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Book Review

Asian International Waters: From Ganges–Brahmaputrato Mekong
A. K. Biswas & T. Hashimoto (Eds)
Oxford, Oxford University Press, 1996

The Committee on International Waters of the International Water Resources Association has taken the lead in organizing high-level meetings between riparians of especially contentious basins from around the world. Asit K. Biswas, in his capacity as Chair of the Committee, has to date arranged forums on the international waters of the Middle East, Southeast Asia and Latin America. Each forum brought together about 30 policy makers, academics and representatives from funding agencies, each in his or her private capacity, for an open and frank exchange of information and ideas.

Although each of the Forums was closed-door by invitation only, Biswas has made sure that the results of each meeting have been disseminated as widely as possible. The Middle East Water Forum, with an emphasis on the Nile, Jordan, and Tigris–Euphrates rivers, was convened in February 1993 in Cairo, and has had two subsequent meetings, in 1995 and 1997. Papers commissioned for the initial meeting were published in 1994 (Biswas, 1994), and the work of the Middle East Water Commission, established to continue work on on-going issues from the region, was summarized in 1995 (Middle East Water Commission, 1995) and published in its entirety in 1997 (Biswas *et al.*, 1997).

Asian International Waters, the latest in this series of publications, stems from the Asia Water Forum, held in Bangkok in January 1995, with an emphasis on the Mekong, the Ganges–Brahmaputra, and the Salween river systems. The forum was sponsored by the IWRA, the United Nations Environment Programme (UNEP), and United Nations University (UNU), hosted by the Asian Institute for Technology, and attended by 27 invited experts from the region and representatives of international organizations. The papers in this volume were commissioned for the meeting.

In his introduction, Biswas stresses the vital role international waterways are likely to play in the future, and expresses personal concern that, given their increasing importance, the subject of international waters has nevertheless fallen off the political agenda of international organizations.

Biswas notes that Asia is particularly precarious with a projected population growth of 47% between now and 2030, and a rising standard of living throughout the region. The international community will need to take the lead in helping resolve the complex issues of international water, he argues, but it shows little inclination to do so. Water was a 'bit player' at the 1992 UN Conference on the Environment in Rio de Janeiro, and the last 'mega-conference' on water was in 1977—there seems to be no planning for a 20-year re-appraisal, as had been done for other major environmental conferences of the 1970s.

The key-note presentation, reproduced here, was given by Subin Pinkayan, former Foreign Minister and Industry Minister of Thailand, and gives the setting

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for the meeting. Pinkayan describes how, in his experience both in water resources and in foreign policy, the links between sustainable development of international waterways and peaceful regional relations are inextricable. He describes the increasing interest in international waterways throughout the world, noting the (at the time) recent draft agreement among lower Mekong riparians.

The focus of Pinkayan's paper is the premise that management of international fresh water bodies is likely to be one of the most critical development issues of the 21st century, particularly in Asia. This is likely to be so for two reasons: first, Asian countries are increasing their utilization of available resources to accommodate growing water and energy demands; second, economic and technical constraints limit the quantity of fresh water which can be exploited at any one time. This combination of growing demand and limited supply suggests the increasing importance of international waterways—traditionally the last to be developed because of their size, and legal and political constraints. The rest of the chapters are organized by the three basins covered by the meetings.

The Mekong River System

The chapter by Yuzo Akatsuka and Takashi Asaeda on water transport on the Mekong, stresses the interdependence of the different social, economic, and cultural facets of any river basin, and describes these interrelations specifically for the Mekong. The emphasis is on the link between socioeconomic development between co-riparians of the river and the resulting capacity to combat natural dangers such as flooding and threats to navigation. After describing the physical characteristics of the Mekong River, the authors point out that, while international rivers can be used for the transportation necessary for international development, goods have to be able to travel door-to-door. This fact suggests that the development of the river system's capacity to transport goods—including dealing with variability in the system, mapping, and barrier markings—needs to be linked with the development of regional transportation infrastructure, including truck roads, railways, bridges and institutions.

