RESEARCH REPORT

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A Method to Identify and Evaluate the Legal and Institutional Framework for the Management of Water and Land in Asia

The Outcome of a Study in Southeast Asia and the People's Republic of China

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International Water Management Institute

COMPREHENSIVE Assessment of water management in agriculture

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Introduction

Achieving the sustainable use of water and land resources is a major challenge for the world in the twenty-first century. Despite the emerging recognition of their central role in human survival, water and land ecosystems are being degraded at an alarming rate. Of significant concern is the sustainable production of food, maintenance of livelihoods of rural land users and improving the quality and biodiversity of natural resources (World Resources Institute 2000; WSSD 2002a, b, c). The creation of an enabling environment for farmers and agencies to adopt management practices that reduce water and land degradation and improve food security is crucial. It is important to create a legal framework to define what activities are allowed in a particular area and who is responsible for them and for the state of the resources. In particular, rural land users should have the benefit of securing tenure or long-term access to land and assured rights of access to the water resource (Penning de Vries et al. 2002). The benefits of capacity building in environmental, legal and institutional systems to the Asian region in general are widely recognized, especially to the knowledge, understanding and capability of environmental law to improve the quality of the natural environment (Boer et al. 1998; Craig et al. 2002). The International Water Management Institute (IWMI) accepts that the development of a framework to identify and better understand the legal and institutional issues of water and land management is an essential part of this process (Dialogue on Water, Food and Environment 2001; Penning de Vries et al. 2002). Such a framework would make a substantial contribution to achieving the common concerns and agreed priorities for action on water, and sustainable land development outlined in the joint statement of ten Asian nations of May 2002 (Joint Statement by the Ministerial Delegations of Ten Asian Nations 2002).

Law reform, through the introduction of new frameworks or upgrading the existing ones is seen as a priority for water and land management for the upcoming years (Dialogue on Water, Food and Environment 2001). The law is perceived as a fundamental tool for achieving integrated resources management, guaranteeing a participatory process, and tackling issues such as pricing of commodities, building partnerships, protecting the environment and achieving sustainable development (Penning de Vries et al. 2002). Areas of intensive agricultural land use tend to experience water and soil degradation, resulting variously in water and soil salinization, decline of water quality and degradation of the

terrestrial and aquatic ecosystems. It is established that these problems hit first and hardest the people in the region who already lead the poorest livelihoods as well as threatening the resource base on which food production depends (Molden et al. 2002; IWMI 2000, 2002).

This report outlines the approach taken to identify and evaluate the features of the legal and institutional framework for the management of water and land of four countries in the Asian region. It describes the method used to achieve this, outlines some of the key findings and raises some important challenges for the future. It is based on a study carried out in the region in 2002 by IWMI, to review the capacity of the legal and institutional system of the People's Republic of Bangladesh, Lao PDR, the Republic of the Philippines and the PRC (these four countries are hereafter referred to as "the region" in this report) to manage water- and land-use issues (Hannam 2002a, b). It identifies the capacity of relevant national, regional and international legislation to manage water and land-use issues of the region. It also raises opportunities for reform and capacity building in the legal and institutional system in the region. It highlights the relationships and interdependence between the three principal levels of legislative instruments applicable in the region—the international environmental law, regional environmental law and national environmental law. In this regard, this report makes a significant contribution as a general procedure to better understand the capacity of the legal and institutional system for integrated water- and land-resources management.

Establishing a Direction for a Legal and Institutional Framework for Water and Land Management

Generic Terms Central to the Discussion

One of the difficulties in discussing water- and land-management issues is the question of consistency in understanding particular interrelationships between the water, land, legislative and human factors. For this reason, a number of generic terms have been formulated to ensure consistency in interpretation in this report.

Sustainable use of water and land

- This is the utilization of water and land in a manner that preserves the balance between the processes of soil formation and soil degradation, and the maintenance or improvement in the quantity and quality of water, while maintaining the ecological functions and needs of water and land. In this context, the term "the use of water and land" means the role of water and land in the conservation of biodiversity and the maintenance of human life.

Sustainable water and land management

- This is managing the water and land resources for livelihoods and nature by identifying the necessary tasks, policy tools, organizational designs, and institutional frameworks to achieve and sustain high productivity of water and land for agriculture and to improve people's lives.

Integrated resources management

- This is a process that promotes the coordinated development and management of water, land and related resources, to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems (see Global Water Partnership 2000).

There are many competing issues within these definitions but an important role of a natural-resources legal and institutional system is to provide a range of administrative and procedural mechanisms that enable such competing issues to be reconciled while providing for the primary interests of humans and natural resources.

Meaning and Scope of Environmental Law

In a general sense, any rules or regulations that govern conduct that are likely to affect the sustainable use of water and land may fall within the definition of environmental law as applied in this report. One approach in identifying the parameters of environmental law is through the definition of "environment," where the scope of the legal discipline of environmental law flows logically from that definition. Many variations of the definitions of "environment" exist but they commonly provide for all aspects of the living community of earth and the natural, human-made and social surroundings of that community. It often appears in a more comprehensive format, making reference to ecosystems, all natural and physical resources, qualities and characteristics of an area, and social, economic and cultural conditions. The different facets of the "environment" are not mutually exclusive and many of the boundaries overlap, bringing them within the scope of a legal and institutional framework for the sustainable use of water and land (Rodgers 1994; Williams 1997). This report puts forward a way of discussing the legal and institutional system for the environment of water and land and determining its capacity to manage these resources. In this report, a reference to "law" means a body of law enacted by a legislature, e.g., an act, decree, regulation, or other formal legal instrument that is legally enforceable. It can also include agreements or covenants, which are expressed to be legally binding.

Two Key Definitions

A legal and institutional system

A legal and institutional system is the organizational and operational regime together with a legal and institutional framework that is used to manage water and land. It comprises the organization itself and its administrative and legislative structures (see Boer and Hannam 2003).

The capacity of a legal and institutional framework for water and land management

The capacity of a legal and institutional framework for water and land management can be measured by the ability of a legislative and institutional system to achieve sustainable use of water and land. The "capacity" is determined by the number and type of essential legal and institutional elements present in a legal instrument in a format that enables the key issues of the sustainable use of water and land to be identified, and with the legal, administrative and technical capability in the particular instrument to take some form of effective action. In some jurisdictions, the capacity will be direct and obvious. In other places, it will exist in a format that enables some form of indirect action. Capacity is also represented in the form of legal

rights, the type of legal mechanisms, and importantly, the number and comprehensiveness of the essential elements and their functional capabilities.

Most primary water- and land-management issues in the region are multifactorial, i.e., they include a sociological, a legal and a technical component. Therefore, it is obvious that, generally, more than one piece of environmental legislation, along with detailed regulations, will be needed in a particular nation to effectively manage individual issues (Hannam 2002a). A variety of types of legal and institutional elements and mechanisms may also be required. This reinforces the necessity to analyze the relevant environmental legislation at each level in the region in order to ascertain current management regimes. The information generated by such an analysis may also be used as a guide to the type of legislative and institutional elements that may be necessary to include within any new legislative regime that may be drafted for each level of resources management (see Boer and Hannam 2003).

Legal and Institutional Frameworks

The general concept of a legal and institutional framework is to provide law and policymakers with the practical information and guidance to understand, or to develop or strengthen the legal and institutional capacity for a specific environmental-management issue. A framework can be applicable at either the international, regional or national level or a combination of these levels. Some nations have improved the capability of their domestic legislative systems to include references to the regional and international laws (see Shine and de Klemm 1999; Hannam and Boer 2002). An important aspect of a framework can be the need for cooperation and coordination between various countries in the region to effectively address their environmental problems (Boer et al. 1998). The activity around the world over the last decade to create or modify legal and institutional frameworks to implement the objectives of multilateral treaties and conventions has produced lessons that can benefit national and regional environmental law reform procedures (e.g., Glowka et al. 1998; Shine and de Klemm 1999). The outcomes of the 1992 United Nations Conference on Environment and Development have been particularly beneficial, and the principles of the 1992 *Rio Declaration on Environment and Development* (United Nations 1992) have been incorporated into various legislative structures for the future management of the environment in the Asia-Pacific region (Boer at al. 1998). More recently, the *Report of the World Summit on Sustainable Development* (United Nations 2000), the *World Summit on Environment and Development Plan of Implementation* (WSSD 2002a) and the outcomes of the Kyoto Water Forum 2003, provide additional substantial mandates for environmental law and policy reform for water- and land-resources management in the region.

