modern Law of Nations*, 57 Nordic Journal of International Law 3-28 (1988); Janis, Mark W., The International Court, (In: International Courts for the 21st Century. Ed. by Mark W. Janis. Dordrecht (etc.), 1992, p. 13-41); Jennings, Robert, *The Role of the International Court of Justice in the Development of International Environment Protection Law.* 1 Review of European Community and International Environmental Law 240-244 (1992); Degan, Vladimir-Djuro, *Customary Process in International Law.* 1 Finnish Yearbook of International Law 1-76 (1990).

[36] While the ICJ's organization and power are founded on the UN Charter, Article 92 and 96, they are also grounded in the ICJ Statute, a multilateral treaty which serves as the court's constitution.

Compromis reflects that both countries have agreed to accept the jurisdiction of the ICJ in their particular case.[37] An additional weakness is the fact that the ICJ lacks effective procedures to ensure compliance with its judgments and has no direct application to private entities. Although international courts and arbitration tribunals are prepared to interpret and apply international law, generating considerable sources of persuasive legal authority in the process, sovereign states are reluctant to accept compulsory jurisdiction over disputes that might evade negotiated settlements.[38] The illustrated weaknesses in the international legal regime cannot be remedied simply by calling for stronger institutions, which could not survive in any event without a firm foundation in widely held values. Judicial settlement and the effectiveness of international law will therefore continue to rely heavily on the particular position a sovereign state might take in regard to its natural resources, and the approach it might favor in the resolution of international environmental conflicts.

A variety of proposals have been made to establish a special International Environmental Court and to relate it to relevant environmental instruments for the expressed purpose of conflict settlement, or, in the alternative, the creation of a special chamber of the ICJ which would specialize in environmental law. The Hague Declaration has also considered promoting a new institutional authority which could be created either with the establishment of a new institution, or by re-formulating the functions of existing ones. In this regard, the WCED advocated a more active role for the ICJ.[39]

While Articles 92-96 of the UN Charter provide that "the Court may from time to time form one or more chambers, composed of three or more judges as the Court may determine, for dealing with particular categories of cases; for example, labor cases and cases relating to transit and communications,"[40] the ICJ has indicated in the past that it might consider establishing a special chamber for environmental law.[41]

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[37] Guilds, John C., *"IfIt Quacks Like a Duck": Comparing the ICJ Chambers to International Arbitration for a Mechanism of Enforcement.* 16 Maryland Journal of International Law and Trade 43-82 (1992); Chatterjee, Charles, *"The Rainbow Warrior" Arbitration between New Zealand and France.* 9 Journal of International Arbitration (No.1) 17-28 (1992).

[38] See, Riggs and Plane, supra.

[39] See WCED (1987), supra.

[40] Statute of the ICJ, Article 26, para.1.

[41] Report from the ICJ to the 41st Session of the UN General Assembly, 1985.

The Permanent Court of Arbitration

The Permanent Court of Arbitration (PCA), established by the Hague Convention for the Pacific Settlement of International Disputes of 1899 and 1907, shares many of the ICJ's limitations.

Following the establishment of the ICJ in 1946, the PCA continued to operate with a roster of arbitrators and an arbitration process for resolving international conflicts. The arbitration process provides an alternative for nations which may want to avoid international adjudication of their particular case. Since 1970, no new cases have been submitted to the PCA, though the process remains viable for the settlement of IECs, despite the fact that the PCA has not been discussed as an active supplement to the structure of the ICJ.

The United Nations Secretary General

The Secretary General is the sole person who can speak on behalf of the entire organization. That the role of the Secretary General has been increasing in its importance and is generally expected to do so, is further reflected in an excerpt from the *Washington Post*:

> "[He] should ... lead the institution in its enhanced role to actively maintain international peace ... manage, motivate, root out ineptitude and cronyism and reorganize an institution in which the proliferation of jealous, independent agencies has created managerial chaos ... define a leading role for the UN in the intertwined economic and environmental concerns, from debt and development to global warming, that can only be dealt with at the global level and that will increasingly determine [a] nations' security and [sense of] well-being."[42]

The UN Charter provides for the Secretary General to have a role in the settlement and resolution of international conflicts, which may also include IECs.[43]

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[42] Mathews, "A Strong Secretary General to Reshape the UN," *Washington Post*, Washington, D.C., January 28, 1987.

[43] UN Charter, Articles 98 and 99.

The United Nations Environment Program (UNEP)

The mandate of the United Nations Environment Program (UNEP) is to coordinate environmental action throughout the UN system, to lead in this regard and to be a catalyst for programs and projects of other international organizations. Its greatest strength lies in the areas of monitoring, assessing, reporting, and developing actions plans, initiating new legal instruments and giving assistance to build environmental competence in industrializing countries.

In a draft paper to the 16th Governing Council of UNEP, the secretariat pointed out that UNEP's mandate and wide experience make it well-suited to making a substantial contribution in the area of conflict resolution, and that the UN General Assembly empowers the Governing Council to assist in the resolution of environmental conflicts, to keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate considerations by the respective governments.[44]

The Manila Declaration on Peaceful Settlements of International Disputes also implicitly provides for UNEP having a role, as it refers to "utilizing ... the subsidiary organs established by the General Assembly in the performance of its functions under the Charter" as an option for early peaceful settlement of disputes.[45]

The UNEP has long been involved in the prevention of environmental conflicts, through activities such as the UNEP Regional Seas Programme and the Action Plans for Shared Lake and River Basins, just to name two examples which are designed to anticipate and avoid environmental conflicts.

During UNCED, the establishment of an "Inquiry Commission" for the resolution of IECs was proposed, which, once established, could benefit from UNEP's experience. A framework for a dispute prevention and settlement service under the UN has also been suggested,[46] and has been supported in many substantive proposals for the participation of a third party in the resolution of the IECs.

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[44] UNEP, GC (1991).

[45] UN General Assembly Resolution 37/10, UN, New York.

[46] Stein, R.E., & Cormick, G.W., "Elements of a United Nations Environment and Development Dispute Resolution and Settlement Service," a paper presented for the consideration of the Preparatory Committee and Secretariat of the United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, July 1991.

Bretton Woods Institutions

Bretton Woods Institutions include the International Monetary Fund (IMF) and the World Bank Group, which consists of the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), the International Center for Settlement of Investment Disputes (ICSID), and in the case of the Compromis the fictitious Inter-Regional Agricultural Development Bank (IRADB).[47]

In the context of the Compromis in particular, and IECs in general, the IMF has less relevance than the World Bank Group (the IMF's primary concern being financial and foreign exchange related). The IBRD (World Bank) functions as a special agency within the UN regime and is involved in its own "fund-raising" and decision-making processes. Through its massive capital transfer, with the cooperation of its two affiliates (IFC and IDA), the IBRD has assumed a central role in global efforts to stimulate development. These efforts have come more recently under attack and have been criticized for having apparently contributed to environmental impoverishment and a crisis in on-going development projects.[48]

Playing a crucial but controversial role in the policy development of its borrowers, the World Bank has therefore come increasingly under scrutiny due to a perceived insensitivity of the need for concerted and coordinated action to safeguard the environment in harmony with the borrower's requirements and aspiration for social and economic development. The Compromis attempts to exemplify this further, by the "profit-motive" which appears to drive the IRADB's decision to lend to Agistanus, the IRADB's rather stringent conditions which it imposes on the borrower, and the fact that the IRADB's team of experts appeared to have known of the subterranean sources of water which become the source of the pollution in the Ozoonio but failed to bring this important detail in the work of the surveying team of experts engaged by Agistanus to the attention of the Government of Agistanus, even if that may have meant that the loan agreement may not have been signed and consummated. The corollary point is Agistanus' apparent failure to exercise due diligence and to familiarize herself with *all* aspects of potential liability in the pre-appraisal and appraisal phase of the project.

In an endeavor to address such criticisms, the World Bank has in recent years taken several steps to develop a more environmentally responsive lending portfolio

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[47] The IMF and the World Bank were established under the Articles of Agreement drawn up at the Bretton Woods Monetary and Financial Conference in 1944.

[48] See Rich, B., Mortgaging the Earth: The World Bank, Environmental Impoverishment, and the Crisis of Development, Beacon Press, Boston (1994).

which also requires environmental impact statement procedures and relevant environmental policy guidelines.[49]

One of the important roles for the World Bank is to make environmental management concepts an integral part of its operations, especially through project financing.[50] Although structural adjustment lending, as in the case of Agistanus in the Compromis, has not paid specific attention to environmental issues, it can have implications for environmental management and conflict prevention (e.g., through reforms which reduce subsidies for energy and pesticides). Following the severe criticism of its operations and lending practices, the World Bank appears to have made an effort to anticipate better the effects of adjustment policies on the environment, and to design its interventions accordingly in a more responsive manner. However, the process is far from complete or satisfactory, as in the intervening time the stress on the natural resources of many of the borrowing

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[49] In this regard, the World Bank created a central Environmental Department as well as regional environmental units; increased staff resources assigned full-time to environmental matters about tenfold when compared to staffing nearly a decade ago; developed Environmental Assessment Procedures for application in all projects with any likely environmental implications; prepared Environmental Issue Papers for most of its active borrowers, to assist them in developing their own national Environmental Action Plans; set up an Environmental Technical Assistance Program to speed up preparation of environmental projects; participated in the set up of the Global Environmental Facility (GEF) together with UNDP and UNEP to cover additional costs compared to lending and traditional development assistance related to biodiversity, global climatic changes, the stratosphere, and international water systems.

[50] For a sampling of recent reports from the World Bank about changes in its environmental approach and policy development: Keck, Andrew; Sharma, Narendra P.; & Feder, Gershon, Population Growth, Shifting Cultivation, and Unsustainable Agricultural Development: A Case Study in Madagascar, World Bank Discussion Paper 234, March 1994, 78pp. (ISBN 0-8213-2793-3); Development Issues: Presentations to the 48th Meeting of the Development Committee, Washington, D.C., April 26, 1992, May 1994, 158pp. (ISBN 0-8213-2870-0); Goodland, Robert, & Edmundson, Valerie, (eds.), Environmental Assessment and Development, A World Bank Symposium, June 1994, 174pp. (ISBN 0-8213-2762-3); Kirmani, Syed, & Rangeley, Robert, International Inland Waters: Concepts for a More Active World Bank Role, World Bank Technical Paper 239, June 1994.

countries has also risen proportionately.[51]

While it is important to bear in mind that the bank has no explicit mandate *per se* actively to settle or resolve IECs, its more recent development and perceived changes in approach and conduct may perhaps be interpreted as the Bank's understanding of an expanded role also to resolve IECs as part of its traditional role.[52]

Management of International Environmental Conflicts (IECs)

Since the 1970's, there has been significant increase in efforts to devise international obligations to protect the environment from ever-increasing encroachment by human development and to manage shared resources through formal legal arrangements. Approximately two-thirds of all international environmental agreements have been negotiated since then, with the number growing both regionally and globally. Although more difficult to quantify, most preventive measures taken to date are comprised more of informal and voluntary initiatives.

