

# NEW PUBLICATIONS



## *Environmental Change, Adaptation, and Security*

Steve C. Lonergan, Editor

Dordrecht: Kluwer Academic Press, 1999. 432 pp.

### *Reviewed by Simon Dalby*

This four hundred-page volume contains the proceedings of the NATO advanced research workshop on “Environmental Change, Adaptation and Security” held in Budapest in October 1997. Twenty-seven edited chapters organized into seven sections comprise versions of all the papers presented at the workshop, making this a complete record of this meeting. The decision to print the entire set of papers makes for an uneven collection of styles, approaches, and academic quality which the editor and his assistants have obviously worked very hard to massage into a readable and editorially consistent volume.

There are very diverse views in these pages and a variety of different perspectives on what counts as both security and environment. This will interest those who find the broad conceptual matters congenial and probably frustrate those who wish to follow a narrowly focused empirical research agenda. Environment here is understood in general terms and security is about much more than armed conflict and overt violence. Notable in the titles of the first three sections of the book is the specification of matters in terms of human security, which, while not explained in an introduction, obviously gestures at the formulation of security as a matter of more than states, or for that matter, the military concerns of NATO. This theme runs through the rest of the book; obviously, the notion of security here is much broader than traditional understandings in terms of national security and alliance politics.

Section one has four conceptual chapters that offer some overall reflections on the debate. Michael Redcliff's chapter opens the discussion by arguing that environmental change is not the given premise from which the debate should start. Rather he argues that the global economy has increasingly turned the environment into a matter of competition and conflict as competing corporations struggle to appropriate resources from all over the world. The consequences are that development wins out over sustainability repeatedly, and ensures that environmental security is not practically addressed. Richard Matthew's chapter also tackles the big picture by focusing on what he calls disequilibria between the political views of liberals and realists, rich and poor, institutions and needs, social and ecological systems, which added together summarize the current crisis. These are then reinterpreted through a reading of Rousseau's *Social Contract* to explore the politics of global environmental change. Marvin Soroos argues for an understanding of security that gets beyond traditional definitions in national security studies and stimulates thought about the larger threats to human well-being. He concludes ruefully, that experience suggests that societies will opt for avoidance, defense, and adaptation to environmental change, rather than take the better option of prevention. Philippe Le Prestre's chapter, the final one in the first section, focuses on how to conceptualize the political processes of adaptation in the face of both known risks and, more importantly, large scale uncertainty.

The second section consists of four chapters on matters of resources and human security, starting with David Greene's analysis of the continued high dependence of the transportation sector on petroleum and the effects of Organization of Petroleum Exporting Countries' actions on world energy prices. For economic reasons as well as

environmental concerns, he argues that high US dependence on oil needs policy attention. Chapter six, by Mike Brklacich and Shona Leybourne, reviews concepts of food security, suggesting, among other things, the importance of understanding food in terms of individual and community access and entitlements. Chapter seven by Samir Allal and Martin O'Conner, focuses on the question of the "ecological distribution" of water resources in the Jordan-Israel-Palestine area, and the necessity of political actors to understand that they have to operate on the basis of some shared interests if solutions to water supply questions are to be found. Sandor Kerekes discusses the environmental dimensions of post-Soviet economic development in Hungary in chapter eight, concluding that much of the gain in environmental performance has been achieved by the closure of polluting Soviet era factories.

Its not quite clear why chapter eight is not included in the third section on regional perspectives, which explore everything from water supplies in Istanbul, the vulnerabilities of Pacific islands to environmental change, to the environmental situation in Kyrgyzstan. The seven chapters in this section show the eclectic approaches to the overall theme of the book most clearly, and inevitably raise the question as to whether all these authors are really talking about the same topic. Environment is a common theme, but security is only implicit in some of these chapters. Chris Cocklin's chapter nine on the Pacific islands' vulnerability to environmental change and more specifically, to the increased vulnerabilities of many societies as a result of the economic "development" strategies of establishing mines and forestry exports, is a detailed academic analysis. On the other hand, Kazimir Karimov and Razia Gainutdinova's discussion of Kyrgyzstan's environment in chapter thirteen is only a very brief overview.

Barbara Jancar-Webster's chapter 10 offers an analysis of the institutional dimensions of adaptation to post-Soviet situations and concludes that the focus on developing appropriate institutions for applying for European Union or NATO membership may not produce the necessary capabilities for adapting to and handling potential environmental problems. Cocklin is more optimistic arguing that in the case of the Pacific Islands' regional strategies in negotiating international agreements on climate change and related matters have suggested the possibilities of considerable cooperation among those states. Ilter and Gul Turan's analysis of the

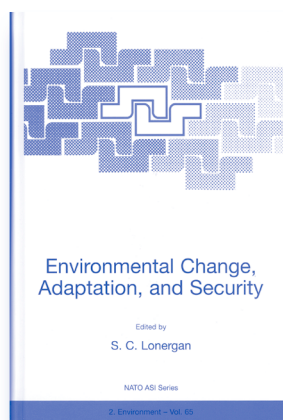
water supply situation in Istanbul focuses on the theme of urbanization and the consequences of the rapid shift of populations in developing states into urban areas. Security here is interpreted as guaranteed water supplies to urban consumers. In chapter twelve, K.S. Losev and M.D. Ananicheva briefly discuss recent trends in greenhouse gas emissions in Russia, echoing the point in chapter eight that emissions have been reduced as a result of economic decline rather than technical innovation. Chapter fourteen by Adele Finco and Peter Nijkamp offers a discussion of technical aspects of land use sustainability analysis and policy evaluation with an application to the Po delta in Italy. The final chapter (fifteen) in this section by A. Makarenko and Z. Klestova

suggests, but does not demonstrate in any detail, the applicability of Makarenko's mathematical modeling procedures to global questions.

Section four addresses transboundary problems, first with chapter sixteen by Elena Nikitina and Vladimir Kotov, on the question of Norilsk Nickel's sulfur dioxide emissions, from their smelters on the Kola Peninsula, which remain a problem despite various mitigation attempts. The political crisis in Russia has made policymaking and environmental enforcement more difficult requiring an

adjustment from top down national and international arrangements to a more complex political process that deals with local authorities and the enterprises involved directly. B. Constantinescu and Roxana Bugoi discuss the social adaptation to the Chernobyl accident in chapter seventeen emphasizing the importance of prompt and accurate government information in such a crisis. Aaron Wolf discusses the persistent question of "water wars" in chapter eighteen linking questions of resources once again to traditional security discussions of armed conflict. Wolf's analysis supports other work that suggests that the possibilities of war breaking out over inter-state water disputes are fairly remote. Violence and conflict over water resources are usually internal to states and stop short of full-scale warfare.

Section five covers matters of institutional capacity and adaptation. In chapter nineteen, Joanne Caddy returns to the themes introduced in chapter ten, suggesting the importance of innovative institutional arrangements in the transition economies of Central and Eastern Europe. Radioactive contamination in Russia is the theme of chapter twenty. In particular, L. Uspenskaya is concerned about the Kyshtym accident near Chelyabinsk in 1957 that contaminated a large area. The only effec-



tive method of dealing with this accident was the construction of a strictly enforced exclusion zone, or a “radiation reserve” where, ironically, long-term increases in biodiversity due to the lack of human activity have been documented. Sedar Guner uses game theory to investigate the possible state alliance combinations in conflict over water in the Euphrates and the Tigris rivers in chapter twenty-one. This chapter precedes a consideration of Romanian environmental strategies by Daniela Constantin, who suggests that “mosaic ecodevelopment,” starting with small local areas and gradually extending sustainable development over the whole country, coupled with careful communication, nongovernmental organization participation, and more general behavioral changes, offers the most promising possibilities for the future. The final chapter of this section is by Edward Barbier and Thomas Homer-Dixon, who discuss the fact that the resource-rich poorest countries often remain poor with conflict over the allocation of resources occurring, while economic diversification and growth are stalled.

