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# Understanding Water Rights and Water Allocation<sup>1</sup>

A Background Paper Compiled by

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## I. Background

### A. Introduction

1. The abundant supply and low demand of water in the past contributed to the minor concern on the aspects of water ownership, allocation, and rights. In many countries in Asia, water demand and water use conflicts are now occurring; thus licensing mechanisms, water allocation, and water rights have become a challenge.

2. There is extensive interest in the topic of water rights and water allocation internationally though there are relatively few successful experiences so far in most Asian countries. The topic is of particular interest to the Network of Asian River Basin Organizations (NARBO), as evidenced from members' completed survey and evaluation forms in recent NARBO activities.

3. NARBO intends to contribute in addressing the need to have an appropriate system of water rights and water allocation with the conduct of 1<sup>st</sup> NARBO Thematic Workshop on Water Rights and Water Allocation to be held in Hanoi on 5-9 December 2005.

4. This paper is intended as a reference material for the workshop. It consists of 4 sections:

- **Section I Background** - offers useful definitions; discusses water as a human right; describes the linkage of poverty and water rights; and presents the challenges, pitfalls and practical approaches to water rights.

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<sup>1</sup> **Disclaimer:** This paper contains background information on water rights and water allocation, including a description of existing legal frameworks in selected countries, and some projects supported by the Asian Development Bank in its developing member countries. The information contained in this paper is solely as a resource. While the authors try to provide high-quality and updated picture on the subject of water rights and water allocation, they do not guarantee the accuracy, reliability, or timeliness of the information presented in this paper; and therefore, will not be liable in any capacity for damages or losses to the user that may result from the use of this information. ADB and its affiliate offices, likewise, will not be responsible for any errors, omissions, or inadvertent alterations that may occur in the disclosure of the contents in this paper.

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- **Section II Frameworks and Arrangements for Water Rights in Selected Asian Countries** – provides the governing laws and institutional arrangements for water rights and allocation in selected Asian countries.
- **Section III ADB's Water Policy and Experience from Projects** - highlights the pertinent provisions on water rights and allocation in ADB's water policy; and ADB experiences on water rights and allocation in selected water projects.
- **Section IV Conclusions and Recommendations** - offers some conclusions and recommendations.

## B. Useful Definitions

5. **Water Rights and Water Allocation Defined.** Following are some definitions of water rights and water allocation from available literature:

- Water right is the right to divert<sup>3</sup> public waters and put them to beneficial use<sup>4</sup>. (Constitution and Statutes of the State Idaho, 2005).
- Water right is the legal right to capture and use water. It is based upon (i) quantity, (ii) source, (iii) priority date, (iv) nature of use, (v) point of diversion, and (vi) beneficial use. (WaterBank, 2005)
- Water right is a legal authorization to use a predefined quantity of public water for a designated purpose. (Washington Department of Ecology, 2005)
- Water rights are socially recognized claims to water, which may be composed of a bundle of rights to access, consume, exclude, manage and transfer. A broad definition includes many institutions involved in allocating access and resolving conflicts. (Bruns, 2004)
- Water rights are rights to use certain amounts of water rather than the right to the ownership of the resource itself. Many systems may include provisions for penalizing the non-use of allocated resources. (GWP, 2000)
- Water allocation is the volume of water that a license holder may take over a defined period of time. (Working Paper on Water Sharing: Viet Nam's Water Resources Strategy, 2005)

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<sup>3</sup> In Idaho, USA there are two ways in which a right to surface water could be established. The first way is to simply divert water and apply it to beneficial use. The second way is to establish a right to surface water to comply with the statutory method in effect at the time the water right was established. As for groundwater, there is only one way to establish a right, and that is following the application/permit/license procedure. (Constitution and Statutes of the State Idaho).

<sup>4</sup> Beneficial use involves the application of a reasonable quantity of water to a non-wasteful use. It includes such uses as domestic use, irrigation, stock-watering, manufacturing, mining, hydropower, municipal use, aquaculture, recreation, fish and wildlife, among others. Due to the beneficial use requirement, a water right may be lost if it is not used for a certain period of time.

6. **Absolute and Conditional Water Rights.** A water right is 'absolute' where an appropriation has been completed by diversion and beneficial use of the water by the time the water right is adjudicated or a permit is issued. It is 'conditional'<sup>5</sup> if water use is reserved for future use, as in the case of large water projects the construction of which will take some time to complete. (Castle, 2005)

7. **Direct Flow and Storage Water Rights.** 'Direct flow' water right is generally measured in terms of a rate of flow, eg. 10 cubic foot per second (cfs); while 'storage' water right is measured in terms of volume of water, eg. storing up to 1,000 acre feet of water to be used at some later time for a beneficial use. (Castle, 2005)

8. **Tradable Water Rights.** Water rights represent an economic value. Recognition of the economic value allows a more rational allocation of the resource among competing users. The economic value of water implies that a water right can be traded<sup>6</sup>. Allowing trading of rights or permits can help to clarify preferences among users, or to quantify compensation for lost rights, and hence to optimize water allocation. The economic value stimulates water rights owners to invest in the minimization of water consumption, maintaining their productivity, while selling the rights for the excess water to buyers without access to water. (Arriens, et al, 1996)

