This third workshop is concentrating existing and emerging basin arrangements in Asia in which Bank staff have been involved. The two basin arrangements discussed in this paper and presentation are the Tarim Basin Water Resources Commission (TBWRC) in the Xinjiang Uygur Autonomous Region of the PRC, and the Mekong River Commission (MRC) in Southeast Asia. The World Bank was vitally instrumental in the creation of the TBWRC and continues directly involved in its operationalizing and functioning, and is currently involved in a very important component of the MRC work program - the Water Utilization Projet (WUP) and indirectly to its Basin Development Plan (BDP) project.

The authors wish to complement the organization of this and previous seminars and studies for setting the process on a comparative basis to further gain an understanding of the spectrum of organizational arrangements and rationale for their differences. Every effort was made to prepare these two case studies for the two basin organizations according to the typical organization outline used by the previous case studies:

1. Description Of The Basin.
2. The Basin Institution Development Process
3. The “New” Basin Institutional Arrangement
4. Facilitating The Process, And The Role Of The Bank In It
5. Conclusions And Recommendations
6. Annexes

This paper will attempt to provide in overview and for each of the two basin organization studies:

(i) A clear understanding of the key characteristics of these basin arrangements, and their corresponding physical and institutional environments, including historical, administrative and overriding cultural factors, and the traditional mechanisms to engage in cooperative action, mitigate conflict, and allocate hierarchy and power.

(ii) An operational insight in how such arrangements developed, and how Bank initiatives have initiated, contribute to, and facilitate the development process. It is important to note, that in both cases, the intervention of an external factor, e.g., UNDP and donors in the Mekong, and the WB in the Tarim Basin, has provided the initiative or catalyst for cooperative action for the creation of a “win-win” situation and the commitment of relevant government bodies to carry out the process of sustainable implementation and improved water management.

(iii) The annexes include copies of the 1995 Mekong Agreement, the 1997 Xinjiang Regulation for the TBWRC, and other relevant materials, maps and overheads.
MRC & TBWRC Case Studies In Perspective

Introduction

As noted by previous contributors, the range of functions and structures reflects the scope of needs and potentials for integrated and comprehensive management of water resources through cooperative and coordinated actions at the international and national/provincial basin levels. But within each case study, whether on an international or national/provincial river basin (or groundwater basin), it can be noted the water sector is a complicated one, and the interests and beneficiaries very often are beyond the boundaries of the basin. Thus, every river basin organization (RBO), has regional significance that should not be overlooked, as is particularly the situation of the MRC.

Equally important to the spatial dimension is the temporal dimension. The temporal dimension, however, concerns both functions and achievements of the RBOs. The former notes the range from narrow single purpose functions to full scale coordinating and management authorities. The latter notes that most organizations over time go through periods of success (high rate of objectives and expected results achievements) and periods of failure or stagnation (loss of significance and questioning of relevance and budget). Thus, the time leading up to and all during the life of the organization must be considered in terms of performance evaluation to fully appreciate changes in organization activities and often re-organization of functions and structure. To fully appreciate the present conditions of the MRC and TBWRC, one must examine this temporal dimension and note the changing external and internal environments within which they exist.

Global Trends In River Basin Management

The global direction of water resources management is to move toward some form of river basin organization responsible for the planning and management of water resources in this hydrologic unit or catchment area. Four common threads can be found in those river basins where planning and management are rated as good. They are:

1. A stable institutional framework that overcomes fragmentation and overlap of responsibilities, and is supported by strong and comprehensive, but flexible legislation, regulations, decrees, etc. This insures "fairness" in basin-wide decisions and a process of accountability.

2. A strong "knowledge" base that derives from a good, uniform, and comprehensive data network, systems and models for analysis, and that allows "knowledgeable" natural resources/water management policies and strategies to be developed and implemented. This insures "equity" in defining solutions amongst and between the implementing agencies and water users.

