Regulatory Frameworks for Water Resources Management: A Comparative Study

Introduction

This note contains a summary, for practitioners, of the World Bank Law, Justice, and Development Series Book Regulatory Frameworks for Water Resources Management: A Comparative Study (2006). It examines how the regulatory frameworks in 16 jurisdictions worldwide have addressed the various basic issues related to water resources management, provides a comparative analysis of those issues, and highlights the essential elements of the regulatory frameworks that are emerging in response.

Most countries have laws or regulations (and in fewer cases constitutional clauses) relating to ownership, management, and allocation of water. These provisions are often, however, out of date, overcomplex, lacking in clarity, or fragmented.

In recent decades a number of international conferences and forums have urged governments to adopt legislation that addresses these deficiencies. Two conferences in particular laid the foundation for this process:

- United Nations Water Conference, Mar del Plata, Argentina, 1977, whose Action Plan included still-relevant recommendations on formulation of water-related legislation, stressing in particular the integral role played by water within the wider economy;

- International Conference on Water and the Environment—Development Issues for the 21st Century, Dublin, Ireland, 1992, which issued the Dublin Statement on Water and Sustainable Development, including the so-called Dublin Principles, helping to lay the foundation for the concept of integrated water resources management.

Comparative analysis of regulatory frameworks for water resources management

For the comparative analysis, regulatory frameworks for water resources management were selected from 16 jurisdictions: Armenia, Brazil, Cameroon, China, Costa Rica, European Union (EU), France, Germany, Kazakhstan, Mexico, Morocco, Nepal, Senegal, South Africa, Vietnam, and the Republic of Yemen. This section provides a comparative summary of the approaches taken by the 16 jurisdictions as regards the following eight elements:

Statutory framework

Half of the jurisdictions address the issue of water resources in their constitutions, with several giving the State the authority to regulate water. Water
resources are generally owned by the State or managed by it on behalf of the nation.

Underlying principles and priorities

The underlying principles and priorities in most statutes include efficient management and use of water resources; conservation and protection of water; sustainability; and equity and fairness. Some explicitly recognize the economic value of water. In all cases highest priority is given to drinking water for humans.

Regulation of water uses

Several jurisdictions permit a degree of private ownership. In all jurisdictions, individuals or entities have to obtain a license to use water or establish water systems, other than for domestic or small uses. Licensing rules generally cover transfer or loss of water rights.

Protection of water

The statutes in all jurisdictions include provisions for protection of water against pollution, though there is much variation in the definition of the scope of protection, the standards set for quality, quantity, and flow, and the parties responsible for protection.

Regulation of water infrastructure

In most jurisdictions, the water statute stipulates that licenses are required to construct water installations or infrastructure for water use. Some jurisdictions stipulate that the State is responsible for either constructing or overseeing the construction and operation of water infrastructure, particularly what is considered as strategic infrastructure.

Institutional arrangements

In most jurisdictions the main water statute assigns to the national government (ministry or department) or a designated agency explicit responsibility for regulation and management of water. A number of statutes designate roles for river basin authorities, water user associations, and advisory bodies.

Financial arrangements

The majority of the jurisdictions provide for fees or charges to be levied for water use, and most of them allow for specific user fees, including licensing fees, calculated according to such criteria as cost recovery and equity.

Enforcement of regulations and dispute resolution

The statutes in all jurisdictions provide for inspections as part of the regime for enforcing water law and regulations. Dispute resolution may be through special bodies, the regulatory authorities, or the courts.

Regulatory frameworks for water resources management: Essential elements and emerging trends

This section outlines the elements any country needs to consider when debating, designing, and preparing a regulatory framework for water resources management, without endorsing any particular approach.

Process for preparing water legislation

The process for preparing a new water law or revising an existing one should be transparent, participatory, and inclusive. A review of existing rules and regulations should lead to the preparation of a background policy paper outlining the main policies, principles, and procedures to be included in the draft law.

Ownership of water resources

Public ownership, control, regulation, and allocation of water resources, including groundwater, has emerged as the rule worldwide, with the State
acting as public custodian of water resources on behalf of the people. Capture and storage of rainwater is still generally a private prerogative.