The World Commission on Environment and Development (WCED) and the report "Environment Perspective to the Year 2000 and Beyond," both emphasized a need for prompt and timely information before the onset of activities which are likely to have significant, adverse, transboundary effects on the environment,[53] in order to enable countries which might be affected by these activities to participate in prior evaluations of the potential environmental consequences. This exchange of information, which is sometimes referred to as a "Principle of Transparency," ought to be considered routine for activities that may have significant adverse effects on the

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[51] For a shift in the World Bank's environmental strategy beginning in 1987/88, see Warford, J. & Ackerman, R., Environment and Development: Implementing the World Bank's New Policies, *Development Committee*, No. 17, World Bank, Washington, D.C. (1988).

As economic development and environmental issues are closely inter-twined, economic development may be understood as both a cause of IECs and a potential way of resolving them. This is reflected and implied in Agistanus' position, just previous to submitting the dispute to the ICJ. For example, the World Bank has played an important role in mediating conflicts over international river systems, such as the Indus River Basin in the 1960's.

[52] See also Biswas, A.K.,*Shared Natural Resources*, in: Dupuy, J.-R. (ed.), The Settlement of Disputes on the New Natural Resources, Martinus Nijhoff Publishers (1983).

[53] UNEP (1989a).

environment. Furthermore, developing contingency plans between countries may increase the likelihood of remedial co-operation in case of accidents or damage resulting from environmentally hazardous activities, such as the mining project in the Compromis.

WCED's report in 1987 (Our Common Future) stressed the need for the sharing of resources by appropriate international organizations and for the employment of the most current monitoring technology available, so that a reliable early warning system for environmental conflicts and risks might be put in place. The Commission recommended the establishment of a *Global Risk Assessment Program* to include the following elements:[54]

- identification of threats
- assessment of causes
- provision of reports and advice

But the Commission omitted to elaborate the elements and details which such an international environmental early warning system might require.

UNEP plays an important role in environmental risk assessment and monitoring, arising out of its legitimacy and credibility in the field.[55] To fulfill its mission and to anticipate, monitor and assess changes in the condition of the

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[54] D]Js, B., Environmental Issues Requiring International Action, International Institute for Applied Systems Analysis, Luxembourg (1991).

[55] In 1992, despite an unclear mandate, the United Nations Conference on Environment and Development (UNCED) agreed that an international "Green Cross" organization be established. Previously, at the UN General Assembly in 1988 (and the following year in ECOSOC), a proposal by the former General Secretary of the former Soviet Union, Mikhail S. Gorbachev, to establish a UN Center for Emergency Assistance was tabled. The proposal envisioned a center which could send experts on very short notice to areas damaged by IECs, ready to give advice and support in formulating an emergency response and to coordinate its implementation, with a suggestion that the group include lawyers to consider early on the legal problems from transboundary conflicts (with a dangerous action register be added to and regularly maintained and updated by the Center).

In 1991 in Nairobi, support for a coordinating role of UNEP in IECs was given to the Executive Director. Any distinction between the "Green Cross" and the UN Center for Emergency Assistance is not quite clear yet, and there is concern about the overlapping mandates of the two prospective organizations.

environment and natural resources, UNEP will need greater resources, because environmental emergencies may ripen into full-blown IECs.[56]

Development of "Soft Laws"

Recently, a variety of resolutions, guidelines, recommendations, and standards have been established, collectively often referred to as 'soft laws.' Non-binding, but significant just the same, the term is used to distinguish such arrangements from more formal arrangements, such as conventions and treaties. UNEP has contributed considerably to the development of international environmental guidelines, norms and recommendations, which have been approved by both the UNEP's Executive Director and the UN General Assembly. Despite their non-binding nature and the fact that states have the freedom to accept or reject them, they are often followed and, it may be argued, they have reached the respected status of custom. It may also be argued that such proposals may be understood as a requisite preliminary step toward a formal, outwardly manifest, and legally binding instrument.[57] Easier to adopt than conventions, soft laws are immediately applicable and work well as long as participating countries believe that the benefits outweigh the costs.[58] These proposals also may set initial guidelines not only for the management of shared

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[56] Nanda, P., *Trends in International Environmental Law*, 20 California Western International Law Journal (1990); Bragdon, Susan H.,*National Sovereignty and Global Environmental Responsibility: Can the Tension Be Reconciled for the Conservation of Biological Diversity?* 33 Harvard International Law Journal 381-392 (1992); Malinverni, Giorgio, The Settlement of Disputes within International Organizations. (In: International Law: Achievements and Prospects. Ed. by Mohammad Bedjaoui. Paris, 1991, p. 545-587); Population, Resources and the Environment: The Critical Challenges. United Nations Publications, E.91.III.H.1, 154pp; Carson, Rachel, Silent Spring. Boston: Houghton-Mifflin, 1962.

[57] A Hard Look at Soft Law. (Proceedings of the 82nd Annual Meeting of the American Society of International Law. Washington, DC, 20-23 April 1988, p.371-395.);
Sztucki, Jerzy, Reflections on International "Soft Law". (In: Festskrift till Lars Hjerner: Studies in International Law. Stockholm, 1990, p.549-575.); Burhenne, W.E., & Jahnke, Marlene, (editors), International Environmental Soft Law: Collection of Relevant Instruments, Nijhoff Kluwer Academic (1994), 304 pp.

[58] On environmental issues, see The World Bank's World Development Report (1992).

resources in a manner of harmonizing differing environmental demands and standards, but also for the management of IECs.

Many IECs are caused by the escalation of local conflicts arising out of a use of natural resources and the environment, which cannot be sustained and which emphasizes the crucial role national institutions play in preventing IECs from occurring. In the context of the Compromis, which is silent as to these points specifically, but allows an inference in either way, Agistanus, for example, may have appropriately developed its own response mechanism, and Behestoon may well have also had a member on the teams which undertook the surveys, the project pre-appraisals and appraisal, but apparently neither did.

Compensation

Financial compensation as a mechanism may be applicable in both prevention and resolution of IECs. Legal instruments whose scope is limited to technical standards and theories of liability are probably inadequate in this context because of the complexity of the issues underlying them. The much broader elements in the context of North-South issues relate to the availability of financial resources; transfer of technology and access to natural resources and markets are an integral part of a state's effort to comply with international obligations which aim to protect shared resources.[59] Such broader structural issues, for example, can be found in the negotiations for the Montreal Protocol, the Basel Convention, the UN Economic Commission of Europe (ECE) Convention on Transboundary and Long-Range Air Pollution, as they were also found in the negotiations for the Global Climate Convention and Biodiversity Convention.[60] They reflect a real-world pragmatic approach to the manner in which environmental and natural resource issues must be addressed legally.

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[59] Koskenniemi, Martti, *Peaceful Settlement of Environmental Disputes*. 60 Nordic Journal of International Law 73-92 (1991); Malinverni, Giorgio, The Settlement of Disputes within International Organizations. (In: International Law: Achievements and Prospects. Ed. by Mohammad Bedjaoui. Paris, 1991, p. 545-587.); Shinkaretskaya, G.G., *Peaceful Settlement of International Disputes: An Alternative to the Use of Force*. 26 Coexistence 39-52 (1989); Carrol, John E., (Ed.), International Environmental Diplomacy: Management and Resolution of Transfrontier Environmental Problems, Cambridge University Press (1990), 304 pp.

[60] Allrecognized the importance of transfer of financial resources and technology to less industrialized countries as an appropriate form of compensation. See Preparatory Committee meetings and the UNCED Conference Reports in Rio, June 1992.

Legal Aspects of IECs

A gradual shift can be perceived in the legal management and response to IECs, from a setting where there once were *polluters* and *polluted countries* to a situation where most countries can be seen as *outlaws* and all are *victims*. In the traditional view, conflict management was used to gain access and control over political, legal and economic resources. This has changed to a scenario where the following questions loom large: who is the most *responsible*, who should pay the most, and who is the most *affected* and should be compensated the most? The central issues of liability and compensation, for example, are therefore quite evident in the continuing negotiations for global conventions on climate and biological diversity, and may be used analogously by either advocate-agent of Behestoon, respectively Agistanus, in support of their respective positions.

A changing perception has left an indelible mark on the juxtaposition between the rights and interest of individual states and a growing awareness of the existence of certain international obligations concerning the environment.[61] Advocate-agents should be queried as to the scope of this change. In contrast to centuries of custom and practice guided by the principles of national sovereignty,[62] the past quarter century bears witness to an increasing preparedness among states jointly to explore ways of fostering international environmental cooperation.[63] Such willingness may

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[61] Abi-Saab, Georges, Permanent Sovereignty over Natural Resources and Economic Activities. (In: International Law: Achievements and Prospects. Ed. By Mohammad Bedjaoui. Paris, 1991, p.597-617); Halperin, Morton H., David J. Scheffer and Patricia L. Small, Self-Determination in the New World Order. Washington, DC, Carnegie Endowment for International Peace, 1992. XIV + 177pp.; Bedjaoui, Mohammad, The Right to Development. (In: International Law: Achievements and Prospects. Ed. by Mohammad Bedjaoui. Paris, 1991, p. 1177-1203).

[62] Abi-Saab, Georges, supra. (In: International Law: Achievements and Prospects. Ed. By Mohammad Bedjaoui. Paris, 1991, p.597-617); Clark, Ian, The Hierarchy of States: Reform and Resistance in the International Order. Cambridge, Cambridge University Press, 1989. VII + 253 pages.

[63] Koskenniemi, Martti, *Peaceful Settlement of Environmental Disputes*. 60 Nordic Journal of International Law 73-92 (1991); Shinkaretskaya, G.G., *Peaceful Settlement of International Disputes: An Alternative to the Use of Force*. 26 Coexistence 39-52 (1989); McWhinney, Edward, The New Thinking on the United Nations and Contemporary International Law. (In: From Coexistence to Cooperation: International Law and Organization in the Post-Cold War Era. Ed. by Edward McWhinney (et al.).

(continued...)

be interpreted to reflect an acceptance and understanding of obligations over shared international environmental interests and the need for their existence alongside traditional sovereign rights. In the context of the Compromis, Agistanus willprobably attempt to resist such a notion, while Behestoon willprobably be an exponent of this approach.

While this has led to significant development in the areas of international environmental law and the international legal regimes for the protection and management of natural resources are not new, widespread enactment of such agreements is a relatively recent development and lags behind the development of many national environmental legal regimes.[64] The significant increases in international environmental awareness evolve as a result of important contributions made to its development by the scientific community.