3. Integration across all natural resource issues, i.e., this means individual agencies do not find singular solutions, but look at impacts and improvements across the spectrum of natural resources. It also means that Provincial/Regional governments look at their natural resources base as a whole and attempt to achieve "sustainability" as package, not just maximum use of

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1 These four points were further described and illustrated in the paper on the Murray-Darling Basin Commission prepared by Mr. Peter Millington.
a single resource such as water, soil, minerals, etc. This is often achieved through the adoption of a "Provincial/Region Natural Resources Policy".

4. A program for strong community awareness and participation. Most policies or decisions relative to rehabilitation or exploitation of natural resources impact heavily on the user and mostly upon the farmer. Unless the farmer understands these issues and is a party or has input into the decision making, i.e., developing some ownership, then how can users be expected to give-up some use or activity for the so-called common good? This is where it is important to find a "win-win" solution for all concerned, but particularly the farmer.

In addition, two other components are essential for a sustainable, efficient and effective river basin organization. The are:

1. The organization must have its foundation and mandate in legislation which clearly identifies its functions, structure and financial base, and whose administration and operation is based upon a decision-making process of authority, responsibility and accountability. Every decision made by a higher level body to be carried out must not only delegate responsibility, but also commensurate authority and financial capacity. And every decision that is carried out by the lower level body requires accountability of the action taken to the higher level body, through a systematic reporting process. If this process is properly carried out, the organization must internally carry out a planning, programming and budgeting system (PPBS) in which the operational body at the lower level will submit for consideration a plan, program and budget for the higher level policy and decision-making body to review and approve.

2. The organization must be conceived in the reality of existing conditions, where there are already vested interests, attitudes, and economic bases; that is to say, there may (are) already water and other resource agencies with similar mandates, but operate along administrative or other jurisdictional boundaries, attitudes with respect to location and accessibility to water resources (upstream-downstream mentality), and current water and land uses and practices. Whenever and where-ever reform movements of the nature and magnitude of comprehensive river basin management are introduced or expanded, there is resistance to change and concern over infringement on administrative level and agency "turf". To mitigate this resistance and insure successful reform (although this may take many years), it is necessary to adopt a strategic planning and implementation process (SPP) that will insure communication, coordination and cooperation (CCC) within the river basin organization, and among and within the appropriate levels of government, agencies, water users and community.

Basic Forms of RBOs By Function

Examining such existing entities around the world, there are three basic forms of river basin organizations based on function. The are range from:

(1) monitoring, investigating and coordinating river committees such as Water Resources Councils in Sri Lanka and parts of Malaysia, and several of the river commissions in China;
(2) planning and management commissions such as the Murray-Darling Basin Commission of Australia, and the international Mekong River Commission of SE Asia and International Joint Commission between Canada and the USA; and
(3) development and regulation authorities such as the Tennessee Valley Authority in the USA and Hydrographic Confederations of Spain, with the latter taking on the functions of the former. Thus, they range from a lesser to a greater degree of power in the basin entity relative to the local or administrative water agencies of the nation/province/prefecture.

At the river basin level, there is no one "right" model that suits all circumstances. One must take into account at least four general attributes of the basin system being focused upon to identify the institutional framework needs and utilize the experiences from other parts of the world. These are:

1. system of government, law, and administration;
2. hydro-geological and ecological characteristics;
3. stage of development and the current system of water management and administration; and,
4. the needs and potential for sustainable water and related resources development and environmental management.

