

Chapter 1

Introduction: Conceptual Elements

Matthias Finger, Ludivine Tamiotti, and Jeremy Allouche

Governance—as opposed to government—defines the phenomenon of societal problems (in our case water) appearing to be too interlinked, too complex, but also too overwhelming for any single nation-state to address them alone. Multi-level or simply multi-governance relates to the fact that such problems need to be tackled simultaneously at all relevant policy levels, i.e., from the local via the regional and the national to the supranational levels, and that these levels further need to be interconnected. For the purpose of defining a concept of multi-governance, case studies of the governance of four river basins have been conducted following a single conceptual framework. The basis of this conceptual framework is set in general terms in the introduction and then discussed and further developed in the conclusion that focuses on transboundary river basin governance.

The conceptual framework developed in this book builds on the analysis of the process of globalization, which has already—and independently of any particular issue—altered the way in which traditional politics works. This process has touched upon the way in which the State operates and is involved simultaneously both of the level above and below the nation-state, together with nongovernmental actors. The term *governance* therefore emerges as the concept that allows one to reconceptualize this changing role and functioning of politics. As such, “governance” defines a function—i.e., the function of collectively solving societal problems—, as opposed to government (local, national, and to a limited extent international), which defines a structure. In other words, this chapter, which is structured into four sections, aims precisely at doing this, i.e., defining how collective problem-solving is best conceptualized once the nation-state is considered to be too limited to warrant results.

In the first section of this chapter, we will present the implications of globalization on the nation-state. The argument, here, is that the nation-state is undergoing substantial changes as a result of globalization and that, therefore, governance emerges as a new phenomenon in order to solve collective problems, especially in the case of transboundary water issues and river basins. In the second section, we will discuss the two currently dominant theories in the area of governance of resources, namely regime theory and Common Property Resources Management Theory. The third section will then introduce the issue of water and river basins, as well as their management. The fourth section will summarize the overall conceptual framework for our study.

1. GLOBALIZATION AND THE IMPLICATIONS ON THE STATE

We would like to first position the concept of governance in general, and of multi-governance in particular, within the broader phenomenon of globalization. Indeed, irrespective of the issues at hand—which by themselves call for a governance approach, as we will see in the next section—globalization appears to have a significant influence on the nation-state and on its capacity to solve collective problems, even at the domestic level. In this section, we therefore want to show how traditional State authority, and especially problem-solving capacity, is being undermined by globalization, how governance in general, and multi-governance in particular, appear as a solution to this problem, and particularly so in the area of water management.

1.1. Globalization

The special importance of both the concept and the practice of governance stems from the fact that globalization has profoundly altered the premises of, and the ground rules for, traditional, i.e., nation-state-based, politics. As such, globalization has challenged the roles and functions of the traditional political actors (e.g., nation-states and related actors and institutions at local, national, and international levels) regulating public affairs and promoting industrial development. A situation has been created, where problems are no longer simply solvable at the nation-state level, where new often equally powerful actors have emerged parallel to the nation-state, and where new institutions both above and below the nation-state level are being created.

Quite logically, then, “governance” emerges as a new concept—and to a certain extent as a set of new practices—, seeking to capture this new politico-institutional reality. As a matter-of-fact, the concept of governance so far has mostly become prominent in the study of inter-

national public affairs.¹ There, the idea of governance seems to be in a good position to meet the multiple and interrelated challenges of the twenty-first century, as it indicates new, more cooperative ways of managing public affairs, i.e., solving collective problems (but still mainly among nation-states), capable of coping with the emergence of new actors and the evolution of traditional actors' roles, while capturing growing interdependencies.² While subscribing to the general line of this argument, this chapter will nevertheless examine the concept of governance critically, while seeing it in the context of changing politics at all levels and not just at the international level. In other words, the term *governance* will be used in a much more radical sense, seeing governance essentially as a new function of solving collective problems in a fragmented and multi-level political environment characterized, before all, by a multitude of actors and interests.

Indeed, the phenomenon of globalization—besides being characterized by growing interrelatedness, interdependency, complexity, and so forth—is also characterized by the slow but steady ascent of non-state actors. Among these, the two increasingly powerful ones are transnational corporations (TNCs) and nongovernmental organizations (NGOs): until recently, TNCs were considered to be the most typical of such new global (and local) actors.³ Some of them—with their strategic vision, their mobility, and their economic and sometimes even political power—have already become more powerful than many governments.⁴ But one often forgets that this same phenomenon of globalization can also be found in the not-for-profit sector.⁵ Thus, one also has to increasingly deal with “multi-national” NGOs. In addition, new global agencies have emerged that are no longer entirely controlled by governments, as this is still the case of most United Nations agencies. We are thinking here in particular of the Bretton Woods institutions.⁶ All of these actors not only have a global strategic vision, but are today among the most active promoters of globalization and of new governance mechanisms and arrangements.

These new actors span the entire gamut of societal levels, as they can be found simultaneously above and below the nation-state, and therefore also increasingly with the nation-state, as so-called partners. In other words, parallel to the emergence of new partners for the nation-state, new levels of collective-problem-solving below and above the nation-state are also emerging, often with corresponding institutions, within which the nation-state is no longer necessarily the dominant actor. Therefore, besides leading to the emergence of new non-state actors, globalization also leads to the emergence of new policy levels. In short, while globalization builds on previous historical trends of

rationalization, institutionalization, expansion, and subsequent socio-cultural and ecological degradation and exploitation, it now seems to have reached a new stage in the form of new and institutionalized organizations, which increasingly span the entire range of levels, from the local via the national to the global. And this is precisely where the concept of multi-level or multi-governance comes in.

1.2. The Concept of Multi-(level) Governance

Having now located the concept of governance within the dynamics of globalization, we would like to precisely define, in this section, what we mean by *multi-level governance*. In doing so, we will first look more closely at the concept of governance, then define governance at the various levels, and finally link these levels in the concept of multi-level governance.