Notwithstanding its considerable progress, an international legal regime still has limited authority to legislate, adjudicate, or enforce legal rights and obligations, as there is at present no single body of authority in international law to undertake any one of these functions, let alone all three. Therefore, because a development of effective conflict resolution regimes is stymied by a lack of international adjudicative and enforcement authorities, the effectiveness of international environmental law should not be overrated by the advocate-agents.

Treaty laws

As a principal source of legally recognized rights and obligations existing between states, multilateral agreements have two significant limitations, for (1) they are binding only on the signatories, and (2) are effective only to the extent implemented by each of the signatories. Furthermore, since the international legal system lacks

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[63](...continued)
Dordrecht (etc.), 1991, p.18-28.); Birnie, Patricia, & Boyle, Alan, International Environmental Law, Oxford University Press (1993), 500 pp.; Adede, A.O.,International Environmental Law Digest: Instruments for International Responses to Problems of Environment and Development 1972-1992, Elsevier (1993), 584 pp.

[64] Guruswamy, Lakshman D., Basic Documents to International Environmental Law & World Order, a Problem-Oriented Casebook, Geoffrey Palmer and Burns H. Weston, editors, West Publishing Co. (1994), 1,200 pp.; Guruswamy, Lakshman D., International Environmental Law & World Order, a Problem-Oriented Casebook, Geoffrey Palmer and Burns H. Weston, editors, (American Casebook Series), West Publishing Co. (1994), 1,182 pp..

an independent enforcement authority, the global community is largely dependent on voluntary compliance to secure the terms of an international agreement.[65]

Despite several drawbacks, e.g., a usually slow and lengthy process of negotiation, and the fact that international legal instruments usually reflect only the lowest common denominator required to reach an agreement, such instruments are indispensable for creating binding and compelling rules and regulations in situations where there are conflicts of interest.[66]

Customary law

A second principal source of legally recognized international rights and obligations is customary practice. However, the fact that different states interpret differently the nature of rights and obligations which are established by custom is generally an obstacle in the process of reaching a consensus on what course(s) of action or codes of conduct to follow, more especially in the case of IECs and the Compromis.

The Stockholm Declaration

Adoption of the Stockholm Declaration in 1972 which was considered a landmark in developing the global community's growing awareness of the many environmental problems arising from the development of natural resources and their complexity and inter-relatedness of these problems confirmed the need for common and concerted action to be taken to protect the environment.

Principle 24 of the Stockholm Declaration stresses a duty of governments to cooperate by way of multilateral or bilateral agreements, or any other appropriate means for the purpose of controlling, reducing, or otherwise eliminating adverse environmental effects. Principle 21, which has often been referred to in the same

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[65] With an increasing body of evidence of such compliance, an equally growing number of states have begun to adopt legislation designed to define and implement their own obligations under international environmental agreements. One such significant recent example of a broadly based enactment of national legislation followed the commitment undertaken by the signatory parties to the Montreal Protocol to phase out the production and use of ozone-depleting chemicals, and has resulted in passage of national implementing legislation in unprecedented numbers.

[66] Guidelines for the Preparation of National Master Water Plans. United Nations Publications, E.899.II.F.17, 92-1-119549-7, 163pp.; Treaties on Utilization of International Water Courses for Other Purposes Than Navigation: Africa. United Nations Publications, B.84.II.A.7,92-1-104225-9, 130pp.

document, states explicitly: "States have, in accordance with the Charter of the UN and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction."[67]

Despite the fact that the Principle is found as part of the non-binding text, there are many indications that it has become a rule of customary law. Principle 21 has also been referred to and reaffirmed in several declarations and international conventions which were negotiated since the adoption of the Stockholm Declaration. One such example is the 1979 Geneva Convention on Long Range Transboundary Air Pollution (LRTAP) which referred to Principle 21 as "expressing the common conviction of States."

While Principle 21 did not represent revolutionary new thinking on the subject of states' obligations to refrain from actions within their territories that could cause environmental harm to other states, similar obligations have indeed been recognized in the past in 1941 in the Trail Smelter arbitration,[68] in the 1957 Lake Lanoux arbitration between France and Spain,[69] and in the 1968 Gut Dam arbitration between Canada and the United States.[70] These cases applied the principle of "good neighborliness" and recognized an obligation of states to ensure that activities under their jurisdiction do not cause damage to the territory of neighboring states. Agistanus may rely on the first part of Principle 21, and insist on her sovereign right to develop her natural resources, while Behestoon may raise the complete language of the same principle in her argument to seek redress for the ills complained off in the Compromis.[71]

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[67] UNCHE (1972).

[68] Trail Smelter: UN Reports on International Arbitration (UN IAA), vol. 3 (1949).

[69] Lac Lanoux: UN IAA, vol. 12 (1957).

[70] Erades, L., *The Gut Dam Arbitration.* Nederlands Tijdschrift voor Inter-nationaal Recht, vol. 16 (1969).

[71] For a discussion of some of these approaches and concepts underlying them see also, Bedjaoui, Mohammad, The Right to Development. (In: International Law: Achievements and Prospects. Ed. by Mohammad Bedjaoui. Paris, 1991, p. 1177-1203; Bourne, Charles B., Protecting the Environment: Fresh Water Resources. (In: From Coexistence to Cooperation: International Law and Organization in the Post-Cold War Era. Ed. by Edward McWhinney (et al.). Dordrecht (etc.), 1991, p. 128-141.)

State responsibility and liability

State responsibility and liability are complex issues, and highlight the present inadequacy of international environmental law when addressing environmental problems, especially those with global implications.[72] While the principles of responsibility and liability are generally accepted, the practice varies especially where common natural resources are concerned.[73] No agreement was reached at the Stockholm Conference over liability in international environmental conflict resolution.[74] In fact, Principle 22 which concerns state cooperation in the development of international law concerning environmental obligations and liabilities, gave only minor reference and treatment to the subject, since in the past state have resisted regimes that could imply "state liability" for environmental damage. One explanation for this is in part because the parties responsible in cases of environmental damage ('polluters') more often than not are private entities (individual or corporate) rather than entities of the government. In the case of the Compromis, there is no indication that the entities operating in Agistanus are such private entities. Rather, it may be inferred that the businesses operating in Agistanus following the start of the development program are semi-governmental entities. Thus, not surprisingly, liability avoidance is as important to sovereign states, such as Agistanus and Behestoon, as it is deemed to be otherwise for private individuals and companies.

A major hurdle in establishing liability is that it is almost impossible to quantify accurately harm caused to the victims - more especially in the case of pollution emissions, whether air-based or land-based.[75] Even when the source of pollution

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[72] Vicuna, Francisco Orrego, State Responsibility, Liability and Remedial Measures under International Law: New Criteria for Environmental Protection, 1991 manuscript; Dupuy, Pierre-Marie, *Dionisio Anzilotti and the Law of International Responsibility of States*. 3 European Journal of International Law/Journal europeen de droit international 139-148 (1992); Falk, Richard, The Environmental Law of War: An Introduction. (In: Environmental Protection and the Law of War: A "Fifth Geneva" Convention on the Protection of the Environment in Time of Armed Conflict. Ed. by Glen Plant. London-New York, 1992, p.78-95); Wolpin, M.D., Third World Military Roles and Environmental Security, International Peace Institute, Oslo, Norway (1990).

[73] Nanda, supra.

[74] UNCHE (1972).

[75] Cf., Levy, R.E., *International Law and the Chernobyl Accident: Reflections on an Important, but Imperfect System*, 36 Kansas Law Review 81 (1987). See also Levy. (continued...)

or degradation appears to be easily traced, liability claims may still not arise. Experts in international law, for example, now consider it unlikely, in the case of the Chernobyl nuclear accident, that Russia will compensate other nations for damage caused by the accident, or even that the victim states will file for compensation.[76]

A lack of an authoritative international legislative regime limits the development of binding international legal rules, and leads to uncertainty over international rules of responsibility and liability of states for transboundary environmental degradation, resulting in a lack of adjudicatory and enforcement powers and in a limitation of the effectiveness of any resolution mechanisms of IECs.

In contrast to the above statement, international environmental law has progressively expanded its scope and has encompassed new areas and resources. At first, complimentary principles prohibiting pollution and assigning responsibility were limited to the protection of a territory and to the resources of the states it contained. Later, they were extended to cover also protection of the marine environment as well, - to include the high seas. Most recently, the scope has been yet extended further to include the protection of common areas, resources, and the environment as a whole.[77]

Questions of liability and state responsibility become even more complex when addressing common resources where a causal nexus may be difficult to establish, because the effects of long range pollution may either be noticeable only over considerable distance, or areas, or after considerable time having passed; as an example topics like the depletion of the ozone layer, a potential rise in the sea level associated with global warming, increase in desertification, deforestation, the effects of acid rain all may have a distinct impact on a locale or region, but their causal links are not always immediately and readily recognized, nor is it always possible to establish their linkage directly to one or the other event.

Thus, in the context of the Compromis, the occurrence of the new toxins once the plume travels downstream could fall into this scenario, as it is not clear, and left open to argument, whether Agistanus bears responsibility for this part of the crisis

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[75](...continued)
B. & Hertzmann, C., *Environment and Health in Central Europe*, In: WRI et al., *World Resources 1992-1993*, Oxford University Press, New York and Oxford (1992).

[76] Ibid.

[77] Hargrove, Eugene C., Foundations of Environmental Ethics, Englewood Cliffs, New Jersey, Prentice-Hall, 1989; Nash, Roderick Frazier, The Rights of Nature - A History of Environmental Ethics, University of Wisconsin Press, 1989; Rolston III, Holmes, Environmental Ethics: Duties to and Values in the Natural World, Philadelphia, Temple University Press, 1988.

and the occurrence of polycyclic aromatic hydrocarbons, or whether Behestoon might not also be responsible, having added waste to the river. Several international conventions establish responsibility or liability and concern common resources,[78] even though the petitioner or respondent may be neither a signatory nor a party, to rely on them the advocate-agents would have to make a persuasive argument to the bench that their considerable number and their content may be regarded as evidence of the notions the conventions contain having become part of customary international law.

International responsibility relates largely to unlawful acts and the theoretical underpinnings of international liability encompasses both lawful and unlawful acts, and has recently focused particularly on lawful acts in the international context. During the preceding quarter century, the International Law Commission of the UN has endeavored to codify rules of liability for acts which might fall in this category.

A state's actions which violate the prohibition of pollution against another state or the global commons, might fall into three categories imposing responsibility or liability upon a state:

- responsibility based on fault or lack of due diligence;
- objective responsibility or strict responsibility;
- liability regardless of fault or regardless of the respective lawfulness of the act complained of.