Global Classification of RBOs

Within this context, three broad global classifications of river basin organizations can be considered in their ascending order of scope and authority:²

1. Coordinating Water Resources Council
   This usually consist of a council of department heads covering the natural resources management and consumptive uses (e.g., agriculture) agencies as well as planning, etc. Such a council would meet irregularly to endorse policy, new initiatives, etc. It would have a small supporting staff and would not intrude on the active functions of existing agencies. Its role is essentially coordinating, recommending policy, supporting, compilation of data, auditing, and reporting, and would have no real management and control functions. It can work well in a "mature" water industry where most development options have been implemented, where good data and models exist, and where existing agencies (and perhaps basin commissions) function well with only the need for improved communication, coordination and cooperation to reconcile overlaps and fill gaps. In effect, water is more about improved management strategies and processes than about water development.³

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² This classification and the is not directly consistent with the three types (Secretariat, Authority, and Others) set out in the Annex 2 to the Guidelines for Report Preparation on Comparing International Experiences in River Basin Institution Development: A Brief Analytical Comparison, presented at the 2nd Workshop on River Basin Institution Development, The World Bank, June 11, 1998, perhaps partly because of the legal perspective of this report on the MRC and TBWRC. Both of these two organizations could fit in one or more groups of either classification, but function, structure and operations may better describe their attributes in the light that each has a secretariat, each has greater or lesser degree of authority by law and operation, and structures are similar.

³ Successful examples of this approach are usually found in the "developed countries" and tend to modify or adapt themselves frequently to address the particular circumstances; it is generally the first step in the evolution to a more comprehensive basin organization described below. The United Kingdom followed this approach in the 1980's before a reorganization established a stronger basin resource management approach with the "National Rivers Authorities". This has again been reviewed in recent years with the view to reform the authorities to meet changing circumstances. Australia has, in the past, also used this coordinating organization approach. The Zambezi River Action Plan is an example of a "wrong approach"; it has no "strength" to initiate change in the basin.
2. River Basin Commission

This is a more powerful model than the coordinating council and involves an agency with a larger staff (depending upon the size and complexity of the basin) rather than relying on other agencies to carry out some of their analysis and report writing. It would concentrate on developing: good data systems and predictive hydrologic models; establishing base-line water use and environmental conservation measures in the basin; developing policies and strategies to guide water planning and development, and environmental (aquatic-ecosystem) rehabilitation and management; and, a systematic process of monitoring and reporting on the "behavior and health" of the basin and uses within it.4

3. River Basin Authority

This form of organization is larger, more powerful, and complex in comparison to the other RBOs, and normally is always a national or even state/provincial level organization.5 It is usually a multi-disciplinary, full-functioning organization covering all aspects of natural resources planning and management, and with regulatory powers. Its jurisdiction is the hydrologic boundaries of the basin, but often is involved in regional (outside the basin or inter-basin) activities for optimum resource use and equitable accounting of benefits and costs. When established or reformed, it may "absorb" the operation and management role, personnel and facilities of some existing organizations.

Its existence and mandate is based upon a comprehensive legislative enactment which may authorize it to monitor, plan, allocate, manage, supervise, regulate and enforce its decisions and activities over water and related resources, and implement policies and provisions found in other complementary laws such as those concerning water, land, pollution control, environmental protection, etc. The legislation and operating regulations set clear lines of authority, responsibility and accountability, and it normally adopts a strategic plan and dynamic process for communication, coordination and cooperation. This form of organization usually has a large professional and support staff and covers policy setting, planning, management and operation. It may have a fixed or perpetual term of existence, and is usually accountable directly to the executive office of the nation/state/province/autonomous region as is appropriate, and works in close association with relevant line agencies and academic institutions. This type of basin authority is used when:

- Many development options are being formulated or under consideration;
- Existing agencies are fragmented and weak or failing to perform;
- A large multi-disciplinary task is to be performed; and/or,

4 Such commissions would have a strong legislative base with clear lines of authority, responsibility and accountability, and adopt a strategic planning process for communication, coordination and cooperation. It may operate strategic monitoring stations, and operate and manage key hydraulic works. But more often the commission would have oversight and management or regulatory authority over these and other works by way of an operating agreement or contract with some other organization. Examples of this type of river basin organization are the International Boundary and Water Commission, the Murray-Darling Basin Commission, and to a lesser extent, the MRC.