Chapter twenty-four by Dilrom Fayzieva on water pollution in Uzbekistan and chapter twenty-five by Alexi Danchev on climate change in Bulgaria constitute the sixth section on health, environment, and security. Fayzieva documents the health effects of degraded water supplies in Uzbekistan and, noting the effects of degradation around the Aral Sea in combination with the poor economic situation in the region, paints a bleak picture of the complex causes of widespread childhood illness. Danchev suggests that climate change may aggravate the already serious health problems in Eastern Europe, but that people’s perceptions of matters needing attention focus on short-term concerns with crime and health services rather than ameliorative measures in anticipation of long-term disruptions. This discussion implicitly suggests, again, the more general difficulties of addressing climate change issues, given long-term uncertainties and pressing short-term problems.

The last two chapters deal with measurement issues: Peter Nijkamp on natural resource issues and the importance of decision support systems in agricultural policy analysis; and Steve Lonergan, Kent Gustavson, and Mark Harrower on mapping insecurity at the global scale. Nijkamp focuses on the definitional debate about sustainable development and the important considerations of carrying capacity, soil and water quality, and especially, their critical threshold values in scenario analysis. Mapping insecurity at the global level takes the questions of indicators to the largest scale and sketches out some of the components of an index of human insecurity. Combining the understanding that environment

is a complex part of violence and change in poorer parts of the world, and that security is not a matter of interstate warfare the authors develop an “index of human insecurity.” This human security index draws in part from work done on developing humanitarian and famine early warning systems, but suggests that longer term predictions may be of more use for development planning and that a few key indicators coupled with an effective mapping system, may be most useful in identifying key areas of insecurity. Not surprisingly, the data for the 1990s, as well as projections into the future, suggests that sub-Saharan Africa contains the most insecure populations on earth. Interestingly, Pakistan, Afghanistan, and the Arabian peninsula are also featured as insecure.

The dialogue with NATO partners for peace states in Eastern Europe and the former Soviet Union is well represented in these pages. This volume is a useful contribution to discussions of global problems, even as the locale from which the writers work obviously influences the perspectives and priorities of the authors. As a snapshot of the current debates about sustainable development and the uneasy links between such concepts and the literature on rethinking security, this volume’s eclecticism is noteworthy. Rather than a weakness, it suggests the multiplicity of concerns under the rubric of environmental security and the importance of understanding such discussions as a useful focus for attention to pressing problems rather than as a tightly defined analytical lens through which to view the world. That said however, some introductory comments about the broader agenda of human security, and the process that brought the authors together in Budapest in 1997 would be helpful to an audience beyond the environmental security cognoscenti. Possibly placing the editor’s own contribution, which includes a useful discussion of what insecurity means, or Marvin Soroos’ contribution, or both, at the beginning as an introductory section, might have provided a more thorough conceptual basis for the disparate themes in the individual papers.

Above all, two things about the current environmental security debate are clear in this collection. First, are the limitations of various disciplinary perspectives in terms of how they define matters. Economists, geographers, and political scientists often do not start from similar assumptions about the world and how to study it. While this is accentuated by the regional focus of many of the authors in this volume, the conceptual assumptions are not always consistent. Second, and related to this limitation, is the unavoidable matter of the classical concerns of politics. As is especially clear in the chapters by Michael Redclift and Richard Matthews,

the larger questions of humanity's place in the order of things, and the consequent assumptions about how human affairs ought to be arranged, are unavoidable when global environmental considerations are discussed. However important the technical discussions are, and they matter greatly, the case that security is a fundamentally political matter is squarely put, even if often only implicitly, in the pages of this volume.

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***Ecology, Politics, and Violent Conflict***  
**Mohamed Suliman, ed.**  
 London: Zed Books, 1999. 288 pp.

***Reviewed by Leif Olhsson***

If you really wish to get confirmation of the existence of a phenomenon such as the hypothesized link between ecological disruption and potentially violent political and social outcomes, then you should go to changes in language, according to Fatima Babiker Mahmoud, a contributing author in this edited volume, *Ecology, Politics, and Violent Conflict*.

If you are a *naziheen* in Sudan, you will know of this link from bitter personal experience. The term was coined in the early eighties to cover a new pattern of migration caused by environmental crisis. Before the advent of this type of migration, migrants were referred to simply as "rural people" (*igleemiyeen*). The term differentiates between migrants and refugees in the sense that when a person is a *nazih*, he or she is moving within national boundaries. It is also so specific to the drought-displaced that, in general usage, the war-displaced, who are mainly from southern Sudan, are referred to simply as "Southerners."

The number of *naziheen* in Sudan today may be more than three million. About half of them live in or near Khartoum in miserable squatter settlements, subject to regular *kashas*, rounding-ups by the police, often with the object of assembling train-loads of forced labor for the large commercial farms. In contrast to international refugees (e.g. from Eritrea), or even war-displaced people, none of the *naziheen* qualify for

support from UNHCR [United Nations High Commissioner for Refugees].

If you are a *nazih* woman, you are particularly vulnerable. Wearing your traditional clothing from, say the Nuba region, you immediately become a target of abuse, not only by the police, but by men in general. Even in their migrant homes, *nazih* women face greater risk of violence than in their place of origin, since the level of violence in migrants' homes tends to rise.

This is how Mahmoud portrays the link between ecological disruption and violence, primarily against women, in today's Sudan. It is an understanding that can only come from detailed studies and privileged inside knowledge. It is also one of the great strengths of the book *Ecology, Politics, and Violent Conflict*, edited by Mohamed Suliman.

It is a strength which is replicated in another case study of Sudan, by Abdel-Galil Elmekki, which concerns the large-scale changes in the country's food-producing sector. In an extremely well-reasoned chapter, he gives a detailed account of the roots of the food crisis in Sudan. The enigma to be explained is succinctly formulated: why is it that producers of food are the first and most seriously affected by famine?

The explanation is that access of peasant communities to food is declining at both the production and exchange levels. Farmers in eastern and western Sudan are no longer capable of producing enough sorghum and millet, as a result of both land degradation and forced changes in the production process. As a result of what ironically was termed the "bread-basket" policy, sorghum and millet no longer are produced in order to provide people with food, but as a contribution to the country's balance of payments. In the process, the large-scale mechanized farming sector has become one of the most powerful lobbying groups, completely marginalizing small-scale

farmers, who can neither produce enough for their own needs, nor afford the produce offered on the market.

At the bottom lies a system of perverted government-induced subsidies favoring the interests of large-scale mechanized farmers, the end result of which has turned out to be both starvation and ecological disaster in a context of civil war and massive flows of internal and external refugees. The case of Sudan thus, underpins the links between ecology, politics, and violent conflict, sought for by the book.

Starting out the book, however, the reader gets a healthy inoculation against too simplistic notions of such





links. Nicholas Hildyard's criticism of proponents of the "blood and babies" family of theories is a passionate, yet balanced, treatment of the basic theoretical issues encountered whenever a treatise is attempted that involves violent conflicts of seemingly ethnic origin, in a context of continuing population increase. Neither ethnicity, nor scarcity are "primordial" causes of conflict—both, in Hildyard's terms—are socially constructed or induced phenomena, open to manipulation by actors with an agenda based on self-interests.

By placing Hildyard's thoughtful piece at the very beginning of the book, the editor, Mohamed Suliman, promises a fruitful intellectual journey to come. To a large part, such promises are fulfilled—Günther Baechler's theoretical chapter deserves mention—but in some cases they are not.

Unfortunately, Suliman's own chapter on "The Rationality and Irrationality of Violence in Sub-Saharan Africa" belongs to the latter group. An expert on the conflicts in the Horn of Africa, Suliman deserves credit as an editor for bringing to the light contributions like the two chapters on Sudan mentioned. But he would have been wise to abstain in his own chapter from an attempt to gain easy points through rather empty denunciations of cultural essentialism and neo-malthusianism. Here, serious researchers are lumped together with authors of best-selling books, and all of them discarded in little more than a paragraph on the grounds that "only a combination of unfavourable factors will make [people] cross the threshold between war and peace." This is a straw-man type of argument, since every serious author, including several of those discarded, would be very careful to make the same point.