George Radosevich's chapter on "The Mekong—A New Framework for Development and Management Under a Renewed Spirit of Cooperation", is a fascinating look inside negotiations leading up to a new agreement on cooperative water basin management ratified in 1995 by the riparians of the lower Mekong River—Cambodia, Laos, Thailand and Vietnam. Radosevich, an active participant in the negotiations, gives some history of the Mekong basin, noting that it has a history of cooperation, with nearly 30 agreements between 1856 and 1978.

Radosevich's chapter describes in some detail the process which led to the agreement. It was agreed that two major areas were to be worked out in the negotiations: principles for the sustainable utilization of the water resources of the Mekong river system, and institutional and management issues relating to the mechanism of cooperation. A guiding framework would be international law—Radosevich notes that the agreement is the only one relating to international basins which explicitly agrees to all eleven points of the Helsinki Accords—but additional criteria considering theory, fairness and a 'one-nation-basin' scenario were also included. He stresses that, while only the lower riparians are signatories to the agreement, it was designed to be fair also to the other two riparians—China and Myanmar. He also notes that planning would be basin-wide, and not restricted only to the main channel.

The Ganges–BrahmaputraSystem

The book has three chapters on the problems of the Ganges–Brahmaputra system by Aminun Nishat, by V.G. Verghese, and by Hari Man Shrestha and Lekh Man Singh. In shifting from the Mekong to the Ganges–Brahmaputra systems, the book essentially moves from a case of under-development to over-development; the problem with the Ganges–Brahmaputra system is that most potential benefits of development are within the boundaries of the upper riparian (Nepal), the intensive use of the river is centred in the middle riparian (India), and the devastating fluctuation of the river takes place in the lower riparian (Bangladesh). The chapters foreshadow the India–Bangladesh treaty on the river, signed in December 1996.

Nishat's chapter, "The Impact of Ganges Water Dispute on Bangladesh", begins with a history of conflict over the Ganges River, focusing on relations between India and Bangladesh (earlier, eastern Pakistan). The dispute originated in 1951 with India's proposal for a barrage at Farrakka to divert Ganges water to flush increasing sediment from the port of Calcutta. Negotiations continued with greater and lesser success over the decades, but never achieving a comprehensive agreement over sharing the waters of the Ganges. In the absence of such an agreement, the paper describes the adverse effects in Bangladesh resulting from reduced upstream flow. Impacts include: degradation of both surface and groundwater, change in morphology, impeded navigation, increased salinity, degraded fisheries, and danger to water supplies and public health. Damage to the region's forests, agriculture and ecology and environment are also described. Nishat's considerations for the future, including considering each proposal in the regional context of its cost, time to implement, and environmental impacts, while interesting, have been overtaken by history—the new treaty is not quite as thoughtful as Nishat might suggest, merely allocating a minimum flow to each state.

V.G. Verghese presents one view from India in "Towards an Eastern Himalayan Rivers Concord". Verghese begins his chapter with a description of the natural and sociopolitical setting of the Ganges Basin, noting that the region has several hundred years of irrigation history which, given the absence of appropriate storage sites, has been accomplished entirely through diversions. He points out that disputes similar to the current conflict with Bangladesh were earlier resolved on the Indus by physically separating the flow into Pakistani and Indian territory, but that is not feasible on the Ganges system. The paper generally agrees with the history presented by Nishat, and poses the question, "Where do we go from here?".

Verghese attempts to broaden the question from the either–or choice offered between the Indian and Bangladeshi proposals, suggesting that including resources other than water, and investigating the needs also of Nepal and Bhutan may offer more creative solutions. He cites as an example that the areas of Bhutan, Nepal and northeast India are all landlocked—transportation rights may therefore be offered as a *quid pro quo* for water rights. Likewise, Bangladesh currently relies heavily on using natural gas resources as its energy supply, yet Nepal and India have several sites ideal for hydropower generation within their territory. Perhaps an exchange involving storage of monsoon flows, irrigation water, and power generation might be arranged. In his conclusions, Verghese suggests that potential benefits exist for the entire region, and that the riparians

cannot afford to lose more time in harnessing their shared assets. Again, the actual negotiators might have done well to have taken some of Verghese's suggestions.

