

WATER LAW AND INSTITUTIONS

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Keywords: common pool resource; institutions; management arrangements; property regime; public good; water allocation; water law

Contents

1. Introduction
2. Institutions, Policies and the Law
 - 2.1 Management and Property Regimes of Water Resources
 - 2.2 Institutions
 - 2.3 Property Rights
 - 2.4 The Law
 - 2.5 Policies
 - 2.6 A Legal Framework for Integrated Water Resources Management
3. National Water Legislation
 - 3.1 Sources of Water Law
 - 3.1.1 Roman Law
 - 3.1.2 Civil Law: Roman-Dutch Law
 - 3.1.3 Anglo-American Common Law: the Riparian Doctrine
 - 3.1.4 The Prior Appropriation Doctrine
 - 3.2 Recent Trends in Water Legislation
 - 3.2.1 The System of Public Allocation
 - 3.2.2 The System of Tradable Water Rights
 - 3.2.3 The System of Proportional Water Rights
 - 3.3 Water Allocation under Water Scarcity
4. Water Quality and Environmental Law
 - 4.1 Natural Law
 - 4.1.1 Roman Law
 - 4.1.2 Roman-Dutch Law
 - 4.2 Water Related Environmental Regulation
 - 4.2.1 Environmental Water Requirements
 - 4.2.2 Sanitation
 - 4.2.3 Water Pollution
 - 4.3 Legal Approaches to Water Related Environmental Issues
 - 4.3.1 Principles Related to Water Quality
 - 4.3.2 Water Quality Standards
 - 4.3.3 Environmental Impact Assessments
 - 4.3.4 Some Limitations of Regulating Water Quality
5. Managing Water Resources
 - 5.1 Institutions Managing a Water Resources System
 - 5.2 Water Management Activities
 - 5.3 Financial Resources
 - 5.3.1 Private Utilities in Operational Water Management

6. Improving Water Resources Management

6.1 The Role of the State in Water Resources Management

6.2 Public versus Private: The Nature of the Goods and Services

6.3 Institutional Aspects of Integrated Water Resources Management

Glossary

Bibliography

Biographical Sketch

Summary

The increasing pressure on fresh water resources makes it evermore important to regulate water use and control water pollution. Since time immemorial water users have agreed on mutual beneficial arrangements regulating access to water. The agreed rules are embodied in the many formal and informal institutions, and differ from place to place. These institutions have given rise to different water law traditions, many of which go back thousands of years. However, the last decades have seen an interesting convergence of ideas concerning some legal principles. In most countries water rights are not “real” property rights, but rather user rights, with governments having the ultimate ownership in this natural resource. Laws are directly linked to a country’s policies. Institutions, policies and law are three cornerstones of water resources management.

This article first provides a general introduction to these cornerstones, after which national water legislation and water quality and environmental law are dealt with separately. In the section on national water legislation, attention is given to the origins of water law and recent trends. The section on water quality and environmental law provides a succinct overview of this broad field. A subsequent section deals with managing water resources, focusing on institutional arrangements for operational water management. The final section suggests how water resources management can be improved through policy, institutional and legal measures. Some major dilemmas are addressed, such as the role of the state versus the role of the private sector, and trends of decentralization of water management and the role of public participation.

1. Introduction

The increasing pressure on fresh water resources makes it ever-more important to regulate water use and control water pollution. Since time immemorial, water users have agreed on mutual beneficial arrangements to regulate access to water. The agreed rules are embodied in the many formal and informal institutions, and differ from place to place. These institutions have given rise to different water law traditions, many of which go back thousands of years. Water law has been defined as the creation, allocation and distribution of water rights. It deals often with non-consumptive uses of water, e.g., navigation, as well as consumptive uses, e.g., drinking water and irrigation, while of late environmental aspects and water pollution have become central concerns in water law. One interesting legal question is: Who owns the water resources? Different legal traditions give different answers to this question, but colonialism and globalization have seen a convergence on some basic legal principles. As it was in Roman law, in most countries water rights are not “real” property rights, but rather user

rights, with governments having the ultimate ownership in this natural resource, with important regulatory functions. Laws are formulated in order to achieve certain ends, such as equity, or to foster economic development, or simply to maintain order. Laws thus are directly linked to a country's policies. Institutions, policies and law are three cornerstones of water resources management.

