Governance of Shared Waters

Legal and Institutional Issues

Grethel Aguilar and Alejandro Iza

IUCN Environmental Policy and Law Paper No. 58 rev.

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Table of Contents

Acknowledgements vii

Foreword ix

Introduction 1

Key Questions 5

Chapter 1 Space in motion 9

1.1 Space components 9
1.1.1 Water basins 9
1.1.2 Elements of a basin 11
1.1.3 Aquifers 12
1.1.4 Coastal-marine area 12
1.1.5 Hydrological cycle 13
1.2 Shared, transboundary and international basins 13
1.3 Scope of application of the shared basin concept 20

Chapter 2 From principles to tools 23

2.1 Sources of international law related to water 23
2.2 Theories about the use of water from shared basins 25
2.3 General principles of international water law 25
2.4 State powers and duties 28

Chapter 3 In agreement with the agreements 35

3.1 Global Context 35
3.2 Treaties and agreements related to shared basins 39
3.2.1 Africa 41
3.2.2 America 46
3.2.3 Asia 48
3.2.4 Europe 50
3.3 Transboundary Aquifers 55
3.4 Other alternatives for the governance of shared waters 60

Chapter 4 Rethinking the Institutions 63

4.1 The institutional framework for the management of shared waters 63
4.2 Integrated management of shared basins 73
4.3 Institutional decentralisation 74
4.4 Dispute Resolution 76

Chapter 5 The dynamics of change 81

5.1 Negotiations and decision making 81
5.2 Public Participation 84
5.3 Decentralised environmental governance 86
5.4 Environmental Impact Assessment 89
5.5 Ecosystem conservation 94

Chapter 6 Relevant cases 103

6.1 Case of the Oder River 103
6.2 The case of Lake Lanoux 104
6.3 Case of the Helmand river delta 106
6.4 Case of the Lauca River 107
6.5 Case of the sinking of the River Danube (Donauversinkung) 109
6.6 The Gabcikovo-Nagymaros Case 111
6.7 The Kasikili/Sedudu Island Case 113
6.8 Case of the Cellulose Pulp Mills on the River Uruguay 115
6.9 Case of the San Juan River 117

Short Answers 123

Conclusion 137

References 141

Annex I - Basic guidelines on how to reach a consensus or general agreement 149

Annex II - Treaties and instruments related to shared waters 153

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Foreword

The management of a shared basin is based on a complex framework of agencies and public institutions which have various legal and administrative powers.

Assuming that a large part of the management problems of a water basin result from a lack of coordination between different institutions, the need appears for clear dialogue and understanding at all levels of the administration system involved, including that of local authorities and civil society and, at the very least, between two States which share a water basin.

The solutions to be implemented to improve water management, including for providing access to water, must have national and international (as well as regional) dimensions, since many of the bodies of water upon which entire societies depend are transboundary.

The validity of national sovereignty is demonstrated through the management of shared basins, but there is still a lot to be done in terms of cooperation and joint management, based on the principles of sustainable development, ecosystem emphasis and efficient governance. The most vulnerable populations will continue to suffer from the negative effects of inefficient water management until a joint management system is implemented.

It is therefore necessary to highlight the most effective strategies, as well as the policies and legal instruments for promoting the joint governance of transboundary basins. Such strategies and instruments should be focused on preserving the overall quality of water and securing the abundance of environmental flow, to allow ecosystems to continue providing essential services, to ensure that resources are used more rationally and to develop water basins in a more sustainable and holistic manner.

It is now recognized by most members of the international community that integrated water management should be an essential part of a global strategy for improving water distribution and should be regarded as a pillar for enhancing economic and social development. This type of management requires, *inter alia*, an appropriate framework for establishing the necessary groundwork and for promoting cooperation among States.

It is within this framework that international law defines the contours of the concept of governance and makes it become operational through the codification of its principles, and by specifying what duties and obligations exist, thus facilitating its overall implementation. In addition to setting rules and standards, the law must also serve as guidance to members of the community as to how they should behave, and forge principles to facilitate relationships between the various parties involved in water management and on the governance of shared basins.

In this particular context, the World Conservation Union is pleased to present this revised version of its publication entitled "*Governance of Shared Waters: Legal and Institutional Issues"*. This publication is the fruit of cooperation between the Centre for Environmental Law and the Regional Office for Mesoamerica. It arises from the need to continue promoting dialogue between different entities

and from the need to reflect on the inherent complexities of water governance, and promote further interest in seeking consensus and negotiating agreements for effective water management in a transboundary context.

This book, like its predecessor, is not only meant for lawyers. It is also intended to support those working on the management of shared waters and who are not experts in law, bringing them closer to understanding laws, agreements, treaties and institutions within an international context. This second edition takes the concept of shared water governance a step forward and explores new inter-state and institutional modalities and alternatives for cooperation which are leading the way in practice.

Using international law as a starting point, this book explains how principles and conventions provide an appropriate vehicle for good governance and for the management of shared waters, as well as for the promotion of the proper management of water basins, moving away from the idea that the law is merely an obstacle to change.

This book promotes the idea that there is a need for the better implementation and respect of agreements by States. What is necessary is to promote knowledge of the rule of law and of what such rules actually regulate.

This book seeks to reposition the law as a tool for implementing higher good, or, in other words, for providing justice by seeking to ensure individuals have access to the services that ecosystems naturally provide, and guaranteeing the right to water for human well-being. States should be aware, in addition to those parties involved in the governance and management of water, of the imperative need to guarantee the access to water, and should make sure the necessary steps are taken to ensure inhabitants can enjoy such resources, without forgetting the needs of future generations. It is therefore essential that States optimize their cooperation on shared waters, and seek joint benefits through the appropriate coordination of their policies, legislation and institutional frameworks.

The ultimate aim of this book is to try and strengthen the capacity of various stakeholders, and to help reach the ideal that water should be considered as a vehicle of integration rather than as a source of conflict.

This publication is not intended to provide an exhaustive analysis of the topics discussed, but merely to give more clarity and depth to the current treatment of some of these issues and to create room for further reflection.

Introduction

Of all the water on earth, only 3% of it is freshwater, 97% of it being salty. Most of this 3% is located in the polar icecaps and in underground reservoirs. It is estimated that only 3% of freshwater reserves are found in rivers and lakes[1].Water, so abundant and revered for its ability to give life, is becoming a scarce resource[2].

According to the World Meteorological Organization (WMO), if current projections for global population growth and resource availability remain unchanged, about 34 countries will experience serious difficulties in obtaining water supplies by the year 2025. Currently, about 29 States are already suffering from moderate to severe water shortages. The number of people living in countries experiencing water shortages will increase from around 132 million (in 1990) to about 653 million by the year 2025, which will represent between 13% and 20% of the world's population[3].

There are many reasons for this phenomenon. On the one hand there is an overall population increase which has led to increased water consumption and which, in turn, has led to an increase in the amount of water needed to meet population requirements. On the other hand, other reasons for this water crisis include the gradual deterioration of water quality. This is due to various factors, including the contamination of watercourses with 'heavy' metals, chemical waste or pesticides and fertilizers. It is also worth mentioning the damage caused by salt water intrusion, particularly in island states, which affects not only surface water but also underground water. It is also important to remember what impacts a change in the course of a river can have and the consequences of the construction of dams and reservoirs and of the destruction of catchment areas.

Global changes have led to changes in the levels of rainfall, exacerbating shortages in the regions already experiencing this problem.

The inevitable consequence of the events described above is a gradual decrease in quantity as well as a deterioration in the overall quality of water and associated terrestrial and coastal ecosystems, and a potential increase in disputes over this resource. Indeed, during the course of the last century there has been an increase in international disputes over the possession of water[4].

Of the two hundred and fourteen transboundary river basins in the world, one hundred and fifty-five of these are shared between two States, thirty-six between three States and twenty-three between four or more States.In addition to this, an estimated fifty States have seventy-five percent of their territory located in shared river basins, with about forty percent of the world's population living within one of these shared basins.

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1 Gleick, P., 1993, An Introduction to Global Fresh Water Issues, Water in Crisis.

2 Water stress can be measured as follows: low (10% loss of total available water), moderate (loss of 10 to 20%), medium (disappearance of 20 to 40%) and high (more than 40% of the total available water having disappeared).Global Environment Outlook 2000, page 42.

3 www.wmo.ch/wmo50/e/world/water_pages/crisis_e.html.

4 See Mc Caffrey, S. 1993, Water, Politics and international law, Water in Crisis, Peter H.Gleick (Editor).

The central theme of this publication has evolved in recent years, but it has not had much impact in terms of management issues, implying that current degradation and pollution, as well as the pressure on natural resources sustaining the ecosystem persist, despite the introduction of integrated water resources management approaches. Also, the validity of national sovereignty is clearly reflected in the management of shared river basins, where there is still a lot to be done in terms of cooperation and joint management in accordance with the principles of sustainable development, the ecosystem approach and effective water governance. Until this is implemented, the most vulnerable populations will continue to suffer from the negative effects of unsustainable water management practices.

It is necessary to explain what most effective strategies exist, as well as what policies and legal instruments will allow for the joint governance of transboundary basins, in order to preserve water quality, the minimum flow of water and to make sure that ecosystems are properly used as the basis for promoting sustainable development.

From a political point of view, shared natural resources also offer a challenge, due to the fact that the management of these resources may have consequences for the sovereignty and territory of different States. Indeed it is important to take into account the political relations in certain regions, whether the context is of calm and peaceful interactions between States or whether there are disputes. It is necessary to reflect on the value of the shared resources in relation to the integration processes taking place in different regions, also taking into account, for example, the integrated management of shared waters as a possible mechanism for avoiding disputes on resources that may become scarce due to growing demand.

The aim of this book is to contribute to a better understanding of the legal and institutional arrangements necessary for promoting good governance[5] of transboundary waters between two or more States.

The concept of 'shared waters' was chosen for the title of this book instead of the concept of "shared basins" in order to promote a holistic vision of water, independent of its geographical location within a territory, as well as to provide an understanding of the legal and institutional aspects of managing and conserving bodies of water located between two or more States. It is precisely the water resource itself that is shared, while by nature, the basin cannot be divided and as such, it is not specifically "shareable".

Bearing this in mind, the authors first of all suggest defining the conceptual framework and explaining relevant terminology. They then provide a review of the legal foundations for the regulation of shared waters, focusing on political agreements, international treaties and customary law as applicable to the case. The book also aims to provide guidance regarding institutional arrangements, which are

5 Governance is the process of exercising economic, political and administrative authority in managing the affairs of a country at all levels.This includes the mechanisms, processes and institutions through which citizens express their interests, exercise their rights, meet their obligations and resolve their differences. It can also be described as the means by which society defines its goals and priorities and advances cooperation, whether at global, regional, national or local level. Governance systems are expressed through political and legal frameworks, strategies and action plans. See Burhenne-Guilmin, F., Scanlon, J. (Editors), 2004, International Environmental Governance, IUCN Environmental Policy and Law Paper No 49, IUCN Gland, Switzerland, page 2.

necessary for promoting the changes that are needed to put good water governance into operation[6]. In order to do this, the book is divided into six different chapters.

Chapter I, entitled "Space in Motion", sets out to explain what the components of a water basin are, thus clarifying terminology on concepts such as 'shared', 'transboundary' and 'international', and clarifying the scope for the practical application of the concept of shared waters.

Chapter II, with the title "From principles to tools", aims to give guidance on the sources of international water law and the principles of applicable law in this particular area for States to adequately regulate their relationship to transboundary water. It also explains the powers and rights of the States that actually use the waters flowing from one country to another.

Chapter III "In accordance with the agreements" refers to the key treaties regulating shared water, and also focuses on other types of available instruments relevant to shared water governance.

Chapter IV entitled "Rethinking the institutions" concerns the institutions necessary for the management of shared waters and the mechanisms used for resolving any dispute that may arise between States currently sharing water resources.

The title of Chapter V "The dynamics of change" addresses the need to cover a set of horizontal issues relating either to certain principles, or to agreements and institutions, and which constitute the vectors of a new approach towards the integrated management of shared bodies of water, including, among other issues, public participation, environmental impact assessments of projects and activities, and the conservation of freshwater ecosystems.

Chapter VI highlights some of the most relevant legal cases involving disputes between States part of a water basin, over their shared water. This section is intended to illustrate what issues are raised during these disputes and what mechanisms are used to find a solution.

In an effort to provide the reader with the answers to key legal questions concerning the management of shared water resources, this book includes a further section entitled "Key Questions", which summarises the main questions asked, and a Chapter VII entitled "Short Answers" where the answers to these questions are shown in simplified format.

This body of work is rounded off by two annexes. Annex I includes guidelines and practical elements to be considered in improving the governance of shared waters. Annex II contains a selection of treaties and instruments relating to shared waters in several different regions around the world. This selection is intended to give the reader an idea of the diversity of tools available for regulating shared water, and of the variety of provisions contained within these tools: from general political commitments such as the obligation to cooperate, to stricter regulations on the quality and quantity of water.

6 The Global Water Partnership (GWP) defines water governance as a range of political, social, economic and administrative systems, set out to develop and manage water resources and water supply at different levels of society. See Moran Colom, E., Ballesteros, M., 2003, 'Gobernabilidad eficaz del agua: acciones conjuntas en Centro América, Global Water Partnership, page 4.

We invite the reader to think about, build upon and promote the concept of shared waters as a gateway to strengthening regional agreements, which seek to promote peace, democracy, the overall welfare of ecosystems and the quality of human life.

Key Questions

Chapter 1 Space in motion

1.1 What are the practical differences between a shared river, a shared basin and an international watercourse?
1.2 How are different water basin States defined?
1.3 How are the resources linked to water resources regulated?
1.4 What does it mean for a basin to be shared?
1.5 What is the difference between a shared basin and an international basin?
1.6 What is the difference between a shared basin and a transboundary basin?
1.7 What is the difference between a transboundary basin and an international basin?
1.8 What is the differencebetween a border basin and a transboundary basin?
1.9 What consequence does the use of this different terminology have in practice?
1.10 How is the concept of a basin applied in practice?
1.11 How are limits established within a water basin that separates or crosses over into the territory of two or more States?
1.12 Is it possible to change the borders of the States that are part of a basin in order to characterise a shared basin?
1.13 What are the limits of a shared basin? Where does it begin and where does it end?
1.14 What is it that is shared? The water, the river or the other natural resources of the river?

Chapter 2 From principles to tools

2.1 What are the theories that explain the use of water within a shared basin?
2.2 What are the principles that govern the behaviour of different States in relation to shared basins?
2.3 Do these principles establish binding obligations and what purpose do they serve?
2.4 What laws apply to shared basins?
2.5 How do the laws of any particular State apply when this basin is shared between other States?
2.6 What are the benefits of co-regulating a shared basin between States?
2.7 What types of activities are permitted within a shared basin?
2.8 What types of activities are, or should be, forbidden within a shared basin?
2.9 How are the activities that occur within these shared basins regulated?

Chapter 3 In accordance with the agreements

3.1 What standards are applicable to a shared basin?
3.2 What treaties apply to a shared basin?
3.3 Is it possible to regulate a shared basin by means of a law?

3.4 What are the difficulties in developing and implementing a treaty on shared river basins?
3.5 Is it necessary to prepare a treaty for regulating the management of a shared basin?
3.6 How does general international law apply to shared basins?
3.7 Who do these legal instruments apply to?
3.8 What rights and obligations do upstream and downstream States have?
3.9 What rights do the bordering or contiguous (river) basin States have?
3.10 Is it necessary to have a specific basin policy in order to manage a shared basin?
3.11 Are there any successful examples of policies at the international level involving shared basins?
3.12 What are the benefits for riparian States of cooperating in the management of a transboundary basin?
3.13 How is a cooperative process for the management of a transboundary basin developed between States?
3.14 What is a code of conduct?

Chapter 4 Rethinking the institutions

4.1 Is it necessary to establish institutions for the management of shared basins?
4.2 What type of institutions should be established?
4.3 What sort of characteristics do such institutions have for the management of shared river basins?
4.4 With regards to the administration of shared basins, what exactly is the level of input by States into the institutions?
4.5 What roles do the private and the productive sectors play in institutions entrusted with the responsibility of managing a shared basin?
4.6 How can cooperation between States, local authorities and the inhabitants of a shared basin be encouraged?
4.7 What does it mean to manage a basin in an integrated manner?
4.8 What does the integrated management of water resources consist of?
4.9 What are the differences, at theoretical and practical levels, between the integrated management of water resources and the ecosystem approach?
4.10 What are a water basin's management or operational plans?
4.11 Who prepares these management or operational plans?
4.12 Who or what is the target audience of a management or operational plan?
4.13 How is a management or operational plan enforced?
4.14 From a legal or national legislation perspective, how can a shared basin be managed in an integrated manner?
4.15 How should any disputes that arise from the use of shared basin resources be resolved?

Chapter 5 The dynamics of change

5.1 Who is responsible for negotiating within the context of shared basins?
5.2 Which authorities are involved in negotiating agreements concerning shared basins?
5.3 Who makes the decisions when negotiating agreements?

5.4 What are the steps for reaching an agreement on matters concerning shared basins?
5.5 What are the steps for negotiating a treaty related to shared basins?
5.6 What is the influence of a “border zone” on the integrated management of shared basins?
5.7 What are the practical implications of decentralised environmental governance for shared water management?
5.8 What are the characteristics of a good environmental impact assessment (EIA) procedure?
5.9 How can it be ensured that an EIA procedure is respected?
5.10 How can it be ensured that the provisions of an agreement on shared basins be respected?
5.11 Who is responsible in situations where a shared basin may be contaminated, when this contamination derives from another State?
5.12 Who should pay for cleaning-up a contaminated river when the basin in question is shared?
5.13 How is water distribution to be negotiated within a shared basin?
5.14 Are there any priority levels in allocating the use of water within shared basins?
5.15 How can environmental flows be regulated within a shared basin?
5.16 Who will represent the environment in negotiations concerning the allocation of water within a shared basin?

1 Space in motion

Water is an element that exists in abundance on planet Earth. It can be found in three different forms: liquid (rivers, lakes, streams, and seas), solid (ice) and gaseous (clouds, fog or mist).

From the chemical point of view, water is, in its purest form, a binary compound of oxygen and hydrogen. In reality this is not always the case because water is often mixed with other substances.

Normally, water is found in a liquid state. It is this aspect of water that we will be looking at in depth in this book. Nevertheless, in the words of Marienhoff "(all) physical states of water can give way to problems, the solution of which being the concern of the jurist"[7].

Water is not found in nature alone: water, rivers, lakes, flora, fauna, earth and other natural resources coincide with or, more accurately, are part of an area called the basin. This is not a static area, but an area constantly in motion due to the various components constantly and intermittently interacting with each other. The intervention or the use of any of these components has sooner or later an effect on the other components.

According to Guillermo Cano "Not only do the different natural resources depend upon each other, the different uses of these same resources are also interdependent. Comprehensive and coordinated management is therefore essential. For example, if in the upper parts of a basin, where the sources of a water system originate, the natural pastures are ploughed but not replanted, or if the area is ploughed in the direction of the slope itself, it will accelerate the rainwater runoff process and result in the accumulation of water and possible downstream flooding. This shows what damage a misuse of flora resource can have on water resources. By the same token, the incorrect use of flora will have a negative influence on land resources, causing erosion. This whole process will result in the washing down of solid sediments and will cause sedimentation in the lower parts of rivers, creating deltas, obstructing natural waterways and exacerbating problems relating to floods"[8].

In order to clearly appreciate these interactions and then delve deeper into their related legal regulations, we first need to explain each of the components that are part of the aforementioned space.

1.1 Space components

1.1.1 Water basins

A water basin, also known as a catchment or collector basin, is a geographical and hydrological unit consisting of a main river and all of the territories between the water source, the spring, and the mouth of the river.

7 Marienhoff, M., 1996, Treatise on Administrative Law, Volume VI, Rules and Regulations of Public and Private Water, Third Edition, Editorial Abeledo-Perrot, Buenos Aires, Argentina, page 47.

8 Cano, G., 1979, International Water Resources of Argentina, Legal-Political Government, Victor P. de Zavalía, Buenos Aires, Argentina, page 95.

This specifically includes all land and smaller rivers that supply the main river with water, as well as the coastal-marine area in situations where the river flows out into the sea. The water captured by the basin can be fed out into rivers, lakes, swamps, bays, subterranean aquifers or into several elements of this landscape.

The river is the central component of any water basin. There are no water basins without rivers, nor are there rivers without water basins. In practical terms, the differences are expressed in relation to the management of territorial space, i.e. the “basin” or linear space, i.e. the “river”.

Due to the fact that a river is the central element of the water basin, its management is intimately linked to the management of the basin as a spatial unit. The river flows at the maximum extent possible for each stretch or channel until it reaches the river mouth. The flow of the river and the quality of its water depend on what the water from this river is used for, as well how the land associated with the basin is used and what the predominant geological and climatic conditions are.

A water basin consists of land or territories where societies develop. It is on this land that all cultural, economic and productive activities occur, the land is divided into administrative units, cities are built and the earth is cultivated using water, soil and biodiversity. In this respect, each one of us lives within a basin that flows out into a local river and all the water that is used at home, in the neighbourhood, in factories and for cultivating land is drained down into the river or infiltrates the soil and reaches subterranean water reserves, also known as aquifers.

The basins thus provide all of the water needed and used by societies for their diverse range of activities. Similarly, the basin receives all of the water used by society which is poured off into the ground, into riverbeds and into other bodies of water.

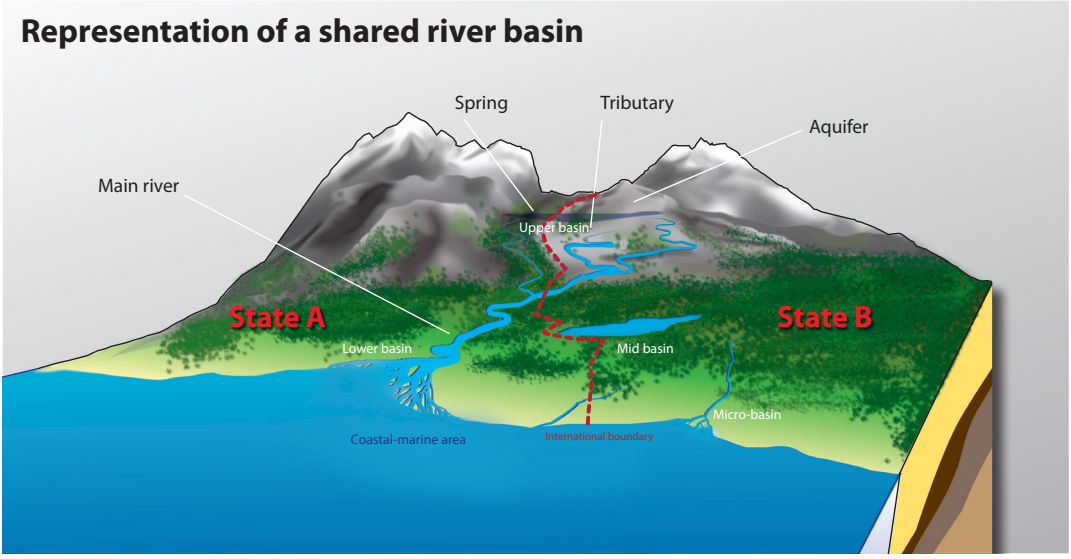
It is within these basins that water cycle phenomena are most evident: rain, surface water runoffs, water seeping into aquifers, water evaporation and transpiration of plants and animals. All these natural processes remind us that we are all united by water: upper basins are connected to the lower basins, surface water runs into rivers, wetlands permeate into the aquifers and mountain tops are linked to coastal marine areas.

It is precisely for these reasons that the basin, whether big or small, is a natural management unit per se. Therefore, soil conservation and the conservation of its vegetation and its surface and subterranean water is best achieved by ensuring the appropriate use of land.