Many legal and institutional frameworks to emerge over the last decade demonstrate different ways to approach international, regional and national environmental law analysis, and reform and the development of ways to approach this task (Robinson 1997). These frameworks illustrate the impact of various pressures on the natural environment and demonstrate how laws and institutions can mutually link between the scientific approaches and legal tools (e.g., Shine et al. 2000). While none of them alone was considered to be readily adaptable as a framework to examine water- and land-management issues in the region, various aspects of these frameworks provided a valuable guide to the approach taken to develop a legal and institutional framework for the region (Hannam 2002a). In general, a legal and

institutional framework for natural-resources management should feature:

- An overview of the current international legal regime, outlining the key legal approaches, principles and tools in the international law that could be considered in shaping regional and national frameworks.
- The structure of a national framework should have the ability to consider complex scientific issues in a legal context.
- A discussion of the role of legal principles, tools and other elements in the design of national legal measures and procedures to prevent or minimize environmental degradation.
- An indication of elements that could be featured in regulatory regimes.
- The mechanisms for compliance, accountability and responsibility in environmental management (e.g., see Shine et al. 2000).

Methodological Steps in the Legal and Institutional Framework

There are basic steps to the development of a legal and institutional framework for water and land management in the region (Hannam 2002a). These steps are applied at the international, regional and national levels of law, but in doing so, the different objectives, roles and responsibilities of each level of law within the region are carefully evaluated. Individual states in the region have the freedom to change their laws to more effectively manage water and land. However, changes to international laws can only be brought if states, usually as a group, apply pressure on treaty Secretariats, International Councils, etc., for existing treaties and strategies to be amended, or new ones to be formulated. Where a state in the region is a party to a treaty, this may impose certain obligations or duties on that state to implement the provisions of the treaty. On the other hand, states are not bound to implement the provisions of the international environmental strategies and can use them as a guide for national decision making (see Boer et al. 1998; Mottershead 2002).

In the main study, the primary aim was to determine the capacity of the existing legal and institutional system for effective water and land management and look for opportunities for improvement, rather than whether individual nations were actually following their obligations under international, regional or national law (Hannam 2002a).

Step 1. Preliminary

- The first task identifies the primary water- and land-management issues in the region. An issue is defined as an expressed point or area of concern, which may include reference to the knowledge and action needed to achieve the sustainable management of water and land. It may also include a matter that requires further investigation to determine or justify a particular course of action (e.g., see Penning de Vries et al. 2002).
- The second task identifies the operational environment for water and land management. This includes the principal methods, processes and procedures used to understand, implement and solve water- and

land-management issues (e.g., see the operational environment outlined in *Dialogue on Water, Food and Environment* 2001, 10).

- The third task identifies the environmental laws and instruments relevant to water and land management in the region at each level—international, regional and national. In the study, searches were conducted on various environmental law databases (i.e., *Australasian Legal Information Institute database*, *Asia-Pacific Environmental Law database*; *Mekong Region Law Centre database)*,[1] in addition to canvassing relevant literature (e.g., Craig et al. 2002) to prepare the list of relevant legislation and instruments for each level.

A law or instrument was selected for examination on the basis of its assessed direct or indirect role in the sustainable management of water and land.

Step 2. Analysis

- The first task examines, analyzes and interprets the selected environmental laws and instruments against a legal and institutional standard. In this case, the "standard" is the basic legal and institutional elements considered as essential within an individual law or instrument to enable its effective implementation within the geographic and institutional jurisdiction to achieve the sustainable use of water and land.

- The second task is, for the relevant laws and instruments at each level:
  - To "isolate" the articles, principles or clauses relevant to water and land management.
  - To categorize the relevant articles, principles, or clauses according to which of the "essential elements" they satisfy.

- The third task is the preparation of the legal and institutional profiles for each of the three levels, where each profile consists of:
  - The relative occurrence of each essential element.
  - Delineating the most-represented and the least-represented elements.

The same procedure was applied to each law and instrument identified at each level.

Step 3. Discussion, Results, Outcomes

- The first task summarizes the legal and institutional profiles.
- The second task documents the principal characteristics, strengths and weaknesses of individual laws and instruments at each level.
- The third task determines the capacity of the legal and institutional system to achieve sustainable water and land.
- The final task discusses opportunities for legislative and institutional improvement, and suggests areas of legal and institutional reform to improve water and land management.

[1]Including, IUCN ECOLEX, www.ecolex.org; UN FAOLEX, www.faolex.fao.org; Australian Legal Information Institute, www.austlii.edu.au; the Asia-Pacific Environmental Law database <sunsite.nus.edu.sg/apcel/dbase>; and the Mekong Region Law Centre database <www.mekonglawcentre.org>.

Water- and Land-Management Issues

The primary water- and land-management issues in the region were identified from key strategic water- and land-management materials for the region, paying particular attention to their objectives, recommendations and conclusions (e.g., see Penning de Vries et al. 2002, 47–60 in particular; *Dialogue on Water, Food and Environment* 2001; WSSD 2002a, b; IWMI 2002; World Bank 2001). In the main study, these issues, which are regarded as primary points or matters of public importance, were used to:

- Establish "benchmarks" of important water- and land-management problems facing the region.
- Establish indicators of the type of legal and institutional elements required at each level of law to effectively manage the issues.
- Make comparisons between the legal and institutional profiles of each national law and instrument examined.
- Identify potential areas for legal and institutional research.

The primary issues were also used in conjunction with the findings of the detailed analyses of the legal materials for each level as a basis to recommend change and reform. Some examples of generic water- and land-management issues taken from the main study (Hannam 2002a) are given below.

1. General Issues

- To improve water- and land-resources management by bridging the gap between the food and environmental sectors.
- To encourage more equitable policy and decision-making processes.
- To maintain land-use sustainability in the face of increasing water and land degradation (increasing the productivity of water and land in agriculture with increasing competition for water and land from other sectors).
- To improve the processes for resolving disputes over water and land use, particularly more effective ways to settle conflicts between resources use and conservation.
- To develop a knowledge base that reflects regional, national and local differences in land use and environmental interests.
- To change attitudes and values in sustainable water and land management through increased public awareness and capacity building.
- To identify institutional barriers, participation and consultation processes and stakeholders.
- To ensure an open and inclusive approach to the management of water and land.
- ` To improve the knowledge-sharing processes.

2. Legislative, Policy and Institutional Issues

Issues identified at the regional and international level include:

- The level of interest expressed in the international treaties and strategies toward national environmental-management issues of the region.

- The mechanisms for enforcement of regional and international laws and strategies.

Issues expressed at the national level include concerns to:

- Undertake a detailed study of laws and rule making, policy and institutional arrangements in developing countries, ranging from the community to the national level.

- Produce knowledge-based guidelines, best practices and policies that enable institutions to deal with specific water- and land-management problems.

- Develop strategic tools for enhancing the productivity of water and land at the local, river-basin and national levels.

- Identify poverty and gender concerns associated with the use of water and land, and how to properly cater for these in national law and policymaking systems.

- Develop institutional arrangements and policy frameworks with the highest potential to improve the productivity of water and land management, assist poor people and achieve environmental sustainability.