To recall, traditionally, i.e., since the French Revolution, the nation-state so-to-speak had had a monopoly over collective problems, even though it did not always manage to solve them. With globalization, however, this monopoly, along with many other State monopolies, erodes. As a result, it also becomes acceptable to define societal problems at levels other than the nation-state, especially at the global level, if one thinks, for example, of problems of peace, security, or environmental protection. Simultaneously, nation-states also increasingly push problem-solving downward to the local level, and often peoples themselves take the initiative to addressing societal problems locally even being explicitly encouraged by the State.

At the practical level, governance indeed refers to a mode of coordination of interdependent activities.⁷ Governance thus can be understood as the establishment and operation of a set of rules of conduct that define practices, assign roles, and guide interaction so as to come to grips with collective problems.⁸ Moreover, governance encompasses the various ways in which institutions, actors (public, private, and not-for-profit), resources, regulations, and mechanisms interact through a continuous process, in order to find cooperative solutions to vital societal functions. To quote Ernst-Otto Czempiel, governance means “the capacity to get things done without the legal competence to command that they be done.”⁹ This is what makes the difference between governance and government. Both of them are concerned with rules and collective action but with a difference in the processes used.¹⁰ Governance is thus particularly appropriate to a situation where the nation-state loses its monopoly of legitimate power.

Governance therefore implies a stakeholder approach. Such an approach in public affairs probably became for the first time accepted

at a global level within the context of the United Nations Conference on Environment and Development (UNCED). Ever since, mechanisms for stakeholder participation have become more and more prominent. For example, the 1992 United Nations Convention on Desertification has requested the private sector from underdeveloped countries to pay directly for national plans of action against desertification (Art. 6). Another example can be found in the process of the Inspection Panel of the World Bank. Under strict conditions, NGOs are allowed to file a suit for action before an organ composed of independent experts, the Inspection Panel, in order to assert their rights infringed by misconduct of the World Bank or of the Borrower State.¹¹ In other words, stakeholders are increasingly recognized ways of participating that go far beyond lobbying, which was the traditional approach to influencing state-centric politics.

There is a growing awareness that States are too large to solve some local and regional problems, and too small to address some global challenges.¹² In a sense, politics is becoming more polycentric with States merely one of the levels in a complex system of overlapping and often competing agencies of governance.¹³ Such complexity implies the need for an integrated multi-level conceptualization of governance. However, so far we have primarily observed the emergence of governance practices, as well as corresponding conceptualizations, at the different levels taken separately. One increasingly sees governance-type of arrangements not only at global, but also at the (supranational) regional, and even at the local levels. Not to mention the fact that similar arrangements are now also emerging even at the nation-state level.¹⁴ There does not appear to exist, so far, a coherent conceptualization of how these different levels of governance are being linked together, along the concept we would like to call “multi-level governance.”

The level where governance has been most explicitly conceptualized so far is the global level, giving rise to the concept of “global governance.” The argument for global governance is quite straightforward, as it stems from the observation of growing transnational operations and linkages and problems of global proportions, as well as from the inability or unwillingness of States to tackle these problems. So far, the major institutions tackling such global problems are still state-dominated institutions—for example, the UN and the Bretton Woods institutions. However, other non-state actors—such as transnational corporations and global non-governmental organizations—are also increasingly becoming recognized actors in this arena. Global governance is certainly the most prominent, but also the most vague use of the term *governance*. As a matter-of-fact, and since the early '90s, the notion of

global governance became most popular in the field of international relations and institutional analysis.¹⁵ Global governance is clearly rooted in the idea that economic and financial globalization have profoundly redistributed economic and political power, thus challenging State authority. Also, since the '90s, the development of humanitarian interventions has altered the previous basis of interstate order, allowing for suprastate actors to increasingly interfere into national and local matters. Such changes were conceptualized, albeit not systematically, by an international commission, which met on a regular basis in Geneva since 1992, the so-called Commission on Global Governance. In 1995, this commission published a report entitled *Our Global Neighborhood*, in which it submitted a wide range of proposals in various fields such as environmental governance, economic interdependence, or UN reform. In the framework of this report, the commission defined the concept of governance as follows:

Governance is the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest.¹⁶

With such a definition of governance, it is indeed possible to capture about everything, from individuals working together to cooperation among nation-states. Furthermore, it must be highlighted that this conceptualization of governance mixes together institutions and individuals, and does not account for their relative power, nor for their different strategic interests. As such, this is a conceptualization that is quite typical of UN jargon. Not astonishingly, it is also a particularly nonconflictual conceptualization of cooperation, inspired as it is by humanistic and New Age philosophies. The reality of "global governance" however looks significantly different, and makes such conceptualization look like wishful thinking. Some authors have furthermore tried to enlarge the concept of global governance, so that it can also include grassroots actors, as well as the role played by local peoples. In doing so, they elevate civil society actors to global players, thus not only confusing levels, but moreover ignoring the status and role of institutions. Again, such fuzzy thinking is quite typical of an intellectual tradition, which seeks to transform locally rooted peoples into a global civil society. One can see, says R. Lipschutz,

the emergence of a multilevel and very diffuse system of governance, within which 'local' management, knowledge, and rule are of growing importance to coordination within domestic and international political 'hierarchies' as well as among regions and countries.¹⁷

This, however, is not to say that local levels and actions are not relevant when it comes to dealing with concrete issues and day-to-day concerns. Indeed, many international institutions and organizations now increasingly transfer their capacity to implement, as well as their ability to control the compliance, to local actors.¹⁸ However, this seems to have less to do with an emerging global civil society, than with yet another instrumentalization of the local level by the global level, furthermore bypassing and weakening nation-states in the process. In no way can such civil society activities be conceptualized as an organized counterforce to newly emerging global actors.

