

# **THE LEGAL FRAMEWORK FOR WATER MANAGEMENT IN THE ASIA-PACIFIC & THE PROSPECTS FOR REGIONAL CO-OPERATION**

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Water management and resource development are two of the most imperative issues facing many countries. This is especially so in the light of the rivers of the Asia-Pacific region. Much can be learnt through the sharing of water management histories from the various countries of the region. Further, it is also important that information relating to the national laws and policies of water management and resource development be communicated. This allows an interdisciplinary cross-hybridisation of ideas between the engineering, scientific and legal communities, leading to a greater understanding of the realities of engineering and scientific technologies, and the legal standards applicable to water management.

In this context, this paper presents an overview of the legal framework for water management in countries of the Asia-Pacific region. It aims to provide a comparative analysis of the national laws and policies relating to problems in water management and their solutions. It focuses especially on the realities of implementing the solutions to these problems. Taking a comparative and interdisciplinary approach, it outlines the legal issues that should be made clear to the engineering and scientific community for the more efficient application of such solutions. This paper also focuses on the lessons within specific national legal frameworks that can be learnt and applied to the Asia-Pacific region. Finally, this paper considers the prospects for regional co-operation in water management. It proposes a general framework for a more unified and efficient approach to water management in the Asia-Pacific region.

## **INTRODUCTION**

Water resource management and development is crucial for supporting people, economies and ecosystems. Effective water resource management and development will become progressively more imperative as the world copes with increasingly populations and diminishing resources. This is especially essential in the countries of the Asia-Pacific region, which includes some of the most water stressed nations [1]. Issues arising from natural weather phenomena [2], political and economic factors, and real-time engineering

and scientific problems intensify the challenges of water resource management. In response, States and international institutions have sought to provide for national and trans-border environmental law frameworks to improve water resource management [3].

The sharing of water resource management technology, laws and policies from the various countries of the Asia-Pacific region allows the development of better water resource management policies and procedures. Further, this paper will moot that information relating to the national laws and policies of water management and resource development must be conveyed to the other disciplines involved in water resource management. This allows an interdisciplinary fusion of ideas between the engineering, scientific and legal communities, leading to an enhanced insight into the practicalities of available engineering and scientific technology, and the legal matrices applicable to water resource management.

Within its brief scope, this paper will not re-enumerate the various water resource management laws of the Asia-Pacific States. Instead, it will provide a short analysis of the lessons learnt from the development of water resource management laws in the various States. It will then look at the realities of the implementation of legal solutions to water resource management, and enumerate the legal issues that are of especial interest to the engineering and scientific communities. Before concluding, this paper will discuss the prospects for regional co-operation and propose a general framework for better water resource management in the Asia-Pacific.

### **THE DEVELOPMENT OF WATER RESOURCE MANAGEMENT LAWS IN THE ASIA-PACIFIC: LESSONS LEARNT**

Water resources are essential to both the social and economic development of countries in the Asia-Pacific region. As such, many countries, especially those within the Association of South-East Asian Nations (ASEAN) have developed extensive water and water management laws [4]. A brief reading of the reports drawn up by the Asia-Pacific Centre for Environmental Law (APCEL) of the Faculty of Law, National University of Singapore [5], as well as the country profiles by the United Nations Environment Programme (UNEP) [6], show that the following are areas in which the legal, technical and scientific frameworks for water resource management can be further developed [7]:

- (1) Trans-border communication and development of more efficient water resource management techniques and laws;
- (2) Interdisciplinary dialogue between legislators and engineers to ensure a harmonization of legal and technical standards and realities;
- (3) International and regional cooperation to prevent the resurgence of past mistakes and developments; and
- (4) A unified international technology transfer and legal aid mechanism for more efficacious water resource management.

## **REALITIES OF THE IMPLEMENTATION OF LEGAL SOLUTIONS TO WATER MANAGEMENT PROBLEMS IN THE ASIA-PACIFIC**

Implementing legal solutions to water resource management problems however, must also be rooted in practical reality to have any real significance. These issues are discussed in this section.