In order to do this it is necessary to take natural factors into consideration such as geology, land, weather patterns and variability, as well as the cultural circumstances of the populations who live in a particular basin area, such as their urban settlements, their crops, their economy, their personal knowledge of nature, as well as any relevant policy and institution.

1.1.2 Elements of a basin

Figure 1.1 shows a simplified diagram of the fundamental elements which make up a shared basin:



a. A basin consists of a **main river**, which has its respective spring in the upper basin and a river mouth in the lower basin. The main section of the river receives the rainwater collected in the basin by the surrounding vegetation along the hillsides, slopes or ravines found within the watershed (*divortium aquarium*) area.

b. The main river is fed by smaller rivers, and goes on to form smaller drainage basins, i.e. the sub-basins and micro-basins, spatially delimited by their respective drainage divisions.

c. Depending on predominant climatic conditions in the area, river water then permeates down into the aquifers and reaches the subsoil. This process is not visible to the eye.

These elements grouped together make up the geographical unit delimited by the main water divide, which encompasses the entire basin. It should be noted that aquifers can exceed the limits of the basins and that those limits do not always coincide with the areas delimited by the drainage divides. In this respect, an aquifer may transfer water from one basin to another through the exchange of subterranean waters.

The basin can be divided up for practical reasons into high, mid and low areas, or, at the very least, into high and low areas. The different phases of the hydrological cycle occur within every part of the basin. Rain and snow accumulate into the upper and mid regions of the basin and permeate the ground into aquifers before they flow into the lower basin. The lower part of the basin corresponds to the coastal-marine area and to the immediately adjacent territory, an area with very particular hydrological and ecological conditions in addition to the elements making up the visible features on land, as well as the cultural aspects that shape its structure, both on land and on sea.

Part of the captured water infiltrates the soil, filling up the aquifers with subterranean water. The rest is absorbed by plants and goes back into the atmosphere by evaporation from plant transpiration. The water that does not infiltrate the soil and that is not consumed by living organisms, runs over the land and into the river. This type of water displacement is known as a surface runoff.

Subterranean and surface waters are completely interconnected, to such an extent that it is difficult to separate the two, since they both feed off one another. This explains how it is possible for one area of water to contaminate another.

1.1.3 Aquifers

Aquifers are the parts of the basin that are not visible. However they play a fundamental role in the balance of the waters which make up the basin's geographical unit even for the waters beyond a basin's spatial limits.

Aquifers are subterranean water reserves. Their location and their connection with bodies of surface water depend on both the geological and climatic conditions of the region. In practical terms, this means that aquifers are able to supply water to multiple rivers and basins at the same time. If the subterranean water is contaminated in one particular basin, it could therefore cross over into a neighbouring basin. This means that aquifers are areas where water constantly moves from one water basin to the other.

It is necessary to highlight how difficult it is to define aquifer boundaries and to determine the geographic area they occupy on the Earth's surface. It is also necessary to recognise that there are a wide variety of aquifers. They need to be identified for each basin, at least for the major ones, including their characteristics, such as rock composition, porosity, depth, estimated water volume and quality.

1.1.4 Coastal-marine area

This is the territory belonging to a State located in the lower part of the basin, i.e. in the area within the immediate surroundings of the mouth of the main river. This area includes not only the mouth of the river but also the adjacent area.

This coastal-marine area is where the transitional process of transforming freshwater into salty sea water takes place. It is possible to observe very specific and sensitive ecosystems in this area, such as freshwater wetlands, coastal lagoons, mangroves, sea grass beds and coral reefs.

The ecology of coastal-marine areas and its predominating landscapes are dependent upon the quality of the waters from the basin which flow into the sea:

- Excess sediment, for example, can change coastal profiles changing the coast's hydrology and ecology;
- Coral reefs are very sensitive to sedimentation originating from rivers; and
- Chemicals substances, solid waste products and spillages, with an impact on coastal biodiversity, make it impossible to develop sustainable tourism, causing diseases and contributing to migration to the cities.

In order to fully understand the quality of the water that reaches the coastal-marine area it is necessary to identify, analyse and map the relationships between the upper and lower basins. This will be then used for management and planning within the entire basin.

1.1.5 Hydrological cycle

This is the continuous process of water changing within its three states: solid, liquid and gaseous, within all systems containing water, i.e. the atmosphere, snow-capped mountains and glaciers, rivers and lakes, soil, vegetation, oceans and seas. The hydrological cycle, or the water cycle, consists of the following phases or transfer processes:

- Precipitation;
- Evaporation;
- Surface runoff;
- Permeation into the subsoil;
- Aquifer replenishment.

These components or phases refer to a local hydrographical system, irrespective of any dependence on global phenomena. This is partly under the restriction that precipitation data, for the territorial unit being studied, adequately reflects causal relationships with that of the global hydrological cycle.

Precipitation or rainfall is therefore not a fixed value, but a variable, measured as a historical average and used as a constant in the water basin local methodology analysis. The other components considered within the hydrological cycle are linked to the qualities of the area directly receiving the rainfall.

Evaporation is the process of releasing molecules from bodies of water and from the water retained in vegetation growing in the area, and is produced by heat from solar radiation.

Runoff is the movement of water from the upper areas of the basin to the lowest areas, occurring either on the surface or at subterranean level.

Infiltration is the process by which water seeps into the subsoil from the soil surface layers. This phenomenon is determined by the topographic characteristics of the land itself, the runoff speed and the permeability of the subsoil.

1.2 Shared, transboundary and international basins

Here we review the different terms used in practice for designating a water basin located between two or more States.

Given the political implications that the chosen language may have, especially with regards to the terms used to characterise bodies of water which transcend political State boundaries, we believe that providing precise information on terminology will contribute to the use of proper legal categorisation and therefore lead to the more effective management of water resources.

Practical application of the water basin concept

In its 1958 New York Declaration, the International Law Association (hereinafter abbreviated as ILA)[9] adopted for the first time the concept of a water basin and of the fair and equitable sharing of waters by riparian States. During its 1966 Helsinki Conference, the ILA introduced the so-called Rules on the Uses of the Waters of International Rivers. Since their introduction in 1966, these rules have been supplemented by additional rules regulating more specific issues.

At the London Conference in 2000, the Committee on Water Resources presented a consolidation of the existing rules[10], and an article on adequate levels of flow. The process of revising and updating the Helsinki Rules continues even today. At the Berlin Conference, held in August 2004, the Water Rights Committee presented a new set of rules entitled the ILA Rules on Water Resources; a comprehensive compilation of all relevant standards of customary international law applicable to water resources.

In spite of the ILA rules not being part of an international treaty, they widely reflect on the evolution of international law in this area and have been used, and continue to be used, as a benchmark for the development of treaties and agreements regulating shared basins.

Helsinki rule No.II defines an international water basin as a geographic area which runs through the territory of two or more States, delimited by an area known as the water basin, including the surface and subterranean waters that flow until they meet.

In 1970, the United Nations General Assembly[11], commissioned the International Law Committee (hereinafter the ILC)[12] to prepare a study related to laws on the non-navigational use of international watercourses. Twenty four years later, the ILC adopted a set of Draft Articles, together with a resolution on subterranean transboundary waters. This Draft is the basis of the Convention on the Law of Non-Navigational Uses of International Watercourses[13] (hereinafter called the 1997 Convention) adopted on 21st May 1997, almost 31 years after the Helsinki Rules[14]. The 1997 Convention was adopted on the basis of 103 votes in favour, with 3 against, and 27 abstentions. Although the Convention has not come into force and therefore isn't binding[15], the fact that it has been adopted by a majority of States in the United Nations General Assembly still gives it a considerable degree of authority. Furthermore, it wouldn't be completely inaccurate to say that several of its provisions are

9 The International Law Association (ILA) is a non-governmental organisation founded in 1873, with headquarters located in the city of London. Its objective, through various committees of experts, is to study international law in all of its forms, with the aim of proposing recommendations for the development of international treaties and national legislation, embodying the current state of development of international standards. A Committee on the Uses of International Watercourses was established in 1956. Its name was changed several times and is now referred to as the Water Rights Committee.

10 Campione Consolidation.

11 Resolution 2669 (XXV) of 8th December 1970.

12 Agency of the United Nations Organisation for the codification and progressive development of international law.

13 U.N. Doc. A/51/869.

14 See the document in Annex II.

15 In accordance with Article 36; for this to be possible it will be necessary to wait until the ninetieth day following the date of the filing of the thirty-fifth instrument of ratification, acceptance, approval or accession.

mandatory, not because they are contained in an international treaty but because they are an integral part of customary international law[16].

The 1997 Convention encodes the fundamental duties and rights of riparian States on how to use international rivers for non-navigational purposes, and promotes a cooperation framework between these States, that can be adapted to the specific characteristics of water basins through the signing of specific agreements.

Although, generally speaking, the 1997 Convention is linked to the law in connection with transboundary or shared basins, its scope of application is not just connected to water basins (as is the case with the Helsinki Rules), but to international watercourses.

The international watercourse is no longer defined as a geographical area but as a system of surface and subterranean waters which, by virtue of their physical relationship, consist of a unitary whole that usually flows into a common river mouth, some of these components being located in various States[17].

The fundamental difference between these two concepts is that the international water basin is an integrating concept, defined as a geographic area. It is therefore broader than a watercourse. The additional definition of a water basin, contained in the Rules on Water Resources, puts more emphasis on the fact that a basin's surface waters meet at the mouth of the river.

The concept of an international watercourse is much more limited because it only includes surface waters (rivers, lakes, canals) and the subterranean water dependent upon these, all of which can be defined as a water system.

In short, the parties involved in making decisions about the administration and management of shared basins should take these definitions into account, as well as the other provisions from the 1997 Convention and the ILA Rules, as they reflect the development and overall status of international law in this particular area, with the proviso that the Convention of 1997 is a treaty (although not in effect), and that the Helsinki Rules are the recommendations of a professional non-governmental organisation of international prestige.

States and Basins

Since the law applicable to shared basins is part of international law, its main stakeholders are the States.

States located within or sharing part of a water basin, are defined as riparian States by international law applied to rivers, (in other words, by the law of international watercourses). This is true when dealing exclusively with surface water, since taking subterranean waters into account when considering the overall water basin concept introduces an element of complexity to its definition.

It could be that the surface waters of a specific State (State A) do not permeate into, and supply, an aquifer located within the territory of that particular State, but infiltrates and supplies the aquifers of another State (State B), and that this aquifer feeds a watercourse located beyond the boundaries

16 See 2.1, Sources of Water Basin Law.
17 Article 2 b).

of State A. Thus, strictly speaking, State A would not be classified as riparian. For this reason, an alternative name is proposed for the term 'Basin State'. As in the words of Guillermo Cano, this should really be called a "Basin-participating State"[18].

Regarding the term 'riparian State' or 'Basin-participating State', the 1997 Convention prefers "Watercourse State" which is generally understood as a State that includes a part of the international watercourse within its territory[19].

Border – transboundary – international – shared basins

Below is a distinction between several alternative concepts of a shared basin. However, we believe that the term "shared basin" is the best phrase to use, from a legal point of view, due to it being the phrase that best fits the concept of what an undivided body of water really is, and also includes the idea that there is an obvious need to share this resource between different countries.

Shared basin

This is the most appropriate term for characterising a water basin when the basin in question extends over into the territory of two or more States. The transboundary water basin is, by definition and, from a legal point of view, a shared natural resource such as some forests are, or just like types of migratory species, air masses, electromagnetic waves or oil and gas deposits that cross over state borders into other territories.

The discussion about what is shared (whether this is the river's main channel, its tributaries, the water itself of any of the other natural resources which are located within the geographic area determined by the basin) is an integral part of the water basin concept, as defined previously.

As already explained in Chapter I, the basin includes, in addition to the river, a number of resources which are all interconnected. However, what parts are actually shared? Is it the water and/or the different water sources that make up the basin? Water is, by its very nature, an indivisible resource. At the national level, a State has authority over (or owns) the waters that originate and terminate in its own territory, and the States that share a river exercise a kind of joint ownership on these very same waters. This joint ownership which is based on the indivisible nature of the water results in States having shared sovereignty over water.

This is not so with the other resources belonging to the basin. The river can be physically divided up for example, for each State to exercise sovereignty on the portion of the river that crosses its territory, in the way they deem appropriate.

These statements should not however be interpreted as meaning that the concept of a shared basin is wrong because, strictly speaking, the only resource on which shared sovereignty can be established is water.[20]

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18 See quotation in note 8, page 20.

19 Artícle 2 c).

20 In the opinion of Guillermo Cano: "The waters are indivisible by nature, particularly that of streams, therefore the idea of "shared ownership" (based on the undivided concept) is starting to take shape in relation to international waters, helping to clarify the rights of the nations that have shared use of this resource. Not so with the channel itself and other elements of the basin..., on which material division by physical limits is feasible. Thus, the adoption of the concept of an "international basin", while fine in terms of defining bodies

In international law there are principles that grant powers and impose duties on the States part of a basin in respect to the other States sharing the basin. It is these principles which allow States to impose certain duties in relation to the use of elements within the water basin other than the water over which the States exercise sovereignty. Among these principles, it is worth mentioning other types of principles such as good neighbourliness and cooperation.

As explained previously, considering that a basin is shared depends on the existence of borders or political boundaries between States. These limits will not be affected by the fact that a basin is designated as transboundary, shared or international.

The States part of a basin usually agree on joint management and administration and, for this purpose, establish an organisational body or institution that has authority over the entire basin. Nevertheless, and despite the partial transfer of sovereignty that may be involved in the creation of such bodies or institutions, this does not mean that States will lose or cede part of their territory located within the basin in question to a supranational authority, or that they run the risk of having changes being made to their international borders.

Shared basin – international basin

In general terms, a basin can be classified as international when it passes through two or more States, or acts as the border between these States.

The word 'international' when applied to water basins is used to define the rivers and not the basins. The rivers can be classified into:

a) **national:** those having a watercourse which is fully located within the territory of a single State;

b) **international:** those that fall under the sovereignty of several states in various forms, either because they separate two different States or successively cut across two or more States.

c) **internationalised:** those that have been subject to a permanent international commission system of government and administration;

d) **navigable waterways of international interest:** those created between the States of the Barcelona Convention and Statute of 20th April 1921 for ensuring freedom of navigation, not only on international rivers, but on other watercourses (canals, lakes and lagoons) which, although naturally navigable to and from the sea, are located within the territory of a single State, and interconnect with other States by means of naturally navigable international rivers.

Historically speaking, the use of the word 'international' has been associated with navigation on rivers, and its internationalisation, which, in other words, refers to the attempt to reconcile the

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of water, even in light of problems arising due to shared sovereignty ("shared ownership" or "international common domains"), does not necessarily extended over into the other physical elements of the basin. In other words, the sovereignty of each riparian State is defined and maintained based on these other (non-international) elements. However, the obligations of good neighbourliness, as well as other such principles on which international law is founded, should ideally impose obligations on each State in relation to the interest of its co-riparian neighbours, even regarding the use of other physical elements within the basin, on which sovereignty is exercised". International Water Resources of Argentina, Victor P. de Zavalia, Editor, Buenos Aires, 1979, page 96.

interests of riparian States in relation to the international community. The idea is to search for a balance between the exclusivity of the aforementioned States, which only allow navigation through their territory, of vessels flying their respective flag, and which, more often than not, have a monopoly of the river mouth and the interests of the international community as a whole.

The French Revolution and the Final Act of the Congress of Vienna (1815), which put an end to the Napoleonic Wars, established that countries separated or traversed by a single navigable river should undertake to agree on the regulation of all matters relating to local navigation of that river. To this end it was agreed, with regards to the Rhine, Scheldt, Main, Meuse, Moselle and Neckar rivers, that countries would appoint their own commissioners and specify that from the point where a river becomes navigable until the river mouth, the river would be entirely free for use and not prohibited to anyone in relation to trade.

Freedom of navigation on international European rivers became effective through specific agreements and gradually extended to America and Africa. This freedom of navigation was then reinforced and the rights of the States were explained in greater detail in the judgement of the Permanent Court of International Justice in the Case of the International Jurisdiction of the International Commission of the River Oder (1929).

In short, State sovereignty over international rivers is limited by the principle of freedom of navigation.

However, if the application of these concepts is extended into the water basins, these concepts would then be deemed national when located within State borders, or international when separating or flowing over into two or more States.

Based on the previous paragraphs, there are no major drawbacks in using the term ‘international’ as a synonym for the term shared, with the understanding that this refers to a river or a body of water that crosses over State borders. However, the disadvantage of using the term international derives from the fact that it suggests that the management of the river is in the hands of a commission or supranational body, which limits the sovereignty of the State.

Shared basin – transboundary basin

When applied to a water basin, the term “shared” is somewhat broader than the term transboundary since, in theory, “shared” includes borders and transboundary borders.

Strictly speaking, the terms “border” and “transboundary” can only really apply to rivers and lakes, and not really to basins. This is because these concepts are linked to boundaries or political borders between States, with the only parameters for setting these limits being the rivers (as basin components), but not constituting the basin in full.

Border, boundary or contiguous rivers are those that act as a limit or boundary between two or more countries. This is the case of the River Oder between Germany and Poland, or the Rio de la Plata between Argentina and Uruguay.

Transboundary or successive rivers are those that flow within the territory of a particular country, but cross its border and continue flowing through the territory of another country, towards the river mouth (which may even be found in a third or fourth country). This is the situation with the Colorado,

Danube, Lempa, Nile, Okavango, Paraná, Rhine, Senegal and Uruguay Rivers.

Transboundary basin – international basin

As mentioned previously, these two terms only apply to rivers and lakes, but not directly to basins, because they are fundamentally related to issues of territory demarcation and political boundaries.

It could be said that they are synonyms, in the sense that when a river crosses the international borders of a State it becomes, strictly speaking, international. International would therefore include both border and transboundary rivers.

However, if the reference to a river being international is limited to those cases where such a river is internationalised due to the existence of a supranational authority in charge of its governance and administration, a distinction can be made between 'international' and 'transboundary'. When a supranational authority does not exist, the river is transboundary but not international.

Border basin – transboundary basin

These two terms apply specifically to rivers and lakes and not to water basins because they relate to questions of territory demarcation and political boundaries.

A river is a border river when it is contiguous, which means when it sets boundaries between two or more States. A river is considered transboundary when it is successive, in other words when it originates in one particular State, flows directly within that State's territory, but afterwards crosses the border and flows within the territory of another State.

Limits of water basins

Due to the fact that a water basin is part of the territory of one or more States, its limits are conditioned by political and historical factors which determine the borders between these States. Nevertheless, as far as rivers that are components of a water basin are concerned, it is necessary to distinguish between successive or contiguous types of rivers.

In the case of successive rivers, defining the border between States is done through drawing an imaginary line that crosses the river and connects to the outer limits of the territorial borders at a specific point located on each side of the river bank.

In the case of contiguous rivers, defining the border between States is a bit more complex because it depends on physical and geographical factors such as the river's behaviour and its overall size.

During the Middle Ages, the borders between States in a contiguous river were demarcated by the banks of the river, the water itself not belonging to any particular State (*res nullius,* in Latin).

Subsequently, and in certain cases, this theory was modified to consider water as *res communis*, which means, belonging to all States who share the river as an indivisible whole, without affecting the boundaries between these States on the riverbanks.

A number of cases exist in which the borders of a State stretch to the opposite bank of a contiguous river, by which the entire river falls within the jurisdiction of a single State.

The demarcation of borders can be determined by a line drawn in the middle of the river, the midline, which refers to an imaginary line that extends at an equal distance from each of the banks which,

geometrically speaking, corresponds to the centre of the river. The fundamental problem with this method of establishing boundaries lies in the fact that the midline may be subject to variations, in which case it may be necessary to revise the boundaries. Consider the situation where, for example, there is increased water flow and subsequent flooding of the banks which can be of greater magnitude on one side than on the other.

At the international level, the most common method of demarcating State borders within a contiguous river is through the *Thalweg* line. Indeed, this method has been incorporated into several international agreements. This word is of German origin and corresponds to the valley floor at the deepest channel of the river where the biggest and widest vessels may pass. *Thalweg* refers to an imaginary line between the deepest measuring points of the river bed.

1.3 Scope of application of the shared basin concept

The following resources come within the concept of the international water basin established by the Helsinki Rules:

- The waters of the main river, including the tributaries and lakes that are part of it;
- The riverbed and subsoil of such waters;
- The soil, flora and fauna and other natural resources;
- Groundwater; and
- The adjacent coastal and marine area.

In view of the comprehensive nature of a water basin, the most appropriate concept would be one of overall environmental protection. This is due to the management of water resources taking into account the full scope of activities and processes that take place not only within the main river but also within its tributaries, aquifers, coastal areas and in the surrounding territories.

This assumption has meant that many States located upstream of a water basin have been reticent to introduce the water basin concept, believing that it would be applicable to every individual watercourse regardless of the specific characteristics or needs of each of these resources. They also believe that it would put too much emphasis on the territory included within the basin's geographic area which also implies that this territory would be governed by the rules of international law.

These issues became particularly apparent during the codification work undertaken by the ILC. It is to be noted that the 1997 Convention does not refer to international river basins, but to international watercourses.

It remains to be determined what portion of the water system should be included in a legal regime for the regulation of a shared basin. The choices are many, ranging from the stretch of river that runs through the basin or defines its border, to the entire basin itself.

The first alternative is the easiest to put into practice but does not ensure full protection of the water resources, especially with regard to the quantity and quality of the water. The second alternative implies a certain limitation on the use of the water from the State and an obligation to protect not only its own environment, but also that of a neighbouring riparian State.

For the reasons expressed concerning the second alternative, there is an international tendency to emphasise the water basin and the watercourse which sets the limits. Examples of this trend can be found on every continent: Africa (Niger, Lake Chad, Protocol on Shared Watercourse Systems in the Southern Africa Development Community (SADC)), America (The Amazon, Cuenca del Plata), Asia (Mekong) and Europe (The Danube, Elbe, Scheldt, Meuse, Oder, The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Directive 2000/60/EC of the European Parliament and a Council Directive Establishing a Framework for Community Action in the Field of Water Policy).

In a majority of countries, there are weaknesses in integrating surface and subterranean waters within regulations and management plans. As for joint management[21], the written rules establish that States should make the best possible efforts to manage surface, subterranean and other relevant waters in an integrated manner. Further clarification of this rule states that joint management should be classified as management of the water within a basin as a whole, using a system that fully takes into account the interconnection between the surface and subterranean waters of the basin.

The regulation and management of water resources, with an emphasis on water basins, requires the integration of water with other related resources[22]. In relation to integrated management[23], the Helsinki Rules reflect international tendencies and outline feasible goals or objectives to ensure that water management is integrated in the most appropriate way with the management of other resources.

These two rules contribute to making sure that States take appropriate measures for sustainable water management[24]. In practical terms, the sustainable management of water implies considering such waters within the surrounding ecosystem (with the exception of what cannot be effectively managed), ensuring joint and integrated management, and not extracting water when this could compromise its future availability.

21 Article 5.

22 According to Cano, this relates to water resources, hydro power, panoramic resources, agricultural land, flora, fauna and geothermal resources, see citation in note 8, page 24.

23 Article 6.

24 Article 7.

2 From principles to tools

2.1 Sources of international law related to water

The law on transboundary or shared water resources[25]is part of international law and, as such, it shares the same sources.

The sources of international law are valid procedures through which standards are created. These procedures consist of treaties, customary international law and the general principles of law recognised by the different legal systems around the world[26].

These sources are not applied in a hierarchical fashion, with the treaties coming first, followed by customary law and finally, general principles. They are applied in accordance with two other principles. One of these principles determines that the latter standard revokes the previous standard, i.e. it takes precedence over this standard. The other principle is that the special standard takes precedence over the general standard.