It is worthwhile to mention, within this context of global governance, how the concept of governance is increasingly being used by some global actors, in particular by the World Bank and by some of the UN agencies. Indeed, the concept of "governance" has been used to a great extent by the *World Bank* since the early 1990s, and today it is rare to find a World Bank or a UN publication dealing with development issues, which does not refer to the concept of governance. However, the idea of governance in the framework of the World Bank entails a very specific content and definition. Indeed, World Bank working papers usually refer to the more eloquent concept of "good governance."¹⁹ To recall, the concept of "good governance" has been introduced in order to address politically sensitive questions pertaining to State reform in developing and more recently in Eastern European countries. Such reform efforts, and thus the concept of good governance, most were of the time promoted by international financial institutions. Considering the fact that the statutes of organizations, such as the World Bank and the International Monetary Fund (IMF), expressly forbid them to take up political issues, the use of the concept of governance allowed these institutions to interfere into political and social questions without directly confronting the governments concerned, i.e., by defining governance in a quite technocratic way of (business) partners working together to promote investments and growth. Indeed, the World Bank has used the concept of good governance in a didactic manner, mainly in Africa, in order to designate the institutions and political practices that would be necessary for the (industrial) development of a given country.²⁰ Moreover, the concept of good governance has also been used, in the same perspective, within the context of the UNCED.

Here, the aim of the good governance approach is to create a political environment suitable for so-called sustainable development. As emphasized by K. Ginther, sustainable development requires a close interaction between government and peoples, and a lack of social structures entails crucial shortcomings of control and public accountability necessary in order to secure good governance.²¹ More precisely, in the UNCED context, governance basically came to be defined as three things: (i) the participation of States in international law-making, (ii) the evolution of the decision-making mechanisms of international institutions, and (iii) the participation of nongovernmental entities in national and international decision-making and implementation processes.²² Therefore, in both the World Bank and the UNCED contexts the notion of (good) governance appears to be very close to the notion of government, albeit a very technocratic form of government. Moreover, structural or good governance basically refers to broadly accepted structures of government, whose aim it is to promote the development of Western type “democracy.” Governance then becomes a model able to provide nondemocratic or stateless countries with appropriate democratic institutions. Such governance does not address, for example, the interdependency and complexity of governance situations as we just defined them, i.e., in terms of collective problem-solving. Its only purpose is to define a certain way of operating State institutions, generally a way modeled after Western democracies, and aimed at developing an overall climate favorable for foreign direct investments.

The *regional* level—e.g., regional governance—is still primarily defined and articulated around States but the evolution of certain regional institutions indeed introduces a new level of governance, which is a supranational one. At the regional level, the main concern has been, so far, trade liberalization and economic integration. One can indeed witness the formal institutionalization of economic integration in various parts of the world through such institutions as the European Union (EU), the North American Free Trade Agreement (NAFTA), the Asia Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN), and the Southern Common Market (Mercosur). The European Union is in itself becoming a particular case in this regional governance process, due in particular to the depth of its economic integration, ultimately serving a political purpose. Indeed, the creation of a single market, and of a monetary union, makes the European Union a very different kind of supranational governance mechanism. Its concern to go further than just simply promoting economic integration with new emerging policies in the social, military, and foreign policy sphere shows how special this type of regional organization

is as compared to the other cases. Besides these new regional economic type institutions, one can also find intergovernmental regional institutions comprising different UN specialized agencies and regional multilateral development banks (e.g., the African and Asian Development banks), which also play a substantive role in forging regional governance mechanisms. Nevertheless, one can foresee that most of these regional institutions focus mainly on economic concerns (i.e., development and trade and regional economic integration). We have to ask the question concerning the very nature and purpose of such regional governance mechanisms. Indeed, is regional governance another level of governance or simply an interstate strategic response to globalization? For example, some see in the European Union merely “an effort to contain the consequences of globalization.”²³ As argued, for example, by Helen Wallace “European integration can be seen as a distinct Western European effort to contain the consequences of globalization. Rather than to be forced to choose between the national polity for developing countries and the relative anarchy of the globe, Western Europeans have invented a form of regional governance with policy-like features to extend the state and harden the boundary between themselves and the rest of the world.”²⁴ In this sense, regional governance would basically mean reproducing the traditional nation-state.

It is of course at the *national* level where governments still have the strongest hold on solving collective problems. Nevertheless, even there, one can increasingly observe the erosion of traditional politics, both in terms of the policy process (policy-formulation, policy implementation, and compliance) and in terms of controlling operations. In the case of the policy process, it appears that more and more actors are being included in policy formulation, in the implementation, as well as in monitoring and compliance. Indeed, traditional “command and control” mechanisms are less and less effective. As a result, various stakeholders—e.g., businesses and NGOs—are being included both in the definition of the (environmental) policies and in their implementation. Indeed, national authorities are increasingly using private actors to implement and monitor their own national policies. For instance, in the field of wild bird protection, national authorities have established a strong partnership with scientific organizations to obtain accurate information on the implementation of their policies.²⁵ This evolution at the policy level is paralleled by a similar evolution at the operational level: indeed, and thanks to private sector participation and to other forms of outsourcing, many nongovernmental actors are now contributing to the implementation of public service objectives, thus necessitating all kinds of “governance-type” mechanisms in order to coordinate the various

actors. This situation, however, is not (yet) comparable to the situation at the global level, where governments are clearly only one among many actors involved in managing public affairs. In this respect, the term *governance* at the national level is therefore not entirely appropriate. Indeed, governments retain their ultimate power, i.e., sovereignty over their territory, as well as control over legitimate power. Nevertheless, the capacity to get things done is increasingly dependent upon a government's ability to mobilize the various actors involved. Indeed, one must not forget that States are not unitary players: they have to deal with the pressure of the above and the below levels. The local groups can influence the definition of the strategy of a State at the international level. Some have characterized this phenomenon as a two-level game, in which the game played on the national level constrains the outcomes of the game played on the international level.²⁶ However, such local pressures do not necessarily weaken the state in the internal level-game. Governments can indeed use strong domestic oppositions to get better-off on the international level.²⁷