Laws should facilitate an efficient management and use of water resources. An efficient use of water resources requires an appropriate physical infrastructure as well as an adequate institutional set-up. A misfit between the two often leads to less-than-efficient use of water resources. Legal arrangements should allow for efficient decentralization of operational functions to the lowest appropriate level, where interest groups and delegated public bodies jointly decide on how best the water resource may be used. However, certain crucial functions should remain the responsibility of central government. The nature of water-related goods and services is often such that full privatization may lead to monopolistic behavior. Moreover, market forces may undervalue negative externalities, such as changing return flows and water pollution. The global trend of increasing pressure on fresh water resources appears to be accompanied by an increasing regulatory role of central governments, a de-privatization of water rights, and an increasing role of interest groups and water users in operational functions and in financing water provision.

2. Institutions, Policies and the Law

2.1 Management and Property Regimes of Water Resources

The management of a natural resource such as water, poses a number of specific demands. Any natural resource has some unique physical characteristics, which a management strategy would have to acknowledge if it is to be successful. Water has at least three important physical attributes with a bearing on management:

- Fresh water is vital to sustain life, for which there is no substitute. This means that water has a value to its users.
- Although water is a renewable resource, it is practically speaking finite. The use of water is therefore subtractible, meaning that the use by somebody may preclude the use by somebody else.
- Water is a fugitive resource. It is therefore difficult to assess the (variations in) stock and flow of the resource, and to define the boundaries of the resource, which complicate the planning and monitoring of withdrawals as well as the exclusion of non-rightholders or non-members.

The vital nature of water gives it characteristics of a public good. Its finite nature confers to it properties of a private good, as it can be privately appropriated and enjoyed. The fugitive nature of water, and the resulting high costs of exclusion, confers to it properties of a common pool resource. The property regime of a water resources system is therefore often complex.

Managing this vital, finite and fugitive resource involves relatively complex physical, technical and institutional measures, in order to ensure, among others, that:

- access to and withdrawal from the resource system is regulated;
- the state of the resource is monitored;
- its upkeep/maintenance is ensured;
- the actions of the users is coordinated;
- special rules apply for special conditions, such as droughts, floods and pollution disasters;
- rules are enforced;
- rules are perceived to be legitimate, effective and fair by the vast majority of users;
- rules are adapted to changing conditions of the resource and its use;
- leadership is effective and accountable to the users.

Management arrangements only emerge in cases of scarce natural resources, so that the benefits of the resource use outweigh the costs of its management.

2.2 Institutions

For the use of a water resources system to be effective and lasting, the set of management and decision-making arrangements should be consistent, and should be tailored to the physical attributes of the water resources system and the technology used. A consistent set of management and decision-making arrangements is a basic part of an “institution.” The concept of “institution” is used in different ways according to the context. In normal usage institutions often refer to organizations, or even to the buildings in which these are housed. A more basic definition of institution, however, is “an established custom, law, or relationship in a society or community.” A more elaborate definition of institution is: “the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions.”

Institutions are normally firmly embedded in a society or community. Successful formal organizations involved in water management take cognizance of existing institutions. Institutions may not be directly “visible.” “Traditional” and “localized” management arrangements are therefore often overlooked or considered insignificant or irrelevant by policymakers. This is unfortunate, because for the effective management of a resource a consistent set of guidelines and rules both at central (national) level, as well as at local (grass-roots) level is required. In order to foster concerted action at both the highest and lowest levels in society it is often necessary to strengthen the institutional capacity at the intermediate or “meso” level. At this crucial level, central policies, laws and strategies should be sectorally coordinated and translated into practical plans and actions. The appropriate location of this intermediate level may be the district administration and the catchment authority or basin organization.