Treaties or conventions are voluntary agreements between States and/or international organisations that seek to establish rights and obligations in order to regulate their relationship. There is no bearing on the name chosen for use (treaty, convention, agreement, pact, etc…).[27]The treaty which governs the development of treaties within international law is the 1969 Vienna Convention on the Law of Treaties[28].

Customary international law is, unlike a treaty, a source of unwritten international law. It is a practice commonly accepted as law by an important number of States within the international community. As opposed to uses, customs are law because States accept that such practices may confer obligations, this being the fundamental characteristic of any rule of law.

Customs may become treaties through a process of systematisation referred to as codification, by which the rules are set out in writing. An example of codification in relation to water rights is the 1997 Convention.

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25 In this work, international river law, international water law, law of shared water resources and shared water rights are used interchangeably.

26 In accordance with the provisions of Article 38 of the Statute of the International Court of Justice.

27 In general, the concepts of an agreement, convention, treaty and protocol are synonymous. However, at present, due to the profusion of treaties and agreements which establish general provisions and which are then specifically regulated, the term convention is used for designating the framework and protocol which shall then be used to refer to these specific agreements. Examples of this are the Vienna Convention for the Protection of the Ozone Layer, the Montreal Protocol on Substances that Deplete the Ozone Layer, the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

28 This Convention, adopted on May 23rd 1969, having been in force since 27th January 1980, establishes all of the provisions that apply in relation to the signature, adoption, expression of consent, coming into effect, modification, amendment and termination of treaties. Text available in A/CONF. 39/27, 23rd May 1969, and corrigenda.For a detailed study of the Vienna Convention, see De la Guardia, E., 1997, “Law of Treaties”, Editorial Àbaco de Rodolfo Depalma, Buenos Aires, Argentina.

The spectrum of sources of law is supplemented by so-called general principles of law, and by the work of the most eminent authors within different areas of law.

Some of the major sources of international law governing shared water are listed as follows:

- The 1923 Convention on the Use of Hydraulic Resources, which is of interest to several different States;
- The Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar, Iran, 1971);
- The 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes. Although this convention has a regional rather than global scope, it applies to a large number of States and serves as the basis for the adoption of several agreements or conventions on the regulation of specific water basins;
- The 1992 Convention on Biological Diversity, – wich is not specifically focused on the issue of water basins, but includes freshwater ecosystems and, among these issues, those that are shared between two or more States;
- The Convention on the Law of Non-Navigational Uses of International Watercourses (1997 Convention) which, although not currently into force, represents a good example of the exercise of codification of international law on watercourses which lasted for more than twenty years, and brought together the principles of this law. The Convention constitutes as such a fundamental reference for the regulation of the powers and obligations of States that share a water basin, as well as for the development of agreements for the regulation of such a basin.
- There are other sources which, from a geographical point of view, have a more limited application because they are either linked to a particular region or to a particular water basin. Among these we can mention the following examples[29]:
  - The Treaty of "Cuenca del Plata", 1969;
  - The Amazon Cooperation Treaty, 1978;
  - The 1995 and the 2000 Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC);
  - The Protocol on Water and Health to the 1999 Convention on the Protection and Use of Transboundary Watercourses and International Lakes; and
  - The Directive 2000/60/EC of the European Parliament and Council, establishing a community framework for action in the field of water policies.

29 This is not an exhaustive list.

2.2 Theories about the use of water from shared basins

There have been various theories throughout history which explain the use of water basins shared by two or more States. Some of these theories have never been applied in practice, while others have served as the basis for the development of the legal principles which make up international water law.

The four theories are as follows:

1. Absolute Territorial Sovereignty;
2. Absolute Territorial Integrity;
3. Equitable and Reasonable use; and
4. Joint Management.

According to the theory of territorial sovereignty, the States that are part of a shared basin enjoy absolute sovereignty over the waters located within their territory and may therefore change the quality of these waters and extract the quantity that they require, irrespective of the effects on downstream states. This theory, which has no practical application and therefore can not be considered as part of international law, was prepared by the Attorney General of the United States of America during the dispute over the diversion of the waters of the Rio Grande. It is now referred to as the Harmon Doctrine.

The theory of territorial integrity, much like the previous hypothesis, has had scant reception. It draws on the Anglo-Saxon principle of riparian rights. However, unlike the theory of absolute sovereignty which clearly favours upstream States, the theory of territorial integrity gives downstream States a right to natural watercourse flow. Their consent is needed for any interference in the natural flow of such waters.

The theory that has been the most widespread in practice is that of equitable use, according to which transboundary watercourses are shared natural resources that are subject to equitable use. This is based on the idea that States have equal rights and shared sovereignty over the watercourse, which implies the need to find a balance of interests by taking into account the requirements and the uses of the water from all riparian States.

In addition to the previous theory, the Joint Management Theory puts into practice the idea of a community of interests between all of the States part of a transboundary basin. This theory, which goes further than equitable and reasonable use, offers the possibility for integrated development and joint regulation of the river and of its ecosystem. It also considers the establishment of supranational bodies, which may vary in terms of composition, powers and responsibilities.

2.3 General principles of international water law

According to Silvia Jaquenod de Zsögön, principles are considered “fundamental criteria that provide information about the origin and development of a specific law which, expressed in rules and aphorisms, have their own potential and effectiveness independently from the rules which make up positive law. According to the author, principles serve two functions. On the one hand and in the

absence of a law, international treaty or custom they act as sources of law, and on the other hand, they provide information about the entire judicial system. The principles also serve as tools for discovering the meaning and scope of provisions or legal documents"[30].

The previous section explained what the sources of international law governing the use of shared waters are. This section tries to analyse which principles of international law in relation to water serve as tools to explain the meaning and scope of sources. It also tries to analyse which regulatory provisions govern the use of waters shared between two or more States.

It must be considered that all international water law is based on the following principle: the fact that a State belongs to the international community and, as a result, waives its right to unlimited territorial sovereignty and its right to absolute integrity over its territory. It would not be possible to imagine peaceful coexistence without this prerequisite. In view of this principle, the territorial sovereignty of a State is restricted, in the sense that no activities may occur that could cause damage to any of the neighbouring States. Furthermore, a State cannot claim absolute integrity in relation to its own territory, and must accept the consequences or effects on its territory of minor acts performed by the neighbouring State, providing that such effects come from the lawful use of property and do not affect interests up to and beyond a certain magnitude[31].

The fundamental principles that govern this area of law and which have led to define what the powers and duties of States are in relation to the use of the waters of a shared basin, are as follows:

Cooperation

This is a basic principle of international law which is applicable to this particular area. The duty to cooperate comes from the idea of indivisibility of the water basin and of the community of interests that exists between the States that are part of the shared basin[32]. It is only through cooperation between all of these States that sustainable development can be achieved and ecological integrity maintained.

The duty to cooperate only establishes a general obligation and does not specifically require that institutions be established in order to put this process into practice. This is an overall duty to negotiate in good faith as well as the opportunity to participate in a shared basin cooperative water system.

Integrated management

The principle of integrated management is expressed in two ways. On one hand, it refers to the integrated management of the different phases of water. States should therefore make efforts to achieve the unified management of surface, subterranean and any other waters considered relevant.

On the other hand, integrated management is linked to the inclusion of other natural resources.

30 Jaquenod of Zsögön, S., 2002, Environmental Law, Editorial Dykinson, Madrid, page 539.

31 Marienhoff, M., 1996, Treaty on Administrative Law Volume VI, Conditions and Regulations of Public and Private Waters, Third Edition, Editorial Abeledo Perrot, Buenos Aires, Argentina, page 393.

32 This community of interests, in turn, is based on equal rights among all States in relation to the management and use of water, and excludes, in principle, any privileged status of one particular party over another.

States should therefore make every effort to properly integrate water management and other natural resource management processes.

Sustainability

The idea of sustainability has always been present in water law to a certain extent. Individuals under domestic law and States under international law do not have absolute property rights on the waters that they can use or from which they can extract the fruits, nor can they abuse of such property rights. They have a right of usufruct instead. Today, in the international context of water scarcity, sustainability is a fundamental principle to ensure a proper balance between development and environment.

The principle of sustainability within a shared basin implies the need for integrated management. This particular connection implies the need to consider the waters of a shared basin in the same context as that of the ecosystems to which they belong. For example: limiting the extraction of water in order to enable these ecosystems to continue providing essential services.

Sustainability is also related to the precautionary principle, a fundamental principle of international law which is part of almost all treaties and agreements signed since 1990.

The principle of precaution, or the precautionary principle, applied to shared basins implies that States should take all necessary measures to prevent, reduce or control damage or harm to the aquatic environment whenever there is the risk of such adverse effects, including situations where there is no overwhelming proof as to the causal relationship between the act or omission, which causes, or which could cause, a damage and potential adverse effects.

Damage Prevention

Each State that is part of a shared basin has the right to use part of the basin that is under its jurisdiction providing that such use does not significantly affect the rights of the other States in question.

This right and general obligation arises from the duty to take appropriate measures in preventing and minimising environmental damage. This duty is seen as due diligence rather than an absolute obligation, hence the need to adopt the appropriate measures. This duty is not only applicable to environmental damage to waters within the jurisdiction of a State part of a shared basin, but also to the environmental damage caused by (or through) the waters which are under the jurisdiction of a State part of this shared basin.

This principle is closely related to that of sustainability. It is only possible to ensure continuity of ecosystems and, in general, life on the planet if water is used in a manner that maintains the integrity of its sources.

Participation

Participation in the management of shared basins has two fundamental aspects. On the one hand, it refers to the equitable participation of Basin States, and on the other hand, it refers to the public participation of individuals.

The principle of equitable participation indicates that Basin States have the right to participate in the water management of this basin in an equitable, reasonable and sustainable manner.

Agreements between Basin States may define to which waters such agreements apply, but there is no hard-and fast rule. Depending on the intent of the States that enter into the agreement, they can be applied to all or to a part of the basin, to a particular project or to the specific use of water. Moreover, the principle of equitable participation indicates that no agreement shall affect the rights of a Basin State without that State's prior consent.

Public participation is a principle of international law which still has not been well established in relation to water. It sets out that States should take the necessary steps to ensure that those who may be affected are able to participate in the decision making process related to water management.

2.4 State powers and duties

When a river is located entirely within the territory of a single State, the State shall exercise full sovereignty over it. The State can use the water of such a river in various ways, including to navigate, and can establish regulations in order to allow foreign vessels to use its waters for navigational purposes. The fact that a particular State exercises full sovereignty over the waters within its territory does not mean that the State can do as it pleases with this resource, in the sense that, as part of the international community, it is still constrained by certain duties, such as not allowing activities that occur within its territory or under its jurisdiction to cause damage or harm to other States.

When a river crosses State boundaries, crosses the borders of several States or defines a boundary between these States (contiguous river) it is considered as being a shared resource. The States that share this resource do not have absolute sovereignty but shared sovereignty over it, which implies that they are entitled to certain rights and have certain powers but also have to respond to certain obligations.

International treaties on rivers and lakes have served to regulate relations between States whose territories include such resources. In other words, international water law is a set of rules aimed at regulating the way States behave in relation to the use of shared waters.

This law appears as necessary and not just as a useful tool for supplementing an existing policy since its objective is to establish a framework that helps to build relations between States. States can then formalise the way in which they interact, establish the necessary institutions for shared resource management and cooperate on other areas of common interest.

As previously explained, international law has defining characteristics that go hand in hand with its sources. In a treaty, States define the limits to their relationship to each other. In order to impose duties and obligations through customary law, it is necessary that the type of behaviour used as the basis for this custom be repeated over the long term. This implies that, unlike national law where the powers and duties of individuals are in most cases (but not always) clearly defined, it is not always the case in international law. This is because international law is the result of agreements between various States, which sometimes gives the impression that this is an incomplete body of norms whose application depends upon the ability to constantly reach agreements, even for bringing a case to court.

In any event, the powers and duties of Basin States are as follows:

- The power to navigate;

- The power to use water in an equitable manner;
- The duty to protect the water basin and its ecosystems from any significant damage; and
- The duty to notify, consult and negotiate for the exchange of information, to provide additional consultation and for negotiation services.

In order to further develop this topic, we will focus specifically on the 1997 Convention[33], because this instrument has codified the majority of existing provisions on this theme.

Navigation

The relationship between international water law and navigation is older and more clearly defined than the relationship of such law with the use of water for non-navigational purposes.

The most important precedent in this area is the 1815 Final Act of the Congress of Vienna, which establishes freedom of navigation on all international rivers for vessels of all States, whether riparian or not, over the entire course of the river from the point where it becomes navigable to the river mouth.

As for the sources of international water law relating to navigation, the only general source of information is the Barcelona Convention of April 20th, 1921, which contains the Statute on the Regime of Navigable Waterways of International Concern,

In accordance with this Statute[34], international rivers and lakes are identified as "watercourses of international interest". The Statute recognises freedom of navigation for all States of the Convention with no discrimination, but reserves cabotage rights to riparian States only. The Statute also provides that these States have regulatory and policing powers.

In practice, the idea of a "community of rights" has prevailed as applicable over the entire length of the river and is applicable to all riparian States. Although this includes freedom to navigate along the entire course of the river, it is necessary to regulate the exercise of this right by means of an agreement or treaty.

In the case of the River Oder, the Permanent Court of International Justice ruled that the desire to provide free access to the sea to upstream States had played an important role in the formulation of the principle of freedom of navigation on rivers and added that the solution to this problem had not been based on the idea of a right of passage to upstream states, but because of the existence of a community of interests for riparian States.

For more information about this case, refer to Chapter VI (Relevant cases).

However, in respect to navigation on international rivers for non-riparian States, no such rule of international law exists for guaranteeing an automatic right of access. In accordance with Article 1 (2) of the previously mentioned Statute, there must be either a unilateral act from the State which has sovereignty or authority over the waterway or the part of the waterway located within its territory, or that an agreement be made with the consent of such a State. Once a State recognises the right to

33 See the text of the Convention in Annex I of this book.

34 This statute is not representative of a general acceptance by States, since only 42 States participated in the Barcelona Conference.

free navigation on the rivers which border or cross over its territory, all other States, riparian or not, are able to enjoy this right on an equal footing.

For a river which is open to free navigation, a riparian State may establish a management structure in relation to the portion of the river that is located within its territory, and for all matters relating to customs, port regulations, fees for the financing of water works and questions of sanitation.

The treaties and agreements that have previously been signed in this area have tended to establish certain criteria and policies aimed at non-discrimination and equal treatment. In many of these cases, cooperation has resulted in the establishment of a Commission charged with managing navigation of the river, such as the Central Commission for Navigation on the Rhine, established in 1815, and the Danube River Commission, established in 1856.

Equitable Use

According to the principle of equitable use, Basin States are to use the waterways within their territory in a reasonable and equitable manner. The 1997 Convention establishes that "Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse."[35].

Equitable use does not imply a division of water basins, but the establishment of equal rights and shared sovereignty of States over these resources. In practice, this means achieving a balance of interests to take into account the needs and uses of the waters for each of the States part of the water basin. All States shall then share the benefits according to what is considered reasonable to satisfy their needs.

The 1997 Convention establishes a number of factors (non-exhaustive) for determining equitable use[36]:

a) geographical, hydrologic, climatic, ecological and other natural factors;

b) the economic and social needs of the riparian States;

c) the population that depends on the watercourse in each riparian State;

d) the effects that the use of the watercourse in one particular riparian State can have on another State;

e) the existing and potential uses of the watercourse;

f) the conservation, protection, exploitation and economy of use of the water resources of the watercourse; and

g) the availability of alternatives, of comparable value to a particular use of the watercourse.

35 1997 Convention, Article 5.1.

36 1997 Convention, Article 6.

The 1997 Convention determines that, except in the event of an agreement between States or a custom which provides for the contrary, none of the uses mentioned above are more important or take precedence over the other: "The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole"[37].

When a conflict exists in relation to the different uses of water, the Convention calls on all parties involved to resolve the conflict through negotiation. However, in the end the solution should take into account the fulfilment of vital human needs: "In the event of a conflict between uses of an international watercourse, it shall be resolved [...] with special regard being given to the requirements of vital human needs"[38].

Duty not to cause damage or harm

In international law there is no absolute ban on the polluting of watercourses. There is only a tendency to control specific sources and to ban certain types of pollution.

The 1997 Convention specifies that "Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States "[39].

This is a due diligence obligation, in other words, the conduct which is expected for good governance and which derives from the so-called principle of good neighbourliness[40]. In accordance with this obligation, States must not carry out or allow activities within their respective territories or common spaces (such as the high seas) without first considering the rights of the other States or the protection of the environment. This principle implies an obligation to prevent damages (to take adequate measures) instead of an obligation to repair. This is a principle of customary international law which is also reflected in several treaties and international declarations and has been developed[41] through the rulings of international courts and awards of arbitration tribunals[42].

Basin States should refrain from carrying out any changes to existing systems, within their respective jurisdictions that could adversely affect the use of the basin for another State also part of the basin. The international obligation of due diligence is implementedthrough the introduction of laws and administrative regulations which relate to public and private behaviour and that are capable of protecting other States or the environment.

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37 1997 Convention, Article 6.3.

38 1997 Convention, Article 10.

39 1997 Convention, Article 7.1.

40 Maxim (in Latin) *sic utere tuo, ut alienum non laedas*.

41 For example: Principle 21 of the Stockholm Declaration on the Human Environment; Principle 2 of the Rio de Janeiro Declaration on Environment and Development; Article 3 of the Convention on Biological Diversity; Preamble of the United Nations Framework Convention on Climate Change; The Trail Smelter Case (American Journal of international law (1939), 182; 35 AJIL (1941), 684), and the Corfu Channel Case (ICJ Reports (1949), 1).

42 An award is the result of a decision subjected to an alternative dispute resolution process called arbitration. This award is equivalent to a judicial ruling, being obligatory and binding for the parties involved in the conflict.

In accordance with a State's physical location within a water basin and because of the power relations which exist depending on whether the State is upstream or downstream, Basin States will tend to favour the principle of equitable use or the principle of causing no damage or harm. Upstream States will lean towards equitable use, whereas downstream States will prefer not to cause damage, since in each individual case, these principles favour the position of the State in question. For a downstream State, if the fundamental principle is to do no harm, this will guarantee water availability in case there is an excessive use of water on the part of the State located upstream, whereas the upstream State tends to favour the other principle of equitable use, in the sense that not causing harm imposes a higher threshold of protection and is more stringent than the other option.

In the Helsinki Rules developed by the ILA, the prevention of contamination of a body of water is subject to equitable use, whereas in the 1997 Convention, States are obliged to take all necessary measures to try and prevent any possible damage, in other words, they have a due diligence duty. The duty to equitably use an international watercourse shall prevail over the duty not to cause damage when the amount of damage is not particularly significant, in which case the State has to tolerate the damage, or in case of a significant damage when this damage could not have been avoided, even when exercising due diligence[43].

The duty to inform and provide consultation when an activity could cause significant damage to the interests of another State, is applicable in international water law and is covered by the provisions of the 1997 Convention. States have the duty to cooperate according to the principles of good faith, territorial integrity, sovereign equality and mutual benefit in order to attain optimal utilisation and provide adequate protection of water[44]. The Convention leaves it up to the States to establish different mechanisms to implement the general duty to cooperate, such as the establishment of an organisation for the management of the river.

Procedural duties

States have a duty to exchange information about the overall condition of a basin, particularly issues of a hydrological, meteorological, ecological nature and issues relating to water quality[45].

Prior notification is an international obligation intended to provide sufficient information in cases where States are required to seek specific information.

The State planning to undertake measures which could cause adverse effects to another State part of the water basin must notify the other States in a timely manner of its intention before carrying out such measures. Such notification should be accompanied by available technical data and information, including the results of any environmental assessments.

The States will have a period of 6 months to evaluate the possible effects of the planned measures and to notify the reporting State of its findings. This period may be extended for up to 6 months in exceptional cases[46].

43 1997 Convention, Article 7.2.
44 1997 Convention, Article 8.
45 1997 Convention, Article 9.
46 1997 Convention, Article 13.

The proposed measures will not be executed without the consent of the previously notified States. During the above mentioned 6 months period, the notifying State shall provide all additional information requested by the notified party[47].

In particular instances in which a State understands that the planned measures are inconsistent with the notion of equitable use of the watercourse or with the duty not to cause damage, States must seek advice and, if necessary, enter into negotiations in order to reach an equitable solution[48].

The notifying State must abstain from carrying out or permitting the execution of the projected measures during a period of 6 months, if the notified State requests such action at the time of responding to the original notification[49].

Without prejudice to the time limits specified in the Convention and, taking into account the provisions on equitable use and the duty not to cause significant damage, the planned measures can be immediately implemented in such cases where it is necessary to protect public health and safety or that of other equally important interests[50].

Ecosystem protection

The 1997 Convention establishes in its Fourth Part that States must protect and preserve the ecosystems of international watercourses whether acting individually or collectively.

Refer to Chapter V (5) of this book for more details on this particular topic.

47 1997 Convention, Article 14.
48 1997 Convention, Article 17 (1).
49 Article 17 (3).
50 Article 19.

3 In agreement with the agreements

When it comes to regulating the rivers and lakes that define shared basins, it is necessary to reach a certain level of agreement between the countries involved, through consensus and negotiation in order to obtain a balanced situation with regards to the different uses of the river and its related resources. There have been previous attempts at achieving globally binding rules, but they have been far from universally accepted. The clearest example is the 1997 Convention. However, there are various other examples of other types of endeavours for the managment of shared basins.

The aim of this section is to first of all outline the most important steps in the development of water policy and law and, second of all, to analyse in more detail a number of specific international agreements and arrangements for the regulation of shared basins.

3.1 Global Context

Issues related to the governance of water are complex and go beyond purely legal or judicial aspects.

Given its value and importance, water is a highly political resource. Political issues related to a particular country's water resources are expressed through a water policy. This policy, which can be written or not, may differ from the policies of a current government on water resources.

The law supplements the aforementioned policy, acts as a tool for its subsequent implementation and in most cases reflects a country's current policy in respect to all aspects of water use. Generally, and given the duration of the legislative process, the law lags behind such policies. However, in many cases a law is passed or an amendment to that law is made without even taking into account the contents of a clear government policy.

Furthermore, there are a number of issues that must be considered within national water policies; issues that can then be regulated by a law:

- A clear list of the basic principles that govern water policy;
- A specification of the individual roles of different governmental regions (central, provincial, departmental, municipal) in relation to water supply;
- A definition of the role local communities play in the administration and management of water resources;
- The existing relationship between issues of health and hygiene and the supply of drinking water;
- Education on issues such as water usage and supply, development, health and hygiene;
- The setting of minimum standards in relation to, for example, daily consumption per capita and effluents;
- Prices and tariffs;

- The role of women, young people, non-governmental organisations and the private sector;
- The institutional framework;
- The exchange and monitoring of information;
- Water quality;
- Navigation;
- Specific navigational uses, including its usage by water ecosystems;
- The conservation of aquatic ecosystems;
- Dams, dykes and other types of physical infrastructures;
- Public safety and natural disasters;
- Research and development; and
- Management of shared water resources.