The Issues in an Environmental Law Context

In the main study, the primary water- and land-management issues were used to determine the adequacy of the legislative and institutional elements at the international, regional and national levels. They were also used as a guide for the most appropriate legal and institutional framework that can best represent the primary land- and water-management issues confronted in the region. The sequence is:

- Making a list of the elements considered necessary to deal with each separate component of a particular issue.

- Noting the number of times each particular element is considered necessary.

- Using the above information to estimate the relative importance of a particular element to the management of water- and land-management problems.

It is important to note that most water- and land-management issues are multifactorial, i.e., they many include a sociological, a legal and a technical component. Understandably, more than one piece of national environmental law, with the necessary legislative support tools, is needed to effectively manage each individual issue. Also, many different types of legal and institutional elements and mechanisms are required. The experience and knowledge gained form the study point to the necessity to analyze a wide range of environmental law at each level for any region. Further, international environmental organizations and states can use the information stemming from this process as a guide to the type of legislative and institutional elements necessary to include within new legislative materials for improved natural-resources management.

Water- and land-management functions

The water- and land-management issues themselves were found to be indicative of the types of environmental law relevant to the region. The analysis of all the issues assembled in the study (some listed above) indicated that many administrative, scientific and statutory functions and procedures are involved in water and land management in the region (Hannam 2002a). For example, at the international level, various duties, principles, and obligations are set out in relation to:

- Establishing linkages between different countries.
- Preparing strategies and policies for water and land management (e.g., the content of National Action Programs under Article 8 of the Convention to Combat Desertification).
- Establishing strategies to prevent and reduce poverty.
- Preventing and controlling water- and land-pollution activities (environmental health).
- Balancing water and land use and managing ecosystems for future generations.
- Achieving sustainable use of natural resources.
- Undertaking public participation and community-awareness programs.
- Establishing guidelines and standards to manage environmental hazards.
- Developing and implementing effective national environmental laws.
- Developing guidelines and strategies for river-basin management.

At the national level these include:

- Establishing linkages between different sectoral agencies.
- Preparing and implementing national strategies and policies for water and land management.
- Taking action to overcome and reduce rural poverty.
- Control of water- and land-pollution activities (environmental health).
- Balancing water and land use and managing ecosystems for future generations.
- Deriving sound ecological and technical practices for water and land management.
- Establishing effective communication, capacity building and community-awareness programs.
- Establishing performance reporting and monitoring the effectiveness of land- and water-management schemes.
- Designing and implementing practical water- and land-management schemes.
- Developing and implementing effective environmental laws.
- Developing guidelines and strategies for local- and national-land management, including river-basin management.

Water- and land-management activities

The water- and land-management functions are classified into functional activities. The activities, summarized below, provide a reasonable direction to the specific types of law needed for effective water and land management.

- Natural-resources activities, e.g., soil-management activities (cultivation, fertilizer application, land rehabilitation, sustainable land use, managing contaminated sites); water-management activities (water retention, irrigation systems, river-basin management, wetland management, control of water pollution); vegetation-management activities (biodiversity, burning, cutting, rehabilitation); ecosystem management (water and soil interactions, ecosystem functioning, ecosystem diversity).
- Administrative activities, e.g., land-administration activities, water administration, role of committees, departmental structures and responsibilities, duty of care, activities of special councils, advisory bodies, and inter-governmental and intra-governmental functions.
- Technical-based activities, e.g., activities related to land planning, water allocation, land zoning, establishing water- and land-quality standards, land survey, and land classification and water classification.
- Knowledge-based activities, e.g., activities related to research, investigation, and community participation, education and extension activities.
- Social-based activities, e.g., women's rights in agricultural land use, special education and assistance for disadvantaged groups, and poverty-alleviation programs.
- Legal-based activities, e.g., statutory rules, legal obligations (organizations, individuals, groups), land-use rights, water-use rights, limits of use, regulatory responsibilities, legal standards, enforcement (monetary and nonmonetary), and dispute resolution (courts, mediation, counseling, arbitration).

Laws Relevant to Water and Land Management

International Treaties and Other Agreements

The serious nature of water and land degradation around the world has motivated environmental lawyers and scientists into seeking better international legal instruments to manage these resources (Bridges et al. 2001; de Sadeleer 2002). With the growth in international law focusing on the resolution of global and regional environmental problems, new principles have emerged concerning state responsibility for protection of the global environment, cooperation between states in dealing with these environmental problems, and the need for an ecosystem approach towards environmental protection. These legal developments have placed state responsibility for protecting the local, regional and global environment high on the international agenda (IUCN 2000; WSSD 2002a,b,c). In the Asian region, there has been a varied response to these international issues (Boer et al. 1998; Mottershead 2002).

The Nature of International and Regional Instruments: Binding and Nonbinding Legal Instruments

The two principal categories of international environmental law are represented in the region, i.e., binding and nonbinding instruments (see United Nations 1999). It is important to be aware of the objectives, roles and responsibilities of each type in relation to its application to the sustainable use of water and land in the region. This applies particularly with regard to the effectiveness of each instrument to deal with the ecological complexities of water and land and the technical ability of developing nations to implement international instruments to achieve sustainable water and land management.

Many multilateral environmental treaties, protocols and agreements introduced in the past three decades have environmental responsibilities that are in some way related to the management of water and land in the region (UNEP 1996; IUCN 2000). They include, for example, flora and fauna conservation, protection of coasts, pollution management, regional conservation protection, settling disputes, liability in relation to environmental damage, protection of world cultural and natural heritage, endangered species, and landscape protection. Many related instruments contain legal and institutional elements that assist in the achievement of a regional goal of sustainable use of water and land, including those that have an established interest in the activities that lead to improved management of water and land (Boer et al. 1998).

The following international instruments were identified as relevant to sustainable water and land management in the region.

International

Conventions

- 1971 Convention on Wetlands of International Significance Especially as Waterfowl Habitat.
- 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage.
- 1972 Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter.
- 1973 Convention on International Trade in Endangered Species of Wild Flora and Fauna.
- 1982 United Nations Convention on the Law of the Sea.
- 1985 Vienna Convention for the Protection of the Ozone Layer.
- 1989 Basel Convention on the Control on Transboundary Movements of Wastes and Their Disposal.
- 1992 Convention on Biological Diversity.
- 1992 Framework Convention on Climate Change.
- 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes.
- 1994 United Nations Convention to Combat Desertification.
- 1997 United Nations Convention on the Law of Non-Navigational (Uses of International Watercourses).

Protocols

- 1989 Montreal Protocol on Substances That Deplete the Ozone Layer.
- Protocol on Water Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes.
- 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change.

Declarations

- 1966 Helsinki Rules on the Use of Waters of International Rivers.
- 1972 Stockholm Declaration on the Human Environment.
- 1992 Rio Declaration on Environment and Development.
- 1995 Washington Declaration on the Protection of the Marine Environment from Land-Based Activities.

Other Types

- 1994 International Tropical Timber Agreement.
- 1992 Forest Principles.

Regional

- 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources.
- 1995 Agreement on the Cooperation for Sustainable Development of the Mekong River.
- 1989 Langkawi Declaration on the Environment.
- 1994 Action Plan for the East Asian Seas.