9. **Riparian Rights and the Doctrine of Prior Appropriation.** In many countries, water as a natural resource belongs to the nation and is treated as a public good, i.e, no single person or group has absolute ownership. In many cases, the government owns and has the right to manage and allocate water resources to appropriate users. However, traditional structures may exist that govern water rights; and typical arrangements are: (i) **riparian right principle** which gives the right to make a reasonable use of ground water underneath one's land, or water naturally flowing on, through, or along the borders of one's land.; and (ii) **first in time, first in right principle** or the '**doctrine of prior appropriation**'<sup>7</sup> where a senior right<sup>8</sup> can not be impaired by a junior right. The first person to use water acquires the right to its future use as against later users. (Castle, 2005)

10. **Traditional or Customary Water Rights.** Customary rights have their roots in ancient traditions; and are vulnerable to the impacts of development activities. (Bruns, 2003) In more arid regions, traditional structures exist that determine who owns water rights. The traditional

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<sup>5</sup> The appropriator may obtain a decree or permit to protect his priority before completing the appropriation in order to assure that water which was available in priority at the time the project was initiated will still be available after its completion. An absolute water right can then be obtained upon completion of the project. (Castle, 2005)

<sup>6</sup> Some people advocate systems of **transferable or tradable water rights**, and argue that everybody may benefit from such systems. In some countries (Chile and Mexico, especially), farmers are encouraged to use water efficiently, because if they use less they can sell part of their water rights to a neighboring town, or to a business. (Abernethy, 2005).

<sup>7</sup> The use of water in many of the states in the western US is governed by this principle; and the essence is that while no one may own the water in a stream, all persons, corporations, and municipalities have the right to use the water for beneficial purposes.

<sup>8</sup> Senior right is established by 'priority date' – the date an application was filed for a permitted or certificated water right – or the date that water was first put to beneficial use. Because the water right system is founded upon beneficial use of the resource, a lack of use can result in an 'abandonment' or forfeiture of the right. Most western state laws provide for the loss of a water right if the water is not diverted and used for more than a specified period of time. (Castle, 2005).

arrangements for distributing access to wells are related to local societal hierarchies. (Arriens, et al, 1996)

11. **Group or Individual Water Rights.** Water rights can be for a group or individual. Some irrigation organizations and municipalities hold licenses to use certain amount of water; and these organizations in turn have subsidiary delivery agreements with individual farmers, urban residents, or other clients. (Arriens, et al, 1996)

### **C. Water as a Human Right**

12. In November 2002, the UN Committee on Economic, Social and Cultural Rights (CESCR) adopted a General Comment on the Right to Water. For the first time, water is explicitly recognized as a fundamental human right and the 145 countries which have ratified the International CESCR will now be compelled to progressively ensure that everyone has access to safe and secure drinking water, equitably without discrimination. (Information based on the UN World Water Development Report in the *Official Site of the International Year of Freshwater 2003*)

13. The General Comment states that: 'the human right to water entitles everyone to sufficient; affordable; physically accessible; safe and acceptable water for personal and domestic uses.' It required governments to adopt national strategies and plans of action which will allow them to 'move expeditiously and effectively towards the full realization of the right to water'. (Information based on the UN World Water Development Report in the *Official Site of the International Year of Freshwater 2003*)

14. The General Comment is important because it provides a toll for civil society to hold governments accountable for ensuring equitable access to water. It also provides a framework to assist governments in establishing effective policies and strategies that yield real benefits for health and society; and in focusing attention and activities on those most adversely affected including the poor and vulnerable. (Information based on the UN World Water Development Report in the *Official Site of the International Year of Freshwater 2003*)

15. The UN's Millenium Development Goals (MDGs) '*to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation*' and '*to stop the unsustainable exploitation of water resources*' recognized the key role of water in agriculture, energy, health, ecosystems and in combating poverty. The availability of clean drinking water is one of most important issues facing humanity – and this will be increasingly critical for the future, as growing demands outpace supplies; and pollution continues to grow. (Scanlon, et al 2004)

16. The availability of adequate water supply is critical to every aspect of human life. Formally acknowledging water as a human right, and expressing the willingness to give content and effect to this right, may be a way of encouraging the international community and governments to enhance their efforts to satisfy basic human needs and meet the MDGs. It could serve to increase the pressure to translate such a right into concrete national and international legal obligations, and to focus attention on the need to resolve conflicts over the use of shared water. (Scanlon, et al 2004)

17. Water as a human right has been previously expressed within non-legally binding declarations: (i) Mar del Plata Action Plan in 1977 recognized water as a right, declaring that all people have the right to drinking water in quantities and of a quality equal to their basic needs;

and (ii) Agenda 21, the blueprint for sustainable development, notes in Chapter 18 that a water right entails three elements: access, quality and quantity. (Scanlon, et al 2004)

#### D. Poverty and Water Rights

18. Bruns (2004) affirms that water rights may offer a way for poor irrigators to protect their water from being stealthily stolen away by expanding cities. The poor often lose access to water (quantity and quality) without effective means to respond. The poor's insecure access discourages their productivity. Bruns cautions that water rights reform is no panacea and in fact may open a Pandora's box of potential problems; but argues that without changes in water allocation institutions, the even more likely outcome is that poor people may be further impoverished by losing out in competition over water.