When defining general rules of responsibility, the advocate-agents ought to distinguish between treaty law and customary law. In the area of treaty law, various agreements can range from a lack of regulations on state responsibility altogether to instruments which establish responsibility on principles of fault, and agreements which might stress an objective notion of responsibility. In the area of customary international law there exist primary and principal obligations for states to supervise

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[78] To name a few, the 1982 Convention on the Law of the Sea, 1985 Convention on the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer, the 1989 Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal, Convention on the Territorial Sea and the Contiguous Zone, Convention on the High Seas, Convention on Fishing and Conservation of the Living Resources of the High Seas, Convention on Environmental Impact Assessment in a Transboundary Context, Convention on the Transboundary Effects of Industrial Accidents, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1972 London Dumping Convention, 1974 Paris Convention for the Prevention of Marine Pollution from Land-Based Sources, 1989 Convention on Civil Liability for Oil Pollution.

activities within the state's own territories so as to prevent transboundary pollution to other states, to common resources or to shared space.

For states to meet an obligation to pay compensation in such cases where environmental damage occurs despite a state's attempt to comply with "due diligence," a concerned public in the respective nation would have to bring to bear political pressure, domestically and, if brought, such a step might be construed as a general acceptance of the "polluter pays" principle. This principle implies that a state in whose boundaries the source of pollution is situated will be obliged to pay compensation for negative international externalities, even in circumstances where the polluting activity is lawful or acquiesced to by the "victim state" and the polluting state has taken all possible preventive measures.

In the recent decade principles relating to liability for damage caused seem to be developing considerably, and particularly in situations where the damage caused does not need to be of an economic nature in order to give rise to attributing responsibility. From this development, a general requirement of harmonizing liability and insurance coverage seems to have emerged in order to assure adequate compensation coverage for the affected party, absent such harmonization the seeds of conflict are built in perpetually in the type of development projects the Compromis exemplifies and may create a situation akin to Hobson's Choice.

Countering further environmental degradation

One effective way of developing strategy to counter further environmental degradation might be to establish appropriate preventive measures and to make certain that there is built-in flexibility to amend and modify any measures adopted, if they should prove to inadequate. As an example, in 1941, when the Trail Smelter arbitration ordered the smelter to refrain from causing further damage, and to establish a regime for the control of emissions, including technical improvements, the court addressed preventive measures then to avoid future harm to the environment.[79] Principle 21 of the Stockholm Declaration also prohibits the infliction of environmental damage on other states, and states that precautionary measures must be taken to minimize negative externalities. In it the words "due diligence" are a key concept. The Bergen Ministerial Declaration on Sustainable Development in the ECE Region also emphasized that "[i]n order to achieve sustainable development, policies must be based on the 'precautionary principle:' environmental measures must anticipate, prevent and attack the causes of environmental degradation."[80] Thus, when exercising national jurisdiction and sovereignty, the necessity for developing

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[79] UN IAA, vol. 3 (1949).

[80] UNECE (1990).

adequate preventive measures may clearly be related by either party before the court to the obligation for states to adhere to the Precautionary Principle.[81]

Conflict settlement and resolution

Most legal instruments in existence which relate to environment lack a formal compulsory dispute resolution or settlement mechanism, and in the few instances where there is a provision for dispute resolution procedures, recourse to such procedures generally depends on mutual consent of the parties. As the Compromis reflects, an absence of effective compulsory dispute resolution and settlement enforcement mechanisms might suggest also a corollary need for careful structuring of incentives to encourage and facilitate international compliance; for example, in the implicit need for transfer of additional financial resources on the part of Agistanus and transfer of technology on the part of Behestoon.

While material technical aspects in many existing environmental instruments, where they exist, are spelled out in considerable detail, any elements regarding preventive measures and guidelines on dispute settlement appear to be less stringent and often are found lacking altogether, which links the efficacy of environmental treaties closely to the formulation of these provisions, and those of verification and control, all of which are quite new in an international environmental context.[82] A lack of an effective enforcement or dispute resolution mechanism which characterizes most international environmental agreements gives rise to and calls for a circumspect evaluation from case to case of the ultimate success of such agreements, and in the context of the Compromis might give rise to questions as to underlying principles for development having been undertaken in this manner by Agistanus, or for the inherently inequitable position in which the two parties in this IEC find themselves at the very start of the Compromis.[83]

Of significance is the implicit question whether or not agreements actually ripen to implementation. In 1985, a study of 161 environmental conflicts, site-specific and generic, found that agreement was reached on approximately 90 percent of the

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[81] A similar idea is reflected in the Geneva Convention of 1979 on Long-Range Transboundary Air Pollution. UNEP (1991).

[82] U.S. General Accounting Office Report (1992).

[83] Vig, Norman J., & Kraft, Michael E., (editors), Environmental Policy in the 1990's. Washington, DC: CQ Press, 1994; Fisher, R., International Conflict for Beginners, Harper & Row, New York, NY (1969); Fisher, R., Improving Compliance with International Law, University Press of Virginia, Charlottesville, VA (1981).

issues in dispute,[84] but that such agreement also brought with it an increase in chances for implementation and the challenge of devising effective and verifiable compliance mechanisms for carrying out the terms of environmental agreements. This development may well be understood the most serious challenge to national sovereignty in the context of IECs. In this still evolving atmosphere, no hard and fast legally-agreed overriding principles exist which might guide nations in the international management of natural resources, although most nations would probably hesitate to neglect or violate "soft agreements,"[85] if such neglect or violation might mean facing domestic or international repercussions, as certain environmental behavior might be subject to censure by the global community-at-large and might lead not only to legal issues being raised but also result in political and economic sanctions.[86]

International River Systems and IECs

Demand for water, especially the services it can provide, has increased steadily worldwide, particularly in arid and semi-arid regions. With this pressure from rising demand, national water resources have been exploited increasingly and may even be at a point of depletion. Population growth, agricultural development and expansion, and an increasing, implicit clamor for rising and improved standards of living globally, have brought with them the corollary recognition that water is not a resource which has an unlimited absorptive capacity.

On a local level, competition for both better quality and greater quantity of a shared water source often gives rise to international conflict, more especially, IECs involving water, as it does in the Compromis. The IEC in the Compromis has been triggered because of the numerous ways in which water resources are shared between Agistanus and Behestoon, directly or indirectly. Today, there are approximately some 200 larger river systems worldwide which are shared by two or more nations.[87] The Compromis is intended to show the need for basin-wide water

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[84] Bingham, G., Resolving Environmental Disputes: A Decade of Experience.

[85] e.g., the Rio Declaration from UNCED, 1992.

[86] For example, see the arguments put forth by North-American NGOs in the case of Norway on commercial whaling, the demand expressed by the NGO community in the U.S. that Norwegian export products be boycotted by consumers.

[87] Rogers, P., International River Basins: Pervasive Unidirectional Externalities. Paper presented at a conference on "The Economics of the Transnational Commons." Universita di Siena, Italy, April 25-27, 1991.

management which becomes more acute as the particular elements of the IEC increase.

A river basin is also known as a drainage basin or a catchment area, and is an area which receives precipitation and which geographically supplies water to one or more streams. River basins may have both overland surface flow and groundwater. An international river system is a main river and all its tributaries, which might run through, or separate, two or more states, in the case of the Compromis the Ozoonio River is an international river as it runs from Agistanus to Behestoon. As a result, collaboration at an international level is essential so as to manage the resource properly and avoid an IEC, an aim which neither Agistanus nor Behestoon has reached. Although the potential for using river water in development plans can be essential, as it appears to be to Agistanus, it cannot satisfy all possible needs, because any events upstream inevitably have consequences for the downstream riparian user. If Agistanus and Behestoon continue to consider and focus only on national priorities while pursuing their respective national development plans in the continued use of international rivers, this particular course may undoubtedly give rise to additional IECs, as it does in the Compromis. As between the two nations, the playing field is not exactly comparable for Agistanus and Behestoon, because Behestoon is the downstream riparian user to Agistanus, and will probably use this position in its argument to the maximum leverage to attempt curtail Agistanus' development activities. However, any arguments which may be developed in this regard should be attenuated with appropriate questions from the bench so as not to deprive Agistanus of any sovereign rights and control, she might have over her natural resources, and to develop the same.

The water resource system as a sensitive natural resource

While extensive and large in their geographical dimensions, most international river systems are actually quite sensitive natural resources. A watershed wherefrom a river originates usually determines both water quality and water quantity in that system, as rivers may be regarded not only as natural drains through which run-off water reaches the sea, but also as a way of redistributing water from regions of higher precipitation, - prospectively Agistanus, despite the fact that it is also located in a semi-arid region, - to other, comparably drier regions, such as Behestoon. As the Compromis seeks to illustrate, water as a natural resource is not just used as a source of drinking water, but also for household, industrial, manufacturing, agricultural, and transportation uses, with other sub-systems such as forests, vegetation, fish and wildlife also depending not only the adequacy of supply of this

vital resource but also on a relatively narrow band of water quality for their survival.[88] In the context of the hydrological cycle globally, the volume of fresh water which can be readily accessed for human users is only a very small fraction of the overall amount which is transported. Additionally, research has shown that there might exist other, sub-terranean sources of water which are not necessarily part of the hydrological cycle and are readily available for human consumption.

As regards the waters in the hydrological cycle, it is mainly found in rivers, reservoirs and lakes, and moves generally in aquifers below ground. It typically has a brief time in residence, and due to temporal and spatial variances in the hydrological cycle, its distribution varies considerably in different parts of the world. These variances cause serious shortages for the assessment of water resources both globally and nationally, as it does for a single river basin, more especially in an arid region. Yet, no planning for how water resources could best be utilized and managed in order to achieve certain goals can proceed without being anchored in such a rational basis, however flawed the raw information which is available to support the basis might turn out to be.

Competing demands giving rise to IECs

In order to analyze the IECs in the Compromis as they relate to international river systems, it bears looking first at the participants involved at the different levels of conflict. First, on a local level, competing groups may be a national government versus non-governmental claimants (e.g., individuals such as farmers or private groups, organizations, and the like). Such conflicts may also arise between different national sectors as agriculture and industry, in this case the hydroelectric power generation. In the context of the Compromis, on the side of Agistanus, this particular aspects is less significant, because the mining and agricultural compounds receive their source of water from above the dam, i.e. from the reservoir. It is not entirely clear and has been left ambiguous that the mining accident might also have a deleterious impact on Agistanus' own agricultural operations.

IECs may also arise, or once they arise may escalate to, a regional level where two or more nations perceive their mutually incompatible interests in utilizing a shared resource, the international river system.

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[88] Leopold, Aldo, A Sand County Almanac. New York: Oxford University Press, 1949; Carson, Rachel, Silent Spring. Boston: Houghton-Mifflin, 1962; Taylor, Paul W., Respect for Nature - A Theory of Environmental Ethics, Princeton, NJ, Princeton University Press, 1986; Bormann, F. Herbert, & Keller, Stephen R., (editors), Ecology, Economics, Ethics: The Broken Circle. New Haven, London: Yale University Press, 1991.