5 The Hydrographic Confederations of Spain, Tennessee Valley Authority in the USA and Snowy Mountain Hydo-Electric Authority in Australia are examples of this form of organization. The Snowy Mountain Hydo-Electric Authority has completed its task and has been reformed into a coordinating agency of the first form of river basin organization described above.
There is little or inadequate data systems or models available to address the complex issues and problems that exist or face the basin or region.

**History, Law and Rationale of RBOs**

Reviewing the historical evolution of river basin organizations, it will be noted the first international organizations to gain legal status were created to address disputes among riparian nations (Danube and Rhine River Commission in the early 1800s, and later the IBWC and IJC in the early 1900s). With time, additional functions were added (navigation, flood warning and control, etc.), to where now we can observe the full range of activities to include: comprehensive water sector planning; investigations and data sharing; joint multi-nation and basin-wide projects for sustainable water and related resources development; integrated water management for both quantity and quality considerations; and environment and basin/aquatic eco-system protection. Of increasing concern in recent years is the improvement of the standard of living of the peoples of the basin and the protection and preservation of cultural sites and practices. This has led to a greater participation of all stakeholders in the formation and functioning of IRBOs.

These IRBOs (and international river basins and bodies of water) are governed by a body of international law ranging from customary international law principles of universal application, to conventions adopted by international bodies (UN, European Union, ASEAN, etc.) such as the recently adopted UN Convention on the Law on Non-navigable Uses of International Waters, to treaties among two or more riparian nations (there are approximately 330 treaties on water under various titles), such as the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin. Nearly universal is the principle of reasonable and equitable sharing of the basin's water resources among riparian nations.

A similar pattern of basin organizational evolution can be observed at the national and state/provincial RBOs. This can be noted in the highly acclaimed hydrographic confederations of Spain, the Tennessee Valley Authority (TVA) and Delaware River Basin Commission in the USA, and the Murray-Darling River Commission in Australia. The basic difference is the legal framework within which jurisdiction over water is determined and solutions employed. In most all nations, water is governed by a constitution provisions and laws at the national level, and particular laws at the lower political levels.

The rationale for RBOs is fundamentally the same at either the international and national levels - political/administrative jurisdictional boundaries inconsistent with hydrologic boundaries of the surface or groundwater basins, leading to differences of legitimate and defensible rights and interests, that in most cases, finds their resolution in the law and in many cases, some form of organization as the implementing mechanism. Most often, it is territorial integrity that leads to various jurisdictions with seemingly interdependent interests to adopt inconsistent laws, policies, and programs. Of course, differences in geo-hydrologic characteristics among riparians, potentials and stage of development, and socio-political variations contribute to the complexity of water development and management.

To fully appreciate the potentials and capacities for comprehensive and integrated water and related resources development consistent with the natural boundaries of this peculiar resource,
and to optimize the advantages of advanced technologies to promote economic development, one approach is to disassociate the jurisdictional issue at first, i.e., a "one-nation-basin" scenario. And then to overlay the jurisdictional boundaries to negotiate mutually acceptable principles, objectives, and measures through which the parties could maintain their rights and interests, while jointly and independently taking advantage of the opportunities of development. That is, to agree at the outset to plan and implement for optimum and sustainable development and utilization of the water and related resources, and then to reconcile the interdependent rights and interests of the riparians by applying a Pareto Optimum principle as the minimum requirement for cooperation among the relevant or participating political/administrative jurisdictions, i.e., one party will not be made worse off at the expense of development by another party. In international law terms, a "cause no-harm" relationship. This was the case of the Mekong Agreement and implicit in the Tarim Regulation.

Against this background, the two case studies will examine the TBWRC as a national RBO located in wholly in one province (autonomous region) of PRC, but having five independent prefectures covering the Tarim Basin, and the MRC as an IRBO whose basin contains six riparian nations, the lower four of which are members of the MRC, and the upper two riparians participating as dialogue partners. In both cases, there were predecessor organizations, and in both cases there are over-riding concerns that intimate the necessity for a mutual organization to address the concerns, problems and prospects for improvements within and without the basins.