19. While the wealthy and powerful typically have many ways of protecting their interests, the lack of secure and enforceable rights poses a much bigger problem for those who are poor. If the poor's access to an essential resource such as water can be taken away without consultation, compensation or even advance notice, then their ability to earn a living is fragile; and their ability and incentives to invest in improving their lives are severely compromised. (Bruns, 2004)

20. Secure water rights can play a vital role in expanding opportunities for poor people to escape from poverty. Conversely, lack of secure rights perpetuates poverty. The arguments for the role that secure rights to land can play in reducing poverty are compelling, and similar logic applies to water rights. Water rights can help the poor: (i) safeguard access to basic needs; (ii) sustain livelihoods; (iii) participate in governance; (iv) prevent and resolve conflicts; (v) invest in improving their lives. (Bruns, 2004)

#### E. Challenges and Pitfalls

21. Abernethy (2005) argues that a great deal of effort and time are necessary to establish an adequate water rights system; and suggests not to delay further the establishment of an

**Box 1 Check-list for a Water Rights Reform: No Further Delay.** A great deal of effort and time will be required to form an adequate water rights system. This is perhaps a strong reason why we should not delay further.

1. **Quantity:** How much water may the holder of the right take from the natural resource?
2. **Timing:** Are there restrictions on the time when this quantity may be taken?
3. **Location:** Is there a specific place where this water may be taken?
4. **Quality:** Is the holder of the right entitled to expect the water to be at or better than some specific standard of quality, either chemical or biological?
5. **Conditionality (or priority):** Is the right absolute, or is it subject to any conditions or variations? For example, will it be different in a year of drought?
6. **Duration:** Is the right permanent, or will it expire after a specified time?
7. **Disposal:** How and where will the water be disposed of after use? Are there rules about the quality of used water for disposal?
8. **Source:** From where does this right come? Who awards the right?
9. **Security and enforcement:** Can anybody guarantee the implementation of the right? If the water in the river becomes less, or is polluted, who will make sure that enough remains available for implementing this right?
10. **Ownership and transfer:** Can the owner of the right transfer it to another person, or another location? Can it be inherited? Can it be sold?

- Abernethy, 2005

adequate water rights system. (Box 1)

22. Bruns (2004) identified several challenges to the adoption of water rights:

- Local institutions for water rights and allocation are often unsupported by national law.
- Customary rights may lack legal standing.
- Regulations are often incomplete, contradictory, and un-enforced.
- Water users themselves may have little knowledge of the laws and regulations that define formal water rights.
- Courts are often distant, distrusted, and take years or even decades to deliver verdicts that seem more linked to the ability of litigants to pay than to jurisprudence.
- Technical measurements of water flows may be non-existent, secret or so inaccurate as to be useless.
- Challenge to guarantee fair and suitable sharing among users.

23. Bruns (2005) suggested a provocative recipe for failure in a water rights reform. (Box 2)

**Box 2: 13 Secrets for Failure in Water Rights Reform**

1. **Surprise stakeholders.** Avoid consultation. Exclude not just the public, but also political leaders, legislators, and rival agencies.
2. **Get it wrong the first time.** Codify everything in statutes before you know what works. Avoid experiments. Prevent learning and adaptation.
3. **Create losers.** Condition water rights on using less water and paying higher fees. Make those receiving formal rights worse off than they were before.
4. **Ignore local customs.** Insist that only national laws matter, and must be implemented with no adjustment for local knowledge and conditions.
5. **Make recognition hard.** Ensure that obtaining legal recognition of rights is complicated and expensive, so those with more power and money can easily manipulate the system.
6. **Impose deadlines.** Enact strict nationwide time limits for getting a permit, or else losing all rights.
7. **Forget enforcement.** Keep rights unreliable and insecure. Omit staff and budgets to monitor compliance and apply sanctions. Ensure that those with complaints have no way to appeal.
8. **Maximize agency discretion.** Keep criteria and procedures unclear. Enhance opportunities for agency officials to offer favors and earn extra income.
9. **Cultivate confusion.** Emphasize technical jargon and legalese to mystify non-experts.
10. **Centralize power.** Expect regional and local governments, as well as agencies responsible for health and environment, to surrender to micromanagement by river basin organizations.
11. **Ignore impacts.** Allow transfer of water rights without public notice or agency review. Avoid regulating natural monopolies, information asymmetries, or externalities for downstream users and the environment.
12. **Mandate markets.** Assume that tradable water rights are always necessary, even when rights are vague, governance weak, and gains from trade absent.
13. **Promote paperwork.** Emphasize targets for formal registration, and complex processes for integrated water resources planning, to keep water rights disconnected from practical problem-solving.