Since institutions define who is entitled access to a resource, and who is excluded, there is no sharp dividing line between laws and institutions. Institutions embody commonly

accepted rules and laws. The law itself may be seen as being an institution. A system of property rights, or property regime, is a specific form of an institution.

2.3 Property Rights

A property right is an enforceable authority to undertake particular actions in a specific domain. Property rights define actions that individuals can take in relation to other individuals regarding some “thing.” If one individual has a right, someone else has a commensurate duty to observe that right. Three property rights are most relevant for the use of a natural resource such as water: access, exclusion, and alienation. These three rights confer increasing control over the resource:

- Access: the right of access to a resource, to withdraw it and use it; for instance the right to divert a certain amount of water from a river at a specified site and use it for, e.g., irrigation; this is in effect a user right (*usufructuary* right).
- Exclusion: the right to determine who will have access rights, and how and to whom that right may be transferred.
- Alienation: the right to sell or lease the rights of access and exclusion.

The distinction between rights of access and rights of exclusion and alienation is important. You only have the full ownership (private property) if one person holds all three kinds of rights to a resource. If however only a right of access is held, a fee may be charged for its enjoyment by the holder of the right of exclusion and/or alienation. Rights to water in most legal systems involve a user right (individual access) as well the right of exclusion. These rights are often “nested” within a regime of “public property,” where the state has the final right of alienation, and sometimes also of exclusion.

In much of the economics literature, private property is equated to holding the right of alienation. Property-rights systems that do not contain the right of alienation are considered to be ill-defined, and are presumed to lead to inefficiency, since property-rights holders cannot trade their interest in an improved resource system for other resources, nor can someone who has a more efficient use of a resource system purchase that system in whole or in part. However, in the case of water resources, substantial evidence exists, that the “nested” structure of property rights, with the state being the ultimate owner of the resource, is an effective arrangement that fosters efficient use while safeguarding equity issues and other social and environmental externalities.

Be the kind of right as it may, any property rights regime, such as a water rights system, should have the following three leading characteristics: clarity, security and transferability. Clarity is the most important prerequisite, without which security and transferability cannot be achieved. Then follows security, and only thereafter may transferability be achieved.

2.4 The Law

The law of a state is a rule of human conduct, imposed upon and enforced among, the members of a given state. The law creates legally enforceable expectations (rights),

duties to respect those rights, and means of redressing violations of rights (remedies). The law also creates powers that should be responsibly exercised and privileges that can be enjoyed. The law provides the framework within which activities can be carried out in a society. Laws are effective and enforceable when three important conditions are met:

- a majority of the people are aware of the existence of a certain law or rule;
- a majority of people perceive the rule or law to be legitimate;
- a majority of people (or users) can verify with relatively simple tools, whether they or others infringe the rule or law.

Within the context of a nation, there are various sources of water law. As water is important for so many activities in a society, different laws have been drawn up over time to deal with the different needs. Apart from the Water Act of a country, water law can be derived from the constitutional, administrative, civil, criminal, agricultural, mining, natural resources, environmental, and public health laws of a country, in addition to precedents and scholarly opinion. None of these laws are strictly about water, except for the Water Act itself. With time, a myriad of references and cross-references between acts may develop regarding water, which will make the integrated management of water resources not easy.

The law is often formulated in very precise and legal terms. In that sense, it is much more definitive and specific than the rules and regulations that may be found in “traditional” institutions. The law therefore often appears to us as an entity standing on its own. It may even appear that the law is an end in itself. This is however not true. The law has a purpose, which derives from the priorities of a society and its policies.

2.5 Policies

Integrated water resources management involves the management of surface and subsurface water in terms of quality, quantity and ecology aimed at satisfying the needs and requirements of society at large. Adopting integrated water resources management implies a complex multi-sectoral process of planning and management. Such a planning process should be informed by clear policy principles, from which priorities and criteria can be derived. It is useful to distinguish first order policy principles from second order principles.