Some of the most important political and international water law events can be listed as follows:

- 1923: Adoption of the Convention Relating to the Development of Hydraulic Power Affecting More Than One State;
- 1933: Declaration of Montevideo on the Organization of American States, Resolution LXXII of the 7th International Conference of American States;
- 1959: UN resolution of 21st November, outlining the preparation of preliminary studies in respect to legal issues concerning the development and use of waters from international rivers;
- 1961: The Salzburg Resolution of the Institute of international law on the use of International Waters;
- 1966: Adoption of the Helsinki Rules on the Uses of the Waters of International Rivers by the ILA;
- 1969: Adoption of the La Plata Basin Treaty;
- 1971: Adoption of the Santiago Act on Water Basins;
- 1971: Adoption of the Convention on Wetlands of International Importance;
- 1977: United Nations Water Conference - Mar del Plata Action Plan (MPAP);
- 1978: Adoption of the Amazon Cooperation Treaty;
- 1991: Adoption of the Convention on Environmental Impact Assessment in a Transboundary Context;
- 1992: Adoption of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes;
- 1992: Conference on Water and Sustainable Development. (The Dublin Statement on Water and Sustainable Development) Declaration (Dublin)[51];

51 Irrespective of the legal or judicial principles, there are other principles of a political nature that serve as a

- 1992: Adoption of the Earth Summit, Agenda 21 (Rio de Janeiro);
- 1992: Adoption of the Convention on Biological Diversity;
- 1995: Adoption of the Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC);
- 1997: Adoption of the Convention on the Law of the Non-Navigational Uses of International Watercourses;
- 1998: International Conference on Water and Sustainable Development, which approves the Paris Declaration which urges the international community, public authorities and civil society to give priority access to water for all. In relation to the topic of transboundary basins,it determines the favourable exchange of reliable and comparable information between neighbouring countries;
- 1999: Adoption of the Protocol on Water and Health, as well as the Convention on the Protection and Use of Transboundary Watercourses and International Lakes;
- 2000: Millennium Declaration (New York);
- 2000: World Water Forum. Ministerial Declaration on Water Security in the twenty-first century (The Hague);
- 2000: World Water Vision (The Hague);
- 2000: Adoption of the Directive 2000/60/EC of the European Parliament and Council, establishing a framework for Community action in the field of water policy.
- 2001: International Conference on Freshwater and the Ministerial Declaration (Bonn);
- 2002: World Summit on Sustainable Development (Johannesburg);
- 2003: World Water Forum. Ministerial Declaration (Kyoto); and
- 2006: World Water Forum. Ministerial Declaration (Mexico).

The most recent documents tend to emphasise issues of security.

The question of security in relation to water resources results in the development of more integrated management solutions, greater consideration of the needs of the poorest and most disadvantaged nations, the end of unsustainable water exploitation and the development of management strategies at regional, national and local levels, which promote the equal access and adequate supply of water services.

guideline towards the preparation of water related policies which, in some respects, influence the regulation of shared basins. A number of indicative principles were adopted at the Dublin Conference: Principle 1: water is a finite and vulnerable resource, essential for sustaining life, aiding development and is a fundamental part of the environment; Principle 2: the development and management of water resources must be based on a participatory management system, depending on the involvement of users and decision makers alike; Principle 3: the role of women in supplying, managing and conserving water is essential; Principle 4:water has an economic value in all of its uses and should be recognised as a commodity with economic value.

This idea of water security can be understood better by analysing how the services provided by freshwater ecosystems can help achieve Millennium Development Goals[52]. For example, in relation to the overall effort to eliminate poverty and hunger, water is an essential resource for agricultural and industrial production; investments into infrastructure and services are catalysts for development; reducing ecosystem degradation means that the lives of living beings is safer, insofar as reducing any vulnerabilities from possible damages that can be linked to water also reduces risks in terms of investment and production. As for the MDG objective of ensuring environmental sustainability, improved water management, including methods for pollution control and the adoption of other conservation measures, is an essential factor in maintaining the integrity of ecosystems. In addition to this, the conservation of biodiversity and fight against desertification are essential to improve the management of water resources because developing plans for an integrated water basin management system creates a suitable context for the conservation of ecosystems and to avoid disputes between Basin States.

Agenda 21 devotes the whole of chapter 18 to the conservation and management of freshwater resources[53]. The overall aim of this chapter is "to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet, while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities within the capacity limits of nature and combating vectors of water-related diseases".

In relation to the scarcity of water, the Agenda emphasises the need for the integrated management and planning of all resources, including that of all interrelated freshwater bodies, both surface and subterranean, and the need to take into account the overall quantity and quality of these natural assets.

Chapter 18 includes seven programmatic areas:

1. Integrated Management and Utilisation of Water Resources;
2. Water Resources Assessment;
3. Protection of Water Resources, Water Quality and Aquatic Ecosystems;
4. Supply of Drinking Water, Drainage and Sanitation;
5. Water and Sustainable Development;
6. Water for Sustainable Food Production and Sustainable Rural Development;
7. The Impact of Climate Change on Water Resources.

Agenda 21 is not an international agreement and, as such, contains no binding obligations for States. Nevertheless, the recommendations contained in the seven programmatic areas listed above are

52 Resolution approved by the General Assembly on 8th September, 2000; A/Res/55/2: to eradicate extreme poverty and hunger, achieve universal primary education, promotegender equality and give independence to women, reduce child mortality, improve maternal health, combat HIV / AIDS, malaria and other diseases, ensure environmental sustainability, and develop a global partnership for development.

53 United Nations Action Programme on the environment and development, adopted at the United Nations Conference on Environment and Development, June 1992.

intended to guide the States on how to adopt new legislations or on how to update existing regulations connected to water resources.

Concerning the protection of water resources and aquatic ecosystems, Agenda 21 emphasises the goal of maintaining ecosystem integrity in accordance with the principle of management and preservation, including the living resources within the ecosystem, emphasising that "The complex interconnectedness of freshwater systems demands that freshwater management be holistic (taking a catchment management approach) and based on a balanced consideration of the needs of people and the environment".

Security is also reflected in the Plan of Implementation of the World Summit on Sustainable Development. In the aforementioned Plan, States agreed to halve the proportion of people with no access to drinking water and no access to basic sanitation by 2015, stressing the need to develop integrated management plans and organise the efficient use of water resources by the year 2005. These integrated management plans should be accompanied by measures aimed at:

- Developing and implementing strategies, national and regional plans and programmes for the integrated management of river basins and subterranean waters;
- Using all available normative instruments, including regulatory tools, monitoring and surveillance methods, voluntary measures, market-based and information technology instruments, spatial planning and cost recovery of water-related services, without in any way jeopardising access to clean water for the poorest, and adopting an integrated approach to the management of water basins;
- Encouraging the more efficient use of water resources and promoting its distribution across a wide range of uses, giving priority to basic human needs, and establishing a balance between the need to preserve or restore ecosystems and their natural functions, particularly within fragile environments, and the domestic, industrial and agricultural needs of the populations, including preservation of the quality of drinking water; and
- Facilitating partnerships between public and private sectors and other forms of cooperation in order to give priority to the needs of the poor within a stable and transparent regulatory framework while still respecting local conditions, as well as promoting the participation of all stakeholders and monitoring the performance of public institutions and private companies.

3.2 Treaties and agreements related to shared basins

International water law is the result of the gradual evolution of State practices, and of the adoption of bilateral and regional agreements on the topic.

The first treaties were associated with navigation. For example, the Final Act of the 1815 Congress of Vienna declares the opening of international rivers for commercial navigation, and the 1885 Congress of Berlin establishes free navigation on the Congo River in Africa.

During the Twentieth Century, non-navigational uses of watercourses became important such as irrigation, prevention and control of pollution, or the construction of canals, dykes and dams.

In 1911, the Institute of International Law adopted a resolution banning the use of waters belonging to international rivers in ways that could harm or damage other States. In accordance with this resolution, no activity should obstruct navigation.

The first global treaty to regulate the non-navigational uses of watercourses was the 1923 Geneva Convention on Hydroelectric Use, which consists of 11 Member States, but has had very little practical implementation.

International organisations such as the ILA, the Council of Europe and the United Nations Economic Commission for Europe (UNECE) have been involved in pushing international water law forward into other areas, initially unconsidered.

A milestone of fundamental importance is the codification of the law on the uses of international watercourses for non-navigational purposes, introduced by the ILC in 1970, and which led to the adoption in 1997 of the main instrument of global reference within this area: the Convention on the Law of the Non-Navigational Uses of International Watercourses.

Even though, by definition, the regulation of shared waters is part of international law, the part of the basin located within the territory of each of the basin States is affected by the national laws of these particular States.

It cannot be said, however, that there is a clear divide between international water law and national water law. Water law development is inspired by national policies and measures, and is influenced by global and regional standards. Events that occur in one country have an influence over the events that occur in another country, not only when these countries are adjacent or share a common resource such as a water basin, but also due to the characteristics of the modern world such as regional integration, free trade and, ultimately, globalisation. It should be remembered that the adoption of customary international law and the development of international agreements relating to water resources are influenced by the practices of the neighbouring States which are reflected, among other factors, in the adoption of national water laws.

The degree of influence that international water law has on the preparation of national law varies and depends not only on the nature of each particular instrument, but on the geographical circumstances of each country. For example, in relation to the development of national water basin laws, the 1997 Convention and the Helsinki Rules are general enough to establish guidance parameters for the formulation and revision of national laws, but are only applicable to the sections of rivers and lakes that extend across State borders. However, for those countries whose water resources are, for the most part, shared, it is impossible to make a clear distinction between international law and national law, international instruments being more important in this case. Regarding instruments such as the European Union Water Framework Directive, and according to the characteristics of European Community Directives, States of the European Union are under the obligation to introduce into their national legislation the necessary changes to comply with the instructions and provisions of such a Directive and, in the case of shared basins, to establish, in unison with the States that share these basins, the necessary coordination mechanisms for the integrated management of these resources.

The essential characteristics of a number of different agreements are detailed below. These serve to illustrate how progress has been made on issues relating to the governance of shared waters.

3.2.1 Africa

Protocol on Southern African Development Community (SADC)

The Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region[54], was signed in Johannesburg by Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe on August 28th, 1995.

This agreement represents an attempt to put the concept of sustainable development into practice in relation to the shared management of shared water systems in South Africa. In this regard Article 1.3 establishes that States Parties located within a basin of a shared water system must maintain a proper balance between resource development for increasing the population's standard of living and the conservation of the environment in terms of the promotion of sustainable development.

States Parties must adopt all necessary measures to prevent the introduction of aquatic species into shared water systems, i.e. those with potentially harmful impacts on ecosystems. Additionally, States must maintain and protect such water systems as well as any facilities built on them, in order to prevent pollution and any possible environmental degradation.

It is also worth pointing out that the Protocol reflects the commitment of SADC States Parties in setting up the necessary institutions for the management of shared water systems.

The Protocol's institutional system is comprised of the SADC governing bodies, namely the Council of Ministers and the Secretariat.

A new protocol was signed in the city of Windhoek, Namibia, on 7th August, 2000. The objective of this agreement is to promote closer cooperation in terms of sustainable and coordinated management, providing protection and better utilisation of the watercourses. The States Parties undertake to harmonise the different uses of water within the shared watercourses and to ensure that any work on such waterways is compatible with the sustainable development of all the States involved.

The new protocol also establishes that States Parties shall, individually or jointly, protect and preserve shared watercourse ecosystems, including estuaries.

In terms of the institutional framework, the States Parties shall establish a suitable mechanism for implementing the Protocol by the Ministerial Committee on water, the Committee of Senior Officials on water, the Water Sector Coordination Unit (WSCU) and the technical Committees and Sub-Committees on water resources.

Tripartite Interim Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for Co-Operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses

This Interim Agreement was signed in Johannesburg by the governments of Mozambique, South Africa and Swaziland on August 29th, 2002, with the overall objective of promoting cooperation among States Parties to ensure the protection and sustainable use of the Incomati and Maputo watercourses.

54 Text available at www.ecolex.org

Pursuant to the rules and principles of international law, particularly those included in the 1997 Convention, the States Parties set out to establish the Interim Agreement on the following set of principles[55]:

- Sustainable use;
- Equitable and reasonable use;
- Participation;
- Damage prevention; and
- Cooperation.

The States Parties agree to adopt all measures of a legal, political, administrative and technical nature, either individually or jointly, in order to:

- prevent, reduce and control pollution of subterranean and surface waters, and protect and improve their respective quality and connected ecosystems, for the benefit of present and future generations;
- prevent, eliminate, mitigate and control transboundary impacts;
- coordinate joint management plans;
- monitor and mitigate the effects of floods and droughts;
- exchange information on the quality and quantity of water and its uses;
- implement training and capacity-building programmes; and
- cooperate with the respective SADC organisations, in addition to other organisations with skills and expertise on issues related to shared basins.

To this end, the States undertake to protect and preserve the fluvial ecosystem, including preventing the introduction of migratory species into the Incomati and Maputo watercourses that could have a negative effect on their ecosystems.

States Parties have the right to use water within the portion of the watercourse that runs through their territories in an optimal and sustainable manner, by for example making use of the benefits derived from its use, but must take into account the interests of the other States Parties. States have the duty to coordinate the management of activities that occur within the Incomati and Maputo watercourses through the exchange of information and the coordination of plans and management programmes.

The agreement contains specific provisions on:

- The quality of water and pollution prevention;
- Droughts and floods;
- Accidental pollution incidents and other emergency situations;
- The exchange and access to information; and
- Environmental impact.

55 Article 3.

With due regard to measures for protecting and preserving the ecosystems of the Incomati and Maputo rivers[56], States have established a river flow system[57], according to, among other factors, the following criteria: the characteristics of the basin and the need to ensure a sufficient supply of water that is of good quality in order to sustain the basin and its associated ecosystems, the current needs and the potential and future needs of water-related systems, including afforestation; the existing infrastructure should be capable of regulating river flows.

These specific provisions concerning river flow should be read and interpreted in line with existing provisions related to the sustainable use of the basin[58]and, in particular, in relation to the all inclusive definition outlined in the following guiding principle: States Parties shall have the power within their respective territories to utilise the water resources of the Incomati and Maputo watercourses in an optimal and sustainable manner, including the use of derived benefits, while taking into account the interests of the other States but also being consistent in terms of adequate protection of the watercourses for the benefit of present and future generations. Additionally, Annex I (Flow Systems) establishes priority in terms of usage. Domestic, agricultural, industrial and environmental uses have priority over other uses of water.

These rules provide the basis for sound cooperation between States Parties, and are essential for the further development of the agreement that, for the time being, is still temporary.

States Parties have opted for the use of an existing technical body to implement this agreement, the Tripartite Permanent Technical Committee (TPTC).This body was established by means of an Agreement between the Government of the Republic of South Africa, the Government of the Kingdom of Swaziland and the Government of the Republic of Mozambique, on 17th February 1983. What is interesting is that the 2002 agreement gives sufficient powers to the Committee to work on its implementation.

Lake Tanganyika Convention

Lake Tanganyika is a body of water with superlative characteristics: it is the second largest in Africa, the second deepest in the world, the world's longest and one of the richest in terms of biodiversity (including more than 1,500 species of plants and animals).

The Convention on the Sustainable Management of Lake Tanganyika was adopted in Dar es Salaam on 12th June 2003. The States Parties to the Convention are Burundi, the Democratic Republic of Congo, Tanzania and Zambia.

This is a modern legal instrument whose primary purpose is to promote the conservation of shared water resources. In accordance with the text, States Parties aim to ensure that biological diversity is conserved and protected and that the natural resources of Lake Tanganyika and its basin are sustainable, according to a system of integrated management and cooperation.

The Convention is based on the following principles: precaution, polluter-pays, preventive action, participation and the fair and equitable sharing of benefits.

56 Article 6.
57 Article 9. Annex I.
58 Article 7.

The States Parties undertake to develop, adopt, implement and apply the appropriate administrative and technical measures, among other issues, in order to:

- Conduct an environmental impact assessment (EIA) of all projects or activities carried out within their jurisdiction or under their control and which may cause adverse impacts. Annex I of the Convention (entitled Environmental Impact Assessment) contains a list of activities which are likely to produce adverse impacts, including an indication of the minimum contents of the documentation relating to the EIA.
- Conserve rare and fragile ecosystems, as well as endangered species and their habitats.
- Avoid the introduction of exotic species into the ecosystem and promote the control and eradication of any exotic species that could threaten ecosystems, habitats, species or genetic resources.
- Prevent and reduce pollution.
- Address, as a priority, the causes of excessive sedimentation within the lake, such as deforestation, soil degradation and the destruction of wetlands.
- Make sure that individuals and local communities have the right to participate at the appropriate levels in decision-making processes which are linked to the lake basin and which affect their livelihoods. This participation will lead to a review of environmental impact assessment procedures.

The States Parties agree to cooperate for the promotion of the sustainable management of fisheries in the lake.

The Convention establishes the Lake Tanganyika Authority, which is made up of the Conference of Ministers, the Management Committee and the Secretariat.

The main authority of the convention is the Conference of Ministers. The Management Committee, a technical organisation consisting of three members from each State Party, coordinates and monitors the way in which the Convention is implemented.

The procedures for resolving disputes that may arise between States Parties concerning the interpretation or implementation of the Convention may be negotiation, good practices, mediation, Commission referral, or resolution through arbitration.

The Volta River Basin Convention

The Volta River Basin Convention was signed by Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo in Ouagadougou, Burkina Faso on 19th January 2007. Its purpose is to establish a cooperation framework for the sustainable management of the river basin.

The Convention establishes the international character of the Volta River in its second article, which leads to recognising freedom of navigation for its States Parties. Additionally, it establishes Integrated Water Resources Management (IWRM) as the ideal solution for the environmental management and development of the basin.

The Convention develops the concept of a water basin and encourages cooperation among States Parties. It also sets up the Volta Basin Authority, the overall objective of which is to promote IWRM activities throughout the entire basin, taking into account the different uses of water as well as the

participation of different stakeholders in relation to water management processes. The convention also stresses the importance of preserving the quality and quantity of water through pollution prevention mechanisms.

The Code of Conduct for Sustainable and Equitable Management of the Volta Basin Water Resources

Although the Volta Basin is shared by six West African States, 85% of it lies within just two countries: Burkina Faso and Ghana. Given their dependence on the basin's resources, both countries have developed a series of cooperation agreements for its joint management.

The Code of Conduct for Sustainable and Equitable Management of the Volta Basin Water Resources was developed through joint cooperation and signed in 2006 by the Minister for Agriculture, Fisheries and Water Resources of Burkina Faso and by the Minister for Water Resources, Works and Housing of Ghana.

The code defines a series of non-binding principles and procedural rules that must be followed by both Burkina Faso and Ghana during decision-making processes related to the joint management of shared waters. This code was developed in parallel to the Convention and is aimed at promoting the integrated, sustainable and equitable management of shared water resources by using a participatory methodology which involves different stakeholders and in particular local communities.

The code develops the basic principles on which the IWRM of the basin rests, which include:

- The principle of conservation and sustainable use;
- The principle of cooperation;
- The principle of equitable use;
- The principles of pollution prevention and polluter-pays;
- The precautionary principle;
- The principle of distribution of benefits; and
- The principle of participation.

The code regulates the need to maintain an environmental flow in order to conserve aquatic ecosystems. Lastly, it underlines the specific need for an Advisory Committee (Commission) for monitoring and coordinating the code´s implementation and its official interpretation.

Both the Volta River Basin Convention and the code of conduct are instruments designed to contribute to the good governance of the shared waters of the Volta Basin. While the former is a characteristic instrument of international law that establishes the specific powers and duties of States Parties, the code of conduct serves as a support tool for the development of a sound legal framework and for strengthening the institutional platform in relation to various activities, such as the exchange of technical information for example. Both instruments incorporate the principles of international water law, including the principle of equitable water use and the duty not to cause damage or harm to other States, and recognise the principles of cooperation, prevention and precaution, ecosystem protection and exchange of information. Additionally, the code of conduct refers to the principles of sustainable development, distribution of benefits and polluter-pays. Lastly, both the Convention and

the code set out the relationships between the different stages of operational activities. These activities include actions to be developed through projects or through the development of programmes.

The code of conduct is more operational than the Convention since it provides both general guidelines and defining actions for promoting sustainable development through water management. The Convention, while establishing the authority of the basin and granting the authority certain skills, defines the framework for cooperation between States and in this sense, it establishes the institutional basis for governance of the entire basin.

3.2.2 America

La Plata Basin Treaty

The La Plata Basin Treaty signed in Brasilia on 23rd April 1969 between Argentina, Bolivia, Brazil, Paraguay and Uruguay is a framework treaty that aims to promote the harmonious and balanced development of the water basin, the optimal use of its extensive natural resources and its sustainable development.

The Agreement adopts the concept of a water basin in its reference to the "La Plata Basin and [...] its direct and considered influence". In accordance with the provisions of the Agreement, the States Parties will identify areas of common interest, carry out research, programmes and public works, as well as formulate operational understandings and legal instruments that are aimed at: facilitating navigation; encouraging a more rational use of water, particularly through the regulation of watercourses and their various and equitable uses; preserve flora and fauna; improve road, rail, river, air, electrical and telecommunication connections; develop border areas; cooperate in areas such as education and health and the fight against disease and promote other projects of common interest, particularly those related to the use of natural water resources within the basin.

The Treaty establishes the Intergovernmental Coordinating Committee as a permanent body for promoting, coordinating and monitoring the progress of specific measures aimed at the integrated development of the La Plata Basin.

Amazon Cooperation Treaty

The aim of the Amazon Cooperation Treaty, signed in Brasilia on 3rd July 1978 between Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela is to encourage cooperation for the harmonious development of the Amazonian region, the preservation of the environment and the conservation and rational use of its natural resources.

The Treaty's scope of application covers the territories of the States Parties that are part of the Amazon Basin, as well as the territory of any State that is part of the Treaty and that could be considered as closely connected to such a Basin due to its geographic, ecological or economic characteristics.

The objective of the Treaty is to promote cooperation in areas such as shipping, transport and telecommunications, to encourage the rational use of water resources, scientific research and the exchange of information and technical personnel, and to provide additional health services that aim at improving sanitary conditions within the region.

The meetings of the Ministers of Foreign Affairs and the Amazon Cooperation Council make up the Treaty´s institutional framework. The Council has the authority to ensure the realisation of the aims and objectives of the Treaty and of the decisions made at meetings between the Ministers of Foreign Affairs, to recommend that States Parties hold similar types of meetings and to prepare the agendas for such meetings, to take into consideration any initiatives and projects presented by the States Parties, and to evaluate the realisation of any bilateral and multilateral project.

Protocol on Shared Water Resources between Argentina and Chile

The Act of Santiago on Hydrological Basins[59] serves as the basis for the Protocol on Shared Water Resources, additional to the "Treaty on Environment" signed between Chile and Argentina in Buenos Aires on 2nd August 1991.

The Santiago Act was signed to lay the groundwork for a future "... convention regulating the full and detailed use of water resources contained within the Argentine-Chilean basin".

The groundwork is as follows:

- Equitable and reasonable use of water;
- The preservation of ecological resources within shared basins, and the avoidance of any form of pollution;
- The preparation and signing of an agreement for the use of the water pertaining to contiguous rivers;
- Recognition that the use of successive watercourses such as rivers and lakes should not significantly damage other States;
- Signing of agreements to provide for situations in which one State takes advantage of a common lake or a successive river. The State to which the request is made shall have a period of up to 5 months to respond to any such situation in which a project could cause significant damage; and
- Submit the details of any such dispute to a Joint Technical Commission.

The Protocol was probably not what the States had in mind when signing the Santiago Act. However, it is necessary to state that the Protocol reinforces what had been already established within the Santiago Act, and, based on the concept of integrated water basin management, it emphasises the duty not to cause harm to shared water resources, to shared basins or to the environment, it establishes a Working Group within the Environmental Subcommittee to identify and prioritise shared water resources and develop plans for its use, and it determines the need for an environmental impact assessment for the introduction of exotic species into shared water resources. The States therefore established a Working Group within the framework of the Environmental Subcommittee in order to identify and prioritise shared water resources and to develop plans for its use.

59 Signed by the Ministers of Foreign Affairs of Argentina and Chile, on June 26th, 1971.

3.2.3 Asia

Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin

The purpose of this agreement, signed on 5th April 1995 between Cambodia, Laos, Thailand and Vietnam, is to establish the Mekong River Commission (MRC), and to replace an earlier agreement which established the Committee for Coordination of Investigations of the Lower Mekong Basin in 1957[60].

China and Myanmar are States which are part of the Mekong River basin but that have not signed the agreement.