**Bryan Bruns, 2005**

## F. Approaches to Developing Water Rights and Water Allocation

24. A recent synthesis of practical international experience in developing water rights systems suggest some key principles; and these are reflected in the recommendations from the International Working Conference on Water Rights, Hanoi, Viet Nam, 12-15 February 2003. (Box 3)

### Box 3. Recommendations from the International Working Conference on Water Rights, Hanoi, Viet Nam, 12-15 February 2003

1. **Parallel-track reform.** Water rights reforms should pursue a “parallel-track” approach that integrates drafting of changes in laws and regulations with consensus building through public discussion and feedback learning from field trials.
2. **Participation.** Adequate time and other resources should be provided for public participation processes, including building capacity of agencies to apply participatory approaches and developing basin committees and other institutions for participatory governance.
3. **Customary rights.** Local ideas and practices concerning rights to water should be suitably recognized and incorporated in reforms, particularly through the empowerment of local institutions.
4. **Pro-poor reform.** Pro-active efforts are needed to ensure that poor people, ethnic minorities, and women are included in discussions about reforms; that impacts on marginal and vulnerable groups are considered; and ways identified to protect livelihoods and improve equity as part of water rights reforms.
5. **Action research.** Case studies during reform implementation, simulation modeling, and other applied research can improve water rights reforms in a water (rights learning) cycle of generating better understanding of current water allocation systems; informing discussion of issues; supporting development, testing and refinement of changes; and assessing the impact of changes.
6. **Sharing international experience.** International mentoring, exchange visits, sourcebooks, websites and other methods should be further developed to share experience, positive and negative, with changes in water allocation institutions.
7. **Priorities.** Reforms should be suitably prioritized and sequenced, in accordance with national, basin and sub-basin conditions, priorities, and institutional capacity.

- Synthesized by Bryan Bruns

25. The Global Water Partnership (TAC Paper No. 4, 2000), posits that to allocate water efficiently and effectively to competing users, the following issues have to be addressed:

- When markets do not fully capture the total value of water, other mechanisms have to be used to allocate water to the highest value uses and users.
- Market mechanisms (trading systems and/or full cost pricing through valuation) could be improved in conjunction with the formulation of appropriate regulatory systems.
- Conflict resolution mechanisms may be used to facilitate water sharing among competing users such as upstream and downstream stakeholders.

## II. Frameworks and Arrangements for Water Rights in Selected Asian Countries

26. Countries vary in terms of how natural resources, governance structure and cultural traditions impact on the development and management of water resources. Frameworks and arrangements for water rights and water allocation differ: from the traditions of Islamic states where water is, in principle, considered a gift from God; through countries where democratic procedures and due process constrain government action; to centralized and bureaucratic states where water could more readily be allocated through administrative decisions.

### **Cambodia**

27. In Cambodia, the sharing and allocation of water among various uses has not yet been implemented in a formal way that meets the needs of all water users. Irrigation though has traditionally received a high priority for allocation of water. (National Water Resources Policy, 2003)

28. With Cambodia's abundant water, there has been limited competition among water users even during the dry season; and competition and conflicts rarely occur. In places where conflicts do arise, community and local leaders resolve them informally. Resolution of conflicts is provided for in the draft Law on Water Resources Management (WRM).

29. The draft law on WRM does not explicitly set priorities for water; though the following articles state what can be regarded as basic principles for water rights and allocation in Cambodia:

- All water resources are owned by the State and are managed by the Government in accordance with the provisions of this law. (Article 3)
- Everyone has the right to use water resources freely for drinking, washing, bathing and other domestic purposes, the watering of domestic animals and buffaloes, fishing and the irrigation of gardens and orchards in amount not exceeding that necessary to satisfy the individual and family needs of the user. (Article 8)

30. To assure effective and equitable water allocation that achieves the greatest national benefit, the following policies are in place: (i) promote the equitable sharing and allocation of water, and introduce the necessary laws, regulations, and procedures to achieve them; (ii) apply fees and/or licenses for water use where they are necessary to conserve water resource, and administer them in a consistent and timely manner; (iii) share water during periods of water shortage, normally in the following order: domestic and municipal uses, minimum flows for ecosystem and fisheries maintenance, industry and small manufacturing enterprises, irrigation, hydropower, navigation; and (iv) take international agreements fully into account in the allocation of water during periods of water shortage.

### **Kazakhstan**

31. Water resources management in Kazakhstan is the responsibility of the Committee of Water Resources and its eight water management basin boards. The committee and the basin boards establish the water delivery restrictions, issue permits, and register and control water intake from the rivers.

## **Lao PDR**

32. The problems of water use and other related matters in Lao PDR are not as acute relative to other countries. Until the approval of the Water Resources Law in 1996, the country does not have an exhaustive water legislation that would allow to regulate comprehensively and effectively all kinds of problems concerning water. There exists several sectoral policies where references to water can be found; and there are some provisions concerning various aspects of water (ownership, use, distribution, management) which are scattered in the 1991 Constitution and various laws, decrees, regulations, circulars, and other legal enactments.

## **Malaysia**

33. The jurisdiction and legislative powers in all aspects of water are distributed between Federal and State Governments in accordance with the Legislative Lists of the Federal Constitution. It may generally be stated that water, whether surface or ground, is a State matter; but water is not exclusively a matter within the sole jurisdiction of the States. If it concerns the restriction of the right of the State to use any river wholly within that State, approval has to be obtained from the State Legislature. Conflicts involving water resource allocation, flood management, environmental protection, etc. are resolved mainly through ad-hoc inter-agency consultations.

34. Different government agencies and departments are entrusted with sector responsibility for water resources development and management. For example, the Public Works Department is responsible for domestic and industrial water supply; the Department of Irrigation and Drainage for irrigation, drainage, and flood mitigation; the Department of Environment for pollution control. This sector approach leads to conflicts in water allocation. There are more than 30 different laws related to water, most of which are old and obsolete (eg. the Water Enactment was passed in 1920).