Likewise, Suliman's own point, that "the most pernicious [factors leading to conflict] are the denial or limiting of people's access to renewable natural resources, and ecological degradation," is well worth emphasizing—but it also conforms to precisely the link that a whole strand of environment and conflict research, including some of the researchers previously dismissed, has gone to considerable lengths to problematize and illuminate.

Having said this, the overall evaluation of the book, of course, depends on its intended readership. As one in a row of "readers" for the interested general public or undergraduate courses it may fill a certain need. The replications of already published material are not a drawback for this purpose, although some of the pieces would then have benefitted from a different style of writing. As an edited volume for the scientific readership (as its style of writing would imply), there remains—apart from several highlights mentioned—certain weaknesses. As a

final example, the chapter on climate change has much to do with politics, but the link to violent conflict (as the chapter heading promises) is absent. Similar comments could be made about other chapters.

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***Hydropolitics in the Third World: Conflict and Cooperation in International River Basins***

**Arun P. Elhance**

Washington, DC: United States Institute of Peace Press, 1999. 309 pp.

***Reviewed by Ariel Dinar and Shlomi Dinar***

*Hydropolitics in the Third World* is a major contribution to our understanding of conflict and cooperation patterns among states that share international river basins. Arun Elhance, a scholar on international water resource management, has prepared for readers of various disciplines a comprehensive analytical framework that covers several aspects of international waters, such as hydrology, geography, history, economics, politics, and international relations. This book is the first attempt at applying a robust analytical approach that compares and analyzes conflict and cooperation in several river basins. All previously known works were case studies that examined only one international river basin.<sup>1</sup> What can the reader gain from reading this book and what are the main assets of the book?

First, the book is an endless source of information on the geography, hydrology, and politics of the riparian countries sharing six of the major international river basins around the world. The case studies in the book include the Paraná-La Plata in Latin America, the Nile in Africa, the Jordan and the Euphrates-Tigris in the Middle East, the Ganges-Brahmaputra-Barak in the Indian sub-continent, and the Mekong basin in South East Asia.

Second, Elhance presents an analytical framework that guides the reader through a rigorous analysis of hydropolitics in each basin and a synthesis for all basins. The reader is exposed to eye-opening information on one of the most interesting trends in the world—conflict and cooperation over the most precious resource, water. In addition, scholars of all disciplines can apply this approach developed by Elhance to other river basins, and make use of the framework since conflicts

around international river basins are the rule rather than the exception. The waters of these basins are just as rare and scarce as cooperative solutions to the conflicts.

In terms of international relations, Elhance not only discusses many traditional and emerging concepts, but also adds tremendous insights into the manner in which politics on water and environment interact—a very important issue since the end of the Cold War.

Unfortunately, for overall implications of hydropolitics and international relations, the river basins chosen do not permit analytical generalization because of the hydropolitical uniqueness of each basin. Nonetheless, Elhance's comparative case study approach does produce some "contingent generalizations" which can be beneficial as the states within the different basins often face similar constraints and objectives under which they conduct their relations.

One very important aspect of water, of which the reader is constantly reminded, is the interdependency of riparian countries. This interdependency draws nations into a web, compelling them to interact with each other, yet making them vulnerable to the vagaries of uncertain interstate relations, the anarchic state of the international system, domestic politics, and geo-politics. The picture is even more complex when colonial-era legacies are present, where contested national borders become a conflicting issue, and where identities and other political conflicts are embedded in the water conflict and vice versa. Thus, nations are often faced with both sensitivities and vulnerabilities in terms of their riparian relations.<sup>2</sup>

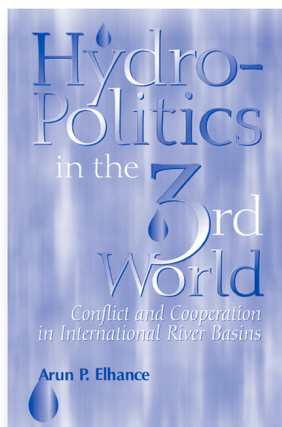
To his credit, Elhance also stresses the importance of geography to the international relations between riparian states. This often forgotten variable in conflict, cooperation, war, or peace in international relations, is of great importance to hydropolitics. As such, geography shapes hydropolitics and often dictates the positions and foreign policies of states vis-à-vis a waterway. For example, a nation such as Turkey that is the upstream state in the Tigris and Euphrates basin, is a potentially hegemonic nation since the rivers both originate from its territory. Yet, hegemony in terms of geography can sometimes mean nothing when a state is not able to exploit its hegemonic potential (i.e., the hydrological assets). Ethiopia for example, is an upstream state where more than eighty percent of the Nile waters originate. *It is unable, however, to exploit its position given its inferior economic status and its military and political stance in comparison with the political and economic power of Egypt.*

Elhance also notes that the inability to assert hegemony affects the relationship between security and sovereignty. In the case of Egypt, the Nile River is crucial to the state's survival as evidenced in the past, when the Egyptian government has threatened to go to war over the river if the water flowing into Egypt is threatened or altered in any way. In a similar manner, water has already had a role in instigating a war between Israel and Syria and is a great issue of contention between the two countries as they negotiate a peace treaty.<sup>3</sup> This brings us to a central question: Will states actually go to war over shared water resources? This has been a topic of great interest and debate among several scholars that is still unresolved.<sup>4</sup> What is certain, according to Elhance, is that conflicts over shared waters of international river basins will continue to undermine interstate relations for the near future.

In several of the regions, such as the Ganges-Brahmaputra-Barak Basin, water is linked to a political conflict. This linkage is important to such an extent that, Elhance argues it is difficult to imagine the states in the basin making a substantial improvement in their contentious bilateral and multilateral relations if issues

relating to the division and sharing of water are not resolved. On the other hand, as Elhance reiterates, basins such as the Jordan are afflicted with a protracted conflict where the main obstacle to cooperation is embedded in identities and territorial disputes. Regions where the low politics (water) cannot be separated from the high politics (protracted conflict) also involve domestic politics and the influence of pressure groups on the policies and negotiating positions of states. Still, as the nations of the Jordan River basin continue their reconciliation, a final peace agreement will not be possible without an equitable division, or at least a fair division of the waters. This conflict, however, demonstrates the problematic nature of water. In some regions, the inseparability of water from the protracted conflict or the centrality of water in the state's international relations, makes water the subject of high politics.

As Elhance illustrates when introducing the example of the Mekong River, only when states have committed themselves to cooperation and are also "ripe" in terms of their domestic and international environments, can they then commence negotiations over the waterway they share. In addition, only then can international organizations and other nongovernmental organizations be able to mobilize and assist states in realizing their shared interests. Thus, cooperation is very much linked to the



overall political environment among states and their perceptions of one another. It is important to note, however, that nongovernmental organizations, epistemic communities, and international organizations can often put pressure on governments or mobilize citizens to support a certain political track even if the government itself would not have initiated the political track alone. At the same time, cooperation, as the Mekong River basin demonstrates, can also be a derivative of the realization among the riparian states that a water crisis may be realized if they do not take immediate cooperative action.

There are also several areas of the book where Elhance's argument is weak. First, we find it very unfortunate that the most important contribution of the book—the analytical framework—is hidden in an appendix at the end of the book. One would expect to have the analytical model at the front of the book, followed by the case study chapters, the comparative analysis, and conclusions.