The objective of the Agreement is to establish a framework for cooperation in all areas related to the sustainable development, use, management and conservation of the basin's resources[61].

States undertake to protect the basin's environment from pollution or other negative effects which may occur due to various types of development and due to the waters and associated resources[62].

In accordance with Article 5, States are obliged to use water in an equitable and sensible manner, taking all relevant factors and rules listed within the Treaty into account[63]. States further agree to cooperate in maintaining minimum flow levels of no less than the acceptable monthly minimum flow rates during each month of the dry season[64]. The Joint Committee[65] is responsible for the preparation of the necessary guidelines for determining the location and overall levels of flow, as well as for the preparation of rules concerning schedules for the dry and rainy season, the location of measuring stations, criteria for determining levels of excess water during the dry season and a mechanism for controlling the transfer of water within the basin.

The institutional mechanism which is widely used for ensuring cooperation within the Mekong basin is that of the Mekong River Commission, an international legal entity.

The Commission's organisational structure is as follows:

- The Council
- The Joint Committee
- The Secretariat

The Council consists of a single representative of ministerial or cabinet rank from each contracting State, equipped with sufficient powers to make decisions that can commit his/her government. The role of the council is as follows:

- To adopt policies, decisions and other guidelines for the promotion, cooperation and coordination of joint activities and projects directly related to the sustainable development, use, conservation and management of the basin, its waters and related resources, and to the protection of the environment;

60 Text available in 34 International Legal Materials (1995), 865.
61 Article 1.
62 Article 3.
63 Articles 5A, 5B and 26.
64 Article 6.
65 Executive body of the Mekong River Commission.

- To adopt all necessary policies and decisions for the successful implementation of the Agreement, including the Joint Committee's Rules of Procedure, the Rules to be adopted by the Joint Committee in terms of water use and transfer, a management plan, and guidelines for technical and financial assistance; and
- To resolve any differences and disputes concerning the Agreement, that are brought to the Council by a member of the Council, a member of the Joint Committee or by a Member State.

The Joint Committee shall consist of one member representing each State, part of the Agreement at a level no lower than Head of the Department. The various roles of the Committee are listed below:

- To implement Council policies and decisions, as well as all other duties that is assigns;
- To formulate a development plan for the basin, that should be periodically reviewed and modified, as and when necessary. The aforementioned plan, as well as the necessary projects and programmes for its successful implementation, shall be submitted to the Council for approval;
- To gather, update and exchange informationon an ongoing basis that is necessary for the agreement's successful implementation;
- To carry out suitable research and evaluations for the protection of the environment and for maintaining the basin's ecological balance;
- To assign tasks and supervise the activities of the Secretariat in relation to the successful implementation of the agreement, as well as its policies, decisions, projects and programs adopted within its framework;
- To make every possible effort to resolve differences that occur during regular Council sessions, submitted for consideration by one of its members or one of its Member States; and
- To review and update research and training programmes for the staff of the States involved, strengthening their capacity to implement the agreement.

The role of the Secretariat is to:

- Work under the supervision of the Joint Committee and carry out any tasks that it, or the Council, assigns;
- Provide technical services and financial advice on request of the Council or the Joint Committee;
- Develop an annual work plan and all relevant documentation relating to plans, projects, programmes, research and assessments, as requested;
- Assist the Joint Committee in managing and implementing projects and programmes; and
- Organise Council and Joint Committee sessions.

The Agreement contains provisions for settling disputes that arise between States Parties and that concern specific issues, such as its interpretation and implementation. First of all, the Commission will make every effort to resolve any such conflict. In the event that this is not possible, the issue will be submitted to the respective Governments so that it can be resolved through diplomatic negotiation. States may then request the assistance of a mediator, if they think it is necessary.

3.2.4 Europe

Agreement between Finland and Sweden Concerning Frontier Waters

This treaty, signed on 16th September 1971, applies to the Könkämä and Muonio border rivers, to the portion of the Torne River and the border lakes along the Swedish-Finnish border, and to other bodies of water and tributary streams within those countries[66].

The main purpose of the agreement is to regulate non-navigational uses of the previously mentioned border rivers, establishing specific parameters in terms of usage rights. It also stipulates that both countries can enjoy the benefits offered by the border watercourses, but that they should take nature conservation into account while doing so.

To this end, the agreement includes specific regulations for:

- Hydraulic structures, including the construction of associated facilities, the regulation of water levels and water flows, transference of bodies of water, or any other action that results in a change in the water flow, its depth or composition. The provisions relating to hydraulic structures are equally applicable to measures affecting the conditions of subterranean water, the construction of bridges or to any other structure or substructure found on any of the bodies of water covered by the agreement.
- Water regulation, establishing legal powers to grant permits and licenses on the flow of water from a lake or river to any individual party who can establish more efficient management, with the aim of promoting traffic, the use of water in generating electrical energy, agriculture, forestry, fishing, or any other type of general interest use.
- Fishing, outlining the necessary conditions for the regulation of specific fishing areas and secondary channels.
- Pollution, emphasising that no type of solid or liquid waste or other substance will be discharged into the waters at a higher level than that specified within the agreement, nor shall situations occur in which discharges may prove harmful, either through disruptive changes to the composition of the water itself, damage to fish stocks, direct harm to human populations and to health in general, or be the cause of any other type of public or private inconvenience.

To implement the agreement, the Parties established the Finnish-Swedish Frontier River Commission, a standing committee jointly governed by representatives of both States.

The Commission can deal with matters related to the violation of the operational provisions of the agreement, and has sufficient authority to take matters to court in order to resolve such disputes.

The Helsinki Convention

The Convention on the Protection and Use of Transboundary Watercourses and International Lakes was adopted under the framework of the United Nations Economic Commission for Europe (UNECE) on 17th March 1992[67].

66 Chapter 1.Article 1.

67 Text available in 31 International Legal Materials (ILM) 1312 (1992).

The States Parties to the Convention have the general duty to adopt the appropriate means to prevent, control and reduce transboundary impacts, defined as " any significant adverse effect on the environmentresulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors"[68].

Parties should take all necessary measures to ensure that transboundary waters are used in an ecologically reasonable and equitableway, for the conservation of water resources and protection of the environment[69].

The Convention establishes that States that are part of a transboundary watercourse have the duty to cooperate in the development of harmonised policies, strategies and programs that cover all or part of the relevant catchment areas, and further aimed at the"prevention, control and reduction of transboundary impacts and aimed at the protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment"[70].

In addition to the duty to prevent and control pollution, the Convention stipulates that Parties must carry out an Environmental Impact Assessment[71] and promote the sustainable management of water resources, including the adoption of an integrated approach towards ecosystems[72].

Each Party must define water quality goals and criteria in order to reduce transboundary impacts, as well as establish the necessary criteria for defining these objectives.

Various shared basin agreements have been negotiated within the framework of the Helsinki Convention, such as:

- The Convention on the Protection of the Rhine[73];
- The Agreement for the Protection of the River Scheldt[74];
- The Agreement for the Protection of the River Meuse[75]; and
- The Cooperation Agreement for the Protection and Sustainable Use of the River Danube.

68 Article 1.2.
69 Article 2 b and c.
70 Article 2.6.
71 Other agreements relevant to the conservation of water resources have been entered into within the framework of the Economic Commission for Europe, such as the Convention on Environmental Impact Assessments in a Transboundary Context of 25th February, 1991 and the Convention on the Transboundary Effects of Industrial Accidents of March 17th, 1992.
72 Article 3.1.
73 Done at Rotterdam on January 22nd, 1998.
74 Done at Charleville on 26th April, 1994.
75 Done at Charleville on 26th April, 1994.

Convention on Co-operation for the Protection and Sustainable Use of the Danube River

This Convention, signed in Sofia on 29th June 1994, applies to the Danube water basin[76] which, according to the Convention´s provisions, includes the water basin as shared by the contracting Parties[77].

The purpose of the Convention is to promote cooperation between States in managing, using and protecting waters, as well as to consolidate national and international measures to prevent, control and reduce adverse transboundary impacts. The Convention also provides that the Parties must employ measures focused on the equitable and sustainable use of water resources, as well as for the conservation of ecological resources. In particular, they have the duty to assess the importance of individual biotope elements in relation to the river's ecology and to suggest measures to improve the ecological conditions of the waters and the coastline[78].

Part III of the Convention regulates the establishment of the International Commission for the Protection of the Danube, in order to ensure the proper implementation of the Convention's objectives and provisions.

With regards to potential conflicts that may occur between two or more Parties concerning the interpretation or implementation of the Convention, such Parties shall seek a solution through negotiation or by any other available means acceptable to all of the countries in question, with the possible help of the International Commission for the Protection of the Danube.

If the disputing Parties cannot resolve the conflict within a reasonable period of time, which in any case, should not exceed twelve months from the date when a Party notifies the International Commission about the conflict, the matter shall be referred to the International Court of Justice or submitted to arbitration, as set out in Annex V to the Convention.

Protocol on Water and Health

The Protocol on Water and Health signed on 17th June 1999 is a supplementary agreement to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki Convention). The objective of this agreement is to promote good health and individual and collective human well-being, in the context of sustainable development through improvements to water management, which includes the protection of ecosystems and the prevention, control and reduction of diseases transmitted through water.

The provisions contained in this Protocol cover issues such as the supply of drinking water, questions related to water and public health and the protection of resources at the water basin level.

Parties pledge to do everything in their collective powers to prevent, control and reduce diseases transmitted through water, to strengthen health systems, improve the management and planning of water resources and ensure water environments are safe for recreational usage.

76 The States of the Convention are Austria, Bulgaria, Croatia, Slovenia, Hungary, Moldova, Romania, The Czech Republic, Slovakia and Ukraine.

77 Article 1.b.

78 Article 6.e.

Parties must encourage and facilitate the access to drinking water and the provision of public sanitation services for the fulfilment of the Protocol´s objectives. In order to do this they must establish and publish national and/or local objectives so that protection standards on diseases transmitted through water can be enforced. These objectives must be established and periodically reviewed within the context of public participation and consultation procedures. Parties must establish authorised coordination mechanisms and develop transboundary management plans at national or local levels in order to promote the importance of these objectives, take into account the physical scale of the water basin, and establish legal and institutional frameworks for the monitoring and enforcement of drinking water quality standards.

To implement the Protocol´s provisions, Parties must take into account the following set of principles: precaution, polluter-pays, good neighbourliness, intergenerational equity and subsidiarity. The social, economic and environmental value of water must also be taken into account.

According to the Protocol and to the extent possible, the management of the water basin must be undertaken in an integrated manner. In must be borne in mind that the water basin is a management unit and that the objective is to link economic and social development to that of ecosystem protection. The protocol clearly states that this approach should be taken whether in the context of a national water basin context or in the context of a transboundary water basin.

Degrees of variability are reflected in provisions linked to the need to give adequate protection to those members of the public who are the most vulnerable to diseases transmitted through water. This is also reflected in the provisions stating that all members of the population, especially those who suffer from some form of social exclusion, should have equal access to adequate amounts of good quality water.

In addition to the obligations described above, if Parties to a Protocol are both part of the same basin, they shall cooperate and, where necessary, provide appropriate assistance to the prevention, control and reduction of transboundary impacts caused by diseases transmitted through water. In particular, and where appropriate, Parties must make sure that the provisions of agreements on shared water resources do not contradict the Protocol´s basic principles.

European Union Water Framework Directive (WFD)

There are many instruments under European Community Law which are linked to the management of water resources, from directives related to the quality of water for various uses, to rulings related to the protection of natural habitats, in particular since the European Community is a Party to many treaties and agreements regulating water basins.

The Framework Directive on water[79], which modifies large sections of community law in this area, defines a specific framework for the protection of inland surface waters, transitional waters, coastal waters and subterranean waters, which:

- Prevents further deterioration, protects and enhances the status of aquatic ecosystems and, in

79 The 2000/60/EC Directive of the European Parliament and of the Council of 23rd October, 2000, establishing a community framework for action in the field of water policies.Text available in the Official Journals of the European Communities, L 327/1 of 22.12.2000.

respect to water requirements, protects terrestrial ecosystems and wetlands that are directly dependent upon these aquatic ecosystems;

- Promotes sustainable use or water based on the long-term protection of available resources;
- Protects the aquatic environment, among other surroundings, through the progressive reduction of discharges, emissions and priority substance leakages;
- Ensures the progressive reduction of groundwater contamination;
- Contributes to mitigating the effects of floods and droughts.

The environmental objective of the Framework Directive is to achieve good ecological standards in relation to water within the Member States of the European Community. The ecological status is defined differently depending on whether the water is surface or groundwater. The standards for surface water are determined by ecological and chemical factors. They are most stringent for subterranean water and depend on chemical and quantitative considerations.

The framework used for managing water resources is a water basin, defined as an area of land in which surface water runoff flows, through a series of streams, rivers and lakes and into the sea through a single river mouth, estuary or delta[80].

Member States of the European Community are required to identify the water basins located within their respective territories and to establish their boundaries. Administrative structures must therefore be established to identify competent authorities who can enforce the provisions set out in the Framework Directive.

If a river basin extends across the territory of more than one State, the Member States must ensure that the basin is included within an international hydrographical boundary, for which they will establish necessary coordination mechanisms while attempting to make use of existing processes. Additionally, when the basin extends beyond the limits of the European Community, Member States concerned should provide all the necessary measures for ensuring proper liaison with non-European members, and should make sure that the objectives of the Framework Directive are met.

Each Member State must develop a hydrologic plan for each water basin located within its territory. This plan will be supplemented by more detailed plans designed for sub-basins, different types of water and for specific usages.

For each water basin, Member States shall ensure that they conduct analyses of the characteristics of the aforementioned basin, carrying out research of the consequences of any gradual decline in water conditions, including the economic analysis of water uses. The Directive contains technical specifications for the preparation of these studies within its annexes, which are to be reviewed 13 years after the Directive has been transposed into national law and then after every 6 years.

One of the defining elements of the Framework Directive is the way it classifies water. Annex V divides surface water into five categories: rivers, lakes, transitional waters, coastal waters and artificial and heavily modified bodies of surface water. Additionally, Annex II classifies water according to ecological regions. Once the different types of water have been incorporated into ecological regions,

80 Article 2.

different types of ecological conditions are distinguished. These types of ecological conditions can be referred to as very good, good, fair or poor.

The Framework Directive sets out three different types of monitoring: surveillance, operational and investigative monitoring.

The aim of surveillance monitoring is to facilitate the classification process in accordance with the provisions set out in the Framework Directive, i.e. by taking the ecological regions and ecological conditions of the water into account. The aim of operational monitoring is to determine the status of waters unable to meet their environmental objectives, as well as assessing any changes that occur in the status of such waters. Investigative monitoring aims to identify waters which are under the risk of not being able to meet environmental objectives established within the Directive. There are also other, specific controls for protected areas.

Pollution control is another area which is regulated by the Framework Directive, where various types of control measures are established depending on the type of substances involved.

The institutionalisation of public participation is another of the distinctive features of the Directive. Member States must do everything within their power to promote and encourage public participation concerning the preparation, revision and updating of river basin management plans.

3.3 Transboundary Aquifers

To summarise what was outlined in Chapter I, aquifers are underground geological units from which it is possible to extract significant amounts of water.

The International Law Commission (ILC) defines an aquifer[81] as a water-bearing, permeable geological formation underlain by a less permeable layer, the water being contained in the formation's saturated zone.

Depending on its location and its connection to surface water, it is possible for an aquifer to supply several streams and water basins at the same time. Just as with water courses, aquifers can be transboundary but this completely depends on whether one or more area of the aquifer extends into different States.

With the development of international water law and its various regulatory objects, transboundary aquifers are now getting an increased amount of attention from the international community. This is happening since there is growing concern about the quality of subterranean resources and about the sustainability of the current rates of extraction, based on available world water reserves.

Nevertheless, the legal and political aspects of transboundary aquifers are complex. The marked differences between different legal systems and general usage policies, the extraction and control of pollution, among other factors, are all causes of an overly complex water management system. This situation has been exacerbated by the absence of specific conventions governing State relationships concerning particular aquifer systems.

81 See the 2991st meeting of the ILC, August 5th, 2008.

Finally, it is worth emphasising the need to initiate negotiations for the development of international tools to govern transboundary aquifers. This is due to the fact that national systems and legal instruments and their respective institutions are inadequate to provide solutions to disputes relating to the management of shared groundwater.

Legal issues

The main difference in the management and regulation of an aquifer at national and international levels stems from legal and institutional background issues and from the difficulties that arise from transboundary management. In practice, this implies that decisions made at the international level require the agreement and the political will of two or more States.

Furthermore, the regulation of transboundary aquifers also depends on the subject at hand. In accordance with the ILC, even though an aquifer is an integral part of a transboundary basin, the applicable legal system must be different from the system that regulates the watercourse itself. This is because by definition, an aquifer essentially contains "confined groundwater". This statement implies that there is no singular parity between surface water and groundwater systems, due to the possibility that the aquifer supplies substantial amounts of water to one or more watercourses. For efficiency and consistency, it is necessary to regulate the aquifer independently to the transboundary basin.

Of all the legal instruments discussed within this publication, the 1997 Convention is the only global instrument to include the topic of groundwater within its regulatory framework. That is to say, its principles and obligations apply equally to surface waters and groundwater[82]. However, the 1997 Convention does not specifically expand on the issue of transboundary aquifers per se, and as such, it is insufficient in this area.

The SADC Convention detailed in Section 2.1 of the third chapter is inspired by the same set of considerations as those detailed in the 1997 Convention[83].

References to subterranean water can also be found in the Helsinki Convention. The Convention aims to prevent, control and reduce transboundary impacts on shared waters, which are defined as bodies of surface or subterranean water which are prominent, cross over, or are located on the boundaries between two or more States. As such, any type of subterranean water is subject to regulation within the Convention's regulatory framework. In other words, specific legislation on the precautionary principle, the polluter-pays principle and general legislation on sustainable development, as well as the principles already analysed in the relevant section of this publication, are all imperative concerns to State Parties in relation to the aquifers that they share.

Still within the context of the European Union, the European Union Water Framework Directive, previously outlined, defines specific obligations[84] that States have to implement. State Parties are under

82 In this respect, we can refer to the analysis of the 1997 Convention, set out in Chapter 2.

83 Mechlem, K., International Groundwater Law: Towards Closing the Gaps?. In Yearbook of International Environmental Law. Volume 14. (2003).

84 The 2000/60/EC Directive of the European Parliament and of the Council of 23rd October, 2000, establishing a community framework for action in the field of water policies, published in the Official Journal of the European Communities (L 327/1) on December 22nd, 2000.

the obligation to define their subterranean bodies of water according to specific criteria set out in the directive. They are also required to establish records of protected areas within the water basins related to groundwater, to establish a groundwater monitoring system dependent on specific chemical and quantitative factors and to develop a water basin management system including a summary of human activities that deteriorate and have an impact on groundwater. Lastly, a measurement programme should ideally have been put in place in 2009 to achieve the environmental objectives established by the directive, and should be fully operational by the end of 2012. According to the directive, basic measures include, among other factors, the control of the extraction of groundwater, the control of artificial refilling of aquifers, pollution control of water sources and springs, and responsibility for pollutant discharge.

References can also be found in other regional or bilateral treaties concerning transboundary groundwater (but to a lesser extent to transboundary aquifers). Nevertheless, for all the enthusiasm and substance within the treaties regulating surface waters, they usually lack substantive obligations and specific provisions for the management of groundwater.

Guiding principles

The principle of *equitable use* is one of the pillars on which the legal system governing the use of transboundary aquifers rests. In this context, the principle is accompanied by a *duty not to cause damage or harm*. Both legal maxims are explained in the 1997 Convention, offering a framework for the possible formalisation of these expressions into instruments of international law.

Cooperation, as a voluntary action by sovereign States, is the most suitable instrument for the implementation of the guiding principles concerning transboundary aquifers. The procedural duties discussed in Chapter II of this publication are also applicable to this particular instance. The duty to give prior notification, to exchange information, to consult and negotiate have a dual function: on the one hand, they can be seen as legal obligations which are part of the set of norms and guiding principles that exist in the legal sphere for governing transboundary aquifers which are part of the shared basins and, on the other hand, they can be seen as duties for States, which have a certain degree of discretionary powers with respect to their application. This is due to there being no specific rule at the global level that formalises procedural obligations as a primary source of international water law.

Finally, the Bellagio Draft Treaty[85] puts forward a full set of principles and mechanisms for the regula-

85 The Bellagio Draft Treaty on transboundary groundwater was developed by a group of respected jurists and scientists under the common interest of identifying basic criteria for the joint protection and use of aquifers shared by two or more States. The project began in 1977 out of the interests of Al Utton and the Honourable former Mexican Ambassador César Sepúlveda in wanting to find out more about this topic. A decade later, after the circulation of several preliminary ideas, the final proposal was drawn up at a workshop held at the Rockefeller Conference Centre in Bellagio, Italy. This constitutes a response to the lack of legal and institutional mechanisms for the management of transboundary aquifers. It is based on the proposition that water rights must be determined by mutual agreement rather than be subject to uncontrolled unilateral uptake and that intelligent conservation and protective measures require a mechanism for joint management of this resource. The first draft outlines the mechanisms required for managing international aquifers in areas of significant importance by mutual agreement rather than continual subjection to unilateral resource extractions. The treaty makes reference to pollution, depletion, drought and transboundary transfers, as

tion of transboundary aquifers. In line with the aforementioned text, the following measures must be implemented in order to set-up a joint management system: the establishment of joint institutions for the implementation of the agreement, the establishment and maintenance of a joint database, the identification of critical joint management areas, and the establishment of conservation areas for the joint management and full development of management and development programs.

State practice

In practice, States resort to various types of formal and informal cooperative procedures for the management of transboundary aquifers. Nevertheless, experience shows that up until now there has been reluctance in formalising agreements in this specific field. This is the case, despite advances in the development, attention and information available on the special characteristics of transboundary aquifers.

As to the formalisation of cooperative procedures, there are two clearly defined situations:

- There is a certain amount of fear from States, about the loss of territorial sovereignty. This is to such an extent that continuous delays and avoidances are common place in finalising binding agreements on transboundary aquifers;
- It is also fairly accepted that States treat matters concerning transboundary aquifers independently as long as they remain connected to the discussion and, possibly, to the development of international legal instruments concerning international watercourses[86].

Practical examples

There are very few treaties and agreements capable or providing specific rules for the development, management and protection of aquifers shared by two or more States.

In 1997, the Canton of Geneva, Switzerland and the department of Upper Savoy in France set out an agreement for the protection, use and replenishment of the shared aquifer in Geneva. This agreement sets the foundations for a joint commission consisting of six members (three Swiss and three French). At least four of those members must be experts on the subject of water. The Commission prepares an annual plan for the use of groundwater, suggesting measures for regulating pollution control. It also approves or rejects any proposals related to the extraction of groundwater. The committee also exercises control and supervisory duties over the aquifer. It is interesting to note that this level of cooperation in the management of a transboundary aquifer is an exception at the global level.

A less sophisticated example of cooperation is the agreement reached between Mexico and the United States of America in 1973 on the specific limits to the annual extraction of groundwater within the territory of both countries over an area of 8 kilometres along the international border between Arizona, USA and Sonora, Mexico. The agreement requires that the two States mutually consult each

well as extraction and replenishment issues. The fundamental aim is to achieve joint optimum utilisation and to avoid or resolve disputes concerning shared groundwater during times of increasing pressure in terms of resource usage.The draft copy of the Treaty and other, relevant information is available at the following Internet address: http://uttoncenter.unm.edu/bellagio_treaty.html

86 Daibes-Murad, F. A New Legal Framework for Managing the World's Shared Groundwaters. IWA Publishing, 2005.

other prior to the endorsement of new developments or when substantially modifying either surface water or groundwater within their own territories. This agreement exists and was created within the framework of a general agreement between the two States through which the International Boundary and Water Commission between the United States and Mexico was created. The groundwater in the border area has been progressively included within the scope of activities of the Commission responsible for ensuring the Treaty´s implementation.