### **The urgent need for regional co-operation**

Water resource management is a topic that must be addressed on a trans-national and regional basis. Some of the issues that need to be addressed include [8]:

- (1) Methods by which to allow effective water resource management with sources that are trans-boundary;
- (2) Mechanisms to allow environmental impact investigations across national borders;
- (3) The applicability of environmental and water laws of neighboring countries to another State; and
- (4) The possibility of public participation and awareness in the region [9].

It cannot be more strongly emphasized that water resources are a finite planetary reserve, and problems with water management do not respect artificial national or disciplinary borders. As such there is an urgent need to acknowledge the necessity of regional co-operation in water resource management.

### **The need for strong political will**

It is especially important to reach political consensus and devolve sufficient political will on the effective use and management of water resources. Recently, action has been taken to raise awareness of the importance of water resource management, particularly across borders. These include integrated water resources management [10], the growth of river basin organizations, and the ASEAN's Declaration of 2003 as the "ASEAN Environmental Year" [11].

Existing regional associations such as ASEAN and ASEM have also aided cooperation, enabling a common institutional structure to operate within the region. Such regional associations can often facilitate consensus and provide a potent motivation to garner the necessary political will. Non-governmental organizations (NGOs) also play a role in improving political will by acting as mediators between industry and government, as well as reliable sources of public outreach and information.

### **Raising sufficient financial & technical resources**

In a developing country context within the Asia-Pacific region, there is often a dire shortage of funding available to ensure the development of effective water resource management. The World Bank, the Asian Development Bank, and bilateral institutions are vital in this regard. They supply the requisite subsidy and capability, and provide a means of enforcement of the various water resource management policies and laws.

## **LEGAL ISSUES OF ESPECIAL INTEREST TO THE SCIENTIFIC & ENGINEERING COMMUNITY**

### **Enforcement & compliance procedures**

One important issue is the legal enforcement and compliance procedures of the various water resource management frameworks. Some of these frameworks tend to be overwhelmingly procedural, guiding, and non-binding. This may be advantageous for three reasons: first, the principles of water resource management are still evolving, and reaching binding consensus regionally has proven to be challenging. Second, this may facilitate dialogue, refining methodologies to water resource management more rapidly than a legally binding treaty-making process. Third, this approach grants greater discretion to States and thus is more likely to be adopted.

In this regard, the input of the scientific and engineering community is of particular importance. This input will allow for greater clarity and specificity with regard to the legislation and implementation of water resource management frameworks. With clarity and specificity, States are more likely to agree what specific elements in practice are necessary, and are more likely to implement these specific elements. Specific requirements - for example, precise methodologies for water resource managements - help to avoid conflicts and increase transparency.

### **Harmonisation & non-discrimination**

There is great value in harmonizing water resource management frameworks between States. Harmonisation emphasizes nondiscrimination, ensuring that all affected people have the opportunity to participate equally [12]. The process of harmonizing water resource management policies often takes place either bilaterally through shared interests, or regionally. This shared interest provides a motivation to adopt new laws ensuring minimum legal standards across the region for water resource management [13].

Such an approach ensures that water resource management puts in place a basic minimum standard throughout the Asia-Pacific region. Although States may elaborate upon these standards, all share a common policy to water resource management. These common standards and institutional procedures facilitate management in a trans-boundary context, where government agencies from other States are involved.

### **Technical assistance with environmental law**

The methodology of technical assistance needs to correspond with environmental law to achieve its objectives. This can be achieved in two ways:

- (1) Assistance from the technical and scientific community with environmental law should lead to proposals are appropriate to the State in question and therefore are likely to be enforced. Scientific and technical expertise is essential to the approach and content of the legal rules.
- (2) Assistance from the technical and scientific community with environmental law in institutional enhancement should allow for better application of environmental policies. Legislation is insufficient without proper technical and scientific mechanisms for application and enforcement.