Second, the restriction of the book to “hydropolitics in the third world” is an artificial construct. The model developed by the author has relevance to cases in the developed world as well. Why should it be restricted only to the third world? We feel that extending the discussion to include a wider range of conditions pertaining to the variables used in the comparative model (such as the country's level of development), would add value to the book. Elhance extrapolates from the analysis of present situations to future predicted scenarios, but he ignores other contemporary basins also in need of analysis. This practice, in our view, is a missed opportunity to demonstrate the robustness of the analytical framework. To Elhance's credit, he does generalize some of his findings in the conclusion section, but in our view, this brief mention is not enough.

Third, Elhance approaches cooperation with a narrow focus. The fact that mainly water-related cooperative projects are discussed and used to explain trends in behavior of riparian states may have biased the conclusions of the comparative analysis. Cooperative theory suggests that the larger the “cake,” the more likely the arrangement is to be stable and sustainable. Experience indicates that there are many venues of cooperation that are outside the water arena.<sup>5</sup> Use of relative advantages in neighboring economies may add needed aspects to cooperation. Here we suggest the notion of sub-coalitions, as was suggested by Richard Just and Sinaya Netanyahu.<sup>6</sup> The basic issue that does not get the attention it deserves, is whether or not full cooperation (Grand Coalition) among all riparian states is a necessary condition for conflict resolution in the basin, or that

cooperation among a sub-group of riparian states shall be the first objective and over time this cooperation will strengthen and the sub-group will expand.

Finally, while Elhance admits that his book only focuses on states (although he does mention the importance of separatist movements such as with Eritrea, Kurdistan, and Kashmir/Panjab), his argument could have benefited from a more rigorous analysis and discussion of the influence and effects of emerging states and national entities on already established states' hydropolitics. This impact on hydropolitics is especially important with the introduction of new actors after the Cold War.

Despite the deficiencies described above, we recognize the fact that not every issue can be addressed in one study or model. *Hydropolitics in the Third World* is one of the building blocks in the process of establishing the necessary analytical framework for the science of hydropolitics, as well as the challenging field of water diplomacy. It is our hope therefore, that our criticism will offer ideas for further research in this important field.

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## NOTES

<sup>1</sup> For example, see John Waterbury, *Hydropolitics of the Nile Valley*. Syracuse, N.Y.: Syracuse University Press, 1979; John V. Krutilla, *The Columbia River Treaty: The Economics of an International River Basin Development*. Baltimore: Johns Hopkins University Press, 1967; Aaron T. Wolf, *Hydropolitics along the Jordan Valley: Scarce Water and its Impact on the Arab-Israeli Conflict*. Tokyo: United Nations University Press, 1995; and B.G. Verghese, *Waters of Hope: Integrated Water Resources Development and Regional Cooperation within the Malayan-Ganga-Brahmaputra-Barak Basin*. New Delhi: Oxford and IBH Publishing Co, 1990.

<sup>2</sup> Kenneth A. Waltz, “Structural Causes and Economic Effects,” *Theory of International Politics*. Reading, MA: Addison Wesley Publishing Company, Inc, 1979.

<sup>3</sup> In the negotiations between Syria and Israel that are currently (as of May 2000) at a stalemate, water plays a key role. If Israel withdraws from the Golan Heights it will lose control over the tributaries, which feed into the Jordan River.

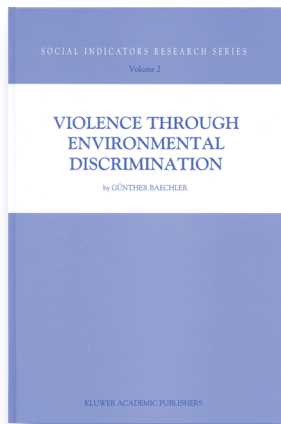


Any agreement with Syria will include a detailed agreement on the control, management and division of the tributaries' waters. For background information, see for example, Itamar Rabinovich, *The Brink of Peace: The Israeli-Syrian Negotiations*. Princeton, N. J.: Princeton University Press, 1998; and Helena Cobban, *The Israeli-Syrian Peace Talks 1991-96 and Beyond*. Washington, D.C.: United States Institute of Peace Press, 1999.

<sup>4</sup> Aaron T. Wolf, "Conflict and Cooperation along International Waterways." *Water Policy*. 1:2 (1998): 251-265; Thomas F. Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict," *International Security*, 16:2 (Fall 1991); Thomas F. Homer-Dixon, *Environment, Scarcity and Violence*. Princeton, N.J.: Princeton University Press, 1999.

<sup>5</sup> See for example Peter Rogers, "The Value of Cooperation in Resolving International River Basin Disputes." *Natural Resources Forum*, 17:2 (1993): 117-31, for the case of the Ganges-Brahmaputra and Haim Ben Shachar, Gideon Fishelson, and S. Hirsh. *Economic Cooperation and Middle East Peace*. London: Weidenfeld and Nicolson, 1989, for the case of the Middle East.

<sup>6</sup> Richard E. Just and Sinaya Netanyahu, "International Water Resource Conflicts: Experience and Potential." In Just, Richard E. and Sinaya Netanyahu (Eds.), *Conflict and Cooperation on Trans-Boundary Water Resources*. Boston, CT: Kluwer, 1998.



volume offers a full-length elaboration of both the model and the findings. As such, this volume is a most useful addition to the environment and conflict literature.

The basic premise in the study follows much of the literature in the field in arguing that political conflicts in the underdeveloped world have identifiable material roots. In exploring the chains of causation that link environmental factors to conflict, Baechler develops a complex model that emphasizes political factors within states as crucial to predicting the eruption of violence. The ENCOP findings confirm other research, which suggests that environmental conflicts are mostly internal to particular states and unlikely to cause inter-state conflict in the immediate future. Unraveling the important causal factors and the circumstances that are likely to lead to organized conflict, if not to full-scale warfare, is not an easy task although this volume carefully lays out the causal connections. But, Baechler wants to do more than revisit this research; he tries to extend the analysis to suggest some practical ameliorative measures that will take the pressure off rural resources and hence prevent conflicts occurring. This attempt at ameliorative measures leads him back to a discussion of security and sustainable development towards the end of the book.

While much of the environment and conflict research focuses on the question of environmental degradation as a factor in causing conflict, Baechler emphasizes that the other side of the coin, the transformation of environments by human action on the largest scale, is also an important part of the current processes. In particular the actions of industrialization, the development of a fossil-fueled economy, and the expansion of industrial agriculture in the second half of the twentieth century have been major factors in the transformation. Right from the first page of chapter one, Baechler uses Vandana Shiva's term "maldevelopment," to make the connections between violence, poverty, and environmental degradation in Africa explicit. But more generally he discusses this within the framework developed by Karl Polanyi, of the "Great Transformation" from traditional agricultural to modern industrial society in Europe which has directly driven many of the large-scale environmental changes of the last few centuries. Crucially Baechler suggests that maldevelopment in Africa, in particular, is part of the larger consequences of the "Great Transformation."

These conceptual considerations suggest clearly that conflict is a result of the disruptions of development

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***Violence Through Environmental  
Discrimination: Causes, Rwanda Arena,  
and Conflict Model***  
**Günther Baechler**  
Dordrecht: Kluwer, 1999.

***Reviewed by Simon Dalby***

Günther Baechler was the director of the Environment and Conflicts Project (ENCOP) supported by the Swiss Peace Federation in the 1990s. This volume draws heavily on the work of the project and its case studies. Although not officially ENCOP's final report, much of this volume effectively acts as such. It provides a summary of the theoretical framework as well as a synthesis of the findings of the empirical material. While much of the project material has appeared in summary form in articles and book chapters, including in the Environmental Change and Security Project Report, this



and transformation rather than a result of solely indigenous causes. This connection is crucial to the discussion in this volume and a very useful contribution to the larger literature linking environment and conflict. While some researchers might demur at the broad generalization that the places that are likely to have environmental conflicts are arid grasslands and mountain areas, which have been only partly disturbed by the processes of industrial transformation, this volume has the very considerable advantage of making the geographical factors of conflict much more explicit than is often the case in this environment and conflict literature. Focusing on the particular kinds of environments that are involved in conflicts simplifies both the relevant causations to be studied, and also narrows the often loose definitions of both "environment" and "resources" included in models that try to offer very broad generalizations about the processes of environmental conflict.