35. Following the water crisis in 1998, the National Water Resources Council was formed with a view to pursue more effective water management including the implementation of inter-state water transfer. In 1999 and 2000 respectively, enactments have been passed for the formation of the Selangor Water Management Authority and State Water Resources Council. These were important steps towards more holistic planning of water resources.

## **Indonesia**

36. Indonesian constitution stipulates that water is a “God granted resource” and should be used for the highest level of welfare of the people. Therefore, water is owned communally by all citizens; and no individual ownership can be claimed over water. The idea also provides the basis for the state right to control—but not to own—water. This state right to control water is exercised by the government. (Samad, 2005)

37. The New Water Law (NWL) of February 2004 (superceded the previous water resources law No. 11/974) is not specific on allocating water as it allows communities to take what they perceive they need free of charge. The main tenets of NWL pertaining to water rights and water allocation are:

- Water resources are controlled by the State and are to be used for the welfare of the Indonesian people in a fair way. The State therefore guarantees right of everyone to

obtain water to fulfill basic daily needs while recognizing local traditional community rights, as long as they are not contradictory to national interests (Article 6);

- Water utilization right consists of water usage right and water exploitation right and can not be leased out or transferred, partly or wholly (Article 7);
- Water usage right is acquired without a permit if to fulfill daily basic need for individuals and on public irrigation systems. A permit is required if condition of use changes the natural condition of the water sources; intended for use by a group needing a large quantity; or used for public agriculture outside the existing irrigation system (Article 8);
- Water exploitation rights can be given to individuals or corporation with a permit from authorized government; and holder can channel water on other people's land only on approval of the land owner and can be in the form of a compensation agreement (Article 9);
- The National Government will establish a National Water Resources Councils at various levels of government to facilitate settlement of water management disputes (Articles 14, 15, and 16);
- Water utilization is to be conducted in an integrated and fair way, either inter sector, inter region or inter community by encouraging cooperation (Article 26); and
- Companies wishing to use groundwater resources for industrial use will have to apply to local government for an abstraction license (Article 45).

38. In several areas, the mechanism of permit application is not established yet, neither the monitoring mechanism whether the user utilizes more than permitted. (Hargono, 2005)

## **India**

39. In 1987, a national water policy was adopted under the Aegis of the National Water Resources Council. The policy aims to optimally utilize the country's water resources, lays down priorities and indicates broad directions for water resources planning and planning. Under the policy, the highest priority for water use is accorded to provision of safe drinking water; followed by water uses for irrigation and industry.

## **Mongolia**

40. The Water Law of 1996 stipulates the following water management and development concepts: (i) water has an economic value; (ii) local authorities has substantial power for the management of water resources; (iii) water will be allocated and utilized if there is no depletion of water resources that maintain natural ecosystems

## **Nepal**

41. In Nepal, the Water Resources Act of 1992 and its by-laws in 1993 vest the ownership of all the water resources in the country with the government. A government license is required for the development of the water resources other than the water resources on the land of a landowner. The development of water for individual and collective use for the drinking and

irrigation does not require license. Water right in Nepal is available to people in following four ways (Kayastha, et al, 2001):

- Natural right for developing water for limited purpose.
- Right acquired through license for developing water resource for specific purpose.
- Upper riparian has prior right compared to the lower riparian.
- Customary use right and prior appropriation right.

### **Papua New Guinea**

42. The Water Resources Act of 1982 covers some aspects of the water sector, but in general there is a lack of clear legal rights relating to the ownership of water. Water resources are taken to be the responsibility of the State, which has the vested right to use and control the flow of natural water ways. The Act does not cover customary claims over water rights; but provides for the management and protection of all national water resources, both surface water and groundwater.

### **Philippines**

43. In the Philippines, water allocation procedures are prescribed under the Philippine Water Code of 1976 and its implementing rules and regulations. All waters belong to the State; and the State through the National Water Resources Board may allow the use or development of waters by administrative concession through the issuance of water rights to user. The measure and limit of appropriation of water is 'beneficial use'. Priorities in appropriation of water follow the priority in time principle except in times of emergency when the use of water for domestic purposes have better right over all other uses. The Philippine Water Code allocates water for the following purposes: domestic, municipal, irrigation, power generation, fisheries, livestock raising, industrial, recreational, and other purposes.

44. **RBO Role on Water Right and Water Allocation: Case of Laguna Lake.** The Laguna Lake Development Authority (LLDA) is given authority by the government (i) to exercise water rights over public waters within the Laguna Lake; (ii) to develop water supply from ground and/or surface waters for municipal, agricultural and industrial usages; and (iii) to enter into agreements with municipalities, government agencies and the private sectors to supply, distribute and market such water. LLDA conducted the Water Resource Pricing Study in 1999 which covered, among others, determining the feasibility of adopting a tradable water user right system within the Laguna Lake. However, this objective was not realized because the study revealed that the system may not work because the number of buyers and sellers was not enough to make the market competitive.

### **People's Republic of China**

45. PRC's Water Law of 1988 stipulates that water resource agencies at all levels are the authority agencies for integrated water resources development and management. The Ministry of Water Resources is the water administrative agency under the State Council; and seven river basin water resource commissions are the representatives of the Ministry for water resources development and management at the basin level. The Water Law contains relevant regulations, including on water use permission and water allocation for interregional rivers.