## **PROSPECTS FOR REGIONAL CO-OPERATION IN WATER MANAGEMENT**

The Millennium Development Goals adopted at the 2002 Johannesburg World Summit on Sustainable Development underline the urgency of helping to improve water resource management through increased safe drinking water, improved sanitation, water for production and income generation, sustainable environmental management, and reduced vulnerability to water-related disasters [14]. The Asian Development Bank (ADB) has identified three priority areas in the implementation of ADB's water policy and the national water policies in the Asia-Pacific [15]. The first area is to assist water sector assessments and national water action agendas, to design and implement critical water sector reforms; and to demonstrate these reforms through pilot initiatives at the appropriate levels, involving national water partnerships and river basin organizations to ensure broad stakeholder participation. The second area concerns revising ADB's business processes and strengthening its internal capacity to target the water sector more holistically in its operations, aiming for greater synergy through knowledge management with development partners. The third area is to strengthen regional cooperation and awareness of important water issues, trends, and policies, and to catalyze a new generation of water sector investments that follow from effective water management policies and sector reforms [16].

### **A PROPOSED GENERAL FRAMEWORK FOR A MORE UNIFIED REGIONAL APPROACH TO WATER MANAGEMENT**

In the context of the above discussions, this paper proposes that a general framework should be set up for a more unified regional approach to water management. This framework should work at the regional Asia-Pacific level, with links to organizations at the international (e.g. UNEP), the sub-regional (e.g. ASEAN) and the national (e.g. various ministries) levels. It should provide a forum where there can be an exchange of information and technology for efficient water resource management among the States of the Asia-Pacific region, and in particular, for discourse between the scientists, engineers, legislators and public. In line with the ADB's proposal for its Water Program, the following categories could form part of the general framework:

- (1) Promotion and Public Awareness: This would aim for a further dissemination of water resource management policy and key development messages in the water sector, increase public awareness and stakeholder dialogue on water reform issues, improve press coverage of water issues and initiatives, and educate youth about the water crisis.
- (2) Knowledge Base and Capacity Building: This would give further support to developing water resource management, knowledge systems to support water operations, and assist regional departments in undertaking water sector assessments and preparation of water sector roadmaps.

- (3) Pilot and Demonstration Activities: This gives support for introducing and validating new or innovative development approaches that are highly replicable. This aims to strengthen core operations including policy dialogue, country programming, and project preparation and implementation. Support will also be given to field-based applied research by local stakeholders, including NGOs.
- (4) Water Partnerships. Several activities will be supported on a demand basis to initiate or strengthen national and regional water partnerships. Examples can include the Southeast Asia Water Utilities Network, the Network of Asian River Basin Organizations, and the Gender in Water Partnership.
- (5) Program Coordination, Monitoring, and Evaluation. The monitoring and reporting system for the Fund will be further developed and maintained to provide updated information on inputs, outputs, outcomes, and financial management. This also allows further coordination with other multilateral development institutions.

In addition, a joint legal and technical sub-committee should be established between the various States of the Asia-Pacific. This allows for greater cross-fertilization of ideas between the disciplines essential to the effective development of water resource management policies and frameworks. This also enables the security that any such framework will be practically applicable, and legally relevant.

## **CONCLUSION**

This paper has argued that regional co-operation in water resource management is essential to the equitable and sustainable management of a scarce resource. Just as each country is unique and yet shares the same problems and issues as another, the uniqueness of water resource management within various countries is given. A whole plethora of issues must be taken into account, including various legal and regulatory mechanisms, political systems, socio-economic demographics, scientific and technical practicalities and environmental contexts. Thus, it is of especial interest for the States of the Asia-Pacific region to work together, especially in a sensitive and urgent area such as effective water resource management. Only through the shared resources of the scientific, engineering and legal communities of the various States can effective water resource management take place. Consequently, it is time to look to the future across the artificial boundaries of territorial lines and professional disciplines, and work together in full knowledge and disclosure for better water resource management in the Asia-Pacific.

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