Using the African "maldevelopment" cases where violence is directly linked to the environment and the lack of development, Baechler suggests that these processes must also clearly be understood in terms of the unfortunate history of colonization and the economic marginalization of rural populations. Discussing these marginalized people, as the title of the volume suggests, in terms of environmental "discrimination," may not be the ideal terminology. But, discrimination does convey the crucial point of the whole volume, that many people do not have access to either the resources they need, or economic alternatives to these resources, for political reasons, and are often forced to fight to survive as a consequence. The Rwanda case study that forms the empirical demonstration of the ENCOP model however emphasizes that environmental factors were not the crucial cause of the violence there in the 1990s. Rural discrimination there was overlain with powerful ethno-political fractures that were mobilized by elites in a desperate genocidal bid to maintain power in a crisis situation.

Parts of this book read more like a technical report than a scholarly monograph, but apart from some minor irritants like the unusual designation of quotation marks, the volume is easily accessible. The detailed summary presented in the introductory pages clearly lays out the overall argument of the volume. Appendices and a detailed bibliography are also useful scholarly additions to the field. The last substantive chapter argues convincingly that thinking about practical policy initiatives requires linking the debates about rethinking security, conflict research, and the possibilities of sustainable development.

The volume closes in chapter eight with a brief dis-

cussion of the "Borana solution" to the potential conflicts between fourteen ethnic groups in an area in East Africa. Here cooperation and an intricate agreement forestalled conflict and generated a locally sustainable pattern of resource use as well as an agreed arrangement for enforcing the agreement. Baechler suggests that there is much to be learned from this case, but this reviewer was disappointed that much more was not made of this analysis. In particular, Baechler would have strengthened the volume, if he had explicitly worked the Borana solution back into the model on the one hand, and, on the other hand, if the crucial question of keeping central state officials out of the way to allow a local solution to be worked out, was discussed in more detail.

How all this might lead to alternative modes of "off farm" rural economic employment that reduce the strain on agricultural resources in other situations needs much further work. Hopefully, the results of such research will be forthcoming in future volumes based on the current research in Africa that has followed on from the ENCOP analyses. What is abundantly clear in this important volume is the necessity of understanding violence as a part of contemporary social transformation, and of understanding the political specificities of particular environmental contexts in predicting conflict, as well as in suggesting ameliorative actions.

*Simon Dalby is Associate Professor of Geography and Environmental Studies at Carleton University in Ottawa.*

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*The Sustainability Challenge for Southern Africa*  
**Jim Whitman, Editor**  
 New York: St. Martin's Press, Inc., 1999. 299 pp.

*Reviewed by Shanda Leather*

This book is the result of a collaborative effort by a team of southern African practitioners and academics who on the environmental challenges facing their region. As is stated in the preface, the authors are attempting to investigate the sources of sustainability and stability in the region from a global security perspective. By examining a variety of topics from this viewpoint, the contributors are seeking to emphasize the importance of political comprehension that is inclusive and recognizes that collaboration between states in this region may be essential to ensure environmental and political sustainability.

The introductory chapter lays out the global security approach in a comprehensive manner, beginning

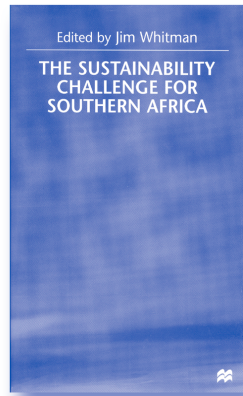
with fundamental definitions and discussions of sustainable development, global security, global civil society, and indeterminism. The theoretical groundwork is well set, and a framework through which we can view a variety of topics is very clearly defined. Unfortunately, the remaining topically-oriented chapters do this with a wide-ranging level of success.

Chapters on global security, regional cooperation in the sustainable development of tourism, sustainable water development, and population and energy are well-developed and seek to examine these topics in new and innovative ways. All of these chapters attempt to broaden the traditional political definitions of security and incorporate innovative ways of looking at resource sustainability. The authors incorporate the global security approach through discussions of cross-boundary resources and the interdependence of populations and states, and very clearly support the statement in the first chapter that the link between the global and the regional security is two way.

Discussions of more traditional economic topics such as economic integration, sources of sustainable development, and cooperation for intra-regional trade are less successful in incorporating the global security perspective, and as a result, read as little more than literature surveys on the topics. Several of these chapters simply present the variety of theories one after another and leave little room for innovative thinking. For example, in the literature on human development, there has now been

over a decade-long desire to expand discussions to include a wider definition of human security. An understanding and awareness of this debate is reflected by the authors of the chapters on those topics in their ability to think more broadly and introduce a wide range of possible directions for southern Africa. Although less well developed, this broadening debate has also taken place within the literature on development economics and environmental economics, and it would have been welcoming to see some of those discussions and innovative ways of approaching the topics incorporated here.

An inherent weakness in a book incorporating topically-oriented chapters by a variety of authors is that it will lack an overall common theme. In the case of this volume, there are many direct and specific policy recommendations throughout the book, some more constructive and innovative than others. The final chapter is dedicated not to reiterating these recommendations, but to identifying common themes that emerge from the chapters. The various authors come together in this final chapter and refer to these themes as "policy pressure points." The authors assert that it is essential for these overall issues to be addressed in order to create the environment for the other specific policy recommendations to be effective. Listed briefly, these themes are: democracy, equity, cooperation, policy monitoring information systems, and a shared value system. These are broad and cross-cutting themes that get right to the crux of a global security oriented approach to



## Environment and Security in the Amazon Basin

Sponsored by the Latin American Program and the Environmental Change and Security Project of the Wilson Center, this series of three meetings on Environment and Security in the Amazon Basin was a wide-ranging and stimulating discussion on politics and policy in the Amazon Basin. The first meeting covered the following topics: environmental and sustainable development initiatives in the Amazon Basin; the roles of local, national, and international actors; the evolving Brazilian national security perspective; and the rising threat of drug trafficking in the region. The second meeting focused on environmental policy in the Brazilian Amazon and featured Mary Helena Allegretti, Special Secretary for the Coordination of Amazonian Policy in Brazilian Ministry of the Environment, while the last meeting examined Brazil's SIVAM Project and its implications for the Amazon. Issue 7 of the *ECSP Report* will feature a comprehensive report of the three meetings.

sustainable development. Unfortunately, these themes remain underdeveloped, and other than expanding on what is meant by each, no recommendations are given as to how this group would recommend proceeding towards them.

In general, I was disappointed by this volume. There is precious little available about sustainable development in southern Africa that is written by authors from the region. I had hoped that this would prove an exception, and that it would turn up some innovative ideas and stimulate discussion. Aside from one or two authors, my general sense is that the volume restates much of the northern development literature with African voices. There is debate and there are innovations within the region, and the book would have been stronger had some of that more recent literature been reflected here. That said, it is good to see a collaborative effort bringing together professionals from across the southern African region. If the challenges to sustainable development are to be met within the global security perspective promoted in this volume, it will only be successful through collaboration and cooperation.

*Shanda Leather is a Project Associate at the Woodrow Wilson Center's Environmental Change and Security Project and the Editor of the PECS Newsletter.*

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***Nature's Place: Human Population and the Future of Biological Diversity***  
**Richard P. Cincotta and Robert Engelman**  
Washington, DC: Population Action International, 2000. 80 pp.

***Reviewed by Jessica Powers***

“The more fundamental causes [of biodiversity loss] are rooted in the contemporary human condition, especially as they are amplified by the explosive growth in human numbers in the last three centuries.”