Lastly, reference may be made to an independent sector level, e.g., a cross-level involving IECs and an international organization where the contentious issues are the consumptive use and/or industrial pollution of the river system arising out the relation of one or both parties in the IEC with a third party and tied up in some kind of a debt instrument.[89] The global level becomes relevant in this context, where the advocate-agent's argument seeks to link debt repayment issues to international river systems.

This is one proper arena for the arguments on either side to evolve into, and where the tensions in the argument may probably be highest. This third element has not been explicitly developed further in the Compromis, however, in order not to extrapolate too much and so as not to make an already complex factual pattern so complex as to preclude the advocate-agents from completing the substance of the argument-in-the-main in support of their position.

A brief analysis of the forces behind IECs

An analysis of the forces behind IECs must properly begin with conflicts arising at a local level. Though conflict issues and what motivates them are still substantially the same on an international level, human-made borders, and the additional complications their existence bring with them, such as claims of national sovereignty by Agistanus over her 'own' river resources complicate any resolution attempt at this adversarial level. A three part model might illustrate basic types of conflict which may arise:

> 1 - competing interests in access to, control over, and uses of international river systems which are not sustainable (e.g., water diversions, dams and reservoirs);
>
> 2 - external modalities resulting from the use of international river systems by either of the conflicting parties, or both (adverse impact on water quality, changes in water quantity due to restricted flow, industrial pollution from water being used in the production process, sewage discharge from human dwellings);

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[89] Debt and the Environment: Converging Crises. United Nations Publications, E.91.I.17, 92-1-100457-8, 347pp.; Caldwell, Lynton Keith, & Schrader-Frechette, Kristin, Policy for Land Law and Ethics, Savage, Maryland: Rowman & Littlefield Publishers, Inc., 1991; Miller, Alan S., GAIA Connections, An Introduction to Ecology, Ecoethics, and Economics. Savage, Maryland: Rowman & Littlefield Publishers, Inc., 1991; Paehlke, Robert C., Environmentalism and the Future of Progressive Politics, New Haven, London: Yale University Press, 1989.

3 - external modalities resulting from sources and activities which do not immediately fall into Category Two (eutrophication, incidental pollution by industries which are not primary users of the water resource in their production processes, soil erosion, siltation of tributary water courses accompanied by deforestation and overuse by livestock).

1 - Competing interests in access to, control over, and uses of international river systems which are not sustainable

The location of each country in relation to a river system determines access to water resources. In the context of the Compromis, while Agistanus has a certain advantage being the riparian upstream nation, Behestoon is not entirely dependent on the Ozoonio River for its supply of drinking water as she has water desalination plants along Solonia Bay. Climate also has considerable influence on Agistanus', resp., Behestoon's, access to water resources, as the Compromis reflects both countries are geographically located in a semi-arid region.

The degree of control in international river systems is mainly determined by the location of riparian states in relation to the watershed, and the balance of power between the countries, whether military, economical, or political.[90]

Domestic and municipal uses of river water rank highest on the list of priorities of resource use, as the survival of a community depends on an adequate drinking water supply; though in the case of the Compromis, Behestoon has alternative sources of fresh water in the desalination plants, while Agistanus has those fresh water sources which were discovered in the course of the survey, with their source left unexplained. The expanding populations of cities face higher demands for water for drinking and sanitation purposes, giving rise to questions of prioritization where there may not be enough water to satisfy all demands.[91]

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[90] Guidelines for the Preparation of National Master Water Plans. United Nations Publications, E.899.II.F.17, 92-1-119549-7, 163pp.; Institutional Issues In the Management of International River Basins: Financial and Contractual Considerations. United Nations Publications, E.87.II.A.16,92-1-104210-0, 111pp.; Water Resources Planning to Meet Long Term Demand: Guidelines for Developing Countries, United Nations Publications, E.88.II.A.17,92-1-104301-8, 117pp.

[91] Legal and Institutional Factors Affecting the Implementation of the International Drinking Water Supply and Sanitation Decade (IDWSSD), United Nations Publications, E.87.II.A.3,92-1-104198-8, 54pp.; Non-Conventional Water Resources Use in Developing Countries: Proceedings of the Interregional Seminar. United Nations Publications, E.87.II.A.20,92-1-104214-3, 515pp.; Use of Non-Conventional Water

(continued...)

In arid or semi-arid nations, such as Agistanus, diversion of water for agricultural irrigation may be a high priority, while by comparison in countries which appear to be relatively well-supplied with water, such as Behestoon, access to hydroelectric power and industrial use of the river's water may have comparably higher priority.

Such water use can be consumptive or non-consumptive. While non-consumptive use, such as navigation of international river systems, has in the past led to IECs, well-established rules and existing international administrative regimes have reduced considerably the incidents of conflict arising from the navigational use of international river systems (which is why navigation is substantially de-emphasized as an issue in the Compromis). Various interests fall into the category of consumptive use.

Domestic and municipal uses

In the context of the Compromis, the decision of Agistanus to develop her natural resources results in an increased demand for water and appears to lead to excessive extraction from the Ozoonio and an accompanying deterioration in the quality of water supplies downstream.

The demand for water and the different uses to which it is put depends largely on the number of individuals who are to be supplied, and how concentrated the population turns out to be. The larger the population and the greater its concentration, the less water is usually available on a per capita basis, given a stable supply, making population growth a real problem where the supplies of water are scarce.[92] One characteristic common to almost all nations located in the semi-arid regions of the world is a relatively high rate of population growth, whether in Sub-Saharan Africa, India, or southern California, particularly, if by the end of this century, the world stands to gain over one billion inhabitants, with about 20% of this growth taking place in arid and semi-arid regions.[93]

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[91](...continued)
Resources in Developing Countries, Natural Resources/Water Series No. 14, United Nations Publications, E.84.II.A.14,92-1-104234-8, 278pp.

[92] A modern urban household uses approximately 400 to 800 litres (100-200 gallons) of water daily.

[93] Groundwater In Western and Central Europe, Natural Resources/Water Series No. 27, United Nations Publications, E.90.II.A.25,92-1-104355-7, 363pp.; Groundwater in Continental Asia (Central, Eastern, Southern, South-Eastern Asia), United
(continued...)

The quality of available potable water sources is also an important issue, as a satisfactory domestic water supply must be free from harmful bacteria and chemicals, whose presence might be harmful and lead not only to health problems, but even if not harmful also might cause an unpleasant taste. With growth both in the population and industrial development, supplies of good quality water tend to become more scarce, or, if available, more stressed.[94]

Globally, with the exception of China, approximately 71% of urban populations have access to drinking water supplies, with availability of most services greater in urban areas than in rural ones. Drinking water is no exception, as only 41% of the world's rural population has serviceable access to adequate supplies of potable water.[95]

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[93](...continued)
Nations Publications, E.86.II.A.2, 92-1-104175-9; Groundwater In Eastern and Northern Europe, Natural Resources/Water Series No. 24, United Nations Publications, E.89.II.A.11, 92-1-104318-2, 278pp.; Groundwater In Eastern, Central and Southern Africa and Maps of Africa, Natural Resources/Water Series No. 19, United Nations Publications, E.88.II.A.5,92-1-104223-2, 320pp.; Groundwater In North and West Africa, United Nations Publications, E.87.II.A.8,92-1-104203-8, 405pp.

[94] World Resources Institute et al., World Resources 1988-89, Basic Books, New York, N.Y.(1989); World Resources Institute et al., World Resources 1990-91, Oxford University Press, New York, N.Y.,Oxford, England (1990); World Resources Institute et al., World Resources 1992-93, Oxford University Press, New York, N.Y.,Oxford, England (1992); Groundwater In Western and Central Europe, Natural Resources/Water Series No. 27, United Nations Publications, E.90.II.A.25, 92-1-104355-7, 363pp.; Groundwater in Continental Asia (Central, Eastern, Southern, South-Eastern Asia), United Nations Publications, E.86.II.A.2,92-1-104175-9; Groundwater In Eastern and Northern Europe, Natural Resources/Water Series No. 24, United Nations Publications, E.89.II.A.11,92-1-104318-2, 278pp.; Groundwater In Eastern, Central and Southern Africa and Maps of Africa, Natural Resources/Water Series No. 19, United Nations Publications, E.88.II.A.592-1-104223-2, 320pp.; Groundwater In North and West Africa, United Nations Publications, E.87.II.A.8,92-1-104203-8, 405pp.; Institutional Issues In the Management of International River Basins: Financial and Contractual Considerations. United Nations Publications, E.87.II.A.16,92-1-104210-0, 111pp.

[95] For United Nations data from 1986 on see: Groundwater In Western and Central Europe, Natural Resources/Water Series No. 27, United Nations Publications, E.90.II.A.25, 92-1-104355-7, 363pp.; Groundwater in Continental Asia (Central, (continued...)

Irrigation: industrialized and industrializing countries

Despite the growing needs of municipal and industrial water users, water use in industrialized countries continues to be dominated by agriculture and the water it needs for irrigation, which globally accounts for about 73% of water used in arid and semi-arid regions.[96] Normally, irrigation is water-intensive and has a higher consumption-to-withdrawal ratio than other water uses, which means that proportionately more of the water diverted from streams or aquifers evaporates from the soil or transpires from crops instead of being returned to the source for re-use. This ratio averages about 60%, compared to 25% in municipal use and between 0% and 25% for industrial use.[97] The case of Israel with a low ratio average is one such exception, however.[98]

In industrialized countries, much of the water supplied for agriculture originates in national water projects, often subsidized by the public, as in the Columbia River Basin, or through district equalization policy, as in Scandinavia. Therefore, water is usually inexpensive to farmers and subsidies offer little, if any, incentive to conserve surface water. Rising water costs have, however, have been followed by a gradual shift to crops of higher cash value and (or) crops which require less irrigation (xerophytic agriculture). Despite irrigation efficiencies varying according to the type of technology applied and being a factor of the capital investment in the land and physical plant, which, as a measure of that efficiency, if related to the supplied water may reach 75% of the quantity furnished, with most irrigation methods used crops currently use only about half of the water applied.

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[95](...continued)
Eastern, Southern, South-Eastern Asia), United Nations Publications, E.86.II.A.2,92-1-104175-9.; Groundwater In Eastern and Northern Europe, Natural Resources/Water Series No. 24, United Nations Publications, E.89.II.A.11, 92-1-104318-2, 278pp.; Groundwater In Eastern, Central and Southern Africa and Maps of Africa, Natural Resources/Water Series No. 19, United Nations Publications, E.88.II.A.5,92-1-104223-2, 320pp.; Groundwater In North and West Africa, United Nations Publications, E.87.II.A.8,92-1-104203-8, 405pp..