At the *local* level, governance is again a totally different matter. In order to understand this type of governance, it is useful to recall that it is often at the local level where problems become first visible—even if they are only symptoms of global problems—, and where the resources and means to address these problems are very minimal. In other words, in the era of globalization, it is often at the local level where problems need to be solved as they arise. If these problems become too overwhelming, national, regional, and global actors also intervene. In noncrisis situations, however, national politics generally conceptualizes the local as an implementation problem: indeed, the local level is the final level of the implementation chain, i.e., the level at which all global, regional, and national policies will ultimately (have to) produce effects. This is also the level that ultimately provides the legitimacy for the entire public policy chain. Interestingly, and parallel to the erosion of traditional politics, the role of the local level is increasingly being recognized by both the national and global political actors, as being vital for their own effectiveness and legitimacy. To quote the Commission on Global Governance, some examples of governance at the local level may be a town council operating a waste recycling scheme; a multi-urban body developing an integrated transport plan together with user groups; or a local initiative of State agencies, industrial groups, and residents to control deforestation.²⁸ Many collective issues may indeed be handled more efficiently on the local level. Local populations often have intimate knowledge and experience of local ecosystems, as well as a sense of roots and continuity with a given place.²⁹ To recall, this level of

governance has only been recognized in the context of larger global problems, i.e., in the late 1980s after the publication of the Brundtland Report. The need for, and the role of, local actions has moreover been enhanced by Agenda 21 agreed upon during the UNCED in Rio in 1992, which in turn encouraged local actors to develop their own local Agenda 21s. As a consequence, numerous initiatives all over the world were launched. Most of these initiatives are educational in nature and are not really problem-solving. In any case, such local actions are rarely self-contained local governance mechanisms, as they are part of a larger concept of implementing a “global public policy.” However, what we would see as truly local governance is something else, namely community-based local problem-solving within the larger framework just outlined. Without doubt, such collective problem-solving efforts will become increasingly necessary parallel to the process of globalization and to the effects it has on local communities and on their livelihoods. It is therefore not surprising that it is at the local level where currently the most innovative governance practices and conceptual developments take place.

After having now outlined the emerging conceptualizations and practices of governance at the various levels, we must now turn to the concept of multi-level governance. In our view, *multi-level governance* simply refers to the fact that the emerging governance practices at the various levels—local, national, regional, and global—somehow need to be connected to one another. Such connection should furthermore occur in a more or less logical way, i.e., attributing the different levels of governance with the most appropriate functions. Furthermore, our idea of multi-governance also implies that there is some sort of mechanism to articulate, manage, and control the interlinkages between the different governance levels, an articulation that would have to be performed by an actor, which so far does not exist. In this book, we will illustrate this idea at the example of transboundary river basin management.

If one looks at the literature, one will tend to find the concept of multi-level governance exclusively used in the context of the European Union. Here, multi-level governance defines a conceptual framework whose function it is “to rectify the failure of previous theories to recognize the roles played by various actors on the European stage.”³⁰ More generally, the concept of multilevel governance serves as a legitimation for an otherwise weak democratic justification of European institutions.³¹ However, there are two basic ideas that can be taken from this quite Eurocentric conceptualization of governance, namely the idea of subsidiarity on the one hand, and the idea of a coherent articulation of the different levels on the other hand. Subsidiarity means

that problems should always be solved at the lowest governance level and being shifted upward of this cannot be achieved. The idea of a coherent articulation of the different governance levels along subsidiarity principles furthermore suggest that there is an actor, in our case the European Commission, responsible for it. Nevertheless, we want to go beyond this European definition of the concept of multi-level governance, as we also want to include the global level in this overall governance approach. Furthermore, we think, as just argued, that the European Commission conceptualization of multi-level governance remains not only quite state-centric, but is furthermore ultimately top-down in nature. Indeed, we would want to be more open to the possibility that the coordination and articulation of these different levels of governance does not have to be “governed” by one single level, especially not by the regional one.

1.3. Water and the State

Nowhere in contemporary world politics is the need for effective governance more apparent than in the realm of global environmental issues. Sustainable environmental protection stands as the most challenging features for future generations. In this regard, governments are facing enormous pressures, from their citizens and from each other, to address problems of pollution, natural resource degradation, and ecosystem destruction. But in an ecologically interdependent world, acting unilaterally is often not an effective response to these problems. The result is that governments are forced toward collective action and cooperative behavior, in which they construct mechanisms for transnational environmental governance. Collective environmental management poses a severe challenge because it involves the creation of rules and institutions that embody notions of shared duties that impinge heavily upon the domestic structures and organization of states and that seek to embody some notion of a common good for the planet as a whole.

Governments, both individually and collectively, therefore face growing pressures to act cooperatively in response to environmental problems. However, one obvious set of pressures for global environmental governance comes from the poor fit between the world’s political map and the current ecological problems. Rivers, watersheds, weather patterns, forests, deserts, and mountains rarely fit the logic of the territorially based nation-state system. As suggested by Jessica Tuchman Matthews,

The majority of environmental problems demand regional solutions which encroach upon what we now think of as the

prerogatives of national governments. This is because the phenomena themselves are defined by the limits of watershed, ecosystem, or atmospheric transports, not by national borders. Indeed, the costs and benefits of alternative policies cannot be accurately judged without considering the region rather than the nation.³²

For most authors, sovereignty inhibits environmental protection.³³ The 'sovereign-as-enemy' thesis is appealing on logical and historical grounds. First, the nation-state's territorial exclusivity approach compared to an integrated ecological approach appears to be mutually exclusive. Second, the modern State has been an agent or accomplice in ecological degradation across the globe. One such skeptical position was summarized by Richard Falk, writing at the time of the first wave of global environmental concerns in the early 1970s.

A world of sovereign states is unable to cope with engendered-planet problems. Each government is mainly concerned with the pursuit of national goals. These goals are defined in relation to economic growth, political stability, and international prestige. The political logic of nationalism generates a system of international relations that is dominated by conflict and cooperation. Such a system exhibits only a modest capacity for international co-operation and co-ordination. The distribution of power and authority, as well as the organization of human effort, is overwhelmingly guided by the selfish drives of nations.³⁴

With respect to these institutional inadequacies, the State's role and predominance in dealing with transboundary water resources management has gradually been, at least on the theoretical level, put into question. Indeed, most of the literature on environmental governance considers the State an inadequate unit in managing natural resources and pollution, whether transboundary or not, and this is particularly true for water resources. The so-called world water crisis has also shown the necessity for new institutions and regulatory regimes. Indeed, no matter how hard the government of Bangladesh tries to prevent floods, different actions and policies in this respect cannot really work without the active cooperation of riparian states, in this case Nepal and India. Another example could be the protection of water resources from acid rain. No matter what the government of Canada does, it will be unable to protect its resources without the collaboration of the United States.