National Legislation

The actual legal and institutional elements essential to implement the functions and activities of water and land management in the region are far too broad and complex to be found within one single type of national environmental law or even within one regime of environmental law within a country.[2] In fact, they exist across a very wide range of law associated with the management of the natural environment of the region (Craig et al. 2002; Mottershead 2002). This system of law contains the legal elements, legal mechanisms, and ecological and scientific concepts, definitions and standards that are required to manage the multifunctional and multidisciplinary water and land issues. Some nations in the region already have a substantial body of supplementary law, statutory decisions,

[2]A "regime" is a group of legislation that focuses on one specific area of the environment, e.g., soil conservation and environmental protection. Because of the many ecological, administrative and scientific aspects associated with the management of the environment *per se*, it is now common within the discipline of environmental law to link a group of laws by an enabling law so as to give maximum protection to that aspect of the environment.

legal codes, orders and rules to support the implementation of the individual primary laws (e.g., the PRC) whereas others are still evolving an adequate environmental law base (e.g., People's Republic of Bangladesh). In summary, the following areas of national environmental law are applicable (see Hannam 2002a, for the full list of national laws examined):

- Constitutional law (e.g., sets out basic legal and human rights).
- Environmental planning law (e.g., environmental policy, land zoning and land allocation).
- Pollution control law (e.g., water quality and pollution standards).
- Forestry law (e.g., planning and management of forestland and watershed management).
- Plantation and reafforestation laws (e.g., land rehabilitation methods).
- Soil conservation law (e.g., soil erosion control and managing soil erosion hazards).
- Water conservation law (e.g., watershed protection and water classification).
- Water use law (e.g., water allocation, water supply and irrigation schemes).
- Environmental protection law (e.g., environmental impact assessment and environmental standards).
- Mining law (e.g., environmental control over mining activities and land rehabilitation).
- Indigenous people's and customary law (e.g., traditional land-use rights and preservation of traditional knowledge).
- Agriculture land-use law (e.g., controls over crop and livestock, pesticide and chemical applications).
- Agriculture reform (e.g., distribution of agricultural land, irrigation schemes and resettlement schemes).
- Protected area law (e.g., protection of natural and sensitive landscapes).
- Protection of the marine environment (e.g., controlling land-based activities that affect the marine environment).
- Land administration and tenure law (e.g., land allocation, land-use rights, leaseholder agreements and conditions of land use).
- Legislation that provides for women's rights, poverty alleviation and financial management.
- Criminal law and various laws that deal with the law courts (e.g., dispute settlement, pecuniary actions, statutory notice powers and prosecution).

Basis for Analysis, Interpretation and Comparison of Environmental Law and Institutional Characteristics

The Essential Elements of Legal and Institutional Frameworks

Various "legal and institutional elements" or norms are regarded as essential to have within a legal and institutional framework to enable a state to achieve the sustainable use of natural resources (Bodansky 1995; Hannam and Boer 2002). These norms are the basis upon which each level of environmental law is examined. The elements outlined in this report derive from a review of a substantial body of national and international environmental law on sustainable land management, ecosystem management, and the law concerning "ecologically sustainable development" in a number of regions of the world (Hannam and Boer 2002). These elements were evaluated to ensure their applicability to water- and land-management issues (Hannam 2002a) and with the recognition that similar ecological principles apply to the separate management of water and land.

Explanation of an "Essential Element"

An "essential element" is a basic, essential component part of a legal and institutional system. An element is a principle or suggested rule or direction of conduct that may be used in its existing form or modified to perform the role of a legal mechanism (which is a direct statutory or administrative function), or as a legal principle (a rule of conduct) in legislation. An element can also be used singularly, or in combination with other legal mechanisms or principles, to enable or invoke some form of legally based action to achieve the sustainable use of water and land. An individual law can include a number of legal mechanisms in a well-thought-out structure that gives an organization the power it needs, through its executive and administrative structure, to achieve sustainable use of water and land. It is also possible that these elements may be distributed among a number of individual laws within a national legal and institutional system. The "essential elements" outlined in this report were derived through an evaluation of legal and ecological principles where, in combination, they are aimed at achieving a desired level or standard of performance in sustainable water and land management. The legal and institutional elements that follow are used in two roles:

- To assist in the evaluation of an existing law or legal instrument to determine its capacity to meet certain prescribed standards of performance for the sustainable use of water and land.

- To guide the reform of an existing law or to develop a new environmental law to manage both water and land. Each legal and institutional element must have the capacity to achieve a desired or prescribed level of ecological management for water and land.

Application

The manner and degree in which an "essential element" is applied at the international, regional, or national level of law, vary according to the particular type of legal mechanism and its jurisdictional role. For example, an international legal instrument may have a provision for dispute resolution but the actual implementation of this provision within a state may not rely on, or be influenced by, the existence of similar provisions within a law of the state. The following "essential

elements," or norms, were compared against the primary water and land issues identified for the region to determine the capacity of the environmental law in the region to manage these issues. An interpretation of each individual element was made against each principle, article, clause or provision of around 60 individual national environmental laws and instruments, 4 regional instruments and the 21 international laws and instruments (Hannam 2002a).

The Essential Elements of Water and Land Management

1. *General intent.* Includes a clearly identifiable statement of the intended purpose or direct intent of a law or a legal instrument, which has a direct relationship to the general goal and objective of water and land management. It may be expressed as a single or multifunctional statement, but may also be a series of independent statements that collectively convey the intent and purpose of the legal instrument.

2. *Jurisdiction*. Includes various statements or functions in a law or legal instrument that gives it an interest over water and land in a geographical and legal sense. This includes a state jurisdiction, or the power or authority of a specific organization, or organizations, which creates a legal right to engage in some aspect of water and land management. It is often expressed as a sphere of authority and the territorial range of authority, and is synonymous with power, authority or control.[3]

3. *Responsibility*. Includes the various functions in a law or legal instrument that establishes or enables a commitment to an objective of sustainable use of water and land, and includes an obligation, or obligations, which establish a level of accountability to particular stated functions. There may be a division of responsibility in the law or instrument, and stated responsibilities may often directly express, create or invoke circumstances of "use rights" or "user rights."[4]

4. *Goals and objectives*. Include a group of statements that express a policy position, attitude or strategic position in a law or legal instrument. Together, they express a determination to engage in and achieve the sustainable use of water and land at a general or technically specified level. The goals and objectives may be expressed in a single or multifunctional statement, but may comprise a number of multifunctional statements.

5. *Definitions*. Include the presence of statements or terminology that defines or describes key words, phrases or terms in a form that directly relate to the operation of the respective law or legal instrument. This may also convey intent to engage in a prescribed level of action or achieve a particular standard for the sustainable use of

[3]It can also refer to "jurisdiction" exercised by a court, or system of courts in relation to the extent of legal authority conferred by the legislation.

[4]This may be in the form of communal tenure, communal rights or individual property and use rights. Common property rights regimes include access to communal property, private property and state property. Property rights regimes include both property rights (entitlements defining rights and duties in the use of natural resources) and property rules (the rules under which those rights and duties are exercised); see Oglethorpe 1998; Burns et al. 2000; and Boelens and Hoogendam 2002.

water and land. Definitions are used to assist with the interpretation of the law, in either a general sense of understanding and application, or to be applied in a direct operational role in the implementation of the law or a legal instrument.

6. *Duty of care*. Includes the presence of terminology, functions, activities, policies and strategic materials that specify or convey a legal and ethical responsibility, attitude, or commitment to take reasonable and practical steps, to engage in, and achieve water and land management. They create a duty on the part of a person, a number of persons, a corporation or levels of administration, or statutory entity, to comply with the law, in a prescribed manner, and can be in the form of a general duty of care or a statutory duty of care.[5]

7. *Hierarchy of responsibility*. Includes, within a law or legal instrument, the terminology and functions that create a responsibility and commitment to achieve sustainable use of water and land through a number of different administrative levels, and with a variety of administrative functions, or through a hierarchy of organizations with defined responsibilities. Through the structure of an organizational or institutional "hierarchy," particular "rights" and "obligations" may be established at respective levels of administration for individuals or for a specific class, or classes of people, and importantly for water and land management.

8. *Institutional*. Includes the presence of functions, statements, objectives and goals, in a law or legal instrument that give a particular organization or organizations, or related administrative bodies, a direct commitment and responsibility to the sustainable use of water and land. This usually occurs via a number of mechanisms including the organization itself, its policies and objectives, the rules and regulations, incentive mechanisms, accountability mechanisms, norms, traditions, operational plans and procedures, practices and customs.[6]

9. *Policy*. Includes statements of an intended course of action, and may include statements of an attitudinal, principled or strategic nature, and/or the existence of any function or activity that enables the development of materials for these purposes, to achieve sustainable use of water and land. It also includes statements referring to the need for a review, or reform of legislation, including a commitment to the preparation of particular types of legal instruments and the timing of such actions.