[96] Scientific American, *Managing Planet Earth.*

[97] United States Geological Survey, National Water Summary (1983).

[98] Hillel, D., *The Efficient Use of Water Irrigation*, World Bank Technical Paper No. 64, World Bank, Washington, D.C. (1987).

In industrializing countries

Use of irrigation in industrializing countries, such as Agistanus in the Compromis, ranges from capital-extensive recessional systems which usually turn out to be labor-intensive (water diversions from lakes and rivers, e.g., in the Gambia and Senegal river, in the real world, and the Ozoonio in the Compromis), to capital-intensive systems of considerable sophistication and complexity (e.g., in India and Pakistan). To sustain a growing population base and a clamor for an ever higher standard of living in industrializing, which industrializing countries almost implicitly demand as the "benefit" in trade-offs when they engage in development schemes of their natural resources, a substantial accompanying growth in agricultural output, usually around the 3% mark, is required, which, in turn, is unlikely to occur without an intensification of agricultural practices. Such growth more often than not also is accompanied by an increase in waste output of those society which engage in such development practices.

The development of agriculture often has the highest priority designation in many river basin river systems, because from it national economies evolve, and with its breakdown economies tend to fall apart as well. Implicit in this statement is also a tacit acknowledgment that larger and larger tracts of arable land must be cultivated, with large-scale irrigation schemes promoted and tied into them, whenever funds become available. The next progression of such a process might be the use of increasing amounts and strengths of pesticides, often highly toxic to the very organism of human beings, and fertilizer to "goose" Mother Earth into yielding more and more of her fruit.

This thought might suggest that a substantial growth in the crop-irrigation areas and a higher demand for irrigation water, both quantitatively and qualitatively, will become necessary over the next few decades. If this idea is contrasted against the existence of local water shortages in already arid and semi-arid regions, then a logical conclusion might be the evolution of water usage methods and systems of improved efficiency and the development of alternative supplies of water, some of which might not be tied into the hydrologic cycle.[99] The scope for improvement in overall irrigation efficiency may be quite limited, however, as conservation efforts have an absolute floor below which they simply cannot go, -governed by the minimum

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[99] In the context of the Compromis, the learned judge is respectfully reminded to review lines 76-79 of the Compromis, where it is said that "[t]hough some supplies of water were discovered, their source and origin were not identified and the quantities discovered were generally believed by the team of experts from IRADB to be either unusable or insufficient for the contemplated development projects."

water requirements of all living organisms, not only *homo sapiens*,- and are likely to cause a large increase in the demand for additional irrigation water.[100]

Industrial and manufacturing processes

Few industrial or manufacturing processes come to mind which do not apply or use water somewhere along the production stream, e.g., some of the heaviest water users are pulp and paper industry, metallurgy, brewing, chemicals, mining industry. When these industries expand, a process which is at the heart of the presupposition for "modern" growth schemes and can be considered its driving engine, they also require a corollary expanding energy industry, usually fossil-fuelled power stations which require water cooling towers and claim a substantial share of available water resources. Generally, industrial water uses are non-consumptive, and the water used is often recirculated to its source with some, but relatively minimal loss, in order to save expenses and conserve resources, even though such practices may lead to a net reduction in the water quality. The control of water discharge for this purpose is not infrequently a substantial cause of IECs (see, the cases of the Rhine, Danube, or Rhone rivers as an example).

An expanding energy industry

Complications with the fossil-fuelled scenario in the expanding energy industry have been alluded to, and are not necessarily a central theme of the Compromis. But with development, i.e., industrialization, usually comes an equal demand for more power generation. Not infrequently, hydro-electric power is being considered, because it is being regarded as environmentally "friendly," which may be appropriate in relative terms, if compared to other ways of generating the needed power, but which may be questionable, if one considers the orders of magnitude of impact the construction of a dam has on all environmental systems and sub-systems.

One important use of water in connection with modern urban and industrial life is for the development of power, i.e. further development of hydro-electric power (HP). HP can be integrated conveniently in multi-purpose water resource projects which focus also on irrigation and flood control, even though it does not directly consume significant quantities of water in the production process of power. But HP requires usually an artificial reservoir and brings with it often not only the resettlement

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[100] See, Baxter, R.R., "The Indus Basin," (1955) in Garretson, A.H., *et al.*, The Law of International Drainage Basins, Dobbs Ferry, New York, N.Y. (1967); Fowler, F.J., The Indo-Pakistan Water Dispute, *Yearbook of World Affairs* (1955); Knauth, A.W., *The Indus River System*, 54 Proceedings of the American Society of International Law 134 (1960).

of those who occupy the lands to be flooded by the dam, but effects also changes in the local environment, a loss of discharge, and, more often than not in arid and semi-arid regions, more significant seepage and evapo-transpiration. Thus, HP cannot necessarily be classified as non-consumptive use *per se*, as has been done in the past. A dam represents control over river discharge which may cause severe implications legally, politically, as well as geographically for downstream countries, in real life, (such as, e.g., the Ataturk dam in Turkey and its downstream riparian parties Iraq, Jordan, Israel and Lebanon), as it does in the Compromis for Behestoon with the Namche Dam.

Diversion of Water through reservoirs, catchments, and dams

Probably the most important source of IECs must be considered to be water diversion, reservoirs and catchment areas, as they are the means of increasing access to, use and control of, and management of water for the purpose of achieving the water uses previously mentioned herein.

Most types of IECs which involve water sources can be understood to fall into a consumptive uses category, because water diversion projects affect directly downstream water quality, and such projects usually create a considerable source of contention and conflict, especially in cases where a diversion in an international river system exceeds national jurisdictions.

Even though dams, reservoirs, and catchments areas are designed to store water resources for an apparently intended, more efficient water distribution scheme, this practice is equivalent to applying a "savings-and-loan" approach to natural resources, because water demands vary according to each season, and times of peak demand may not correspond to that of peak supply; they usually do not. Therefore, in such a scheme, the supply of water is intended to be increased annually during certain periods, or stabilized, as the case may be, by damming rivers and in order to help manage and address local water shortages which may periodical and seasonal.

Yet, significantly reduced discharge in an international river system causes IECs, as it does for Behestoon in the Compromis, and in actual fact as it also does, for example, in the case of a planned dam near Gao Mali (precipitating conflict with Niger over a loss of water essential for irrigation) and in Senegal (affecting adversely the Gambia and Mauritania, who will experience salt water intrusion moving inland from the coast, which will lead to a recession of their agricultural systems).[101]

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[101] Bourne, Charles B., Protecting the Environment: Fresh Water Resources. (In: From Coexistence to Cooperation: International Law and Organization in the Post-Cold War Era. Ed. by Edward McWhinney (et al.). Dordrecht (etc.), 1991, p.128-141.); (continued...)

Large-scale dams, including the fictitious Namche Dam in the Compromis, are designed to be multi-purpose projects and to regulate the flow of water by storage on the premise that water might then be available when needed. Another purpose is flood control, to control the volume of water flowing downstream at any one time and to prevent danger to humans, their habitat and livestock, until the flood waters have receded. Another additional benefit of this concept may be that flow regulation may keep stream erosion under control.

2 - external modalities resulting from the use of international river systems by either of the conflicting parties, or both

When water is to be utilized for domestic as well as industrial purposes, water quality becomes a central focus; which means that if quality at the source is poor, such inferior quality will invariably raise the inherent cost of treatment considerably. Despite treatment, often certain adverse qualities may not be completely eliminated, such as impalatable taste. Under certain conditions, the treatment processes used, themselves may create a taste problem due to high residual chlorine, as has been the case in the lower and middle portions of the Rhine river in Europe.

In case of agricultural considerations and irrigation, the main water quality problem relates to the presence of salts, as some reservoirs may raise the salt content of water (usually in an increased figure for "total dissolved solids"), particularly problematic in arid zones where reservoir holding time is usually long and

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[101](...continued)
Debt and the Environment: Converging Crises. United Nations Publications, E.91.I.17, 92-1-100457-8, 347pp.; Groundwater In Eastern, Central and Southern Africa and Maps of Africa, Natural Resources/Water Series No. 19, United Nations Publications, E.88.II.A.5,92-1-104223-2, 320pp.; Groundwater In North and West Africa, United Nations Publications, E.87.II.A.8,92-1-104203-8, 405pp.; Institutional Issues In the Management of International River Basins: Financial and Contractual Considerations. United Nations Publications, E.87.II.A.16,92-1-104210-0, 111pp.; Non-Conventional Water Resources Use in Developing Countries: Proceedings of the Interregional Seminar. United Nations Publications, E.87.II.A.20,92-1-104214-3, 515pp.; Bergman, Lars, & Pugh, D. Michael (eds.), Environmental Toxicology, Economics and Institutions, Kluwer Academic Publishers, Hingham, MA (1994), 192pp.; Sterner, Thomas, Economic Policies for Sustainable Development, Kluwer Academic Publishers, Hingham, MA (1994), 344pp.; Opschoor, J.B., & Turner, R.K., (eds.), Economic Incentives and Environmental Policies: Principles and Practice, Kluwer Academic Publishers, Hingham, MA (1994), 312pp.; Pethig, Ruediger (ed.), Valuing the Environment: Methodological and Measurement Issues, Kluwer Academic Publishers, Hingham, MA (1994), 376pp.

evaporation rates high. In the case of industrial and domestic water use, high salt content in the form of a high total dissolved solids number also adds considerably to the secondary treatment cost for such water. Often in such conditions, eutrophication, an increase in mineral and organic nutrients in the stored water sufficient to reduce the dissolved oxygen, becomes a major water quality problem, as well.

Domestic and municipal sectors

Large population centers attract waste disposal problems of equal, or larger size. Past history has shown that humans have dealt with this problem most commonly by throwing waste, often untreated, especially in the past, into the nearest stream, creek, river, or waterway, and often with complete disregard that this source of water might also be the supply of drinking water for someone else. For as long as settlements remained sparse and far and few in between, and waste disposal as seen in relation to the absorptive capacity of the water system was low, waste disposal generally was not a serious problem; with the river's course, the ebb and tide, playing their part in transporting refuse away from its source. That this model of waste disposal is now antiquated, and no longer applies, is shown by the Danube requiring more elaborate methods of waste disposal at its confluence between Austria, the Czech Republic, the Slovak Republic, and Hungary. Despite this evidence many towns still return raw sewage to river systems which may provide part of the water supply for other centers or, even other countries, and which waters eventually end up in some estuary or beach populated by a large number of people for recreation.[102]

Irrigation

A common decision to delay implementation of a costly drainage system to a later stage of an irrigation project might mean that short-term financial constraints get transformed into long-term, and often even more costly, problems of water and environmental degradation.