46. The Water Law defines two kinds of water right relating to both surface water and groundwater: (i) collective property right - if a reservoir or a water body belong to a collective organization, the property right of water stored in the reservoir and water pockets will also belong to the collective organization; and (ii) state property – all other water bodies belong to the State. Regulations do not allow water users (including individuals and institutions) to draw water from any water resources without obtaining a water use license. The water resource management agencies at each level have the right to issue a license to the water user. Water trading or transferring the water withdrawal permit or the water use right is prohibited. In the event of any violations, the water resources administration or any other relevant authority can revoke water withdrawal permit license and expropriate unlawful income. (Samad, 2005)

### **Sri Lanka**

47. A system for formal water rights has not yet been established in Sri Lanka; and there are problems relating to water allocation among competing users, such as irrigation, hydropower, domestic and industrial, which are normally settled through adhoc administrative mechanisms adopted through consultations. 'Customary rights' or 'riparian' rights however prevail. Negotiated rights and strengthening of RBOs as a key decision-making body for water allocation among stakeholders are being considered. (Ariyabandu, 2005)

48. The National Water Resources Policy provides that: (i) water is a public property; (ii) drinking will be given priority in allocation; and (iii) traditional and customary rights will be respected.

49. Allocation of surface water is covered in principle by the State Lands Ordinance of 1947. The Irrigation Department has carried out 'de facto' the role of water allocation. Other laws also assign powers to extract water for specific purposes, including (i) the Irrigation Ordinance for irrigation work; and (ii) the National Water Supply and Drainage Board Law, the Mahaweli Development Board Act, and the Urban Councils Ordinance for water supply. The State Lands Ordinance vests all rights to water in the State, and water management has been based on the belief that water is a 'gift from God' which should be administered by the State for the benefit of all. The ordinance makes provision for the rights of riparian landholders to take water. There are no legal instruments dealing with groundwater.

### **Thailand**

50. In Thailand, all water resources are owned by the State by law. Water rights are not too clearly defined; thus it is not clear whether the riparian or appropriation principles are applied to practice. For example, Bangkok which is growing by leaps and bounds, was running short of water and some amount was transferred from another river basin, that of Maeklong – to supplement the flow of the Chao Phraya, traditionally the source of Bangkok's water supply. Riparian residents of Maeklong complained about the negative impact of water abstraction on their ecosystems; but it was not clear whether their basis of their complaints was ownership, which they cannot claim by law, or water rights, which still remain ill-defined.

51. The first draft of a National Water Law proposed in 1992 attempted to establish water markets but ultimately failed to get through the statutory process. Recently a revised draft of the water law requires that claimants desiring water beyond a certain limit (that for household use) need to ask the River Basin Committees (RBC) 'for permission'. Until the establishment of an effective and functional legal framework regarding water rights is established, the allocation of water and the management thereof will be problematic both with respect to the recently

developed river basin committees and government departments.

**52. RBO Role on Water Right and Water Allocation: Case of Bang Pakong River Basin.**

The body responsible for the allocation of water resources in the Bang Pakong River Basin is the Bang Pakong River Basin Committee (BPRBC). However, the committee has only existed starting August 2003; and has started holding regular monthly meetings as recent as early 2004. Although the 36-member committee includes representatives from government and NGOs, over half of the members come from business, industry, farming, and public administration who have no formal training or experience in water management or the issues related to water management. Once the national water law is ratified, the committee has a mandate to manage water and must try to do so in a way that maximizes social, environmental, and economic sustainability; but may not have the capacity to do so. Introducing a water rights system in the Bang Pakong would involve many different types of complexities, therefore it is critical that the committee have a clear understanding of how and why such a system works. They must both be able to disseminate information to their constituents and minimize the delay in the acceptance, promulgation, and proper implementation of water rights. (Kobkiat, 2005)

**Uzbekistan**

53. Management of water resources in Uzbekistan is carried by territorial administration and basin principals. The general management of water resources is carried out by the Ministry of Land Reclamation and Water Management, which annually establishes limits by branches of the national economy and in the framework of provinces with estimates of total water intake volume, including from the Amu-Darya and Syr-Darya rivers. In all 13 provinces, there are province water management bodies which control water resources within the borders of the regions; carry out the management of water resources; and deliver the water to the borders of the provinces according to established limits.

**Viet Nam**

54. A general legal basis for development of a system for sharing water between competing uses and users exists in Vietnam but very little explicit policy concerning the form of future water sharing arrangements and rights to extract water has yet been developed. There are many issues that need to be resolved before water sharing plans can be written and the necessary water sharing rules developed. (Working Paper on Water Sharing: Viet Nam's Water Resources Strategy, 2005)

55. Three legal documents provide relevant principles on water sharing: (i) 1998 Law on Water Resources (LWR); (ii) Decree 179/1999 - Implementation of the Law on Water Resources; and (iii) Decree 149/2004 - Regulation of Licensing of Water Resources Exploration, Exploitation, Utilisation and Waste Water Discharge into Water Sources. These documents (i) establish general requirements to regulate and distribute water; (ii) require all larger scale water users to have licenses; (iii) exempt some non-profit and some household scale uses of water from licensing; (iv) require that the granting of licenses be based on the actual capacity of water sources, water supply standards and water use demand and proposals of management agencies; (v) provide for withdrawal or suspension of licenses if they are not used in any 12 month period; (vi) require suspension of licenses if they are transferred; and (vii) give priority to water for living over all other uses. (Working Paper on Water Sharing: Viet Nam's Water Resources Strategy, 2005)