**Underlying principles and priorities**

The concept of integrated water resources management is increasingly being adopted, reflecting a more holistic view of water that includes economic, social, and environmental considerations within a sustainable framework. The top priority given to personal and domestic uses is generally followed by water for livestock, with agriculture or industry next.

**Regulation of water uses**

An issue facing most countries preparing water legislation is how, when issuing permits, to verify and regularize water uses that existed before the legislation was adopted. Particular circumstances also need to be considered, such as the status of a permit in the event of a national emergency such as drought.

**Protection of water resources**

Proposed legislation needs to address issues of pollution, wastewater discharge, land use practices, enforcement of water quality standards, and protection of groundwater, specifying where responsibility lies. Concepts receiving increasing attention are the precautionary principle and the polluter pays principle.

**Regulation of water infrastructure**

Legislation for building and operating infrastructure has implications for other legal issues, including construction, land acquisition, zoning, and the environment, and must address the responsibilities of both government and private owners, including water user associations. Other issues requiring consideration include resettlement, transboundary issues, indigenous peoples, safety of dams, involvement of nongovernmental organizations, and environmental assessments and action plans.

**Institutional arrangements**

While ultimate responsibility will lie with a specified government agency, the principles of decentralization and public participation are reflected in the establishment of a range of management authorities at basin level or lower. Lines of responsibility and the degree of financial and administrative autonomy of organizations should be clearly defined.

**Financial arrangements**

Setting fair and appropriate charges, reflecting the position of water as both an economic good and a human right, is one of the greatest challenges of water resources management. A criterion often applied is the volume of water used, sometimes with progressive price increases for larger amounts. Irrigation charges pose a particular challenge.

**Private sector participation**

Private sector participation can assist the water sector with funding and management expertise, leading to efficiency gains. A typical arrangement is public-private partnership, with the public sector retaining ownership and the private sector contracted to provide water services.

**Right to water**

An emerging issue related to water charges is protecting poor and vulnerable segments of society by guaranteeing them a specified amount of water, notwithstanding their inability to pay for it, in recognition of the human right to water.

**Enforcement of regulations**

Enforcement provisions need to enumerate acts that are considered violations of the law and specify sanctions. Violations might include illegal diversion or use of water, construction of unauthorized works, and contravention of the provisions of a permit.
Dispute settlement

Water legislation needs to address the resolution of disputes, including those that might arise between government agencies. Less formal mechanisms can reduce costs and delays, with formal mechanisms reserved for more intractable disputes.

Conclusions

Water resources globally are facing tremendous and ever-increasing pressures, including population growth, environmental degradation, urban and industrial development, climate change, and the growing disputes between the competing demands of users. The multidisciplinary and transdisciplinary nature of water is reflected in the paths followed in the search for solutions—managerial, technological, financial, social, economic, political, institutional, and legal. Legislative considerations regulate and underpin all others, though the pace of development of comprehensive legal provisions related to water has been extremely variable worldwide.

While the 16 jurisdictions examined have approached the issue in ways that reflect their own legal history and national milieu, various general patterns and trends have emerged:

- State ownership or custodianship of water resources is gradually emerging as the rule, though private sector involvement is increasing-
- Groundwater is posing special challenges, as it often occurs below private lands and is very susceptible to external influences.
- Increasing attention to financial arrangements reflects the growing belief that treating water as a socioeconomic good will assist in demand management and rationalization of water use.
- Decentralization of decision making to the basin level and participation of users in the planning and management of water resources has been embraced in a number of jurisdictions.
- While the wide range of institutional arrangements reflects the variety of country circumstances, it is the authority and independence of institutional entities that matter, and their ability to coordinate and integrate activities.
- The challenges to water resources quality are multiplying, and the need for an elaborate protective framework is evident.
- Global issues—the environment, sustainability, transboundary water resources, the right to water—are growing rapidly in importance.

The regulatory framework for water resources management will not by itself resolve existing and emerging challenges and problems of the water sector, but they will not be resolved without a comprehensive, flexible, and implementable regulatory framework for water resources development, management, and protection.