These interdependencies have led most water specialists to conclude that new governance mechanisms were needed for a sustainable approach to water resources management.

2. EXISTING THEORETICAL APPROACHES TO WATER GOVERNANCE

Such questioning of the role of the State have led to the development of new theoretical approaches to manage transboundary water resources. But these approaches are part of a much larger debate on the role and function of the nation-state in a globalized world. The main question of course is whether, in the era of globalization, the nation-state and corresponding politics, still is, and can be, a relevant actor of collective problem-solving.

Because of an increase in the number of international institutions, the growing interdependency and complexity from local to global issues, and the emergence of new actors on the international arena, it became necessary, during the 1990s, to redefine international public action. It is in this context that the concept of governance has been reintroduced, mainly in order to define *area-specific forms of governance*. Here, the term *governance* intends to analytically describe interdependencies and complexities involved in the operation of a given community or institution, generally limited to a geographic area and even to a specific issue (e.g., polar bears) or resource (e.g., water). The idea is not to focus anymore on the operation of structures, but rather to understand the forces and powers involved in the overall process “governing” an issue. In the context of international relations theory, the concept of area-specific governance has thus been used at two levels, one above and one below the State level, i.e., regime theory (above) and common property resources management theory (below). Both of these theories will now be discussed to show they have been applied to transboundary water governance.

2.1. Regime Theory

Regime theory became and still is an important tool in the international relations literature that helps explain the basic issues, challenges, and functioning of transboundary water governance. International relations specialists have focused their attention on regime theory, as well as on related subjects, such as institution effectiveness, implementation, and compliance mechanisms as analytic tools to explain the concrete functioning and complexity of the international system. *Regime* thinking has indeed initiated a new trend in the reflection on international institutions. During the 1980s, many studies have been carried out on inter-

national regimes, which are now fully part of the governance thinking. As Oran Young says, "international regimes, . . . are . . . specialized arrangements that pertain to well-defined activities, resources, or geographical areas and often involve only some subset of the members of the international society. Thus we speak of the international regimes for whaling, the conservation of polar bears. . . ." ³⁵ The classic definition of an international regime is indeed that of a set of "principles, norms, rules and decision-making procedures around which actors' expectations converge in a given issue area." ³⁶ Almost always, international regimes have at their core an international law agreement that established specific rules, commitments, and decision-making mechanisms to improve the process of governance. ³⁷ Consequently, regimes are basically centered around nation-states, even though they can, and often do involve, other actors when it comes to regime formulation, implementation, and evaluation.

Furthermore, a number of scholars have focused their studies on the *effectiveness* of international regimes. The purpose of such an analysis is to enhance the appropriateness of rules to facts. Effectiveness can be defined as the degree to which international environmental agreements and organizations lead to changes in behavior that help solve collective problems. ³⁸ However, one should notice that the effectiveness approach is a rather tricky one, as the assessment of the effectiveness of an international accord or regime is generally rather vague and difficult to establish. The effectiveness of regimes is here very similar to the effectiveness and corresponding evaluation of public policies at the national level.

In the same context, the study of *compliance* and *implementation* processes as part of international regimes are of growing concern to the operation of international institutions. Indeed, the nature and extent of international environmental commitments have been changing in recent years, since States take on more responsibilities under treaties and agreements that are increasingly stringent and with which they must comply. ³⁹ Such a study on compliance and implementation issues is in direct correlation to the issue of effectiveness. Implementation and compliance are the processes by which the effectiveness of an accord, a policy, or a regime can be assessed.

Transboundary waters have often been cited as good illustrations of these new institutional arrangements. Supranational water commissions have actually been the first major form of international organizations and have therefore been the illustration of what a regime is. ⁴⁰ Early models of freshwater regimes were mostly sectoral in nature. Most dealt only with individual issues that had emerged as a result of

coordination needs among States sharing a river or a lake. The earliest agreement, for example, sought to establish rules for the freedom of navigation on international rivers. Progressively, matters such as apportionment of waters, flood control, irrigation, and energy generation took over as primary concerns in treaty making.

Nonetheless, the notion of water regimes has paradoxically been used in a very state-centric way, and this despite recent original studies highlighting the need for more advanced ecosystem regimes.⁴¹ Most of these institutions, which are quoted as illustrations of these water regimes, are still very dependent upon States. Indeed, most of these regimes have no real discretionary power over transboundary waters. The International Commission for the Protection of the Rhine against Pollution, the International Joint Commission (United States and Canada), and the International Boundary and Water Commission (Mexico and the United States) are three typical examples. Each has the power to investigate pollution problems, for example, and to make recommendations but has no power to implement them. Despite the long history of the international commissions for shared freshwater resources, riparian states' sovereign logic is evident in the limits of these institutions. Among the numerous commissions in existence today, many continue to have a very narrow and technical focus or lack significant powers altogether. To date, no evolution toward institutional structures with significant original jurisdiction or powers for joint management of shared water resource has been implemented.

In short, regime theory pertains to a specific issue generally located at the supranational level, often involving the solution of a specific collective problem by means of nation-states' and of other actors' cooperation. To recall, such a regime is generally grounded in a legal framework, i.e., most often an international convention. It remains therefore somewhat state-centric. Yet, when it comes to transboundary water governance, there is clearly a need for a new approach that goes beyond the different aspirations and policies of the States, trying to regroup all of the major users in defining a more efficient and ecologically sustainable approach to transboundary water governance.

2.2. *Common Property Resources Management Theory*

A "common" is a resource to which no single decision-making unit holds exclusive title. This means that it is owned by no one (*res nullius*) or by everyone (*res communis*). Common pool resources are based on two attributes: the difficulty to exclude beneficiaries and the subtractibility of use. The crucial characteristics of common property resources are that property rights to parts of the resource cannot be defined and

enforced. In this regard, some authors have considered water a common pool resource.