56. The Water Law, adopted on May 1998 and went into force in January 1999, stipulates that water resources belong to the people under the management of the State, and organizations and individuals have a right to exploit and use the resources. Water allocation is carried out from a river basin perspective adhering to the principles of fairness and reasonability. Priority in use is accorded to drinking water in both quality and quantity pursuant to Article 20. (Svendsen, et al, 2005)

57. According to the Water Law, the Ministry of Agriculture and Rural Development (MARD) is in charge of overall management of the country's water resources, but the government may delegate authority for specific water uses to other ministries. Water use is licensed by provincial government authorities under the guidance of MARD.

### III. ADB's Water Policy and Experience from Projects

58. **ADB's Water Policy - Provisions on Water Rights and Water Allocation.** The allocation of water among competing uses is rapidly becoming a common challenge in ADB's developing member countries (DMCs), which impacts most on the poor who are insufficiently empowered to claim water rights. To help address this challenge, ADB's water policy stipulates that:

- (i) ADB will encourage developing member countries to adopt participatory and negotiated approaches for water allocation.
- (ii) ADB will support the evolution of water allocation through markets of transferable water rights once the necessary policy, legal and institutional framework for IWRM in a river basin context have been put in place.
- (iii) ADB will help regulatory agencies to develop water rights in a manner that protects the rights of the poor to equitable water services.
- (iv) Until such time as transferable water rights are properly developed, ADB will support the introduction of systems of water entitlements, or usage rights.

59. **ADB's Assistance to its DMCs - Experience from Projects<sup>9</sup>.** ADB has provided loans and technical assistance on the subject of water rights and water allocation to many of its DMCs, as described in the succeeding paragraphs.

60. In the Republic of Azerbaijan, ADB assisted the State Amelioration and Irrigation Committee of the Government in building its capacity on river basin and flood management planning, including water allocation and water resources assessment, among others. (2068-UZB: Flood Mitigation Project, 2003)

61. In the Kingdom of Cambodia, ADB assisted the Ministry of Water Resources and Meteorology (MOWRAM) in clarifying the regulatory framework for Irrigation Management Transfer; particularly on the form of legal agreements required between MOWRAM and the farmer water user community (FWUC) to regulate the transfer and to regulate water use ownership rights for FWUCs. (2035-CAM: Northwest Irrigation Sector Project)

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<sup>9</sup> ADB loans and Technical Assistance projects for the period 1997-2004 were reviewed.

62. In India, ADB assisted

- the state of Madhya Pradesh to formulate a strategy for integrated water resources management specifically in (i) appraising the extent of intersectoral conflicts on the use of surface and groundwater; and (ii) appraising the needs and prospects for introducing water rights, and procedures for intersectoral water allocation. (3715-IND: Madhya Pradesh Integrated Water Resources Management Strategy, 2001); and
- the state of Chhattisgarh in (i) assessing the current status of water resources; and (ii) reviewing and analyzing the existing water resources management policy framework, institutional arrangements, and technical capacity to support implementation with regard to water allocation procedures, water rights, and basin management. (4216-IND: Chhattisgarh Irrigation Development Sector Project, 2003)

63. In the Republic of Indonesia, ADB assisted in clarifying the legal status of water rights in four strategic river basins in Java, Sulawesi and Sumatra; and in developing an appropriate coordination mechanisms in catchment areas. ADB also assisted in analyzing the social dimensions to enhance the focus on poverty reduction and the recognition of traditional rights to water resources. (3793-INO: Participatory Irrigation Sector Project, 2001)

64. In Kazakhstan, ADB assisted the government in reviewing and assessing the present roles of government organizations in controlling water resource allocation and in providing services to agriculture. (1592/1593-KAZ: Water Resources Management and Land Improvement Project, 1997)

65. In Kazakhstan and the Kyrgyz Republic, ADB assisted in improving transboundary water management on a pilot basis. The assistance demonstrated good transboundary basin management practices at the Chui and Talas river basins, located across Kazakhstan and the Kyrgyz Republic. ADB assisted the Chui-Talas Joint Rivers Commission to become fully operational – by helping to develop, among others, a water rights analysis as a basis for a water allocation policy. (6163-RETA: Improved Management of Shared Water Resources in Central Asia, 2003).