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[102] In the context of the Compromis, this feature is exemplified by Behestoon apparently dumping waste it cannot process in its own waste-recycling system, which the Compromis describes as extensive. If queried on this point, the advocate-agent may state that Behestoon's actions do not violate any rights Agistanus might have, because is an upstream riparian from Behestoon. If this argument is set forth essentially on those terms, it might well ignore the obverse of Behestoon's argument about the global commons and obligations owed her by Agistanus within that framework, namely, that Behestoon also owes an obligation in return to Agistanus, even though it may only be a downstream riparian user from Agistanus.

The major water quality problem in arid and semi-arid agricultural areas is increased salinity, i.e., river waters tends to become increasingly saline from the headwaters to the river delta as seepage and return flows from irrigated lands empty into the rivers, an obvious cause of IECs, and affecting seriously the quality of water for downstream riparian users.

This process in many areas leads to severe pollution of the groundwater source by deep percolation of irrigation water and seepage from irrigation delivery schemes, because the groundwater system may act as a conduit of saline waste water to re-enter rivers and be re-introduced to international river systems and aquifers they are tied into.

Yet, increased water salinity is not only a water quality problem instream, as it also poses a considerable challenge to agriculture and can offset the effectiveness of agricultural preparations, be they pesticides or fertilizers, as saline water is used for irrigation, or as waterlogging of poorly drained lands are observed. Such events usually cause the water table to rise, depleting the productive soil layer further, and ultimately leading to reduced crop yields.

The industrial sector

When industries price their goods, often negative environmental side effects of their activities are not included in the considerations. Implied in this statement is the notion that water therefore is used as free goods and may be used to dispose of waste accumulated in processing. As detergents, surfactants, and de-greasers have into wide use, both domestically and industrially, the production of synthetic materials, ever more complex pesticides, and other chemical compounds has also lead to problem of far greater orders of magnitude than those of a few decades ago. Many such pollutants cannot be broken down and de-activated by nature's own processes of purifying itself.

For example, thermal pollution arises from water discharged from power generation stations and cooling towers of factories. The water may be chemically and bacteriologically unremarkable, but may have a much higher temperature than when it was pumped out. The animal and plant population of a river, when exposed to this higher temperature regime, may have to adjust to a temperature range which is in excess of its tolerance levels. Absent such successful adjustment, one may find stretches of barren river beds, unable to sustain life in the short term, or, perhaps even more problematic, may be replaced by other, perhaps less desirable species.

Yet another external modality of industrialization is water pollution by the accumulation of heavy metals, nutrient and toxic chemicals in the mud of the river bed, river delta, and estuaries. Sediments that are dredged normally cannot then be used for such projects as landfills. IECs in semi-arid and arid regions relate to both water quality and quantity, as the problem is exacerbated when industrialization

imitates behavior elsewhere and is based largely on industrial techniques imported without reflection from industrialized countries, and are then adopted without due consideration that these techniques have been developed with plentiful supplies of water implicit for their success, but which supplies are unrealistic by standards applicable in semi-arid and arid environments.[103]

Water diversion

Despite what has been said above, dam and reservoir projects are undertaken usually with the understanding that they might improve water supply for irrigation and domestic use, and that they might provide HP, flood control (where there are floods), and so as to reduce dependency on fossil fuels and their negative environmental effects from burning such fuel in conventional combustion engines. However, as with many other endeavors, such projects are no panacea, and often carry adverse environmental impacts of their own, and of a different, but equally long-lasting nature, because dams and reservoirs normally affect a much larger area than they occupy, and can flood vast acreage of prime agricultural land.

Much criticism recognizes that there is too much variation in the design of large dams and reservoir projects to permit any generalization of common features about their socio-economic and environmental impact.[104]

As in the case of the Compromis, highly charged IECs involving water diversion schemes and dam and reservoir projects, in the case of Behestoon and Agistanus, as much as in the case, in real life, of the Gabcikovo projects (affecting simultaneously Austria, the Czech Republic, the Slovac Republic and Hungary) stress the need to focus not only on the comprehensive assessment of the environmental and socio-economic impact, but also through the participation of the parties to tend to the decision-making process itself implicit and underlying the legal regime.

Erosion factors

Where erosion occurs upstream in a catchment area, the load settles, following the regional drainage pattern, as sedimentation or land slips which often can impair the dam's storage capacity (e.g., see the case in Egypt of the Aswan dam on the Nile river). Additionally, there may also be an increased erosion of the river bed and structures below the dam, including deltaic and coastal features (as could happen on the coast of the Gambia with Senegal building a dam upstream), resulting from

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[103] See, World Bank, The Large Dam Controversy, ENV/Tech. Dep./Africa, World Bank (1989) and World Bank's Operational Directive, no. 4, Annex B.

[104] Ibid.

an increased suspension load of the river. Negative effects may be compounded through changes in stream flow and releases of water from a large dam, leading to an increase in river bed erosion, an undermining of downstream water structures, a depletion of water-borne nutrients found within the normal suspension load of the river, and a reduction of the groundwater levels.

Destruction of wetlands

Reservoirs regulate riparian flow by providing the ability to increase river flow during a dry season, or low water period, and by attempting to keep to a minimum annual flooding. This feature, important for humans, has long-range consequences for the entire river's ecosystem. As a result, riparian habitats, particularly wetlands, below dams and not infrequently far away in another country, often are reduced both in number and in size, as has the productivity of riparian communities (e.g., see, the situation of the Diama Delta in Senegal). In the context of the Compromis, the allegation by Behestoon of a deteriorating condition of its zoo-plankton may be considered to fall into this scenario.

Relocation and displacement

Usually populations prefer to settle and expand along a river's banks, as the stream provides the easiest access inland. Thus, lower lying land flooded by a dam is often not only more productive, but also more densely populated by people. When the waters behind a dam begin to rise, the resulting displacement of the lowland population and their livestock to higher terrain often stresses the environment further, as a greater number of humans are forced to survive on a significantly reduced resource base. Demand for additional arable land, fuel, feed, potable water, primarily, and building materials and other resources secondarily may increase dramatically.[105] Absent significant development assistance and strategy to increase the productivity of the remaining resource base, the sustainable capacity of upland areas to support such changes may be quickly exceeded, with a resulting spill-over of conflict from the IECs which follow.

At present, the tools with which to harness such events and tend to them are not sufficiently developed and the contrast between technically elaborate dam design technology and the legal inadequacies of resettlement and other environmentally significant components calls for improved policies, and a guarantee that the

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[105] Burbridge, P.R., Norgaard, R.B., and Hartshorn, G.S., Environmental Guidelines for Resettlement Projects in the Humid Tropics, *Environment and energy Paper 9*, FAO, Rome, Italy (1988).

standards to be developed meet the same exacting criteria required for other technical aspects of dam construction.

Public health considerations

Particularly in warmer climates, construction of dams, reservoirs and catchment areas, may lead to an increase of water-borne diseases (e.g., bilharzia, schistosomiasis and malaria) absent the necessary precautions being taken, because any larger body of water in tropical areas may create a favorable habitat for the breeding of snails, black flies, mosquitoes which are the common carriers of disease. One typical disease which often follows development schemes is schistosomiasis. Wherever the snail vector is to be found, it is hardly ever far from such projects as reservoirs and irrigation (e.g., the well-publicized cases of the lower Aswan dam, the Akosombo dam, and the Gezira irrigation project).[106] Malaria is more often associated with irrigation systems, particularly for the cultivation of rice fields, than with the reservoirs and dams which serve them, because the malaria larvae prefer stagnant water.

A proliferation of floating weeds, such as, e.g., water hyacinth, water lettuce, hydrangea, and the like, can also impair water quality and increase disease vectors, requiring control of these diseases and imposing a large financial burden on the countries which are affected.

3 - external modalities resulting from sources and activities which do not immediately fall into Category Two

Many factors described briefly below tend to underline the elevated risk for IECs as water quality diminishes, particularly for shared water sources and water-sheds, as the case of Agistanus and Behestoon in the Compromis seeks to exemplify.

Eutrophication

Aerial top dressing with phosphates and other fertilizers is a common and accepted agricultural practice, in industrialized countries, and becoming more

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[106] The pertinent literature, estimates that about 200 million people are infected with the schistosome parasite, with the disease being a threat to about 600 million of the world's population. Its vector snails are commonly found in Africa, parts of Latin America and the Far East. Malaria is even more widely distributed with about 100 million new cases annually and some 365 million people living in malaria-infested regions.

accepted in industrializing countries. A serious source of pollution of the natural water source comes from the application of such fertilizers to agricultural lands. The result may often be short-lived fecundity, increased crop yields, apparently healthy animals living off such feedstock, and good vegetative cover which is required to stave off erosion. Invariably, however, some of the fertilizer finds its way back into the water source, and from there to rivers beds and lakes, and results in an increase in the nutrient level of water, often more easily noticed in lakes where the phosphates tend to be stored. When this situation occurs, one of the changes which can be observed usually is an increased growth in algae and increased in surface algal bloom, which can be toxic to animals living off that water source, as well those living in it. While consuming nutrients dissolved in the water, algae also require oxygen and often tend to reduce the net dissolved oxygen in the water, and may lead to a depletion of the fish population as well as other animal life, an increase in certain kinds of lake weeds, causing previously clear water to become cloudy, foul smelling and spoiled.

Deforestation and over-grazing vis-a-vis soil erosion and siltation

Forests and vegetation are very efficient and effective in combating run-off and erosion, since they induce considerable storage of water in the ground, increase the natural permeability of the soil, and increase the rate of evaporation. There is clear indication that unless forestation and vegetation management are integrated elements of a water management plan, soil erosion, deforestation, and over-grazing may contribute additionally to large silt loads in the river streams and lakes, and become a cause of IECs in itself.

Legal implications of economic decisions and debt repayment

Proper legal identification and analysis of the impact of a water project must be carried out in conjunction with effective monitoring and evaluation system, even if environmental impacts are very difficult to quantify.

While river basin development projects often tend to favor HP generation for the commercial, industrial and private, domestic sectors to the advantage of one or the other nation's economy, many river basin development schemes have systemically actually degraded the riparian habitats and the populations which depend on them. In the context of the Compromis, while Behestoon appears to have benefitted substantially from its geographically favored location, previous to the commencement of the development plan in Agistanus, the tables appear to turn on Behestoon once an additional human factor is introduced, on a different level and in a different manner. It is appropriate to query the advocate-agents as to the legal significance, if any in their minds' eye, of difference between development "pre-Namche Dam" and

development "post-Namche Dam." By comparison, throughout tropical Africa, such strategies have damaged flood water agriculture, high and dry season grasslands for livestock, and fisheries.[107]

While the economies and lifestyles of riparian dwellers depend on recurrent, annual flooding, too much of a good tends to wipe out crops, while too little leads to inadequate harvest, famine, and an increase in migration to cities. One way to minimize the negative effects of water projects might be by linking HP and irrigation to downstream flooding controlled by the dam and regular drawdowns.[108] Although this feature might have been conceivable for Agistanus, and is advocated again by Behestoon during the crisis, it does not appear from the Compromis to have been part of the consideration which guided the project design and implementation phase.