Michael Soulé, 1991<sup>1</sup>

Such is the premise upon which *Nature's Place* looks at the impact of human population pressures on Earth's biodiversity. Richard Cincotta and Robert Engelman report on biologically diverse and species-rich regions that are particularly threatened from population pressures and by the extractive and destructive practices of human beings. The causes and consequences affecting

these biodiversity “hotspots” are explored in this Population Action International (PAI) report, and several recommendations are made to improve decision-making and policymaking, as well as offer further avenues of research.

More than 1.1 billion people now live within the twenty-five global biodiversity hotspots, identified by Conservation International. The term “hotspots” is a concept that Norman Myers, Russell Mittermeier, and other ecologists have defined as the most threatened species-rich regions on earth. About twenty percent of the world's population lives in these biologically diverse areas, and these numbers of people are only projected to increase, thus expanding the need for “additional land, water, waste-absorbing sinks” to support them. Ecologists estimate that at least half of the world's terrestrial species live within these hotspots, but human population growth and migration have made conservation efforts simultaneously more difficult and more important. According to the PAI report, “By 1995, population density (people per square kilometer) in the global biodiversity hotspots was, on average, almost twice that of the world as a whole.” Conservation is thus threatened given the Earth's finite resources and a growing population. On the other hand, conservation is also advocated as way to preserve these finite resources.

What are some of the direct causes of biodiversity loss? Cincotta and Engelman explore the linkages in the literature and identify some key causes including habitat loss and fragmentation, deforestation, biological invasion, pollution, and over-harvesting of fish and agricultural products. Other factors to consider in looking at the relationship between biodiversity and human population growth, according to the authors, include the role of indigenous people, the impact of migration and land inequity, the impact of development and urbanization, the increased use of land for agricultural purposes, and the contrast between poverty and inequity on the one hand, and consumption patterns in the wealthier nations on the other. To illustrate the severity of the many causes and consequences of biodiversity loss, Cincotta and Engelman highlighted the case of Madagascar, one of the twenty-five identified hotspots.

**The Case of Madagascar**

Madagascar, detached from the African continent more than 140 million years ago, is separated from the mainland by the Mozambique Channel, and is the fourth largest island in the world. Ecologists have shown that about eighty percent of Madagascar's plants are endemic to the island. All twenty-nine lemur species were unique

to Madagascar, with sixteen of the species having been exterminated since the arrival of humans on the island.

While rich in biological material, Madagascar, like many of its African neighbors, is afflicted by extreme poverty and has a debt nearly equal to its gross national product. According to the Population Reference Bureau, the average annual income in the last decade was about \$200 per capita. Furthermore, Madagascar has a population of about fifteen million that is growing at about 2.7 percent a year. Malagasy women have, on average, between five and six children during their lives with a life expectancy of only about fifty-three years. The impact of AIDS will further decrease life expectancy, but nevertheless, by the year 2020, Madagascar is predicted to have a population of more than thirty million. This growth represents a doubling of its current population in only twenty years.

Since the arrival of humans on the island of Madagascar roughly 2000 years ago, the dry deciduous forest of western Madagascar has been radically fragmented, as have the mangrove forests along the coast. (See *maps of Madagascar from 2000 years ago and as of 1995*.) Deforestation, unmonitored cattle ranching, and the charcoal production industry, especially since 1950, all threaten Madagascar's tropical forest habitats. Rapid population growth, massive poverty, economic underdevelopment, and political instability have had an impact on the species-rich but ecologically sensitive island of Madagascar. Thus, these socio-political factors combined with the highly endemic nature of species on Madagascar has led to island being designated as one of the world's hotspots.

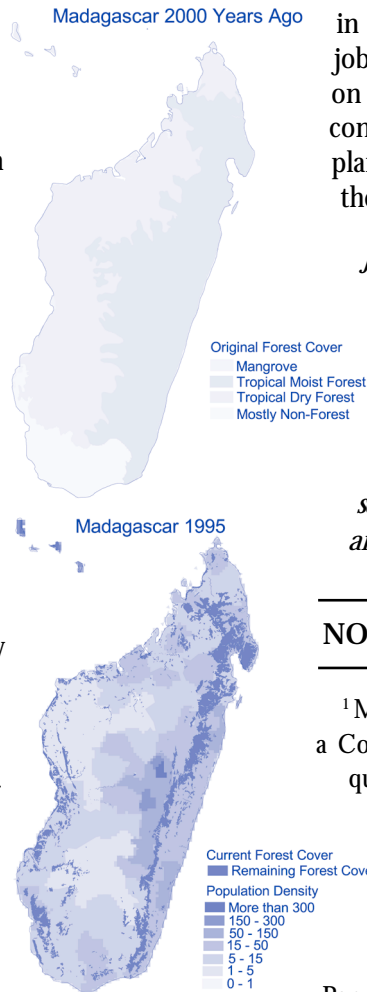
Different research projects have used satellite imagery to study the effects that population growth, widespread poverty, an absence of effective development infrastructure, and the attendant development resources and techniques have on deforestation and species survival. In conducting their analysis, the authors relied upon data from organizations such as the World Conservation Monitoring Centre that have been actively involved in conserving remaining vegetation on Madagascar.

In sum, this PAI report is an excellent overview of the interaction between human population growth and

activity and Earth's biological diversity. The report offers several feasible recommendations for lessening the impact of human population in the identified hotspots and does a solid job of synthesizing different research efforts on biodiversity. Additionally, this report contains many useful graphs, charts, explanatory boxes, and photos that elucidate the points made in the text.

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□ Please see the Meeting Summaries section for an ECSP meeting on this report and its findings.



NOTES

<sup>1</sup> Michael E. Soulé, "Conservation: Tactics for a Constant Crisis," *Science* 253 (1991): 745, quoted in Richard P. Cincotta and Robert Engelman, *Nature's Place: Human Population and the Future of Biological Diversity*. Washington, DC: Population Action International, 2000: 53.

<sup>2</sup> Maps reprinted with permission from Population Action International. ECSP would like to thank Richard Cincotta, Robert Engelman, and Jennifer Wisnewski of PAI for their assistance with the maps.

*Protecting Public Health and the Environment: Implementing the Precautionary Principle*  
 Carolyn Raffensperger and Joel Tickner, eds.  
 Washington DC: Island Press, 1999. 385 pp.

*Reviewed by Kate O'Neill*

The precautionary principle (PP) has taken on an important role in current debates over international and national environmental law and policy. It is a complex principle, in both its definition and implementation, and debates over its relevance tend to generate more heat than light. Briefly stated, at its core lies the notion that "preventive action should be taken in advance of scien-



tific proof of causality” (p.8). Its origins lie in the German system of environmental regulation, and it became prominent on the international scene as part of the 1992 Rio Declaration on Environment and Development. Since then, it has appeared in many national and international environmental rules and agreements, including the Cartagena Protocol on Biosafety, signed in Montreal in January 2000.

The PP (potentially) marks a radical shift in environmental policy with its mandate to change the substance and guiding principles of policymaking towards proaction and greater caution, a far more fundamental change than procedural measures, such as environmental impact assessments. Powerful economic interests frequently oppose the PP. This book tackles some of the more difficult questions surrounding the PP at different levels and stages of policymaking, most notably, the key issues of implementation and the role of scientific knowledge versus legal expertise. The essays collected here came out of the 1998 Wingspread Conference on Implementing the Precautionary Principle. Attended by a group of 35 academics, scientists, activists, government researchers, and labor representatives from the United States, Canada, and Europe, the conference goal was to bring the PP to the forefront of public health discussions in the United States. At the same time, the book has an international focus, drawing on examples from international agreements, Scotland, and Sweden.