66. In the Lao People's Democratic Republic, ADB assisted

- the government in preparing the draft National Water Policy and in developing a legal framework to draft the implementing decree for the Water and Water Resources Law. The implementation regulations cover issues such as water allocation and licensing of water use, among others. (1788-LAO: Decentralized Irrigation Development and Management Sector Project, 2000);
- the Hydropower Office (HPO) in the river basin management and river basin modeling component of the Nam Ngum River Basin Development Sector Project. This project component configured and calibrated a river basin model to ensure its effective use as a planning tool to operate the Nam Ngum 1. The river basin model provided an agreed-on bulk sharing of the water resources in the Nam Ngum River Basin consistent with the Water Law and with prior stakeholder consultation. (1933-LAO: Nam Ngum River Basin Development Sector Project, 2002); and

- the District Agriculture and Forestry Service Office (DAFSO) in developing and finalizing agricultural development plans which include water rights and water allocation provisions. (2086-LAO: Northern Community-Managed Irrigation Sector Project, 2004)
67. In the Kingdom of Nepal, ADB assisted in examining the possibility of water rights being traded between irrigation and other water supply uses on economic grounds for a number of scenarios. (3700-NEP: Optimizing Water Use in Kathmandu Valley, 2001)
68. In the Islamic Republic of Pakistan, ADB assisted in preparing analytical papers on natural resources management, which covers better understanding the issues on water use rights. (4367-PAK: Preparing the Balochistan Rural Development and Drought Mitigation Project)
69. In the Republic of the Philippines, ADB assisted
- in providing water supply to the service area of the Metropolitan Waterworks and Sewerage System (MWSS) from the existing Wawa Dam, and in providing advice on legal issues relating to water rights from the dam. (2012-PHI: MWSS New Water Source Development Project, 2003); and
  - in the master planning activities for the Agusan River Basin, particularly in assessing the effectiveness or shortcomings of existing policies, laws, decrees, regulations, and circulars that govern allocation of available water resources, water rights and water pricing. (4552-PHI: Master Plan for the Agusan River Basin, 2004)
70. In the Democratic Socialist Republic of Sri Lanka, ADB assisted in building the government's capacity to implement water reforms in line with the National Water Resources Act which embodies the National Water Resources Policy and Institutional Arrangements. The policy principles cover the key aspects for sustainable management, including pricing of water and sharing of costs among beneficiaries in an equitable manner. The priority aspects introduced under the policy reforms include: (i) establishment of water rights whereby water is allocated on the basis of agreed-upon priorities and/or in accordance with principles of economic efficiency; and (ii) demand management – which allowed water entitlements to be transferable. (1757-SRI: Water Resources Management Project, 2000)
71. In the Democratic Republic of Timor-Leste, ADB assisted the government in formulating a national water policy leading to the adoption and progressive implementation of IWRM. The national water policy is broad-ranging, covering water assessment, water sharing, and water allocation, among others. (3986-TIM: TA to Timor-Leste for Integrated Water Resources Management, 2002)
72. In the Republic of Uzbekistan, ADB assisted the government in strengthening the management and capacity of the Amu-Surkhan Basin Irrigation Organization (ASBIO) for water allocation, monitoring and accounting. ADB also assisted in implementing water policy and institutional reforms by (i) strengthening the newly-organized institutions at national, basin and provincial levels; (ii) providing policy advice; and (iii) developing policy and legal documents related to water sector management. (2069-UZB: Amu Zang Irrigation Rehabilitation Project, 2003)
73. In Viet Nam, ADB has provided substantial assistance to the water sector and plans to continue its support pursuant to the Country Strategy Program and its updates. ADB provided

assistance in the water resources planning, including a system of water abstraction rights for large rivers in Viet Nam, such as Red, Mekong and Dong Nai. ADB assisted in mass media programs and school education programs to increase public awareness and education regarding water allocation, water rights, water permits and water resource management. ADB assisted in the pilot surface water exploitation licensing system for the Cau River subbasin. The assistance covered (i) formulating the administrative and organizational arrangements for a licensing scheme for assigning and modifying rights to use surface water (via pumps or by gravity); (ii) developing functioning sub-systems such as computer-based licensing and permit registers, a financial accounting system, standard operations manual for the licensing and permit schemes; (iii) implementing the pilot schemes in the subbasin; and (iv) developing a performance assessment system for the pilot schemes. (1855-VIE: Second Red River Basin Sector Project; and 2025-VIE: Phuoc Hoa Water Resources Project, 2003)

#### **IV. Conclusions and Recommendations**

74. This paper provides general background information on water rights and water allocation, including existing framework in some countries and ADB assistance on the subject. No detailed case studies were presented which would have provided practical experiences and intricacies, more in-depth analysis, and lessons learned. 'Negotiating Water Rights' (Bruns and Meinzen-Dick, 2000) is recommended for further reading along this line. The book offers several case studies demonstrating the wide variety of water rights, conflicts and outcomes particular to a country.

75. ADB encourages its DMCs to adopt participatory and negotiated approaches for water allocation and to help agencies to develop water rights in a manner that protects the rights of the poor to equitable water services. While ADB has supported several of its DMCs in the area of water rights and water allocation through investments and technical assistance over the years, a lot still needs to be done. ADB intends to target water as a core investment area in its operations under the Water Financing Program 2006-2010; to expand its water operations building on the momentum and accomplishments in the first five years of implementing its water policy: Water for All; and to respond to the variety of water needs of its DMCs by increasing its investments under the 'basin water' stream, including on water rights and allocation.

76. The establishment and implementation of water rights system needs careful study; and some general approaches have already been put forward in this regard. Some of them are reiterated. The system must fit local conditions. The legal regime needs to be more precisely defined; whereby water laws which among other things govern water rights and allocation, must be modified<sup>10</sup> as necessary in response to evolving conditions. The interests of the poor must be recognized and protected, with accompanying adequate law enforcement mechanisms.

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<sup>10</sup> In the Republic of Korea, the water laws have been systematically revised every few years to respond to current and evolving trends.

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