10. *Education*. Includes functions, activities, policies or statements that set out or convey a role in educational activities or processes aimed at achieving sustainable use of water and land. These would include a commitment to specific technical-training courses, skills-development programs, the preparation and

[5]A duty of care could require individuals who influence a risk of harm to the environment to take "reasonable and practical steps" to prevent such harm; a statutory duty of care could apply to harm that may be caused, harm to both living entities and those yet unborn (this reflects the principle of intergenerational equity). A duty of care may also be subject to an express set of principles or rules laid out in the legislation; see Bates 2001.

[6]An "organization" is a positive entity designed by their creators to maximize wealth, income, or other objectives defined by the opportunities afforded by the institutional structure of the society" (see North 1990; Bandaragoda 2000).

dissemination of materials for these purposes, and the facility to undertake an educational activity.

11. *Research and investigation*. Include functions, activities and programs in a law or legal instrument that encourage a specific commitment to the systematic inquiry or investigation into activities that produce information and knowledge of a scientific, technical, sociological, economic or cultural nature aimed at the sustainable use of water and land.

12. *Community participation*. Refers to the presence of functions, activities and programs in a law or legal instrument that enables interaction with a community of people, to engage in, usually in a joint arrangement, the undertaking of various participatory activities that relate to sustainable use of water and land. It includes references to the general capacity building, improving awareness, knowledge and skills, problem identification, or some form of technical, or practical activity related to the sustainable use of water and land. It may also include an administrative provision or facility for the community, either as individuals or through a representative body, to have formal communication with an organization on problem identification, problem solving or some form of decision making or consultative process aimed at the sustainable use of water and land.

13. *Water and land planning*. Includes the presence of statements, functions, activities or programs that enable a role in planning the sustainable use of water and land. It includes references to technical survey, database development, assembling knowledge on the status and the environmental and ecological conditions of water and land, preparing standards for use of water and land, guidelines, natural-resources evaluation, land zoning, water and land (including watersheds) classification, environmental assessment, plan development, references to plan implementation and monitoring of plans and actions and the preparation of explanatory materials.

14. *Water and land management*. Includes the presence of statements, functions, activities and programs that enable the preparation and direct implementation of water- and land-management programs. It also includes references to specific types of water- and land-conservation works, projects and design criteria, the construction and implementation of the works and projects, and monitoring the outcome of implementation. This element also considers processes for the development of environmental standards, limits of use, including the criteria and matters of concern for their development, and specifies the implementation process.

15. *Financing*. Includes the presence of statements, functions, activities or programs that provide for the financing of projects or activities, or raising money for the sustainable use of water and land. It may also include reference to budgetary procedures, specific appropriation funds and environmental funds.

16. *Enforcement*. Includes the presence of statements, functions, or mechanisms in a law or legal instrument that must be observed, or complied with at a defined level or standard, or in the form of a direct obligation, or a prescribed standard of behavior. It is often referred to as regulation,

or a regulatory role. It may be through a legal notice or direction from a regulator or through a court order. It also includes the procedure to carry out this role, and to regulate certain activities that are directly beneficial to the sustainable use of water and land. Enforcement functions may include responsibilities to identify particular types of offences, investigate certain matters, gather evidence, take direct remedial actions, confiscate certain items, and initiate proceedings for prosecution (in a specified jurisdiction). The legislation may set out the range and limits of monetary penalties for specified offences, and provisions for appeal.

17. *Dispute resolution*. Includes the presence of statements, functions, activities or programs in a law or legal instrument that enables the settlement of a conflict situation, or disagreement between parties, generally over the access to, or perceived right of access to, water and land, or the use of water and land. Various processes and facilities can be available for dispute resolution including conciliatory processes, mediation processes, arbitration and the courts that enable the resolution of a conflicting situation, and is directly beneficial to the sustainable use of water and land. Usually, it also includes provisions for appeal.

Discussion

This section discusses the results and outcomes of the analysis of the international, regional and national environmental law in relation to water and land management in the region.

International Aspects

The international laws and instruments listed above were examined within the framework of the essential elements and a profile of the distribution of the elements for each law was assembled. The profiles are set out in Hannam (2002a) and are too detailed to include in this report. However, they provide the following general information:

- An outline of the capacity of the international law for sustainable water and land management. The study found that all seventeen essential elements are represented but that there is a substantial variation in the way they occur between the particular instruments. The most well-represented elements include those of general intent, jurisdiction, responsibility, hierarchy of responsibility, duty of care, policy, and water and land planning. The least represented elements are those of goals and objectives, institutional, research and investigation, education, definitions, financial, community participation, land management, dispute resolution and enforcement.

- An indication of the relative strengths and weaknesses of specific laws and instruments. This indicates where improvements could be made to achieve the sustainable use of water and land. For example, around half the international environmental laws and instruments examined have ten or more of the principal essential elements considered necessary to express a capacity for water and land management at this level. The laws and instruments with the highest number of elements represented include:

- The Convention to Combat Desertification.
- The 1992 Biological Diversity Convention.
- The 1992 Framework Convention for Climate Change.
- The 1982 Convention on the Law of the Sea.
- The 1972 Convention Concerning the Protection of World Cultural and Natural Heritage.
- The 1972 Stockholm Declaration on the Human Environment.
- The 1992 Rio Declaration on Environment and Development.

Further, a comparison of particular elements in the international environmental law gave a good understanding of the focus of particular laws, including elements that are specific to a water environment[7] and elements that primarily focus on land.[8] Other instruments have elements that establish a broader interest in the environment, for example, natural-heritage interests (water and land),[9] and to protect biological diversity and ecology in general.[10] A further group of instruments have an indirect responsibility for water and land management, e.g., protection of the climate, atmospheric quality and biotic quality of the oceans and the coastal environment.[11]

An examination of the international environmental law indicates that it has a reasonable capability to recognize water- and land-management issues relevant to the region. However, no single international environmental law instrument adequately caters to both water- and land-management issues. This role is diversely spread across the range of laws examined. Moreover, it is possible to assemble from the body of international law a list of guiding principles for "water and land management" for the region but, as the existing instruments do not provide for all aspects of water and land management considered essential, specifically water management, such a list would not cover all important eclogical criteria and principles required to achieve sustainable water and land management.

Regional Aspects

The four regional environmental law instruments examined have less than half of the desired elements considered necessary for an effective capacity in water and land management in the region. When viewed together, twelve of the seventeen elements occur between the instruments. The most well-represented elements are those of general intent, jurisdiction, goals and objectives, institutional, and responsibility while the least represented elements are those for land planning, land management, financial arrangement, hierarchy of responsibility, research, duty of care, policy, community

[7]Article 1 of the 1971 Convention on Wetlands relates to "wetlands" as areas of "water."

[8]Article 3 of the 1994 Convention to Combat Desertification includes many principles aimed at protecting the land area.

[9]Article 2 of the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage considers physical and biological formations and ecological and physiographical formations.

[10]Article 1 of the 1992 Convention on Biological Diversity; also, various principles of the 1992 Rio Declaration on Environment and Development.

[11]Article 1 of the 1982 Convention on the Law of the Sea; Article 1, 1985 Convention for the Protection of the Ozone Layer; 1992 United Nations Framework Convention on Climate Change.

TABLE 1.
Regional environmental law relevant to water and land management: Presence/absence of essential elements for specific instruments.