Policy principles of the first order would be enshrined in the Constitution of a country. This means that they are not negotiable and cannot be overruled by other principles. Three well-known principles as suggested by Sandra Postel could be considered first order principles:

- **Equity:** Water is a basic need. No human being can live without a basic volume of fresh water of sufficient quality.
- **Ecological integrity:** Water resources can only persist in a natural environment capable of regenerating (fresh) water of sufficient quality. Only sustainable water use

can be allowed such that future generations will be able to use it in similar ways as the present generation.

- Efficiency (or Economy): Water is a scarce resource. It should be used efficiently.

As an example may serve the aim of the new water policy of South Africa, which has been summarized as “Some [water.] for all forever.” This mission statement clearly puts principles of equity and sustainability at the center of the policy.

Policy principles of the second order are more specific (strategic and operational), may change from time to time, and will be reflected in a country’s water law, other related legislation, and subsidiary government regulation. A country may, for instance, adopt some or all of the Dublin principles in its laws. South Africa’s “fundamental principles and objectives for a new water law” are a good example.

Water Reform in South Africa

The water reform in South Africa first involved the formulation of a number of principles that were perceived by the vast majority as legitimate. Thereafter the government proceeded with the formulation of a water policy, and subsequently it finalized a new water law. The 28 “Fundamental Principles and Objectives for a New Water Law” were arrived at through a process of nationwide consultations.

Principle 5

In a relatively arid country such as South Africa, it is necessary to recognize the unity of the water cycle and the interdependence of its elements, where evaporation, clouds and rainfall are linked to groundwater, rivers, lakes, wetlands and the sea, and where the basic hydrological unit is the catchment.

Principle 8

The water required to ensure that all people have access to sufficient water shall be reserved.

Principle 22

The institutional framework for water management shall as far as possible be simple, pragmatic and understandable. It shall be self-driven and minimize the necessity for State intervention. Administrative decisions shall be subject to appeal.

Principle 24

Beneficiaries of the water management system shall contribute to the cost of its establishment and maintenance on an equitable basis.

2.6 A Legal Framework for Integrated Water Resources Management

The peculiar characteristics of water stem from its unique physical, chemical and biological attributes, and its crucial environmental, economic and social roles for which there are often no substitutes. Taken together, these attributes and roles lay a heavy

responsibility on water rights systems, as these systems are expected to strike a balance among the different demands and requirements, informed by clearly defined principles.

Once the principles of water resources management have been clearly defined in a policy, a country may review its laws and regulations, and formulate a new legal framework. A legal framework should perform both a structural function and a regulatory function. The structural function determines the manners in which private users will relate to the resource, and to other users. Clarity, security and transferability are three main attributes of this function, and should be reflected in the contents of permits and rights to water in terms of access, exclusion and alienation. The regulatory function of a legal system aims to defend first and second order policy principles, and will enshrine principles such as equity, efficiency and ecological integrity.

When setting up a legal framework for Integrated Water Resources Management, the following aspects may be addressed: international catchment management, integrated planning, water rights or permits, arbitration and appeal, control, policing and sanctioning, institutional development, financial accountability, delegation and decentralization, participation of water users and stakeholders, commercialization and privatization, demand management, standards for water quality, emission standards, safety standards, financial arrangements. Designing a comprehensive legal framework for Integrated Water Resources Management further involves a critical appraisal of the strengths and weaknesses of the existing legal framework and of the institutional reality, while having due regard for the local physical, social and economic conditions. In order for the legal framework to be effective, a consistent management system should be defined. This is elaborated on in Section 5.

3. National Water Legislation

Water law has been defined as the creation, allocation and distribution of water rights. Traditionally, water law tended to cover the use (non-consumptive, such as navigation, and consumptive, such as drinking water, irrigation) and the sharing of water resources. In the last few decades the environmental aspects of water have also become central issues of water legislation. One vexing legal questions: Who owns the water resources? In order to appreciate this question, the evolution of water rights through time is briefly reviewed. It will be shown that from Roman times to the present, in most countries water rights were not “real” property rights, and that there was a significant role for governments to regulate water use.

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Biographical Sketch

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