Hari Man Shrestha and Lekh Man Singh gave the final presentation on the river, "The Ganges–Brahmaputra System: A Nepalese Perspective in the Context of Regional Cooperation". The authors point out that all of the rivers flowing from Nepal are tributaries of the Ganges, suggesting that country's importance in flood moderation and low-flow augmentation. They present the history of bilateral cooperation between India and Nepal dating back to the 1920s, but suggest that these agreements were based primarily on Indian initiatives for fulfilling Indian needs. Over the years, Nepal has developed more of a basin-wide approach, cooperating also with Bangladesh through information-sharing. The authors argue further that the problems of the basin are not those of water scarcity, only uneven distribution, and that dams in Nepal may offer benefits to all of the riparians, particularly in the face of growing environmental degradation and the vital need for the alleviation of poverty.

The Salween River System

Two chapters are included on the Salween River system. Tsuyoshi Hashimoto's "Regional Cooperative Development for the Salween River", describes the potential gains to both Thailand and Myanmar were they to jointly develop the river. The Salween is relatively underdeveloped currently, yet it has high potential for hydropower, irrigation, and urban water supply. In fact, Thailand and Myanmar have already established a joint working group, as of 1991, to investigate development of the river. After describing the physical characteristics of the river, Hashimoto's paper has detailed sections on hydropower potential; opportunities for trans-basin water diversions, particularly into the Chao Phraya in Thailand; irrigation potential; and regional development opportunities. Hashimoto also describes geopolitical issues, noting that upstream/downstream competition is not likely to be as great as on other rivers, since China, the upstream riparian, has little near-future need for consumptive use of the river. This leaves Thailand and Myanmar opportunity to jointly develop the lower Salween and to share the benefits.

Hashimoto presents the principles for sharing costs and benefits between Thailand and Myanmar, including principles for cost allocations and water pricing. He argues that potential projects can provide benefits to both riparians, and describes several specific projects which might be considered. He concludes that joint development is realistic, providing there is appropriate concern for the environment, and recommends addressing social issues inherent to river basin development through a participatory approach to planning and implementation.

The chapter by Pushpa Raj Onta, Ashim Das Gupta and Rainer Loof, "Potential Water Resources Development in the Salween River", is a summary of a Thai study performed on that part of the Salween which lies within Thai territory. The objectives of the study were to study, collect, and analyse hydrologic and meteorologic data for quantity/quality characteristics in order to design a river basin development plan for both the short term (two years) and long term (ten years).

After describing specific alternative projects in greater detail, the authors also explore the institutional process of international cooperation and note that a

Thai–Myanmar bilateral committee already exists to explore options on their shared waters. They point out that, although defining "equitable rights to use water" may pose a challenge, the challenge might be best met by integrating the interests of multiple sectors—irrigation, industry, and domestic uses, in addition to hydropower and environmental considerations—simultaneously. They conclude that not only do options exist for mutual gain, but that the political climate is favourable to enhance cooperation on the Salween.

Discussion

There is very little systematic comparative literature on transboundary water resources—this series provides one of the few ways one has to compare the problems of international basins around the world. One sees that, in contrast to the international waters of the Middle East, those of the Southeast Asia elicit a much lower level of crisis. Even along the Ganges–Brahmaputra where, at the time of the meeting, a 1988 agreement on the flow from India to Bangladesh had lapsed with no renewal in sight (a new treaty was signed in late 1996) resulting in great ecological and human damage in Bangladesh, there was never a threat of violence. A new treaty had just been signed for cooperative management of the lower Mekong; while the earlier treaty had not resulted in any projects along the main stem of the river, it had allowed for joint dialogue and data-sharing among the riparians over the years, even amidst political tensions and outright warfare. Dialogue among the riparians of the Salween was an exercise in preventative diplomacy—the river is only now being examined for joint development and preliminary agreements are being negotiated.

The chapters generally are both technically rich and thoughtful—the book proves an excellent resource for anyone interested in water management in the region. One might have wished to see a slightly broader spectrum of views represented—there is a general lack of criticism of a strong development approach. Insight into the drafting of the Mekong accord is fascinating, for example, and the treaty represents consensus among the technocrats, but is it a good agreement, in an objective sense? The chapters on the Ganges are necessarily dated by recent events, but provide interesting foreshadowing to thinking just before the new treaty was negotiated (although lack of any formal Indian participation provides a gap).

These are very minor quibbles with a rich and insightful addition to the growing literature on the special problems of international waters.

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