More recently, Argentina, Brazil, Paraguay and Uruguay jointly managed and coordinated the Environmental Protection and Sustainable Development of the Guarani Aquifer System Project. The project is currently operational on one of the world's largest aquifers; a body of water that stores a significant and strategic volume of water, which is mainly used for urban supply and recreational purposes. The project was carried out between May 2003 and January 2009 with the financial support of the Global Environment Facility (GEF) and with the Organization of American States (OAS) as the implemention agency.

The project´s implementation has enabled countries to deepen their technical knowledge, develop specific management tools and a Strategic Action Programme aimed at strengthening institutional capacity and regional cooperation for the managment of the aquifer. Finally, it is worth mentioning that the cooperative structure set in place relies on the operational capacities of National Management Units within the States as well as a Regional Cooperation Council consisting of institutions for national water resources, as well as for environmental and foreign affairs. It is now hoped that the technical knowledge and experience gained throughout the project will help the formation of a technical, legal and institutional framework for formalising the coordinated management of shared aquifers, with a view to sustainable management.

Other agreements also exist on the governance of transboundary aquifers, particularly in Europe, the rules of which refer to cooperating on the management and protection of shared basins.

The United Nations

As part of the international community´s impulse to further promote the governance of transboundary aquifers, the United Nations General Assembly recently adopted a resolution specifically focused on such a theme. This is a significant step forward in the development of the legal framework concerning this resource.

Resolution A/RES/63/124 (11th December 2008) of the United Nations General Assembly on transboundary aquifers was adopted at the Assembly´s 63rd session by general consensus. The Resolution is based on the work of hydro-geologists involved in UNESCO's International Hydrological Programme (IHP) and of ILC lawyers. It is also based on the International Hydrological Programme's inventory, now covering 273 transboundary aquifers, as well as the World Map of Transboundary Aquifers published in October by UNESCO's World-wide Hydrological Mapping and Assessment Programme (WHYMAP), a database containing all of the planet's water resources.

The resolution recommends that States enter into bilateral and regional agreements for the proper management of their transboundary aquifers, based on the principles mentioned above in this section.

Within this Resolution, the ILC presents to the United Nations General Assembly a draft set of articles on the law of transboundary aquifers and requests that:

a) The draft articles be duly noted within a Resolution;

b) The States agree to related bilateral and regional agreements for the proper management of transboundary aquifers based on the principles listed in the draft articles;

c) A convention based on these draft articles is considered for preparation at a later stage.

The General Assembly complied with the recommendations of the ILC by adopting resolution 63/124, thus turning this resolution into a concrete step forward to achieve the joint and sustainable management of groundwater.

3.4 Other alternatives for the governance of shared waters

Besides being a fundamental principle of international law, cooperation can take on a number of different guises and can be seen as a key component for the implementation of solutions to promote the efficient governance of shared basins. In other words, it can be seen as a mechanism through which States, by self-regulation and joint action, can reach consensus on the various uses of the river and its resources.

States that are part of a transboundary water basin may cooperate in the integrated management of this basin if they believe that it suits their national interests. This statement implies that, for a State to enter into any sort of cooperative process, it must first believe that it is going to get a specific benefit in return.

As the basis for an interstate cooperative system, another element which must be properly understood is that sharing water is not the same thing as sharing the benefits derived from water. Traditionally, the States that share a watercourse negotiate on the basis of the appropriation of water, in which situation upstream States usually have more power. However, to encourage cooperation between the States that share a watercourse, it must be understood that water appropriation is more than a zero sum game. This means that two States sharing a watercourse according to a typical upstream-downstream scenario may decide not to cooperate in joint river management, thereby acting on their account. Traditionally and depending on the type of technology available, the upstream State typically makes greater use of the watercourse, and could potentially contaminate the water within the territory of the downstream State. This is a simplified illustration of a zero sum game, a situation where there is an object (the water of the shared basin) which is fully appropriated by one of the parties involved, and where the other party is left with nothing. This is a typical winner-loser situation.

The reality is much more complex than this, since negotiations go beyond water and include elements such as health, nutrition, development and even the benefit and enjoyment of the water resource, among other factors. This means that if two or more States maintain a winner-loser relationship with respect to water appropriation, with one State losing out on the situation, this will result in denying the inhabitants of such State their rights to health, food and so on. This could lead to a vicious cycle in which we run the risk of dividing water users up into different power groups, largely dependent on their status within the water basin, generating inequalities that may eventually lead to various kinds of disputes.

Conversely, situations of positive cycles may arise in the same geographic context of a transboundary basin, if the riparian States decide to share, not only the water, but also its benefits.

It is important to emphasise that States receive more benefits through a system of integrated water basin management than through a system of isolated management. Furthermore, with respect to direct benefits and reductions in costs, cooperation can, in turn, generate other benefits that are not directly measurable, such as regional integration, economic diversification and the strengthening of political relations. In other words, cooperation in this particular context does not only imply joint management of the basin.

While this may be the main objective of the entire cooperative management process, benefits that were not initially planned during this process may surface later on, these being of great interest to the States. This type of situation may occur, irrespective of whether each State's individual management costs decrease or not during a collaborative process.

In short, when two or more States decide to cooperate in the management of a transboundary water basin, it proportionally decreases the tension which could lead to water disputes and, to a lesser extent, to other political disputes. That is why the recognition of benefits and the understanding of the necessary processes for establishing joint policies will guide the situation towards cooperation instead of conflict.

In accordance with the previous information, cooperation appears to be not just as an all or nothing proposition, but a mechanism for increasing the subsequent distribution of initial resources among all stakeholders.

Developing alternative cooperative frameworks

There are various degrees of cooperation which exist in relation to the joint management of shared basins. Such levels of cooperation can be seen as progressive phases of a process that enables States to go from a situation of conflict to one of integration. Although obligations such as the exchange of information on the basin's overall condition or the communication and notification of planned activities and projects are viewed as unilateral activities, such obligations set the basis for cooperative management.

In more advanced stages of the process, the national authorities of cooperating States implement joint national projects in order to reduce costs and also to generate a greater amount of benefits. In yet more advanced stages of cooperation, joint management entities are used in addition to specific projects for facilitating and giving continuity to the process.

However, to determine which mechanisms are best to formalise cooperation between States, different instruments are recommended depending on the specific context in which the negotiations for the integrated management of shared basins take place. Such instruments have marked differences in nature and advantages and disadvantages which clearly distinguish them from one another.

On the one hand, the instruments for formalising inter-state cooperation could be codes of conduct. Such codes refer to a document voluntarily written by two or more parties, which can be either public or private, and either physical or legal entities, who agree to reach or abide by a set of principles, goals or standards.

Given its nature, the code of conduct is a flexible document due to the fact that its adoption process is not hampered by the formalities required for negotiating an international treaty. This flexibility can also be seen by looking at how easy it is to implement the code´s provisions.

If this document is accepted at the local level in the context of a shared basin, it is hoped that if the document is clearly written and if it was adopted within the framework of a participatory process, there will be a process of gradual integration of its provisions, that will facilitate its implementation and promote its replication by other local authorities and, in this way, will gradually seep into the different hierarchical levels of governance according to a bottom up approach.

The main disadvantage of a code of conduct is its non-binding nature. Due to its lack of coercive power, it leads parties to have a degree of uncertainty in terms of meeting their commitments which means that in the end, it does not create enforceable rights for those that it is aimed at.

On the other hand, another way to institutionalise interstate cooperation is to develop bilateral or multilateral international treaties, the details of which are fully outlined in section 2 of this chapter.

As a final note, it is worth stressing that both instruments, whether codes of conduct or treaties, are not entirely exclusive. They are part of a complex procedure that requires, in addition to the formalisation of agreements, parties to respect the principles that were previously put forward in this publication.

4 Rethinking the institutions

4.1 The institutional framework for the management of shared waters

The United Nations Water Conference[87] determined that countries sharing water resources should cooperate in setting up the necessary programmes, institutions and mechanisms for the coordinated development of such resources. Specific areas of cooperation, agreed upon by the relevant States, should include activities such as planning, development, regulation, management, environmental protection, forecasting, utilisation and conservation of such resources. The Conference recommended that countries sharing water resources establish joint cooperative commissions in areas such as data gathering and exchange, the management of shared waters, the prevention and control of water pollution, the prevention of water-borne diseases, the reduction in the effects brought about by droughts, the development of activities to control floods and warning systems for such floods, and for the overall improvement of rivers.

Participants of the International Conference on Freshwater[88] stated that "[what is needed is] an integrated water resources management system in order to bring all water users to the negotiating table so that information can be shared and decisions can be made. Although faced with a huge amount of difficulties in relation to the legal framework and how it affects agreements, opinions coincide with the belief that we must expand water basin cooperation and give more vitality and validity to existing agreements". This statement led to the following set of recommendations:

- Water basins must be the framework of reference for the management of water resources and it is necessary to create institutional and participatory mechanisms at this level;
- Water can be used as an element to promote regional cooperation. It is necessary to strengthen transboundary cooperation as a means of sharing upstream and downstream benefits;
- The best way to collaboratively manage water is through long-term commitments.

The 1997 Convention provides that watercourse States, at the request of any of them, shall enter into negotiations for the management of an international watercourse. This may also potentially include the creation of a joint organisation. The Convention also establishes that States should agree on the organisation of planning for the sustainable use of watercourses, and adopt the means to implement such plans and to promote the sustainable use and protection of the watercourse[89].

The setting up of an organisation or institution is key in promoting integrated water management and essential, in the context of a shared basin, to give it some content and in order to implement the

87 Doc. E/Conf. 70/29. United Nations Water Conference Report, Mar del Plata, March, 1977.

88 International Conference on Freshwater, Bonn, 3rd to 7th December, 2001. Water: one of the keys to sustainable development, Recommendations for action.

89 1997 Convention, Article 24.

duties and powers of the States that are part of the basin, such as the equitable use of water and the duty not to cause damage.

Normally, such organisations are established by a treaty or an agreement between water basin States. In this respect, a revised version of the ILA rules has set out the following minimum consdiderations to be included within agreements for creating shared basin organisations[90]:

- Objective and purpose;
- Nature and composition;
- Form and duration;
- Legal status;
- Areas of operation;
- Roles and responsibilities; and
- Financial provisions.

It is further stipulated that a joint management mechanism at the water basin level must be competent, *inter alia*, in the following areas:

- The coordination of scientific and technical research programmes;
- The establishment of harmonized, coordinated and unified networks for observation and continuous monitoring; and
- The establishment of quality, harmonised objectives and standards for the whole basin or for a significant part of it.

Examples of the roles that such organisations perform, or are capable of performing, are:

Establishing a basis for regular meetings and for discussing topics of common interest

Parties responsible for managing shared basins within different co-riparian States have the opportunity to meet periodically in order to discuss and solve all issues related to shared resources, and not just on a case-by-case basis. Holding regular meetings gradually leads to a common way of thinking and builds trust between all the parties involved.

Promoting the exchange of information between co-riparian States

The exchange of information and knowledge between the States that share a water basin is instrumental in breaking down barriers where, often enough, distrust reigns. This is a prerequisite for getting States motivated into cooperating in the joint management of water basins.

Setting up coordinated mechanisms for the management and development of water basins

The setting up of an integrated management scheme for a water basin can only be achieved with the cooperation of all States. To a large extent, such a scheme is a prerequisite for getting support from aid agencies and attracting the attention of other States, including those that are part of the basin

90 Article 65, International Law Association, Berlin Conference (2004) Water Resources Law.

but who have not taken coordination mechanisms into account. This is, in turn, an incentive for such States to join the scheme.

Securing the assistance of donor countries and cooperation agencies

The development of a plausible and realistic collaboration scheme, applicable in practice at the water basin level (but not necessarily mirroring the requirements of all States) can push cooperation agencies to provide support to the States for its implementation.

Dispute Resolution

Organisations can contribute to the prevention of disputes in order to promote cooperation between States. Such organisations however are not a guarantee for the settlement of conflicts. It is often necessary to resort to the help of a mediator, as in the case of the conflict between India and Pakistan on the Indus River, where the World Bank acted as mediator, or to an arbitrator, as in the San Juan River conflict which arose between Costa Rica and Nicaragua, or again to an international court, as in the conflict between Czechoslovakia and Hungary over the Danube River. For more information about these cases, refer to Section 4 in this chapter.

The proper management of shared basin resources between States depends on their political will to advance cooperation, for a beneficial management system for all States within the framework of sustainability. A national institution responsible for the management of a water basin within its respective territory can influence the decisions of the institution or organisation, created for the management of shared waters. The degree of influence of such national institutions is to be determined by each State.

In brief, nothing prevents national authorities which manage a section of a shared basin (the part located within a State´s territory) to coexist with an authority or supranational body that has jurisdiction over the entire basin. The delimitation of powers and responsibilities and, as such, compatibility amongst the targeted authorities, depends on the political will of the States and the regulations that were agreed upon. However, it should be noted that a complex substructure of agencies with different responsibilities can create confusion and can be detrimental to a streamlined decision-making process, and can ultimately compromise the effectiveness of a system of governance.

A number of examples of water basin organisations are listed below[91].

The Niger Basin Authority

The Niger Basin Authority was created by the Convention for the establishment of the Niger Basin Authority, signed on November 25, 1964 and modified on October 29, 1987[92].

The States Parties to the Commission are: Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger and Nigeria.

The Authority is a supranational institution and legal entity, organised as follows:

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91 Part of this information was taken from Burchi, S., Spreij, M., Institutions for International Freshwater Management, UNESCO, IHP, WWAP, IHP-VI Technical Documents in Hydrology, PCCP Series No. 3.

92 More information available at www.ecolex.org

The Summit of the Heads of State and government of the States Parties is the highest organ of the Authority. It holds ordinary meetings every two years and is entrusted with the task of defining the Authority´s policies.

The Council of Ministers is the authority for supervision and control. It meets for an ordinary session every year. It is in charge of preparing the Summits, the development of recommendations for subsequent consideration, and for controlling the Secretariat's activities.

The Technical Committee, consisting of representatives from each State is responsible for the preparation of Council meetings, and for drafting reports and recommendations.

The Secretariat is the executive branch of the Authority.

The Authority´s mandate can be summarised as follows:

- Harmonisation and coordination of national policies;
- Preparation and implementation of an integrated development plan for the basin;
- Promotion of projects on topics of common interest for the water basin States;
- Navigation control and regulation of the Niger River, its tributaries and sub-tributaries; and
- Mobilisation of financial resources for project implementation.

In the event of a dispute concerning the interpretation or enforcement of the Convention, States shall solve it through negotiation. Should negotiations fail, the dispute may be brought to the Summit by one of the States.

In recent years, projects undertaken by the Authority have been linked to, among other things, controlling floods and droughts, improving navigation and producing energy.

The Authority is funded by annual contributions from its States Parties and receives external funding for the implementation of projects.

The permanent Okavango River Basin Water Commission

The permanent Okavango River Basin Water Commission was established through the Agreement on the establishment of a permanent Okavango River Basin Water Commission signed in Windhoek, Namibia on September 16, 1994[93].

The States Parties to the Commission are: Angola, Botswana, and Namibia.

The Commission, which meets at least once a year, is made up of three delegations, each comprising three members that are elected by the corresponding States Parties.

The Commission acts, inter alia, as an advisory committee to the States Parties on the following issues:

- Measures related to determining the availability of water throughout the entire water basin;
- The demand for water at a reasonable level by all users;

93 The text is available at www.ecolex.org

- Criteria to be adopted on the conservation, fair distribution and sustainable use of water within the basin;
- Pollution prevention; and
- Measures that can be adopted by States in order to overcome difficulties which occur during droughts.

Disputes concerning the interpretation and implementation of the Agreement shall be solved by the States.

Each State is responsible for financing its own delegation, as well as for holding Commission meetings in its own country.

The Volta River Basin Authority

Even though article 3 of the Volta River Basin Convention provides for the creation of the Volta Basin Authority, its origins can be traced back to the now extinct Volta Basin Technical Committee (VBTC). The Volta River basin States (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Togo) agreed on the creation of an Authority by signing a Memorandum of Understanding (MoU) on December 6, 2005.

The Volta Basin Authority is an intergovernmental agency with the overarching goal of improving the transboundary management of water across the entire basin. The roles of the Authority are, among others, as follows:

- To promote consultation mechanisms between States Parties for the development of the basin;
- To promote the implementation of an integrated water management system and the fair distribution of the benefits resulting therefrom;
- To authorise the development of planned infrastructure and projects by different stakeholders, that could potentially have a major impact on the basin's riverbed;
- To encourage the development of joint projects and construction among States;
- To contribute to reducing poverty, to the sustainable development of the Volta Basin States, and for better and more adequate integration in the sub-region.

In terms of structure, the Volta Basin Authority is set-up the following way:

1. The Heads of State and Government Assembly, whose main role is to determine and make sure that the Authority's objectives and goals are achieved in terms of cooperation and development;
2. The Council of Ministers on Water, the organisation responsible for formulating and monitoring sectoral policies;
3. The Assembly of the States involved in the development of the Volta Basin, which is an advisory body consisting of all relevant actors to represent various water users;
4. The Committee of Experts, whose main function is to advise the authority on technical issues;
5. The Authority's Executive Board, which implements the decisions taken by the Council of Ministers and reports on the enforcement of the resolutions adopted by the Authority.

The Mekong River Commission

The Mekong River Commission was established via an agreement signed on April 5, 1995 between Cambodia, Laos, Thailand, and Vietnam[94].

Refer to Chapter 3.2 for more information on treaties and agreements about shared waters.

The Permanent Indus Commission

The Permanent Indus Commission was established by the Indus Waters Treaty, signed between India and Pakistan in Karachi, on September 19, 1960[95].

The Treaty aims at dividing the waters of the Indus River between the States part of the basin.

The Commission consists of two commissioners, one from each State. The commissioners must be water experts, and are entrusted with the duties and responsibilities assigned to them by their respective governments.

The Commission meets at least once a year or on request of the commissioners.

The roles of the Commission, among others, are:

- To establish mechanisms for implementing the Treaty;
- To promote cooperation between Member States;
- To encourage studies and prepare reports on any issue arising on the development of the area to which the treaty applies;
- To settle any issues that may arise between the States Parties;
- To carry out regular inspections of any construction work or other services carried out within the framework of the treaty;
- To examine any questions concerning the treaty's interpretation and application; and
- To prepare an annual report, to be submitted to the States Parties for consideration at a later date.

Notice shall be given and information provided on other States concerning the work in question, whenever a State wishes to construct an engineering project that could interfere with the waters governed by the Treaty.

States participating in the treaty shall fund each project through their respective commissioners.

The Intergovernmental Coordinating Committee of the La Plata Basin Countries

The Intergovernmental Coordinating Committee of the La Plata Basin Countries (ICC) is the standing authority governing the La Plata Basin, and consists of one representative from each State Party[96].

The ICC has a plenary meeting at least twice a year. The Secretary General is the executive body and is appointed for two years by alphabetical order of the States.

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94 Text available in 34 International Legal Materials (1995), 865.
95 Text available in Legislative Texts, Treaty No.98, page 300.
96 See the Plata Basin Treaty in Chapter 3.2.

Each State Party shall appoint a permanent ICC delegate or representative. This delegate shall act as a liaison officer also monitoring the activities of the Secretary General.

The roles of the ICC are set out in Article III of the La Plata Basin Treaty where the Committee is identified as "the permanent Basin authority responsible for promoting, coordinating and following the progress of multinational efforts, to ensure the integrated development of the Rio de La Plata Basin and for technical and financial assistance which it may coordinate with the support of international agencies it deems appropriate, and for implementing the decisions adopted by the Ministers of Foreign Affairs".

The ICC is responsible for:

- Considering, approving and implementing projects, studying programmes and researching assignments on issues related to navigation, the conservation of fauna and flora, improvements to infrastructure, the promotion of projects of potential interest to the States Parties, as well as cooperation in education, health and disease control;
- Convening Technical Partner and Working Group meetings, preparing their agendas, considering reports and recommendations that may arise from these meetings and taking the necessary measures for future progress, setting them into motion;
- Negotiating, accepting and endorsing technical cooperation agreements for projects, studies and research when financed through non-reimbursable funds or grants, as well as conveying offers drafted in accordance with the programmes of national and international organisations to the appropriate Governments;
- Convening Meetings of Chancellors of La Plata Basin Countries and preparing the provisional agenda, in coordination with other bodies part of the system;
- Requesting the undertaking of studies of a technical or institutional nature by national or international authorities.

The La Plata Basin Financial Development Fund (FONPLATA) was established in 1974 with the aim of financing studies and projects for promoting integrated water basin development.

The Bermejo River Commission

The Binational Commission for the Development of the upper Bermejo River and Grande de Tarija River Basinswas established through an agreement signed by Argentina and Bolivia, in San Ramon de la Nueva Oran on June 9, 1995. The purpose of this agreement is to establish a permanent mechanism for the administration of the Upper Bermejo River and the Rio Grande de Tarija "that promotes sustainable development within this area of influence, optimising the use of natural resources, creating jobs, attracting investments, and providing sensible and equitable management of water resources"[97]. This mechanism is detailed through the Binational Commission for the Development of the Upper Bermejo River and Grande de Tarija River Basins.

The Commission comprises two delegates from each State representing the Foreign Affairs Ministries, the National Director of the Pilcomayo and Bermejo Rivers of Bolivia and the Chairman of the

97 Article 1.

Regional Commission of the Bermejo River in Argentina. The duties of the Binational Commission Secretariat are performed by the Regional Commission of the Bermejo River (COREBE) of Argentina and the National Technical Office for the Pilcomayo and Bermejo Rivers in Bolivia.

The Agreement provides that the Commission will be an international legal entity self-governed in technical, administrative and financial management issues, and that it will have the legal capacity to acquire rights and take on obligations[98].

Its roles include:

- The ability to enact its own regulations;
- Establishing physico-chemical and biological processes for the regulation of water quality;
- Managing joint projects between States Parties, regardless of their territorial location;
- Identifying sustainable development programs;
- Selecting the types of work to be carried out in and along watercourses;
- Designing, selecting, allocating and evaluating study programmes, researching activities, projects and other initiatives on water resources;
- Approving the planning and construction of bridges and other structures that cross over water-courses and which may affect the use, operation and navigation of the water contained therein;
- Identifying the areas in which the extraction of resources should not occur due to the effects on the hydraulic and morphologic behaviour of the rivers; and
- Proposing rules governing the discharge of any type of contaminants or pollutants.

The International Commission for the Protection of the Rhine

The Convention on the Protection of the Rhine[99] was signed in Berne on April 12, 1999 by Germany, France, Luxembourg, The Netherlands, Switzerland, and the European Community.

It is important to emphasise the geographical scope of the Convention, which covers:

a) the Rhine;

b) the groundwater which interacts with the Rhine;

c) the aquatic and terrestrial ecosystems that interact with the Rhine or whose interaction with it could be restored;

d) the Rhine's water basin, to the extent that pollution caused by substances considered harmful to the basin could also be harmful to the river;

e) the Rhine's water basin, vis-à-vis it's relevance for flood prevention and protection along the Rhine.

The Convention aims to achieve the sustainable development of the Rhine's ecosystem, to guarantee the production of drinking water, enhance the quality of sediments so that dredged

98 Article 4.

99 *Official Journal of the European Communities No. L 289, 16/11/2000 page 31 to 37.*

material can be spread or poured out without negatively impacting the environment, to prevent and protect against floods and ensure that the North Sea is pollution-free.

The Convention operates on the basis of the following principles:

- Precaution;
- Prevention;
- Correction at source;
- Polluter-pays principle;
- Zero increase in disturbances;
- Compensation, in the event of major technical interventions;
- Sustainable development;
- Application and development of cutting edge technology and ecological practices; and
- Non-transfer of pollution from one medium to another.