Instrument/ Element	ASEAN	Mekong River-Basin Agreement	Langkawi Declaration	East Asian Seas Action Plan	Total
General intent	✔	✔	✔	✔	4
Jurisdiction	✘	✔	✔	✔	3
Responsibility	✔	✔	✘	✘	2
Objectives	✘	✔	✘	✔	2
Definitions	✘	✔	✘	✘	1
Duty of care	✘	✘	✘	✘	0
Hierarchy of responsibility	✘	✘	✘	✔	1
Institutional	✔	✔	✘	✔	3
Policy	✘	✘	✘	✘	0
Education	✔	✘	✘	✘	1
Research	✔	✘	✘	✘	1
Community participation	✘	✘	✘	✘	0
Land planning	✔	✔	✘	✔	3
Land management	✔	✘	✘	✔	2
Finance	✘	✔	✘	✔	2
Enforcement	✘	✘	✘	✘	0
Dispute resolution	✘	✘	✘	✘	0
Total (max=17)	7	8	2	8	

participation, enforcement, and dispute resolution. The *Mekong River Basin Agreement* and the *East Asian Seas Action Plan* have the most elements represented and the *ASEAN Agreement* and the *Langkawi Declaration* have fewer elements present. This profile indicates a limited capacity of these instruments to represent the complexities of water- and land-management issues in the region (as depicted in the following table from Hannam 2002a).

National Aspects

The specialized legal databases referenced above were also used to identify relevant legislative materials of the People's Republic of Bangladesh, Lao PDR, the Republic of the Philippines, and the PRC. The selection of each law or instrument was guided by the key themes highlighted in the water- and land-management issues described earlier in this report. The extensive amount of legislative material examined for these four countries is set out in Hannam 2002a. However, as this is a voluminous amount of material, only summaries of the analysis of the Lao PDR and the PRC are discussed in this report as examples.

Lao PDR

The hierarchy of legislative material relevant to sustainable water and land management in Lao PDR consists of its Constitution, and various laws adopted by the People's Supreme

Assembly, Decrees issued by the Prime Minister, Decrees issued by the Council of Ministers or by individual Ministers, and the Recommendations issued by Ministers to implement the Decrees.[12] The areas of legislation considered most important to the sustainable use of water and land include those relating to land, property, environmental protection, water and water resources, and agriculture, forests and mining.

Summary

The legal and institutional profile established for Lao PDR indicates a reasonable capacity to manage water and land issues. The most well-represented elements include those of general intent, jurisdiction, statements of responsibility, hierarchy of responsibility, and duty of care and recognition of obligations, mechanisms for water and land planning and enforcement. The weakest areas are in water and land management, financial arrangements, goals and objectives, and commitments to research, education and community participation. Four of the laws have a relatively high number of essential elements represented: the 1999 *Environmental Protection Law*, the 1998 *Agriculture Law*, the 1996 *Water and Water Resources Law,* and the 1996 *Forestry Law*. These laws contain most of the basic elements needed for effective decision making and the development of water- and land-management programs. An absence of procedures for policymaking and a low capacity for dispute resolution, education, research and community participation in the *Forestry Law* and *Water and Water Resources Law,* are major weaknesses.

Some of the more specific aspects of the Lao PDR profile include:

- The 1998 *Agriculture Law* and the 1999 *Environmental Protection Law,* each containing fourteen of the seventeen elements considered essential for effective water and land management.
- The 1998 *Agriculture Law*, the 1996 *Forestry Law*, the 1999 *Environmental Protection Law*, the 1997 *Law on Land*, and the 1996 *Water and Water Resources Law* together provide a good "framework" of natural-resources management law.
- The 1990 *Property Law* creates rights to water and land, and has procedures to classify property. It also has procedures to deal with violations of rights and to protect property.
- The 1996 *Forestry Law* provides a good legislative basis for the management of forests and forestland and has comprehensive provisions for land, vegetation and water-management planning. It creates rights and obligations of the use of forestlands and has procedures to classify the forestlands for protection and conservation purposes, including water and soil conservation. The 1991 *Decree of the Prime Minister on the Organization and Activities of the Ministry of Agriculture and Forestry* supports the 1996 *Forestry Law* in planning and masnagement of agriculture, forestry and water resources.
- The 1998 *Law on Agriculture* establishes principles, rules and measures to organize agricultural production and guarantees food supply. It creates rights and duties for any person engaged in agriculture, and it creates

[12]See *www.austlii.edu.au/links/210.html* and < … */50620.html>*

rights over land used for irrigation. This law is supported by the 1991 *Decree of the Prime Minister on the Organization and Activities of the Ministry of Agriculture and Forestry,* which provides a role for the Department of Agriculture and Agricultural Extension to study, guide, plan, monitor, organize and administer the development of agriculture. The 1993 *Regulation on the Management and Use of Irrigation Systems* lays down rules for water user groups, sets out the rights and obligations of water user associations and the principles and regulations for the use of water.

- The 1999 *Environment Protection Law* specifies rules, principles and measures for the protection of the environment against degradation and exploitation, including water and soil pollution. It sets out the rights and duties for environmental management, including the role and responsibility for environmental mitigation and restoration. It is supported by the 1993 *Decree of the Prime Minister on the Organisation of the Science, Technology and Environment Office,* which outlines the responsibilities of the government to research, management, development and use of science, technology and environmental management.

The PRC

The environmental protection of the PRC was declared an important national policy goal in the early 1980s and a comprehensive framework of environmental legislation, policy and institutions soon followed. The rapid growth of the economy in an environmentally unsustainable way and the transition from a centrally planned economy to the market economy have intensified the contradiction between the need for economic development and sustainable water and land management (Wang Xi 1996). The Ministry of Water Resources has the primary responsibility for water and land management. Other organizations with an involvement in sustainable water and land management include the State Forest Administration, Ministry of Agriculture, Ministry of Land Resources, State Environmental Protection Agency, State Development Planning Commission, and organizations for State Flood Control and Drought Relief. The existing legal and institutional framework is structured in four levels:

Level 1 The *Constitution* and laws promulgated by the National People's Congress (includes the Administrative, Civil and Criminal laws).

Level 2 The laws promulgated by the Standing Committee of the National People's Congress and international conventions and agreements to which PRC has become party.

Level 3 The regulations, orders, decisions and other documents with a binding force of law promulgated by the State Council and its subordinate Ministries and Commissions.

Level 4 The regulations, decisions and orders promulgated by the People's Congress of provinces, autonomous regions and municipalities directly under the Central Government and the municipalities with local legislative power.

Summary

Around 40 separate legislative instruments were examined for the PRC (Hannam 2002a) and they are separated into two categories for the convenience of discussion in this report. The first category considers a group of laws directly relevant to water and land management and the second group includes a number of related environmental laws.

Group 1: Water and soil conservation law regime

The water and soil conservation law regime comprises four areas of legislation:

- The 1991 *Law of the People's Republic of China on Water and Soil Conservation.*
- The 1993 *State Measures for Implementation of the* 1991 *Water and Soil Conservation Law.*
- The various *measures for implementation* of the provinces and autonomous regions.
- Various regulations, orders and decisions.

When these different areas of legislation are viewed collectively, all seventeen essential legal and institutional elements are represented and there is a wide range of basic legislative mechanisms necessary to manage water and land. However, the detailed examination of each individual law reveals a very substantial variation in the way that the elements occur within the laws, and there is also a substantial variation in their capacity to manage water and land issues (Hannam 2002b).

The legal and institutional framework for soil and water conservation is featured by a relatively standard distribution of responsibilities (Hannam 2002b). This legislation does not recognize the very diverse physiographical characteristics and regional ecological differences of the PRC. Many of the elements of the 1991 *Water and Soil Conservation Law* are directed toward soil-erosion control (wind and water erosion), as distinct from the wider characteristics of soil degradation. This law also lacks capability to implement its stated intent, which includes the mandate to consider ecological aspects of the environment (Article 1). Other weaknesses in this primary law include:

- ` An absence of community participation procedures.
- An absence of definitions.
- A duty of care that does not extend to the "whole environment."
- An absence of a process for policymaking, implementation and review.
- A lack of commitment to education, capacity building, including "whole of environment" education and sustainable water and land management.
- Narrowly defined research interests.
- An absence of procedures to determine the ecological condition of soil resources and to prioritize soil degradation control.
- A poor relationship between land-use activities and land-management measures, guidelines and monitoring.