Most industrializing countries pledge considerable positions of hard currency for debt repayment. For example, Mexico, Peru, Brazil, Venezuela and Argentina have in the past found themselves in such oppressive debt crises that they have been forced to exploit their natural resources short-term in order to pay foreign and international lending institutions, almost foreclosing any long-term development and conservation plan which could be sustained. Any front-loading of one kind or another in the investment strategy for large dams invariably puts a heavy burden on countries in the first years, and tend to a minimization of social and environmental conditions at a local level.

The management of conflict in the context of international river systems

The effective legal management of conflict in the context of international river systems focuses on both water quality and water quantity, as the Compromis seeks to exemplify, and has environmental and socio-economic implications.

In light of the essential importance of water for the different sectors of human and natural existence, it is probably self-evident that protection from water-related hazards (i.e., flood and drought), from health hazards (water-borne diseases), and from threats to the aquatic ecosystem (by pollutants) might form the cornerstones of national and international water management policy if IECs are to be avoided

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[107] Scudder, T., *River Basin Development in African Savannahs*, (1980) In: Harris, D.R., (ed.) Human Ecology in Savanna Environments, Academic Press, London, UK (1980).

[108] Stein, R.E., & Comrick, G.W., *Elements of a United Nations Environment and Development Dispute Prevention and Settlement Service*. Paper presented for the consideration of the Preparatory Committee and Secretariat of the United Nations Conference on Environment and Development, (UNCED), Rio de Janeiro, Brazil, July 1991.

effectively, or to be resolved efficiently, once they occur.

Outflow from upstream riparian users, such as Agistanus, depends on the nature of the water-consuming activities in the country. As a result, the location of a country along a river, such as Behestoon, may have considerable influence on her international relations. The Compromis seeks to exemplify that the interdependence between the environmental policies of neighboring riparian users, i.e., the extent to which decisions taken by actors in one part of the river system may intentionally, or unintentionally, affect another actor's policy decision elsewhere in the river system, and illustrates some of the potential, inherent risks involved in unilateral policy-making. In this context, a brief review of different policies which relate to different situations may be helpful. In general, it can be said that the more polarized a conflict, the more extreme policy the affected party is likely to adopt. Godana distinguishes five scenarios and approaches, which may be informative.

a) *Harmon Doctrine - absolute territorial sovereignty*:

The underlying reasoning of this doctrine holds that a state may adopt all measures deemed suitable to its national interest in regard to water courses within its territory, irrespective of their effects beyond its borders. Accordingly, it may freely dispose of waters flowing in its territory, but cannot demand the continued free and uninterrupted flow of water from upper-basin riparian states.

Proponents of this position may argue that an international water course in the territory of a state constitutes part of the public domain of that state; and since a state has dominion over its own territory, another state acquires rights only with the express agreement of the first state. This doctrine favors upper-basin riparian states.

In today's legal regime, "absolute territorial sovereignty" has quite often been abandoned as position by more industrialized countries because it tends to neglect interdependence and cooperation between states. The principles are equally contradictory to the principle of territorial integrity of states as provided in Article 2 (4) of the UN Charter.

b) *Absolute territorial integrity*

A policy model of absolute territorial sovereignty is the direct opposite of the theory of absolute territorial sovereignty, and states a policy of water rights whereby a lower riparian state claims the right to the continued, uninterrupted (or natural) flow of the water from the territory of the upper riparian state; a doctrine which tends to favor lower riparian states.

The theory is sometimes criticized as it allocates rights without imposing corollary duties, and has been invoked in situations where the continued flow of waters was critical to the survival of the state concerned, e.g. Iraq and the Euphrates River.

c) *Limited Territorial Sovereignty and limited territorial integrity*

Theories of limited territorial sovereignty and limited territorial integrity are in practice complementary and often even identical. They state that every state is free to use the waters flowing in its territory, on the condition that such utilization would not prejudice the territory or interests of other states. Briefly, they state that states have reciprocal rights and obligations in the utilization of the waters of their international river systems.

d) *Community of interests in the waters*

There are relevant authorities which argue for a 'community' approach, i.e. ignore state boundaries and regard a drainage basin or an international river system as an economic and physical entity, having a collective right of action by all basin states in such a manner that no state could dispose of waters without consultations with and cooperation by other states. The doctrine claims that the water system ought to be managed as an integrated whole. This consideration leads to the implementation of basin-wide development plans designed by all the riparian states in the river basin. While a potential for solution of the IEC in the Compromis, it would probably not lend itself for use by one or the side.

e) *The doctrine of equitable utilization*

This policy model has evolved gradually in a framework of long-standing conflict among competing theories discussed above and proposes that each basin state has a right to utilize the waters of the basin, and is entitled to a reasonable and equitable share of the basin water.
The principle of equitable utilization reflects the principal concerns. First, it takes into account the socio-economic needs of the basin states through an objective consideration of various factors and conflicting elements relevant to the use of the waters; second, it aims at distributing the waters among the basin states in such a manner as to satisfy

> their needs to the greatest possible extent; and lastly, it seeks to distribute the waters such that a maximum benefit for each basin state is achieved with the minimum detriment.
> One or the other advocate-agent may argue that many of UNEP's international river basin initiations are purposely based on a combination of the above factors, depending on site-specific conditions and progress in accepting the requisite international legal regime which accompanies it.[109]

The most extreme policy models are more or less considered to be abandoned in today's legal climate; just the same, one advocate-agent or the other might wish to take this position as to Agistanus, as she may have tended to adopt an extreme position when the conflict became more polarized. The increased polarization may result from a mutual perception among the parties that there is greater competition for the amount of water available in the Ozoonio River system; either because of drought conditions which might arise, or due to an increasing population, elevated levels of water pollution following the mining disaster, too much diversion of water from the Ozoonio, or a combination of these causes.

Antagonism between Agistanus and Behestoon, perhaps also rooted in regional historical events, may, in addition to increased competition for water, also contribute to such polarization. This antagonism arising from regional historical events is implied in the Compromis by the Beshini having emigrated to Agistanus generations ago.

The moderate policy models reflect a more balanced approach that may assume a surplus of water in the region - such that harsh and fierce competition for water may be avoided between applicant and respondent. With the intervention of a third party in the conflict chances that the parties to the conflict may adopt moderate rather than extreme policies may be enhanced.

The positions, and thereby the legal approaches adopted by the conflicting states, are to a large extent governed by these states' relative location along the Ozoonio River, and determine whether the relationships between riparian neighbors to a river conflict are antagonistic, as they are in the Compromis, or may be brought to become more cooperative in the course of their respective arguments.

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[109] For a more detailed explication of these principles, see Godana, B.A., African Shared Water Resources. Legal and Institutional Aspects of the Nile, Niger, and Senegal River Systems, Lynne Rienner Publications Inc., Boulder, CO (1985).

Conclusion

As socio-economic development proceeds globally at an ever quickening pace, and supply and demand in the context of the delicate river resources become more difficult to balance, the need for more sophisticated water management mechanisms and the legal regimes to support them arises.

Increases in demand for water usually are accompanied by changes from supply-oriented to demand-oriented systems.[110] In early stages, measures are taken to satisfy the demands as they arise. With an increase in demand and in their frequency, water storage and redistribution projects begin to regulate the supply. Finally, as river systems incorporate water supply schemes considered acceptable, when there is no more water quantity to allocate, further development must be supported by development of other sources of water, such as earth-generated sources, or by reallocation and control of demand; implicit in the latter position would be an acceptance of water availability as a regional constraint.

Since the turn of the century, exploitation of international river systems has begged for a radical solution, perhaps an internationalization of the entire river basin such that no single basin state could solely utilize any single branch or tributary located in its territory, without regard for the interests of its riparian neighbors.

Traditionally, each state has exercised exclusive sovereignty over her natural resources, including water; the implicit legal doctrine being territorial sovereignty. These traditional concepts no longer suffice, however, for a world of ever-increasing interdependence. In view of the peculiar characteristics of drainage basins, and especially the fact that like other natural resources water does not abide by the legal and political boundaries, a claim of absolute sovereignty over a part of an international river meets strikingly different problems from those generally associated with sovereignty over land territory. One interesting path to follow in the queries to the arguments of the advocate-agents might be to assess the replicability of lessons of experience in water management at national levels where strong competitive interests exist. The Columbia River Basin, which is shared by several different states in the United States, provides one such example.[111] Underlying legal, political and administration infrastructures should not be overlooked, i.e., the existence of a unified legal system with effective enforcement authority to ensure compliance and a developed economy which entails using economic incentives for compensation and

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[110] David, L., River Basin Development for Socio-Economic Growth, General Report in UNDP (ed.) (1976).

[111] Lee, K., Columbia River Basin, Experimenting with Sustainability, *Environment*, vol. 31, no. 6, July/August 1989.

compliance. Another example, this one from the industrializing world, might be the case of Lake Chad Basin.[112]

Cooperation in the development of sound environmental policy in the area of fresh-water resources can provide opportunities for cooperation in international law and diplomacy, with a general principle illustrated by international legal development in watershed systems the emergence of a more dynamic and responsive concept of joint development. Integrated development of water resources based upon the notion of one basin unit presupposes a step which includes concerted action in data collection, investigation, planning, operation and, ultimately, management. A recent increase in the development of international river systems along such co-operative lines is not only practical and might illustrate how states have achieved both their mutual interdependence and a wider possibility for development through co-operation, with the Rhine and Danube Rivers in Europe being two good examples.

Recent agreements concluded in the cases of the Niger,[113] Senegal,[114] Lake Chad Basin,[115] and Zambezi River System[116] all attest to this trend and exemplify an increasingly important principle of mutual cooperation and joint development of international river systems. The existence of accepted international legal regimes applicable for the conflicts enhances the potential for successful and peaceful conflict management.[117]

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[112] See Convention and Statute Relating to the Development of the Chad Basin, signed at Fort Lamy on May 22, 1974 (UNEP).

[113] Act Regarding Navigation and Economic Cooperation between states of the Niger Basin, signed at Niamey on 26 October 1963 (UNEP).

[114] Convention Establishing the OMVS (Organisation pour le Mise en Valeur du Fleuve Senegal), signed at Noukachott on 17 December 1972 (MVS).

[115] Convention and Statute Relating to the Development of the Chad Basin, signed at Fort Lamy on 22 May 1974 (UNEP).

[116] Agreement on the Action Plan for the Environmentally Sound Management of the Common Zambezi River System, signed at Harare on 28 May 1987.

[117] Draft Report of the International Law Commission on the work of its forty-sixth session 2 May - 22 July, 1994, GA Official Records Supplement No. 10(A/49/10).