The Rhine River Commission has a permanent secretariat made up of delegations from each contracting party. Every contracting party shall appoint its delegates, including the delegation head. The Position of Chair of the Committee changes every three years between the participating contracting parties. Each delegation has a single vote, with decisions being adopted unanimously.

The main responsibilities of the Commission are as follows:

- To develop international assessment and research programmes on the Rhine's ecosystem, and to use the results, in cooperation with scientific institutions if need be;
- To prepare proposals for individual measures and action plans including economic instruments where appropriate, and taking into account expected costs; and
- To coordinate a system of warnings and alerts between contracting parties for the Rhine.

The Commission holds a regular meeting once a year, called upon by the Chair.

The Commission will share, through recommendations, its decisions on individual measures and action plans to be applied in accordance with the domestic law of the contracting parties. The contracting parties will communicate periodically to the Commission any legislative, regulatory or other measure adopted in order to implement the Convention's provisions, as well as any failure to implement, in whole or in part, the Commission's decisions.

In relation to the financing of the Commission, each contracting party shall bear the costs of its own involvement and structure of work. In turn, each contracting State shall bear the costs of any research or activity taking place within its own territory. The distribution of expenses corresponding to the annual operating budget will be established in the Commission's internal and financial rules and regulations.

With regards to any possible differences that may occur in relation to the Convention's interpretation or enforcement, the contracting parties shall resort to negotiation or to any other conflict resolution method that they consider acceptable. If the dispute cannot be solved by such means, it shall, unless

otherwise requested by the Parties involved, be submitted to the arbitration method established in the Convention's Annex.

The International Commission for the Protection of the Danube

The Convention on Cooperation for the Protection and Sustainable Use of the Danube River is an agreement between "Danubian States", which can be defined as those States sharing an important part of the Danube basin (i.e. an area larger than 2000 km of the entire water basin).

The Convention aims to provide the:

- Sustainable and equitable management of the Danube's water resources. The States Parties agree to address the risks resulting from accidents involving hazardous or harmful substances, in addition to risks arising from floods. Such States shall also attempt to reduce pollution caused by land-based effluents in the Black Sea.
- Cooperation of States Parties in the management of water resources and the adoption of necessary administrative, legal and technical measures for the adequate management of the river and of its resources.
- Prioritisation and harmonisation of measures at national and international levels across the entire water basin, for the sustainable development and environmental protection of the Danube. The aim is to ensure the sustainable use of water resources at the municipal, industrial, and agricultural levels, to restore and conserve ecosystems and to meet other requirements linked to public health.

All measures for the protection of the Danube are based on the polluter-pays and precautionary principles.

States Parties to the Convention agree to cooperate in the following areas:

- The prevention, control and reduction of transboundary impacts through the adoption of administrative, legal and technical measures to ensure the effective protection of water quality, and its sustainable use;
- The setting of limits on industrial dumping or discharges;
- The preparation of discharge inventories, action plans and reports on the overall progress of these types of activities;
- The preparation of water quality control programmes;
- Providing the International Committee with essential information for adequately carrying out its duties;
- Consulting between the States Parties, exchanging information concerning projects with potential transboundary impacts;
- Informing the public through the relevant authorities of each State Party about the condition or quality of the watercourse;
- The joint preparation of research and development programmes;
- The development of warning systems and emergency action plans; and

- Providing mutual assistance, especially in critical situations involving watercourse conditions.

The International Danube Commission is made up of delegations appointed by the States Parties. Each State Party may appoint five delegates to address specific issues.

The Chair of the Commission changes after a one-year term.

The Commission meets at least once a year and adopts decisions by consensus.

The Commission is required to develop recommendations and proposals for States Parties so that obligations that were agreed upon can be complied with. Similarly, the Commission is entrusted with proposing amendments to the agreement when deemed appropriate, in addition to being able to establish the basis for drafting new regulations for the protection and management of the Danube water basin.

The International Commission can make proposals for consideration by the Conference of the Parties.

In the event of disputes between two or more States Parties concerning the interpretation or implementation of the agreement, a negotiated solution should be sought with the help of the International Commission.

In the event that the dispute cannot be solved through negotiation, it shall be peacefully settled through the International Court of Justice or by means of the arbitration procedure established by the Convention itself.

4.2 Integrated management of shared basins

Integrated water basin management is a process which consists of making decisions on water use and on the natural resources within the water basin which interact with the water. The aim of this process is to achieve a balance between the different uses of natural resources and the impacts such uses could have on the long term sustainability of these resources. This implies the need to design and develop activities involving the water basin's natural and human resources.

Integrated management requires the implementation of social and natural sciences, and public participation in planning, consultation and decision making processes.

However, water basin management requires a balanced relationship in three areas: economic, social and physio-biological dimensions. This balance can lead to the development of schemes for the management of water which "maximis[e] the present value of the welfare of all human beings, while maintaining the viability of all existing natural systems"[100]. The aim is to manage human activities in order to preserve the quality and quantity of the water resources needed for economic and social activities and for conserving natural ecosystems.

According to Dourojeanni[101], an integrated approach to water basin management refers to the use and management of natural resources, water resources being part of a more complex and dynamic

100 Lord and Israel, 1996.

101 Dourojeanni, A., 1994, Public Policy for Sustainable Development: integrated water basin management. CEPAL. LC/R.1399, Santiago, Chile.

system, which is built upon the interrelationships naturally established between water, flora (mostly forest), soil, subsoil and fauna, and among these resources and human society.

Among the large number of variables that determine the inter-relationships between water, natural resources and society in terms of the management of water basins, a central role is played by variables linked to water availability.Attention must be drawn to the ability of forests and other vegetation layers to retain water and slow down water runoff which, to a large extent, determines the amount of seepage into the ground and the quality and quantity of this runoff. In this particular sense, we refer to forests as water "producers", not because vegetation produces water naturally, but because it is a major factor in making water available to the rest of the ecosystem, as well as for human consumption.

Forests are such important water producers, that their protection and conservation becomes an essential part of integrated water basin management, which, in turn, necessarily leads to the question of the territorial organisation of human activities.

4.3 Institutional decentralisation

The appropriate institutional framework for integrated water basin resource management requires a plurality of formal and non-formal bodies. In other words, the institutional framework must be such that the decision making processes on the access and use of a water basin´s natural resources occur in areas and instances ranging from local to national and international forums, either on a formal basis (such as governments) or on an informal basis (such as dialogues and negotiations between civil society and representatives of the government or of the private sector).

Within the concept of integrated management of shared river basins, standard governmental organisations representative of different political and hierarchical administration levels, as well as other non-formal institutions that more widely represent different water user groups, coexist within a new institutional framework. This is one of the main aspects of a modern institutional framework for shared water governance.

According to Pulgar Vidal, environmental governance depends on democratic and participatory structures, making use of both institutional and non-institutional measures (meetings, negotiations and peaceful collective activities) for dispute resolution. Furthermore, in order to effectively implement this type of governance, it is crucial to establish horizontal power relationships at internal and external group levels[102]. In other words, shared basin governance is made up of distinct management processes, characterised by complex relationships between the various parties, but is not mutually exclusive to any of these parties.

On the one hand, in the context of international relations, States, as the main subjects and interested parties in international law and international politics, have established institutions for the integrated management of shared basins.

On the other hand, in parallel, and in some cases even simultaneously, in accordance with their own

102 Pulgar Vidal, Manuel, Decentralised Environmental Governance: Opportunities for sustainability and access to natural resources on the part of the rural poor, Mink'a de Chorlavi, first edition, August 2005.

domestic law, States are responsible for urging institutions to comprehensively manage water basins as deemed necessary, usually by means of a water law. This means, from a domestic law perspective and in general, through a law that regulates waters, institutional programmes have now become available so that citizens can participate in the decision-making processes concerning the water basin, whether through water basin committees, development committees or similar institutions. Although these institutions do not have a specific mandate for addressing all issues on shared basins which require a more comprehensive regulation by way of their very own transboundary characteristics and due to their legal nature, they become ideal locations for ensuring public participation and for encouraging a direct dialogue between different users of co-riparian States.

These institutions give room for participation, coordination and cooperation among the interested parties or stakeholders: representatives of the various levels of government, the private sector, civil society and users in general.

Due to the legal vacuum and the absence of an international agreement regulating shared basins and establishing a specific institution for this purpose, coordination and cooperation between these institutions appears to be an effective mechanism for ensuring the integrated management of a water basin. Opera, for example, is a division of the institutional mechanisms which organises cooperation between States for the integrated management of shared basins. On the one hand, there are institutions derived from international law which are reflected in conventions, treaties, protocols, agreements or diplomatic notes, governed by public international law. On the other hand, there are formal institutions within a State which may be created by statutes or non-formal institutions such as those derived from political, scientific, technical, academic or from other types of dialogues created through the interaction of stakeholder groups, which, through cooperation with similar types of groups within the riparian State, create joint management processes that may result in the drafting of letters, codes of conduct and good practice guidelines for the governance of a shared basin. However, these types of institutions can have a dual function, which is explained below.

Ease of creation

This is a typical feature of this type of institution. It is due to the fact that its creation and implementation normally respond to practical needs which are generally difficult to grasp at the higher levels of a State's central government. It is often the case that local problems which may be of a transboundary nature, depending on the location, cannot wait for the necessary processes to be put in place for the creation and establishment of intergovernmental organisations as international legal entities which, in turn, need the formalities of diplomatic relations and international laws.

Legal principles and appropriation

The socialisation of fundamental principles of shared basin management is advisable under certain circumstances for these concepts to be understood by larger numbers of stakeholders and institutions and to ensure their compliance and promote a more effective type of water basin governance. In this manner, social and individual stakeholders, particularly those directly linked to the management of the water basin and its resources, can actively participate in its development and integrated management. That is to say, cooperation, integrated management, sustainability challenges and, above all, the participation of civil society, may also make use of institutions that provide the neces-

sary room for dialogue and negotiation, attending to problems from a holistic point of view, but still being grounded at the national or local level. These types of institutions can create appropriation processes at a stakeholder level which, eventually, could facilitate the integrated management of the basin.

4.4 Dispute Resolution

As discussed above, the main stakeholders in the management of shared basins are the States. Hence, in the end, irrespective of whether disputes between communities over water use occur at a local level, such disputes are interstate disputes thus requiring diplomatic or judicial intervention at the international level.

There are several reasons why disputes arise over the use of water within a shared basin. While they arise in some instances because of water quality, in others they result from a lack of water that is needed for various uses.

Here are some of the most common disputes involving water.

A classic example is when the water demand exceeds the water supply. This could be the result of the overexploitation of water resources or of inconsistencies in seasonal water availability. A classic example is when a downstream State does not receive sufficient water for meeting its needs.

Other disputes can occur due to bodies of water being contaminated. In this particular case, as previously explained, international law does not totally ban pollution, but regulates the amount of toxic materials that come from certain sources and specific substances. This is provided for in a number of agreements which establish what substances are banned from being discharged, and which materials must be regulated to avoid their excessive discharge which could cause damage and have an impact on the right of other States to the equitable use of water. In such situations, it is important to bear in mind that, unless otherwise agreed by the States concerned, the activities of a State do not necessarily establish priorities as to the use of waters within shared basins, except when it is a question of meeting basic human needs.

Another type of conflict can occur when overall use exceeds the basin's capacity to provide the sufficient quantity of water or, in other words, when a conflict arises between the uses or the human consumption of water and the amount of water needed for the environment. In recent years the environment has increasingly been acknowledged as a user of water and, as a result, we are beginning to see a trend in establishing minimum flows and/or environmental flows, making sure that pre-determined reserves or permanent levels of water are maintained within the rivers, so that essential services can continue to be provided[103].

The environment and ecosystems are users of water but they also play an irreplaceable role in its storage, in aquifer replenishment, in the purification and maintenance of water quality and quantities. No other "user" can guarantee or carry out these roles of "provider": without ecosystems and without nature, there is no water.

103 Refer to Chapter 5.4 for more information on the conservation of freshwater ecosystems.

Disputes may arise between traditional and new uses of water from Basin States. There is no special protection for existing uses of water, in the sense that international law does not give any form of priority to these historical uses. Current uses of water can even become inequitable or unfair if, due to a change in circumstances, another State is prevented from using a portion or share of a shared basin's water, which should be available based on the State´s right to equitable use.

Closely connected with the above stated type of conflict is the dispute that arises when a State does not use its share of water within a shared basin. As previously explained in Chapter 2, the States that are part of a shared basin are part of a community of interests that prevents some of them from having different rights over others, regardless of their geographical location within the water basin (whether upstream or downstream).

The fundamental principle in this particular context is equitable use, according to which States may use more water if it is deemed equitable based on certain factors. We can emphasise this by looking at a hypothetical example of a basin, shared by four States, in which fair use does not necessarily mean that each State is entitled to a portion equal to 25% of the water.

To continue with this example, the non-utilisation of a shared portion of water from any of the four States does not imply that the water can be saved for future use and the State cannot prevent other States from using it. If a State wants to save its share of the basin and claim it later, the other States would be in a position to refuse this on the basis that there is no priority given to a historic use or a vested right since this could limit the right to the equitable use of water for States.

Other conflicts may arise due to natural causes such as floods or flooding. A flood can also originate from human behaviour, for example if an excessive amount of water was released from an upstream dam, therefore causing flooding to a downstream State. Lastly, a dispute could arise from various types of industrial accidents, such as the spillage of a harmful or dangerous substances into the water, potentially killing enormous quantities of fish, polluting the water and making it unfit for human consumption. This has happened on several occasions, the most recent example being the pollution of the Tisza River due to a cyanide spill at the Baia Mare mine in Romania, affecting Hungary and Serbia (downstream). There was also the case of the explosion of a chemical plant in the Chinese city of Jilin, located in the upper reaches of the Songhua River about 140 km away from the populous city of Harbin. This disaster resulted in a toxic cloud and caused a natural disaster on the Songhua River, a tributary of the Amur River, shared between China and Russia.

According to the fundamental principle of equitable use of shared waters, States must solve disputes and find a solution acceptable to all parties involved. Ideally, dispute resolution should serve as the basis for establishing a long-term solution, which can be implemented through the signing of an agreement establishing the mechanisms for the future management of the shared basin.

Several mechanisms exist at the international level for the resolution of disputes between States:

The United Nations Charter establishes in Article 33, that the parties involved in a dispute, the continuation of which could very well endanger international peace keeping processes and international security must, above all else, seek a solution through negotiation, research, mediation, conciliation, arbitration and judicial settlement, by resorting to regional organisations or agreements, or any other peaceful means of their choice.

In the end, the use of a certain number these mechanisms depends on the States involved in the conflict, and on various circumstances such as, for example, whether there already is a signed agreement between the parties. Such a treaty can set out the initial steps and mechanisms to be followed in the event of a dispute. In the absence of such a treaty, the resolution of the conflict will depend on the nature of the dispute itself, i.e. whether the dispute is of a technical or legal nature, and whether the relationship that exists between the States is good or tense, etc.

Usually, the first step is to enter into negotiations. Such negotiations can be: bilateral, multilateral, by correspondence or through diplomatic conferences.

Diplomatic negotiations may be preceded by consultations, to exchange views and relevant information among conflicting parties.

One mechanism that can be successfully combined to the above example is the use of good offices, led by a neutral State in order to bring the States to the negotiating table.The use of good offices ends when States sit down to negotiate.

Another alternative is mediation, which consists of the intervention of a third party that aims to provide assistance to the States that are in conflict to find a solution. The mediator is a kind of facilitator, but is also able to suggest specific possibilities for arriving at a solution. Although mediation is not mandatory, an agreement still needs to be entered in order to find an effective solution.

The United Nations Charter lists research as another type of dispute resolution mechanism. Very often, disputes arise over water use due to disagreements on technical matters such as the specific need to maintain a certain flow, the technical aspects regarding the construction of dams or dykes, or tolerance levels concerning the discharge of certain substances. These types of disagreements can be solved through research carried out by a group of independent and unbiased experts, who can prepare technical reports to facilitate negotiations between the parties, thus avoiding losing time arguing on technical aspects.

When States resort to conciliation, they agree to appoint a third party in order examine the facts and propose the terms under which they seek to solve the conflict.

Some agreements on shared basins establish arbitration as the mechanism for dispute resolution on the application and interpretation of the provisions of such agreements. Such arbitration can either be an optional mechanism for States or a mandatory procedure which must be used.

Regardless of the nature of the arbitration procedure (voluntary or compulsory), it can serve as an incentive for Parties to use diplomatic measures such as negotiation for the resolution of disputes.

When no binding arbitration mechanism is in place, disputing States must sign an agreement to submit the matter to arbitration. Arbitration allows States to choose how the arbitral tribunal is organised (usually, each State appoints at least one arbitrator, which can then appoint a third party), as well as the location of the tribunal and the issues to be decided on. The arbitral tribunal adopts decisions by majority vote. The decision or award is binding for the Parties. Chapter VI details three examples of disputes solved through arbitration: the Lake Lanoux, the San Juan River and the Helmand River Delta cases.

The Permanent Court of Arbitration is another alternative for those States having chosen arbitration as a way of solving disputes on water-related matters. This court, established in 1899 through

a treaty[104], offers its services to States involved in a dispute. These States must sign an agreement for using these services. In 2001, the Permanent Court of Arbitration adopted a set of rules on environmental disputes of an optional and non-mandatory nature, that intend facilitate the resolution of disputes linked to the environment and the use of natural resources.

The final resolution mechanism available to States is judicial settlement, which involves submitting disputes to an international tribunal such as the International Court of Justice[105].

Only States can bring cases before the Court for subsequent consideration. To do this, the State must express its agreement. No State can be brought to Court without its prior consent. This agreement or consent can be evidenced in different ways. Some agreements for the regulation of specific basins establish the jurisdiction of the International Court of Justice as court of last resort for solving disputes between the States Parties. States may submit the matter to the Court by a special agreement. Lastly, States may express their consent to refer to the International Court of Justice for settling a dispute through a unilateral declaration according to which the Court´s jurisdiction is recognised. The Court's decisions are binding to the States.

Chapter VI outlines in detail two cases settled by both the International Court of Justice and the Permanent Court of International Justice (its predecessor): The Gabcikovo-Nagymaros case and the Oder River case, respectively.

The 1997 Convention contains specific provisions concerning the settlement of disputes related to the interpretation or application of the Convention[106], and to which these provisions apply, without prejudice to any existing agreement between the States.

In accordance with these provisions, States should try to solve any disputes through negotiation. If the dispute can not be solved through negotiation, States may jointly seek good offices, mediation and/or conciliation from a third party. They can also use mechanisms or institutions established through a specific agreement between the States, or they may agree to submit the dispute to arbitration or for consideration by the International Court of Justice.

The procedure established by the 1997 Convention is summarised as follows:

- Any of the States involved in a conflict may request to enter into negotiation with the other State or States.
- If negotiations fail 6 months after the original request, any Party, unless otherwise agreed upon, may refer the dispute to an impartial procedure to determine the facts. Such decision shall be made by a committee comprising a single member appointed by each Party involved, and a third member who shall be the committee's chairman, this person being of a nationality other than the countries involved in the dispute. The committee will prepare a report to be submitted to the parties involved, with recommendations for an equitable solution to the dispute.

104 The Hague Convention on the Pacific Settlement of International Disputes.

105 The International Court of Justice, established in 1945, is the main judicial body of the United Nations system. Through its statute, the Court is in charge of its own steering and operation. Its Headquarters are in The Hague, The Netherlands.

106 Article 33 of the 1997 Convention.

- At the time of ratifying, accepting or approving the Convention, or at any time thereafter, a participating country may declare (in writing to the Depositary of the Convention) that it accepts as compulsory and under no special agreement with other participating countries, the following:
  - That the conflict can be submitted to the International Court of Justice, or
  - That the dispute can be submitted to arbitration by a tribunal, unless the parties agree to the contrary, in accordance with the provisions set out in the Annex of the Convention on arbitration.

5 The dynamics of change

This chapter builds on some of the main issues required for improving the governance structures of shared waters, such as: the negotiation and preparation of agreements, public participation, decentralised environmental governance, environmental impact assessments of projects, works and activities, and the conservation of ecosystems.

5.1 Negotiations and decision making

The regulation of a shared basin is part of a political process that fundamentally involves States.

This process may lead to an agreement that could eventually be formalised within a treaty. It may lead to an agreement, in the sense that States may or may not initially agree on how to manage a shared basin. This subsequently results in an existing agreement being moulded into a politically or legally binding document, i.e. a treaty, which involves much more complex dynamics and which, ultimately, provides us with a cooperative security framework that wouldn't normally derive from political agreements, which are influenced by changes in government.

Whether or not Basin States come to an agreement depends on a number of factors, but it ultimately depends on the political determination to reaching it. With no political will there is no room for agreement or, should the agreement be achieved, it generally has little effective impact, as the points negotiated are not necessarily essential in terms of the core issues.

Politics comes hand in hand with other factors, such as the existence of good diplomatic relations between the States in question, the need to strengthen bilateral relationships, the importance of consultation processes and regional integration where the basins and water may play a key role, and the need to reflect the will of the public, by giving them the necessary legal support for processes that are possibly already taking place on an informal basis.

There is no single way to influence a process through which all States can agree. It may be that local stakeholders are empowered enough to influence local political institutions and that this, in turn, could bring to the attention of the national political authorities the legitimate claims of those with closer contact with natural resources. However, there is no single mechanism for achieving this. Communities or local stakeholders may organise consultations, campaigns, prepare pamphlets and other more technical papers, but it will greatly depend on their own democratic mechanisms and the consistency and willingness of politicians to bring such claims to fruition, and for national authorities to take the initiative to negotiate with the national authorities or neighbouring States.

Although there are differences between countries, the negotiation of a treaty basically involves two powers of the State: the executive, through the relevant Foreign Affairs ministries, and the legislative, once the treaty has been adopted, and for its approval and domestic implementation.

The adoption process of a treaty consists in several stages, in which the diplomatic, legal and technical experts of the various Foreign Affairs Ministries and other ministries are involved and can be consulted.

The stages are as follows:

- Negotiation;
- Adoption of the text;
- Authentication of the text;
- Expression of consent to be bound by the treaty (signing, ratification or accession); and
- Entry into force[107].

What are the characteristic that a treaty regulating a shared basin must have?

The treaty must include clear rules which avoid, to the maximum extent possible, divergent interpretations, ambiguities and technical errors, so as to reflect the true intention of the parties in reaching an agreement that could promote cooperation between them.

The structure of the treaty may vary according to the circumstances. In its first capacity it will have a structure including a title, a preamble, the main text with the powers and duties of the States, clauses or final provisions, signatures and, eventually, the annexes.

The main text can be structured as follows:

- Objective;
- Substantive rules;
- Rules of procedure;
- Institutional framework; and
- Dispute Resolution.

The objective defines what the treaty aims to regulate. In other words, it must clearly define the waters to which the treaty applies (the entire water basin, part of it, certain rivers, the waters creating its borders, etc), which are part of the treaty, and the activities that are regulated by the treaty and through the States.

The 1997 Convention establishes that in a situation where two States conclude an agreement, the agreement "shall define the waters to which it applies. Such an agreement may be entered into with respect to an entire international watercourse or any part thereof or a particular project, program, or use... "[108].

The substantive rules of a treaty aimed at regulating a shared basin include rules on the equitable use of the basin, the obligation not to cause harm and the conservation of ecosystems. Usually the States need to adopt other sets of rules, to enable the implementation of substantive rules. These are procedural rules and are implemented by a specific institution.

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107 For more details on this subject see, De la Guardia, E., international law of Treaties, Rodolfo Abado Editorial Depalma, Buenos Aires, 1997.

108 1997 Convention, Article 3.