Common Property Resources Management Theory (CPRMT) looks at the effects of institutions on behaviors and outcomes in the area of (natural) resources. It is based on the resources to which a group of people have coequal rights, specifically rights that exclude the use of these resources by other people.⁴² The purpose of CPRMT is to conceptualize how individuals and groups can organize themselves to govern and manage common property resources. Furthermore, it intends to develop a theory of self-organization and self-governance in a specific area, generally related to specific resources (e.g., forests, water, and fisheries).⁴³

While CPRMT is generally limited to local levels and to specific areas, it nevertheless considers cases where individuals are dependent upon a given resource as a basis of their economic activity. In other words, every stakeholder is directly affected by what the others do, which means that each individual or group has to take into account the choices of the others when assessing personal choices.⁴⁴ CPRMT, as well as studies of community-based organizations, are highly relevant in order to understand this level and mechanism of (self-) governance. Nevertheless, CPRMT is basically a resources management approach to governance, conceptualized mostly at the local and at times at the sub-regional level. It operates with a stakeholder approach, yet makes very specific assumptions about the nature of the stakes, i.e., mainly economic ones. While theoretically and conceptually very solid, it is difficult to extrapolate CPRMT beyond the local level, beyond the area of natural resources, and beyond some basic assumptions on stakeholders' economic (and strategic) interests.

Applied to the water sector, a large body of work has focused on the factors that foster collective action in irrigation systems, as well as the conditions under which local institutions are employed to manage local water resources.⁴⁵ More particularly, the development of water users association are more and more viewed as a successful path in averting the so-called tragedy of the commons and in fostering sustainable development. For example, Vermillon lists nine property rights for water users associations, namely water rights, rights to develop crop and method of cultivation, rights to protect against land conservation, rights to infrastructure use, rights to mobilize and manage finances and other resources, rights of organizational self-determination, rights to select and supervise service provider, and rights to support services.⁴⁶ The decentralization and devolution of irrigation system management and these initiatives of collective action through water users associations regarding

property rights certainly represent new approaches to sustainable local management and responsibility. Nevertheless, these institutional designs are clearly inapplicable at a higher level and actually are not intended to be so. River basin management is barely examined in CPRMT and those rare case studies only focus on domestic river basin management. But there again, these studies limit themselves to property rights and look at institutional designs on permit resource users. They are primarily concerned with the different possibilities for developing, modifying, contesting, or transferring water rights.⁴⁷

Overall, the CPRMT literature does not therefore provide any useful mechanisms for transboundary river governance and ignores certain dynamics and interactions between the different levels of governance in these types of rivers. The favored approach of CPRMT around property rights does not offer any interesting perspective for transboundary river governance, since the property rights between the different governments do not constitute an issue at all. Moreover, the definition of property rights and rules over these types of rivers also clearly relies on the traditional authority of State legislation, although we have seen previously that transboundary water governance needs to go beyond the nation-state as the main unit in managing water resources.

In conclusion, the State in CPRMT is only indirectly present, yet it has a crucial function: indeed, it is the State—in particular its legal system—which defines the property rules, and, by doing so shapes the behavior of the different actors at the local level. It is also the State that ultimately enforces these rules. In short, in CPRMT the State is implicitly highly present, and this in a very traditional, i.e., legal fashion. This also means that CPRMT cannot be extrapolated beyond and above the nation-state level.

2.3. Conclusion

Both conceptualizations of governance we have mentioned here have their shortcomings. Common Property Resources Management Theory is conceptually very sound, but deals primarily with natural resources management at a subnational level and actually requires the State in its traditional functions in order to work. As such, it does not really address the issue of institutions and organized actors and their interests. Regime theory is, in our view, certainly the most interesting and promising approach to governance, as it identifies the supranational level and explicitly addresses the issue of organizations and institutions. However, regime theory refers to sectoral issues, and does not really constitute a comprehensive approach, influenced as it still is by the concern of how to implement public policies, albeit at an international level. Further-

more, regime theory still very much remains state-centric. Finally, both governance theories focus on one policy level without relating it to all other levels.

The multi-level approach is in fact much more suited to the current trend of globalization. The interdependencies between the different levels are of course of paramount importance in order to establish a collective problem-solving mechanism. Case studies will be designed from a river basin perspective since river basins transcends national boundaries, as well as provide for the link between the different conservation issues.

The management of international waters has long been an exclusive matter of bilateral relationships between States. The development of international organizations, the rise of global environmental issues, especially the ones related to river basin areas such as biodiversity, as well as the growing scarcity of waters, including desertification, have made the management of international river basins and water more generally an obvious global issue. Indeed, water management is related both to climate change and to biodiversity issues, not to mention economic development. If climate change has been introduced, so-to-speak, at a global level and is slowly moving down the “governance ladder,” biodiversity, on the other hand, has mainly been introduced at a national level and is currently both moving upward and downward. Water, on the contrary, is clearly characterized by a bottom-up approach: awareness that it constitutes a governance issue has emerged first at a local level, tied as it is to livelihoods, and is currently moving to the national and to the global levels. We propose here to use the term *multi-governance* in order to account for the fact that not only does governance occur at all levels (from local to global), but that it also involves all stakeholders, and links several issues together with water such as biodiversity and climate change.

The reality, however, is that such a complete multi-governance approach (which will combine all actors and institutional levels) currently does not exist. Not surprisingly, the growing stress over water resources due to the intensive use of the shared waters for purposes of irrigation, livelihoods more generally, industrial production, electricity production, and many others more, raises the question of the current institutional structure for water governance. Many diverse actors are currently involved in managing, say, for example, a river basin, ranging from public authorities and international institutions to private corporations, public electricity boards, communities, and individuals. Consequently, a large number of rules apply and lots of conflicting interests interact at any given level of water management, i.e., from local to

purely domestic to bilateral, multilateral, and even to global levels. The result of this proliferation of actors, actor-arrangements, rules, institutions, and even regimes carries a substantial risk of overlapping, contradiction, or simply confusion, leading to poor “water governance.” In other words, there is clearly a need for some sort of an organized multi-governance approach to water.