Likewise, the examination of the 1993 *State Measures for Implementation of the* 1991 *Soil and Water Conservation Law* exposed several weaknesses. The *Measures* have less "essential elements" represented than that of the main 1991 Law. In particular, there are no goals or objectives, definitions, or directions for policymaking and it lacks provisions to engage in community participation. The *Measures* raise some important soil-conservation issues for the provinces and autonomous regions to consider, but there is no procedure for the design of specific land-management standards and measures. It also lacks rules for implementation and does not make reference to the differences in physical geography of the PRC, or does not alert provinces and autonomous regions to the

need to develop their local laws to recognize the specific environmental characteristics unique to their particular localities.

Provincial and autonomous region level

Seven provincial laws and one autonomous region law were examined (out of 34) as a representative sample of this level of law. Overall, this level of law is generally absent in many important functions to sustainable water and land management including those for community participation, establishing goals and objectives, resolving disputes, developing natural-resources management policy, undertaking research and investigation, and educational responsibilities and any procedures to prepare provincial water- and soil-conservation strategies. On the other hand, there is a reasonable presence of functions for water and land planning, land management and enforcement.

Group 2: The related laws to water and land management

The examination of a group of eight primary environmental laws of the PRC reveals a substantial legislative interest and capacity for water and land management, particularly in the laws for forests, environment protection, grassland management, and desertification control and prevention. Although the general purpose of the primary law covers a wide range of environmental-management responsibilities, in practical terms there are many overlapping roles, activities and functions as well as conflicting legislative priorities and objectives (Hannam 2002a). There is also an absence of cooperative, cross-linking mechanisms. Some specific observations include:

- The basic responsibility of the 2002 *Water Law* is similar to that of the 1991 *Water and Soil Conservation Law.*
- The 1984 *Forestry Law* has overlapping soil-conservation responsibilities with the 1991 *Water and Soil Conservation Law.*
- The 2002 *Agriculture Law* focuses on production but has power to make decisions on resource utilization that conflict with the objectives of the 1991 *Water and Soil Conservation Law* and the 2002 *Grassland Law.*
- The 2002 *Grassland Law* focuses on grazing activities and animal production but has substantial procedures for planning and protecting ecological aspects of grasslands including the establishment of ecological reserves. This law has several areas of overlap with the 2001 *Desertification Law*.
- The determination and application of “Basic Farmland” under the 1986 *Land Administration Law* constitute an important function necessary for the success of water and land management as this law decides the location and quality of land used for agriculture.
- The sensitive relationship between land type and potential for land degradation in the PRC suggests that there should be formal links between the 1986 *Land Administration Law* and the 1991 *Water and Soil Conservation Law* regime, especially in land-selection and land-evaluation activities.
- Various responsibilities of the 1984 *Water Pollution Law* overlap with the 1991 *Water and Soil Conservation Law*. This situation mainly arises from the definitions of “a pollutant” and the process associated with “water pollution” where each creates a legal responsibility for soil-degradation management.
- The 2001 *Desertification Law* is regarded as a more comprehensive and complete environmental law than any other law. It has well-developed goals and objectives,

comprehensive definitions, clearer statements of duty of care, and responsibilities for policy development, education, research and investigation, and land planning and enforcement. Under this law “desertification” means “land degradation” and it could be considered a highly specialized form of water- and soil-conservation law. It has a greater capability to deal with many areas of responsibility that fall within the bounds of the 1991 *Water and Soil Conservation Law.* A drawback of the 2001 *Desertification Law* is that responsibility for its administration is divided between three agencies, one with conservation interests and two with agricultural-development interests; this opens the way for conflicting interests in implementation.

Future Frameworks

The following section raises various options for future action to improve the legal and institutional system for sustainable management of water and land at the three levels.

International

The examination of international law relevant to water and land management in the region indicates that it presents a reasonably good basis for the sustainable management of water and land issues at this level. On balance, attention is favored more toward land-related issues than water-related issues. In the circumstances, with the current severe global situation with water and land degradation, and its impact on poverty and food security (Bridges et al. 2001; Penning de Vries et al. 2002), it seems reasonable that action be taken to improve the links between many of the international instruments. This could be done with the objective of improving the obligations to the sustainable management of water and land resources. However, recognizing the current less-favorable international legislative situation for sustainable water management, the activity could be directed toward the preparation of a specific water instrument. In this regard, various options exist for the development of a binding instrument, including:

- A specific sustainable water-management treaty.
- A framework treaty for sustainable water management that consists of specific rules for sustainable water management, and links to the Biological Diversity Convention; Framework Convention for Climate Change and the Convention to Combat Desertification.
- A protocol to an existing treaty (e.g., Biological Diversity Convention).

Options for nonbinding instruments include:

- An international charter for sustainable water management.
- A declaration for sustainable management of water.

Moreover, before any move is taken toward the preparation of a new multilateral treaty or instrument for sustainable water management,

other short-term and perhaps politically more favorable actions could be considered. One such action is to make better use of the International Law Association's international law rules for water resources, and these could be applied at both the regional and national level (International Law Association 2003).

Regional

The regional level of environmental law is considered inadequate to effectively deal with the complexities of water and land management issues experienced at the regional level. The existing instruments do not provide for all aspects of water- and land-management generally, but only for water management specifically. Important ecological criteria and management principles are omitted. Similar to the international law situation, there is a reasonable argument for the preparation of a specific regional legislative instrument for water management, including the linkage of such an instrument to other key regional and various international and multilateral instruments. The existence of two "regional water instruments" for the European region, i.e, the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* 1992*,* and the *Protocol on Water and Health* 1999 could be considered a precedent for such action*.* The various options for a regional binding instrument include:

- A specific regional, sustainable water-management treaty (e.g., akin to the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* 1992).

- A framework treaty for sustainable water management in the Asian region (with specific rules for sustainable water management but with links to the *Biological Diversity Convention*; *Framework Convention for Climate Change*; and the *Convention to Combat Desertification*).

- A protocol to an existing treaty (e.g.*, Biological Diversity Convention*) that is directed at the Asian region.

With regard to nonbinding instruments, some options include:

- A regional charter for sustainable water management.

- A regional declaration for sustainable management of water.

- Amending the *ASEAN Agreement*, to expand its role in water and land management.

National

The examination of the national laws of Bangladesh, Lao PDR, the Philippines and the PRC indicates that they are lacking in many important legal and institutional elements considered necessary for effectively management of water and land problems in these respective states (Hannam 2002a). However, it is emphasized that not all of the laws examined are inadequate. Some of the laws estimated to have a good capacity include the PRC 2002 *Desertification Law*, the 1997 *Agriculture and Fisheries Modernization Law* of the Republic of the Philippines, and the 1996 *Water and Water Resources Law* of Lao PDR. It is apparent that key international laws and strategies from the 1992 UNCED process have influenced some laws, but the extent to which these laws could practically implement key international environmental principles requires further investigation. However, in general, the bulk of the national laws created since 1992 have a relatively low presence of the key environmental

principles advocated in the 1992 UNCED process. Reasons for this may include:

- A general unwillingness on the part of states to adopt the principles from UNCED.
- Lack of effective guidelines to properly understand and implement the principles.
- Insufficient capacity-building and assistance programs for the region.
- Inadequate financial assistance for developing states for environmental law reform.

This situation represents an important challenge and reinforces the need for cooperation and capacity-building programs aimed at improving the legal and institutional systems for water and land management in individual countries of the region, including countries in addition to those covered in this report (see Wilson et al. 1996).

Some Key Areas for Attention

This study has raised a number of areas and possible opportunities for legal and institutional reform for sustainable water and land management in the region and these should be considered within the context of any broader plans for improvement in the sustainable use of water and land use in the region (see Joint Statement by the Ministerial Delegations of Ten Asian Nations 2002; Vermillion 2002). However, the following key issues emerged from the study that warrants further attention.