Its strengths, in particular, lie in three excellent overview chapters (i.e., those by Andrew Jordan and Timothy O’Riordan, David Santillo, *et al.*, and R. Michael M’Gonigle) that discuss the history and evolution of the concept from political and legal perspectives. They also clarify some of the definitional ambiguities associated with the PP. For international scholars and practitioners, most useful are the discussions in chapters and appendices of the increased frequency of the PP in international agreements. The discussion does lack, however, a focus on the specific problems of implementing the principle under international law or how implementation issues vary among countries and political systems. Most significantly, though, the book tackles theoretical and empirical implementation issues at the national and subnational levels. Cases and examples are very diverse (perhaps too much so), and the contributors to the volume discuss a wide range of actors. Legal, economic, community/grassroots, and scientific perspectives are all represented. To an extent, the diversity in length, style,

and focus of the essays detracts from the book’s overall coherence. However, it still makes for a good introduction to the subject of the PP as it applies to U.S. policy, and how it has been implemented or applied overseas and in international law.

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***Promoting Reproductive Health: Investing in Health and Development***

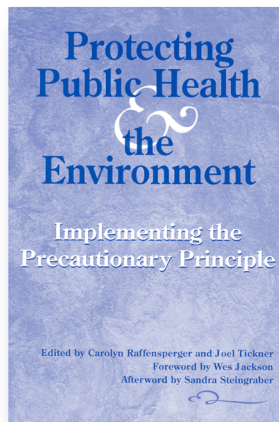
**Shepard Forman and Romita Ghosh, Editors**  
Boulder, London: Lynne Rienner Publishers,  
2000. 315pp.

***Reviewed by Simona Wexler***

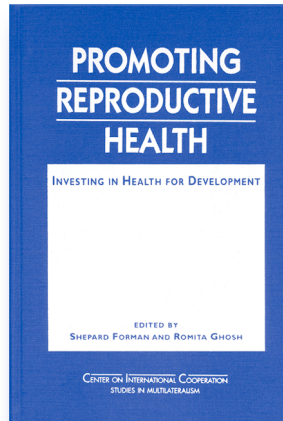
*Promoting Reproductive Health: Investing in Health for Development* outlines policies, programs, and financing that developing countries have implemented following the International Conference on Population and Development (ICPD) held in Cairo, Egypt, in 1994. Six case studies looking at Bangladesh, Egypt, Indonesia, Mexico, South Africa, and Tanzania are presented to illustrate the progress and failures made in the reproductive health front since 1994. The case studies were authored by a joint collaboration between an international team of experts and the Center on International Cooperation (CIC) at New York University. A chapter of the book is devoted to the assistance provided by two donor countries: the United States and the United Kingdom.

According to Simeen Mahmud and Wahiduddin Mahmud, who authored the case study on Bangladesh, there are mixed results on the reproductive health front in that country. Although considerable progress was made even before the ICPD conference of 1994, the status of women’s reproductive health “remains compromised despite the fact that women’s childbearing burden has been halved.” Access to reproductive health services, for instance, continues to be problematic. Furthermore, women’s access to public health facilities is often hampered by “the widespread but unofficial collection of user fees.”

Hind Khattab, Lamia El-Fattal, and Nadine



Shorbagi analyze the case of Egypt, which hosted the 1994 ICPD conference. According to the authors, although Egypt has made significant progress in contraceptive health and family planning, the level of health care is in dire need of improvements. Egypt has implemented many of the recommendations that came out of the 1994 meeting, and as a result, cooperation between non-governmental organizations (NGOs) and the government has improved. Additionally, the government's efforts to improve health services for women in poorer areas have increased. However, donor and recipient's fears that "reproductive health will replace family planning, with grave consequences for rates of population growth and overall development" is hampering further progress in reproductive health.



The reproductive health debate in Indonesia, as analyzed by Terence Hull and Meiwita Iskandar, is being hijacked by a pernicious debate on topics such as abortion and the spread of STDs (sexually transmitted diseases). Stern resistance to "sex education, counseling, and contraceptive services for unmarried people" is commonplace. Indonesia's reproductive health problems have been endemic for sometime and were not caused, the authors conclude, by the severe economic crisis of the late 1990s.

Mexico's political establishment strongly favored implementing the Cairo agenda, and in 1997, reproductive health language was introduced for the first time in Mexico's Health Law. As in the case of Egypt, commitment to the ICPD platform has generated productive cooperation between NGOs and the governmental organization. The research conducted by the authors of this study, Yolanda Palma and Jose Luis Palma, concludes that despite sustained public funding of Mexico's reproductive health care programs, reduced support by international donors may cause problems in certain areas such as "testing of innovative strategies."

Barbara Klugman, Marion Stevens, and Alex van den Heever outline South Africa's reproductive health program. Although the authors describe South Africa as "one of the most progressive countries in the world from a policy point of view," its precarious overall health care system is stymieing access to available reproductive health care services. However, the authors are optimistic about South Africa's future as its government is still working toward a post-apartheid system.

Tanzania, the last country analyzed in the book, appears to have had the most problems implementing

the ICPD platform. Margaret Bangser details how Tanzania's debt, dismal poverty, and lack of political commitment have undermined progress in the reproductive health care sector. Bangser points out how Tanzania's reliance on funding from international donors is driving the reproductive health agenda to meet donor rather than people needs.

Concluding chapters on donors and lessons learned from the case studies highlight how complex a problem reproductive health is for both donor and recipient countries, and how important it is to invest in this field despite the many obstacles. Overall, the book provides a well-researched and comprehensive look at how the seven countries analyzed in the case studies have benefited from implementing the ICPD agenda, and what improvements

need to be made to fully achieve the goals set out in Cairo.

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□ For more information on the Center for International Cooperation, please visit their website at: <http://www.nyu.edu/pages/cic/>.

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***Population and the World Bank:  
Adapting to Change***

Washington, DC: World Bank, 1999. 52 pp.

***Reviewed by Clair M. Twigg***

Population and the World Bank: Adapting to Change a part of the World Bank's Health, Nutrition, and Population (HNP) Series, was written to provide a clear and concise overview of the current application of the 1997 HNP Strategy. This briefing is a discussion of World Bank efforts in these fields and was designed to inform the World Bank's board of directors and staff, and the general public about the Bank's ongoing activities. Its specific objective is to focus on the ways in which the Bank "is responding to the new approaches to population called for by the 1994 International Conference

on Population and Development (ICPD) and to the changing demographic realities in borrower countries on which ICPD is based.” The discussion is of current trends and efforts in dealing with population dynamics and reproductive health initiatives.

In the roughly thirty years that the World Bank has been working in population-related fields, it has made extensive investments in education, health, and family planning with much success. Although its initial objective was simply to halt the growth of population, a result of declining global mortality, the current status of the world’s people, and the ways in which many organizations approach human development have changed dramatically. Despite increases in life expectancy and child survival rates, and some decreases in maternal mortality, many challenges remain, including the high number of ill-timed pregnancies, high maternal mortality, the high risk of infection of HIV/AIDS, and inadequate access to reproductive services.

One of the benefits of this report is that the overview of Bank activities in the HNP sector is broad and comprehensible for many. As such, it is easy to see the different problems that arise in application of population activities. Different cultural obstacles such as the lack of access to education for some girls and the inadequacy of maternal health care facilities are just a few of the many problems that plague the areas in which the World Bank is working. The three HNP goals, “ensuring that investments improve outcomes for the poor, with particular attention to vulnerable groups; enhancing the performance of health care systems by promoting equitable access to preventive and curative services; and securing financing for services including reproductive health and family planning,” are broad and somewhat vague.

What is new in this report is the emphasis on the desire to increase effectiveness of HNP activities by undertaking the following: examining the link between demographic changes, not necessarily population growth, and the effects they have on health, education, and other aspects of social development and the environment; the need for policies and action to be adaptable to different countries with different problems; the need to understand and take into account cultural factors which affect local sentiments on population and health issues; the Bank’s ability to implement plans and support them over a long period of time; and, continued staff development so they maintain the skills essential to continue succeeding.

In sum, this publication appropriately meets its mission of informing a wide audience about the current state of World Bank activities in the HNP sector. In

addition, the report’s pointed examples and final appendices give the reader both a context and statistical platform from which to work. This report is an excellent summation of a larger set of activities.