3. WATER GOVERNANCE

Water has local, regional, national, and international characteristics. Water is local in its network, as each municipality around the world is, for example, responsible for supplying water to its inhabitants. It also is, at this level, an important vehicle for social and economic development. Water is regional and/or international in its natural setting, and as such cuts through different political frontiers. Water could also become international with its possible commodification. Finally, water is national in that the owner of the resources is generally the nation-state. This last characteristic is clearly artificial and has been introduced by human beings. The major governance challenge therefore lies in relating these natural characteristics with the humanly imposed one.

In this book, we will focus exclusively on the governance of transboundary rivers. Our definition of governance pertains to collective problem-solving and therefore there is a need to identify the different problems of transboundary water governance. Without anticipating the analysis of the different case studies, one could categorize transboundary water governance around three major and perhaps contrasting issues, i.e., an ecological, an economic, and a political one.

3.1. Transboundary Rivers: Facts and Figures

Before turning to these three issues, it is important to understand that the governance of transboundary water resources is a major problem. According to the register of international rivers of the now defunct UN Centre of Natural Resources, Energy and Transport, it was estimated in 1977 that there were 214 major shared international freshwater resources, 155 of which flow through two countries, and the rest through three or more countries. These figures certainly need to be updated especially since the breakup of the Union of Soviet Socialist Republics and of the Balkan States. For example, a recent World Bank report refers to “over 245 river basins,” which serve about 40 percent of the world’s population and half of its surface.⁴⁸ According to other estimations there are much more. A group of researchers has updated the UN register to list 261 international rivers, which cover almost half of the

land surface of the globe.⁴⁹ L. Milich and R. G. Varady put the number of shared river basins at “more than 300.”⁵⁰ The United Nations Commission on Sustainable Development, in its 1997 Comprehensive Assessment of the Freshwater Resources of the World, also estimated that the number of transboundary rivers has risen to over 300.⁵¹ Despite these differences, transboundary water governance clearly emerges as an important international issue. This is all the more true since a recent study has shown that 70 percent of the world’s land area can potentially be influenced by river basin development.⁵² How the river basin is developed and managed will therefore have a major impact upon present and future living standards of its inhabitants, as well as on the basin ecosystem. Let us now discuss the main issues pertaining to the governance of transboundary waters.

3.2. The Ecological Approach to Transboundary Water Governance

To recall, water flows according to natural characteristics and does not respect administrative boundaries. Therefore, the question arises as to whether water should be managed and its management structures defined according to existing administrative boundaries or according to natural boundaries, usually taken to be river basins. Not astonishingly and from a pure water resources point, river basin management is therefore increasingly recognized as the most appropriate level for managing water resources. At the international level, the river basin management principle has its origins in the report of the International Law Association pertaining to the use of water of international rivers.⁵³ More recently, during the Rio Earth Summit, it was also argued that independent management of water by different water-using sectors is not appropriate, that the river basin must become the unit of analysis, that land and water need to be managed together, and that much greater attention needs to be paid to the environment.

A river basin is defined by its watershed area. At the highest elevation are the upper reaches where snowmelt or precipitation feed into narrow streams that rapidly descend a steep gradient. These upper reaches feed into a middle reach creating a ‘mainstream’ of the river. Floodplains, lakes, and swamps characteristically are found around the slow-flowing river mainstream. Below the mainstream is the lower reach, where the river meets the ocean. In the lower reach, saline and freshwater mix, silt settles, and a delta forms. Subsurface water flows including underground aquifers are also part of the basin. Therefore, integrated management of a river basin requires a thorough understanding of the physical, chemical, geologic, natural, and environmental resources of the basin.

This approach is increasingly put forward as the main model for managing water resources. Of course, river basin units have existed for a long time as shown in L. Teclaff's excellent monograph on the river basin in history and in law.⁵⁴ Nonetheless, there is currently a much more explicit policy in the different countries around the world in adopting river basins as the main ecological unit for managing water resources. In fact, the current approach goes even further, since it wishes to institutionalize river basin functions at this level. The European Union, for example, has recently adopted the Water Framework Directive, where the basin is definitely assumed as the basic territorial entity for elaborating "Management Plans." This ensures coherence with the aims of sustainability and conservation of aquatic ecosystems. In other regions of the world, this approach is also being followed and encouraged by development agencies and by international organizations. The so-called French model is usually put forward as the model to follow. Indeed, in order to obtain an integrated "river basin management," the French administration has designed six regional agencies, responsible for the general management of each river including investment, research and development, and information. There are in fact six river basin committees and six river basin financial agencies. The financial agencies are in charge of planning and macromanagement of the rivers. The river basin committees facilitate coordination among all of the different parties involved in managing water resources. They fall under the joint supervision of the Ministry of the Environment (for technical matters) and under the Ministry of Finance (exclusively for financial matters). This model has been put forward by the World Bank and also by specialized international water organizations, such as the World Water Council or the Global Water Partnership.

This change from a sectoral to a river basin management approach can only be understood in light of, as some would put it, the current "world water crisis." Indeed, the world is facing increasing problems of *water scarcity*: although 70% of the world's surface is covered with water, only 2.5% are in fact freshwater,⁵⁵ while development has led to a considerable increase in water use (nearly sevenfold increase in freshwater withdrawals since the beginning of the twentieth century).⁵⁶ The increasing demands are causing water stress in many areas of the world, even in some humid areas where rising demand or pollution have caused overutilization of the local resource.

The UN Committee on Natural Resources noted with alarm in 1997 that some 80 countries, constituting more than 40% of the world's population, were already suffering from serious water shortages.⁵⁷ According to the UN Commission on Sustainable Development, about

460 million people live in countries using so much of their water resources that they can be considered to be “highly water-stressed.” A further one-quarter of the world’s population live in countries where the use of water is so high that they are likely to soon move into situations of serious water stress.⁵⁸ In 1995, water availability was estimated to be 10,001 cu m per person per year, while as recently as 1970, it was 7,300 cu m.⁵⁹ Water scarcity is in fact a recent phenomenon. As put by the World Water Council, in the 1950s, only a handful of countries faced this problem. Nowadays, and according to the same organization, an estimated 26 countries with a population of more than 300 million suffer from water scarcity. Projections for the year 2050 show that 66 countries, comprising about two-thirds of the world’s population, will face moderate to severe water scarcity.⁶⁰

This ecological crisis has led decision-makers to search for a new approach to water resources management and thus the concept of river basin management has been put forward. As already discussed, this approach has been followed by the creation of new institutions, i.e.: river basin commissions, which play an increasingly important role in transboundary governance issues. But, along these new environmental preoccupations, transboundary water governance also includes important economic aspects as we will now see.