Basic human needs and rights associated with water and land

There are a variety of mechanisms in the law of the region that recognize basic human needs and rights to water and land resources. At the international and regional level, basic human rights regarding the use of water and land occur, e.g., in the 1996 *Covenant on Economic, Social and Cultural Rights,* the 1993 *Vienna Declaration on Human Rights,* and the 1985 *ASEAN Agreement on the Conservation of Nature and Natural Resources.* However, within the national law system, basic human needs and rights to water and land are treated variously. For example, the fundamental aim of the 1972 *Constitution of the People's Republic of Bangladesh* (see Preamble) is to "realize through the democratic process to a socialist society, free from exploitation—a society in which the rule of law, fundamental human rights and freedom, equality and justice, political, economic and social, will be secured for all citizens." Further, Article 17 of the 1991*Constitution of Lao PDR* provides for organizations and citizens to protect the environment and natural resources, including the land, subterranean area, forests, fauna, water sources and the atmosphere. Article 26 of the 1982 *Constitution of the People's Republic of China* provides for the state to protect and improve the living environment and the ecological environment, and prevent and control pollution and other public hazards. This Article establishes environmental protection as a function and responsibility of the state.

The domestic laws create and allocate human and natural resources rights in a variety of ways. In general, there is a reasonable expression of intent for "rights," in the law, but apart from a few exceptions, in general the law of the region does not clearly express or explain resource rights, land-use rights and land-user rights. Under the 1996 *Water and Water Resources Law* of Lao PDR, water resources are the property of the people. The government acts on behalf of the people to manage and evenly and equitably share the use of water. Individuals and organizations have the right to use the water for specific purposes under an authorization and

there are provisions that give natural rights of way, legal rights of way, and rights to landowners and governments. In Lao PDR, land can be acquired on assignment from the state, transfer, or inheritance, and the holder of a use right has a land-protection right, a land-use right, a land-usufruct right, a right to transfer the land, and a right of inheritance (see Articles 52–58).

Because of the substantial variation across the region in cultural and sociological characteristics, and the way that different societies understand, interpret and apply "rights," it is prudent that this matter be thoroughly investigated in relation to water and land management in the region. While this study has highlighted areas within the law where "human rights" and "natural-resource rights" occur, much more investigation needs to be done to thoroughly investigate these issues, especially the most effective ways and means to incorporate "rights" into the law and what mechanisms and processes are needed to ensure that individuals (especially the poorer people), actually receive the benefit of their rights (Oglethorpe 1998).

Legislative and institutional systems to benefit disadvantaged people (the minorities, and poverty-stricken and to improve livelihoods)

In the region, there are many people engaged in, or who rely on, agriculture and who, for various reasons, may be deprived of a reasonable standard of living, information, knowledge, health, education, opportunities, access to markets, and other services and benefits, by virtue of their socioeconomic, cultural or ethnic circumstances. Disadvantaged people thus require special consideration and action by governments to ensure that they have a fair and equitable right to basic human necessities and needs including access to land of a quality suitable for, or potentially suitable for, farming, access to water of a quality suitable for drinking, and security of land tenure to engage in agriculture as legal owners or legal occupiers of land. The *Constitution* of each country in this review, in general, makes reference to equality for all humans and in resources usage. However, the environmental law examined does not contain specific legislative mechanisms that recognize the special needs of disadvantaged peoples for water and land use. Two exceptions are the 1989 *Rangamati Hill Tract Districts Law* of Bangladesh and the 1997 *Indigenous People's Rights Law* of the Philippines, which give special recognition to particular societal groups but the procedures in these laws differ substantially (the latter is more comprehensive than the former). The region is culturally very diverse, and many ethnic and minority groups and socially disadvantaged people are not specifically recognized by the law in regard to agricultural land use. In some instances, there is a general coincidence between the location of a particular ethnic group and the occurrence of severe water and land degradation (see various papers in Hussain and Biltonen 2001).

Special issues that need to be taken into consideration in the national legislation of the region, include:

- The security of water and land resources.
- Identification, evaluation and integration of innovative land-use systems in national land-use systems.
- Adaptability and transferability of water and land-management practices to assist poor people.
- Ability to develop tools and technologies to help poor people farm small area-holdings profitably and in a sustainable manner.
- Provision for a multidisciplinary approach to identify and evaluate low-cost technologies and devices for water and land management.

- Mechanisms to increase institutional capacity to deal with water- and land-management issues of disadvantaged groups.

Such an investigation could also specify suitable legislative mechanisms to establish and protect their rights, including legal access to resources to improve their livelihood. Special issues for consideration include:

- Improving security of tenure for smallholder poverty farmers (owners, occupiers, permanent or temporary settlement).
- Recognizing, in legislation, the cultural aspects of land management.
- Access to finances for housing, equipment and materials.
- Access to local, regional and state markets.
- Availability of basic rural services, road access, domestic water supply and utility services.
- Rural education, extension and advisory services.
- Involvement in rural land planning and rural development.
- Special provisions for rural women.

Dispute Resolution

There is a substantial variation in the types of mechanisms used in the legislative and institutional system of the region to resolve disputes and conflicts over the use of water and land. Very few of the international instruments have mechanisms to identify and resolve disputes, or give guidance to states on how disputes should be settled over access, or the standards and limits of use of environmental resources. The *Rio Declaration* advocates that states should resolve their environmental disputes peacefully and by appropriate means in accordance with the 1945 *Charter of the United Nations*. The 1985 *Vienna Convention for the Protection of the Ozone Layer Convention,* the 1992 *Convention on Biological Diversity* (see Article 27) and the 1994 *Convention to Combat Desertification* include dispute resolution mechanisms. The regional instruments lack any comprehensive functions, or mechanisms to resolve conflict situations, disputed situations, disagreements over the access to, or perceived right of access to, and use of land or water resources. Provisions exist at the national level for dispute resolution, including the right of appeal and there are instances where a law has provision for enforcement but no dispute-resolution procedures.

The main challenge is to properly identify the existing capability of respective nations to manage disputes over access to, and limits of use of, water and land resources and to determine the most appropriate mechanisms for dispute resolution (see various papers in Craig et al. 2002, chap. 11, *Judicial Decisions and Alternative Dispute Resolution*). An investigation should consider the rights and obligations of disadvantaged people and the most appropriate mechanisms for their cultural and sociological circumstances.

Conclusions

The method outlined in this report has evolved over a number of years, where the legal and institutional aspects of a wide variety of resources-management situations have been examined in a number of countries in different regions of the world. In early 2002, it was comprehensively applied to the Asian region to generate knowledge on legal and institutional aspects of water and land management.

The principal features of this method include:

- Its ability to determine the capacity of a legislative and institutional system to accomplish sustainable water and land management.

- Its ability to be applied at various levels—to assess the capacity of international, multilateral instruments within a particular geographic region; to assess the capacity of regional instruments; and to assess the capacity of individual laws and other legislative instruments (decrees, codes, regulations, etc.) within a particular country or between two or more countries.

- Its role as a comparative environmental law tool to highlight the capacity of various instruments within a particular level (international, regional and national) or between different levels.

- Its capability to identify areas of strengths, weaknesses, omissions, or duplication within a legal and institutional system, and between particular legal and institutional systems, and to use this information as a basis to make recommendations for international, regional and national, legal and institutional reform.

This report also gives an insight into the ways that various nations in the Asian region have taken to the management of water- and land-use issues. Of particular importance, is the application of the data from the comparative analysis of the legal frameworks to practical-based environmental management. In the wider sense, a framework of this form can provide planners, legislative drafters and policymakers with a source book of contextual information and examples to draw upon to tailor a legal and institutional approach for a particular region or nation.

Considerable ground has been made to date with the development and application of this legal and institutional method. Moreover, it is essential that it continues to be applied to many more legal and institutional systems to ensure its rigor and reliability as an effective comparative environmental law research tool for the review and understanding of water and land management in particular, but with the environment in general.

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