*Clair M. Twigg is Project Assistant at the Environmental Change and Security Project.*

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*Coastal Waters of the World: Trends, Threats, and Strategies*

**Don Hinrichsen**

Washington, D.C.: Island Press, 1998. 275 pp.

*Reviewed by Karin Mueller*

“Two-thirds [of the planet’s population] live within 400km of a coast. Nothing more dramatically illustrates that fact than a satellite photograph of the earth taken at night. Viewed from space, an uninterrupted river of light flows around the world’s coastlines.”

Don Hinrichsen, 1998

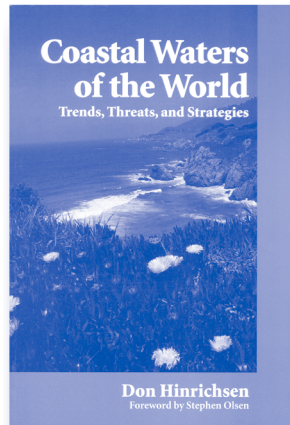
In the interest of placing coastal area concerns higher on the list of government priorities and furthering better management of these areas, Don Hinrichsen has written *Coastal Waters of the World: Trends, Threats, and Strategies*. In his book, Hinrichsen states that no matter where we live, we are all still interconnected to the world’s oceans through watershed drainage systems and rivers. Because we are dependent on coastal areas for our very existence, Hinrichsen asserts that safeguarding these areas is one of the planet’s most challenging management jobs.

To better understand the threats facing these areas and the challenges coastal water management presents, *Coastal Waters of the World* explores three themes: 1) population growth and pollution; 2) development and the conversion/destruction of coastal resources; and, 3) lack of effective and implemented coastal management plans. It is notable that Hinrichsen fails to discuss rising sea levels as a threat to coastal areas. However, his explanation for this omission is convincing given the immediacy of the three threats on which he focuses.

To illustrate the problems of population growth and pollution, development trends, and ineffective management strategies in specific ways, Hinrichsen provides fourteen case studies from each of the world’s regions. While each case study is unique, the three themes listed



above, serve as a common thread. Each study details how increased population, pollution, development, and poor management has affected the area. Hinrichsen also provides excellent insight into the differing issues facing each particular coastal body of water, and discusses the region's history relevant to coastal waters, and any treaties, governing strategies, and management plans currently in effect. If available, he follows with an example of how one group, organization, or country in the area has been successful at coastal water management. He concludes each case study with a list of important issues to be considered in that region.



The examples provided by Hinrichsen's fourteen case studies illustrate that the same trends and problems face coastal communities around the world. Overfishing, untreated sewage and industrial waste, pesticides, runoff pollution, deforestation of upland and coastal forests, clearing mangrove swamps and wetlands, mining, and runaway urbanization are just some of the common themes found in each case study. However, Hinrichsen shows how each region must find its own unique solution to coastal water management problems. For example, in Ecuador shrimp ponds are now being built adjacent to the mangrove swamps, resulting in less pollution and preserving the mangroves for water filtration and habitat. On the Tiny Apo Island in Southeast Asia, officials have preserved a portion of its coral reef, which has allowed dwindling fish stocks to recover and the local tourism industry to thrive in a sustainable way. In Singapore, sewage lines and treatment plants were built to treat wastewater and farms were moved away from riverbanks to reduce pollution entering streams and the oceanfront.

*Coastal Waters* concludes with a chapter on "lessons learned" from past management experiences and offers ideas on how to make coastal management more sustainable. As Hinrichsen states in his endnotes, the ideas presented in this section are an amalgamation of work from many institutions and individuals. Hinrichsen highlights the need for an interdisciplinary, coordinated effort by all stakeholders to work together toward a common set of goals. He also points out the importance of continued political support and leadership; mandating one national institution to have authority over management of coastal areas; and, building support on the local and national level for management plans. Hinrichsen concludes by suggesting a list of nine priority actions, which he admits could be expanded indefinitely.

The presentation of Hinrichsen's research is quite

effective and should be a useful resource to practitioners, policymakers, and academics alike. It illustrates to policymakers the complexity and urgency of coastal water management and provides tangible examples of how areas within each region have resolved the problems specifically. Hinrichsen's case studies should be particularly useful for anyone conducting general research on coastal water management or research in any one of the regions his case studies cover.

*Karin Mueller is an Editorial Assistant for the Woodrow Wilson Center's Environmental Change and Security Project (ECSP) and is Production Editor of all ECSP Publications. She is also Editorial Assistant for the Cold War International History Project and Web Editor for both projects.*

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*Life Out of Bounds: Bioinvasion in a Borderless World*

Chris Bright

The Worldwatch Environmental Alert Series  
New York: W.W. Norton. 1998. 287 pp.

*Reviewed by Joseph P. Dudley*

This book summarizes the problems caused by the proliferation of non-native species of plants and animals in ecosystems throughout the globe. Biological invasions of the earth's terrestrial and aquatic ecosystems by non-indigenous species of organisms have become a major threat to agricultural productivity and global biological diversity. Weedy, exotic species of plants and animals (most introduced or established through human intervention) now dominate vast areas of the earth's surface. Economic losses directly or indirectly attributable to biological invasions may be on the order of thousands of billions of U.S. dollars, annually.

This book is a highly readable overview of the many problems and issues associated with the invasive effects of non-native species on biological systems. The author presents sufficient summary data and examples from the primary literature to keep scientists and specialists engaged, while not overwhelming his general audience with technical jargon or statistical evaluations. The endnotes provide an excellent vehicle for entry to the source literature for those interested in further study of this important topic.



## Global Environmental Change and Human Security Project Web Site

The Global Environmental Change and Human Security Project (GECHS) has recently overhauled its web site to include new links and updates. An interdisciplinary research project that strives to advance research and policy efforts in the area of human security and environmental change, GECHS is a core project of the International Human Dimensions Programme on Global Environmental Change (IHDP). Directed by Steve Lonergan, a geographer at the University of Victoria, the basic objectives of the project are threefold: 1) to promote research activities in the area of global environmental change and human security; 2) to promote dialogue and encourage collaboration among scholars from around the world; and 3) to facilitate improved communication (and cooperation) between the policy community, other groups, including nongovernmental organizations and the research community.



Different publications such as *AVISO*, a public-policy briefing series and a collaborative effort of GECHS and the Environmental Change and Security Project, are available on-line at the GECHS web site. The U.S. Agency for International Development through a cooperative agreement with the University of Michigan Population Fellows Programs, the Canadian International Development Agency, and the University of Victoria all generously support the *AVISO* series.

Visit GECHS' web site at: <http://www.gechs.org>

The author provides numerous historical examples, and a tremendous range of recent and modern examples, of the profoundly disruptive effects that biological invasions may have on both natural and agriculture ecosystems. The author emphasizes the often overlooked fact that many, if not most, biological invasions are mediated or facilitated by human interventions. The increasing homogenization of global landscapes by domesticated or human-adapted species of plants and animals (cultivars as well as commensals<sup>1</sup>) is described, and discussed in terms of both modern and historical contexts.

The security implications of breakdowns in food production systems or disease outbreaks caused or promoted by biological invasions are noted with reference to particular examples (such as fisheries collapses in the African Great Lakes), but does not form a central focus of the discussion. Nonetheless, this book will be a valuable resource for those interested in the effects of present or future "environmental scarcities" on human welfare.

The ongoing global proliferation of virulent, pesticide-resistant pests and diseases, and our current dependence on a narrow range of genetically homogenous lineages of a few staple food crops (e.g. corn, wheat, rice, potatoes, cassava), point to an increasingly high probability of a future Malthusian crisis in world food production.

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## NOTES

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<sup>1</sup> A cultivar is an organism of a kind originating and persistent under cultivation. A commensal relates to two kinds of organisms in which one obtains food or other benefits from the other without damaging or benefiting it.