3.3. The Economic Approach to Transboundary Water Governance

Water is also an important element of economic and social development and this has been the case since ancient times. The earliest evidence for river engineering can be found in the irrigation canals of eight-thousand-year-old in Mesopotamia. However, it is really since the Industrial Revolution that one can see an exponential growth in water use. In terms of governance, it is important to identify the different uses of water for economic purposes and observe their current dynamic. The growing pressure on water resources and its increasing use for economic purposes indeed puts the issue of water sharing at the top of the transboundary governance issue.

The impressive increase in water demand is due to the combination of different but interacting factors, such as the expansion and diversification of human utilization of water—for agricultural and industrial, as well for domestic purposes—as well as the high rate of the world’s population growth. As to the causes of the increase of human utilization of water, Prof. Herbert A. Smith, in his landmark monograph on international rivers published in the early 1930s, observed that “One of the most noteworthy features of the last hundred years has been the immense increase in the use of water. In part this has been due to

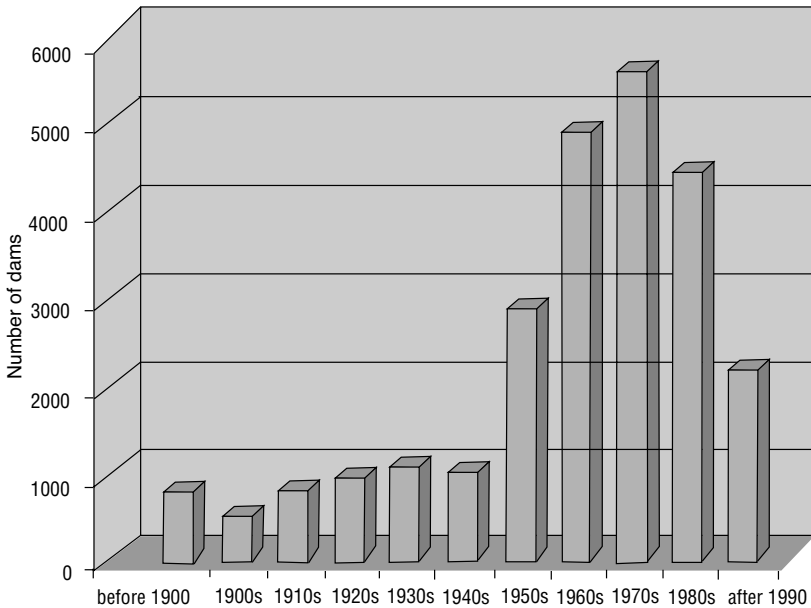
changes in personal habits, and in part to scientific progress. These two causes continually interact.”⁶¹

Suffice it to say that between 1900 and 1990 global withdrawals of water for human consumption increased by a factor of over six. Worldwide demand for freshwater grew from 579 km³ per year in 1900 to 4,130 km³ in 1990 according to UN statistics.⁶² The main turning points are the years following the Second World War. As emphasized in the report on *World Water Resources and Their Use* prepared for the International Hydrological Program of the United Nations Educational, Scientific, Cultural Organization (UNESCO):

The situation has drastically changed during the recent decades. In many regions and countries of the world, the unfavorable results of long-term, often unreasonable, man's activities, were discovered. This concerned the direct use of water resources and the surface transformations on river watersheds. To a large extent this was due to a drastic increase in global water withdrawal since the 1950s. In turn this increase was caused by the intensive development of production forces in all spheres of the world economy in the course of scientific and technological revolution. As compared with the previous decades, during 1951-1960, annual water withdrawal increased fourfold. This occurred because of the drastic expansion of irrigated areas, the growth of industrial and heat-power engineering water consumption, and the intensive construction of reservoirs on all the continents.⁶³

Let us now see the main reasons for the growing importance of water in economic and social development during the past century.

The development of hydroelectricity has certainly brought an important change in the way in which water is managed. From then on, water is not only used for agriculture or domestic purposes, but also for industrial purposes. The first use of dams for hydropower generation was at the end of the nineteenth century. The World Commission on Dams estimated that by 1900, several hundred large dams had been built in different parts of the world, mostly for water supply and irrigation purposes.⁶⁴ And from 1940 on, multi-purpose projects began to spread in Asia, Australia, and South America. In Africa, this type of project did not become widespread until the 1960s. By 1949, about 5,000 large dams had been constructed worldwide, three-quarters of them in industrialized countries. By the end of the twentieth century, there were over 45,000 large dams in over 140 countries.⁶⁵ Figure 1 illustrates the different periods of dam building during the twentieth century.



Source: ICLOD (1998) reproduced in World Commission on Dams (2002:9).
Information excludes dams in China

FIGURE 1. Construction of dams by decade (1900–2000)

One can see from this figure that the period of economic growth following the Second World War saw a phenomenal rise in global dam construction, lasting well into the 1970s and 1980s. The decline in the pace of dam building over the past three decades has been equally dramatic, especially in North America and Europe. However, some countries like China, India, Iran, and Turkey are still building dams.

There are also numerous other developments in other industrial sectors increasing the economic use of water. Today, industrial uses account for about 20% of global freshwater withdrawals. Of this, 57–69% is used for hydropower and nuclear power generation, 30–40% for industrial processes, and 0.5–3% for thermal power generation. The largest water withdrawals for manufacturing are made in the production of iron and steel, pulp and paper, petroleum products, chemicals, artificial silks and rayon, aluminum, explosives, and synthetic rubber. Like hydropower, one can see a slight decrease in industrial water use since the late '70s to early '80s. This can be explained by the fact that many countries have undertaken energetic measures to decrease industrial water withdrawal, and especially waste water discharge. These measures, reflect new environmental considerations, and in particular the wish to fight pollution.