Procedural rules are ultimately intended to promote cooperation between States. Such cooperation can take on different forms, with States agreeing to exchange information about the water basin on a regular basis, having the duty to inform all other States about any types of construction or maintenance work that is likely to start or which could produce negative effects, etc.

The establishment of an institutional framework for the basin is a prerequisite in setting out the principle of equitable use which, as previously explained, cannot be determined in a general manner but depends on the specificities of each basin and the different uses employed by each State. Besides contributing to the implementation of equitable use, institutions serve to prevent and solve, as necessary, any disputes that arise around the use of the waters, including how treaty provisions are to be interpreted and applied.

No institutional model can be applied to all shared basins. Institutions may vary in structure, composition and power, being either bilateral or multilateral, consisting of political or technical staff with the power to regulate all uses of water, certain rivers or only part of these waters or rivers, and also to regulate certain activities, to request information from States or to solve potential disputes that may arise between these States. The scope of these institutions ultimately depends on the political will of States during the negotiation of the treaty. It should be noted that institutions, agencies, organisations, authorities or any other convention, play a key role in the effective management of a shared basin, by providing specific content for cooperation between States, and by serving as channels for solving any possible discrepancies and disagreements that may arise.

A treaty aimed at regulating a water basin should establish a number of mechanisms for solving disputes between States, from negotiation, through adequate third party offices, to binding arbitration. For a detailed analysis of the mechanisms used in solving disputes, see Chapter 4.4.

Once the treaty has been implemented, the State must proceed with its implementation. Such implementation will take effect when the States perform their duties.

As noted previously, the main purpose of treaties or agreements on shared basins is to enable cooperation between Basin States. How this type of cooperation is implemented will depend on the political will of States, according to what these States require from the treaty. In this respect, some treaties establish a duty or obligation to regularly report to the other States in order to exchange information on the basin's overall condition, or to take action at the national level in an attempt to control pollution which occurs within a State's territory.

Other treaties seek to achieve more specific goals, for example, to reduce pollution to a predefined limit within a certain deadline, or to build certain constructions.

Similar to the discussion on the institutions, there is no specific example on how to proceed with bringing a treaty on shared basins into effect. A possible alternative, to save time and avoid the negotiations from being interrupted due to potential disagreements on technical issues, is to adopt a framework treaty which would then be followed by specific protocols. Through this alternative, States are then able to agree on the principles and bases of cooperation. Then, through supplementary agreements or understandings, specific actions can be negotiated for putting such cooperative procedures into effect, such as determining the volume or water flow capacity for each State, or the specific measures that each State must adopt in order to control pollution.

What happens when a State does not comply with the rules of a treaty or fails to implement them?

Lack of compliance with a treaty is a legal problem that may lead to serious political issues between States.

According to a specific rule of international law[109], treaties must be entered into in good faith by the States. As a consequence, if a State does not fulfill an obligation, it violates a treaty and is therefore internationally responsible.

International responsibility, however, is not a very conducive system in fostering cooperation between States. Firstly, because on many occasions the breach of a treaty is not the result of a States' free will, but because of specific circumstances that make it impossible to comply with a duty or obligation. Secondly, because once responsibility is established, it creates a situation in which one State is the accuser and the other is the accused, giving rise to controversy that opposes the ultimate goal of an agreement that regulates a shared basin, which is to promote cooperation between States. Thirdly, because even in case of non-compliance with a provision in a treaty causes the rest of the States to suspend or terminate the treaty in question, either in whole or in part, this solution may not be the most favourable or appropriate to the States involved. Hence, the system of International Responsibility is not the most appropriate for solving non-compliance disputes, thus making it necessary to take other measures.

Among such measures some are designed to assess whether the obligations of the States under the treaty have been implemented effectively and to promote a system through which to facilitate compliance in case there is a deficiency. This can be achieved by granting an institution the power to monitor the effectiveness of the measures taken by States to enforce the treaty, through a system of regular reports to be submitted to that institution. This institution will be able to promote alternative measures to be implemented by all States. An example of this type of institution is the International Commission for the Protection of the Rhine.

5.2 Public Participation

Given the importance of water to all the aspects of life, public participation is essential to make decisions concerning its overall use.

The variety of factors which may have an impact on water management requires a comprehensive system for the participation of all users of water resources, to be able to bring together the interests of all parties and stakeholders within a single set of policies.

Farmers, industrialists and manufacturers, tourism operators, water transportation and distribution companies, residents, local and central governments, among others, must be directly represented in decision-making bodies for water basin management. Without changing the behaviour of these stakeholders or production processes to reduce water consumption and sewage, without changes in agricultural systems to control erosion and reduce agrochemical use, and without the acceptance of economic water valuation frameworks from a hydrological cycle perspective, integrated water basin management continues to be a 'chimera', or is merely limited to sporadic and ad hoc interventions

109 This rule is known as *pacta sunt servanda* (agreements must be kept).

that, at the very best, help mitigate the negative effects of a disintegrated management system, but never contribute to solving the key problems that prevent us from achieving resource sustainability.

Participation in water basin management cannot be limited to consultation schemes and other types of representations with no capacity for decision-making. Participation should ensure that citizens have the power to make decisions. Real power refers to guaranteed minimum representation for all stakeholders, water users, local and regional authorities, to citizens being represented by environmental associations in the decision-making process, such as occurs within the so-called Water Councils of the Spanish Water Boards.

The 1997 Convention contains no specific provisions on public participation. The same holds true to the Helsinki Convention as well as other agreements related to the regulation of specific water basins. The Helsinki Convention, however, is part of the United Nations Economic Commission for Europe. The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters[110] (Aarhus Convention), is also part of this system, and regulates participatory issues, access to information and also justice in environmental matters. This leads to the potential problem of overlap because the Aarhus Convention also applies to the same group of States as that of the Helsinki Convention.

In addition to the Aarhus Convention, the right to participate is recognised in other international agreements and treaties that, while not directly addressing the issue of water, are strongly linked to it. The agreements worth mentioning are the Rio Declaration on Environment and Development[111], the Convention on Biological Diversity[112], the United Nations Framework Convention on Climate Change[113], the United Nations Convention to Combat Desertifcation[114], the European Union Water Framework Directive, and the European Community Directive on Access to Information in Environmental Matters[115].

With this in mind, it can be concluded that public participation in environmental issues is a part of applicable international law within this particular area. Certain conclusions can therefore be drawn about how States should regulate public participation in terms of the management of shared waters.

Firstly, States should ensure that persons within their jurisdiction, those that may be affected by decisions regarding the management of shared waters, can directly or indirectly participate in the decision making process, and are given the opportunity to express their views regarding any activities, projects and programmes relating to water resources.

An essential component of the right to public participation is access to information, since without reliable information, participation is compromised.

This right has been recognised within the majority of international agreements related to the protection of human rights, and is explained in detail in the Aarhus Convention. However, its parameters

110 Doc. ECE/CEP/43.
111 Principle 10.
112 Article 14.
113 Article 4.
114 Article 3.
115 See Articles 3, 5 and 7, in particular.

and limits are rather uncertain due to the number of ways in which it can be regulated, and due to many exceptions.

The right of access to environmental information can be broadly characterised as freedom of access to information which authorities have on a specific topic. This right may be limited, along with other restrictions, for reasons of national security (such as information on military affairs); for reasons of public interest that are more important than the individual interests in acquiring information, or due to information being secret or having intellectual property limitations; or because it could endanger certain ecosystems.

States of a shared basin must make information that is relevant to the water basin's management publicly available. No known difficulties or any unreasonable money collection requirements should therefore be imposed.

5.3 Decentralised environmental governance

Historically, matters involving cooperation between Basin States have been brought up and then driven forward by central governments. The success of such processes relied primarily on the level of political dialogue between States and on the degree of political and economic integration within a particular region.

However, taking into account what policies, rules and institutions refer to, various levels converge within shared basins from the most local aspects of a community to international relations between different States. A number of issues have to be considered at the local community level, in particular concerning the social and political dynamics that occur at this local level, and there must be speculation on the particular format or layout of certain issues, such as those that were considered for the establishment of a more comprehensive approach to shared basin governance.

Border areas, including water basins, can be areas very rich in terms of culture or biological diversity. Often, political boundaries are delimited by rivers which define specific areas for convergence, transportation and for providing access to numerous activities and ways of making a living (hydro-electrical energy, irrigation, water, fisheries, farming industries), shared by the co-riparian State populations. In some situations, border areas may include important protected areas where ethnic minorities may live, which further enriches the cultural diversity scenario.

Transboundary cooperation, as previously discussed in Chapter 3.4, is based on community relationships and territorial continuity, i.e., an area in which people live in close harmony despite the separation drawn by a political border. In these areas, neighbours are very often dependent on each other and have a certain ease of dialogue, due to the proximity in which they live. People living on either side of a political border not only share the same natural resources, but generally face the same problems, although they live in different States[116].

Due to this interdependence, work in border areas emerges as a mechanism for reducing tensions, opening lines of communication and, ultimately, for promoting cooperation among States, including

116 Matul, D., Neighbourliness, mutual cooperation: A review of Central American border practices, Central American Journal of Social Sciences, Asdi y FLACSO, Vol. IV, no.1, July, 2007, page 3.

on the management and conservation of shared natural resources.

Community identity is fully recognised within the realm of local interaction and, as such, it leads to the creation of bonds of trust and possible governance structures. Important interactions occur within these communities, reaching a point in which local stakeholders can become global points of reference, representing the local communities and the social sectors they originate from.

Transboundary populations can be seen as part of such communities and their local relationships originate in a bi-national or tri-national context, despite decentralisation processes purporting to strengthen local institutions and local identities as a response to national interests which are often very different to local interests. From a local perspective, this challenges the vertical relationships that have historically developed between border areas and local governments, setting out a new way of perceiving governance systems and decision-making processes.

These processes for the regulation and resurgence of the local level, to which many of the central government functions have been decentralised, reveal the need to speculate about the possibilities for new local institutional processes which foster the participation and representation of stakeholders and of local demands.

According to the traditional concept of governance, politics and political power are conceived as a monopoly of formal structures, such as government and political parties. Governance is defined as "the efficient, effective and legitimate exercising of power and authority for achieving social and economic goals"[117], and occurs within the context of the relationship between the State and civil society where the State has the ability to represent and respond to social demands that originally stem from the abstract notion of civil society.

Governance, however, is the more of an integrated concept that enables processes to be defined -either formally or informally- whereby a wide variety of social stakeholders with varying interests and often non-traditional activities can interact, comprehensively defining society's behaviour. Governance is broader a concept than government, in the sense that it refers to procedures and practices that, to be successful, must involve stakeholders and relevant social networks. The notion of decentralised environmental governance derives from this concept as an institutional framework, allowing decision-making processes relative to the access and use of natural resources to occur at the local level, either formally -such as through local governments- or informally-such as through discussions between civil society and government or private sector negotiators.

However, decentralised environmental governance implies the need for inclusive and participatory processes, and depends on democratic structures and contexts of peaceful participation which, for dispute resolution, makes use of specific institutional means such as State judicial power, or non-institutional means such as meetings, negotiations and peaceful collective activities. For this kind of governance to function well, it is essential to establish horizontal power relationships, internally within groups (within meetings, consultations, collective decision-making processes, etc), and with external stakeholders.

117 Pulgar Vidal, M., Decentralised Environmental Governance: Opportunities for sustainability and access to natural resources on the part of the rural poor, Fondo Mink'a de Chorlavi, first edition, August, 2005, page 2.

According to Pulgar Vidal[118], there are at least four prerequisites for putting a decentralised environmental governance process into practice:

1. *Social or share capital.* It indicates a sense of belonging to a group or community, sharing realities, identities and demands. Strong social capital involves articulated social organisations, clear leadership and a common political agenda. Moreover, social capital gives a community, "the ability to negotiate and define access to natural resources in such a way that their own populations can satisfy their sustainable needs". A lack of social capital is usually linked to scenarios of poverty and, to a lack of information and limited access to education, circumstances which favour patronage and a lack of accountability from decision-making authorities.
2. *Participation and access to information.* These conditions are essential for effectively overcoming poverty, for democratic access to timely, legitimate and appropriate information, first of all at the internal group level within decision-making processes, and secondly, at the external level, ensuring effective access to public information, justice, due processes, as well as the ability to request accountability.
3. *Presence of the Government or State.* The role of the Government in terms of decentralised environmental governance can be varied: a) It can intervene at the local level, and act as a promoter or recipient of decentralised environmental governance processes, b) It can facilitate access to natural resources, c) It can formulate public policies and, d) It can act as a disputed stakeholder that promotes acts of exclusion.
4. *Institutional architecture*. Non-formal mechanisms created to facilitate social interaction and planning, and to define the institutional structures that involve "the organisation of physical spaces and mechanisms for the participatory decision-making process".

Decentralised environmental governance processes are aimed at promoting decentralisation and building strategies so that local agendas can be more widely accepted and have a greater impact both at the national and regional levels. It should be noted that an important outcome of decentralised environmental governance processes must be to establish conditions that will ease access to natural resources for disadvantaged populations, so that they can responsibly make use of the necessary means for sustaining their livelihoods and, as a consequence, create alternative development processes, and can contribute to overcoming poverty. These are reasons for promoting self-management and the strengthening of local organisations.

To summarise, the considerations previously pointed out allow us to conclude that the processes and mechanisms for decentralised environmental governance must be properly considered in the context of shared basin management, and particular attention should be paid to the specificities of each water basin. Along with traditional tools, previously mentioned in this publication, these processes can be used to generate change and to promote a more comprehensive approach to legal and institutional issues concerning the governance of shared waters.

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118 Pulgar Vidal, M., Decentralised Environmental Governance: Opportunities for sustainability and access to natural resources on the part of the rural poor, Fondo Mink'a de Chorlavi, first edition, August, 2005, page 4.

5.4 Environmental Impact Assessment

An Environmental Impact Assessment (EIA) is a preventative environmental management tool, used by most countries around the world to assess the possible effects of activities and projects carried out within their own territories. This tool is presented as one of the necessary components for changing the way in which transboundary waters are managed.

The duty to protect the integrity of ecosystems and ensure their sustainable development is an obligation of international law in both a national and transboundary context. In other words, States have a duty to preserve the ecosystems within their territories and to ensure that activities taking place within these areas do not affect the ecosystems located within the territories of other States, or in any areas not within the jurisdiction of these States, such as the high seas, for example. This duty to preserve ecosystems could not be properly implemented without an assessment of the potential impacts produced by any activity or project.

In order to regulate the EIA under national law, States have adopted their own varied laws and regulations: some of these are very detailed, concerning the activities and projects that need to be evaluated and the procedures to be followed, and others in which details are given for regulation at a later date. While some countries have specific EIA laws, others rely on general laws for governing the environment, and others include the EIA in sectoral laws (mining, water, etc).

In domestic law, the legislation on EIA establishes in which particular cases the parties involved in a public or private project must perform an EIA. The State, through its institutions, ensures by means of supervision that the procedure be performed in a timely manner. Individual parties may turn to the institutions in cases where it is not possible to conduct an EIA, or where the EIA has been performed poorly due to non-compliance with proper procedures, etc.

In the context of a shared basin, the issue is not as simple.

As already explained in Chapter I, transboundary basins are natural resources shared between the States to which they apply, and which are subject to international law and to the domestic laws of each State in relation to the portion of the basin that lies within each State's respective territory.

In this particular instance, every Basin State shall carry out its own EIA on the activities and projects conducted within its territories and which could have an impact on the environment, in accordance with the provisions set forth within national laws. A number of these laws may take the impacts of the aforementioned activities and projects into account, but this is not mandatory. What happens when an activity or project has an impact beyond a State's territory? How is this issue regulated?

Except on a few rare occasions, national laws do not normally regulate transboundary impacts.

As already explained in Chapter 2.4, international law stipulates that States should abide by the principle of good neighbourliness. This principle is present in several international treaties and its practical implementation requires the prior execution of an EIA, including a number of considerations, as outlined below:

- Communication and consultation with other States regarding the potential transboundary environmental risks would be of little value or use without a prior EIA;

- The duty to communicate potential environmental risks to other States implies not only reporting the risks that are known, but also to know what should be reported on. For this reason, it is necessary to conduct an EIA; and
- If transboundary environmental damage occurs and the State causing this damage has not carried out a prior EIA, it will be difficult to prove that the State acted in due diligence and, as such, that the State is not responsible.

This leads us to conclude that, irrespective of the law and the EIA procedure applied by a State at the national level, when activities potentially produce effects extending beyond a State's borders it is the duty of such a State to communicate these events with the neighbouring countries that may be affected. It is thus necessary to conduct an EIA.

There is no global treaty on EIAs in a transboundary context that determines how an EIA is to be carried out in these situations, although this does exist at the regional level, as will be explained later on. States can also regulate a transboundary EIA on a bilateral level. The question is what will happen if the EIA process is not regulated at the bilateral or multilateral level between the States concerned? What procedure must be followed? Who sets the rules in terms of the activities to be evaluated and for the assessment process?

The procedure to follow is not the same as the one set forth by the laws of the States, for national EIAs: This is the case unless these laws provide for a specific EIA system that recognises transboundary environmental risks, and if the States mutually recognise the implementation of these national procedures.

The most viable alternative is to regulate this matter through a treaty or special agreement. In the particular case of shared basins, an option might be to include provisions on EIA within the wording of the treaty or agreement which regulates the basin, and also provisions on participation in EIA procedures taking place in other States and on the specific rules of the procedure to follow. Through this procedure, Basin States should conduct an EIA in specific situations in which activities or projects carried out within their territories or jurisdictions may affect the aquatic environment of all or part of the basin, regardless of State jurisdictions.

Two key issues need to be determined. One is to know under what circumstances an EIA should be carried out. The EIA must be carried out in situations where activities take place that could have a negative impact on the environment, but not when these impacts are minor or temporary.

The second is to define when to carry out the EIA and to determine at what moment it becomes mandatory. There are several possibilities.

The first possibility is to apply the precautionary principle. This principle of international law allows political decisions not to carry out an activity or project which could negatively affect the environment to be exclusively based on a risk of possible damage or harm, and does not require absolute scientific certainty. In other words, scientific certainty that the aforementioned activity or project will have a negative impact on the environment is not necessary before subjecting an activity or project to an EIA. In these cases, the threshold of risk is low.

The second possibility is based on a minimalistic approach, according to which all activities should

undergo a preliminary or initial EIA[119], a full EIA only to be conducted if there is a greater impact on the environment.

The third possibility is to use an exhaustive list. In this particular case, this means drawing up a list of activities that are likely to produce major impacts and that need to be subjected to an EIA. Should there be a dispute between States as to whether an activity or project requires an EIA, it may be referred to an investigations commission such as the one established under the Espoo Convention, which will be explained in more detail further on.

Some of the most important aspects to be taken into account within an EIA system designed to assess the possible impacts caused by projects and activities within shared basins are:

- Such situations in which an EIA will be carried out (including an exhaustive list of activities and projects that must be subjected to an EIA, including indicators for all activities and projects that are not included in the exhaustive list, indicating when they will be subjected to an EIA);
- An assessment of the waters and ecosystems that could be affected;
- A description of activities or projects and any possible effects, with special consideration given to transboundary impacts;
- Identification of the ecosystems that could be affected;
- A description of the mitigation measures used for minimising negative effects on the environment;
- An analysis of polluting substances, including their levels and flow rates within the water basin, as well as the effects that these substances could have on human health and ecosystems;
- An identification of human activities that may be affected by the project or activity in question;
- A list of possible alternatives, including the alternative that the project is carried out;
- A method for making predictions, including the information used and any possible deficiencies;
- A study on the risks of accidents or disasters;
- A technical summary; and
- The possibility for the citizens of the State affected by the project or activity to participate in the EIA procedures under the same conditions as the citizens of the State carrying out the EIA. This is not always the case. States do not always recognise that citizens of other States require access to justice thus discriminating them vis-à-vis their own nationals. In this respect, affected individuals will only be able to complain or protest within their own States, who, in turn, will submit the complaint to the State carrying out the activity that causes the transboundary impact.

As mentioned above, there is no global treaty for regulating the EIA procedure in terms of transboundary risks. There are however a number of regional tools, the most detailed of which is the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), a regional treaty that operates under the scope of the United Nations Economic Commission for Europe[120].

119 As in the case of the Madrid Protocol on Environmental Protection to the Antarctic Treaty.

120 Adopted on February 25, 1991, in the city of Espoo, Finland.

Even though the Espoo Convention has limited regional application its most important aspects are still worth mentioning, since it provides for a system that can be considered a reference model for regulating the EIA in transboundary environmental risk situations.

The Espoo Convention entrusts States with taking measures to prevent, reduce and control the potential negative transboundary impacts of certain activities on the environment. The concept of environment, as defined by the Convention, is included within the definition of an impact[121], and is of an inclusive nature. The definition of an impact is supplemented by the definition of a transboundary impact, which is defined as "any impact, not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or partly within the area under the jurisdiction of another Party".

The Convention lists activities or projects that are in any case subject to an EIA, and also includes guiding criterias for all activities not included in the above mentioned list.

Under this system, the Party of origin[122] shall ensure that an EIA be carried out in accordance with the provisions set out within the Convention, before taking the decision to authorise or undertake a proposed activity listed in Appendix I[123,] which could have a significantly damaging transboundary impact.

Appendix III of the Convention provides criteria aimed at determining the extent of the impact of certain activities on the environment. Among the factors worth taking into consideration are extensions to activities and their respective locations and possible effects (and whether the effects are particularly complex or even harmful, including activities which could have serious consequences for humans, species or other organisms given special value, in addition to activities that could compromise the current or potential use of an affected area).

In relation to the EIA procedure, the Espoo Convention notes the importance of a State's national legislation, but still establishes its own set of minimum guidelines or policies to be followed.

The duty to cooperate on transboundary issues binds the State Party of origin to notify other affected States of any other activities, listed in Appendix I, that are likely to have a transboundary impact. According to the Convention, the duty to cooperate must be exercised "as early as possible".

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121 According to Article 1, impact means "any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors."

122 The party under whose jurisdiction the proposed activity is to be carried out.

123 Oil refineries; thermal power plants and other combustion plants whose production exceeds 300 MW; nuclear power plants and other nuclear reactors; facilities for the production or enrichment of nuclear fuel; large facilities engaged in the primary processing of cast iron and steel and the production of non-ferrous metals; facilities for the extraction, treatment and processing of asbestos; construction of motorways, roads, long distance rail lines, airports with a runway length of greater than or equal to 2100 metres; very long oil pipelines and gas pipelines; commercial sea ports, river ports and waterways that allow the passage of vessels of over 1350 tons; facilities for the disposal, incineration, chemical treatment and discharge of hazardous waste; large dams and reservoirs; groundwater catchment works where the annual volume of waterreaches or exceeds 10 million cubic metres; pulp and paper mills with a minimum daily production of 200 air-dried metric tons; large-scale mining facilities; extraction of hydrocarbons at sea; large-scale storage facilities for petroleum, petrochemicals and chemicals; felling or destruction of large areas.

This notificiation shall contain information about the nature of the proposed activity, including any available information on its possible transboundary impacts, and shall provide an indication of a reasonable time within which a response is required.

If the affected party decides not to participate in the EIA process or chooses not to respond within the deadline, the Party of origin may continue proceedings in accordance with its own domestic laws and practices. In cases in which the affected party decides to take part in proceedings and, assuming it has received information concerning the activity in question and on any possible impact, it must communicate to the Party of origin, on request of the Party of origin, any information reasonably available and necessary for preparing the EIA[124].

If one of the Parties considers that one or more of the activities listed in Appendix I could have an adverse transboundary impact, but that it has not been notified to this effect, the parties concerned shall exchange information to initiate talks to determine the likelihood of harm or damage that could be caused by transboundary impacts. If no agreement can be reached, the matter may be referred to the Commission of Inquiry set out within the Convention[125] except when another dispute resolution process has already been chosen.

EIA documentation to be submitted to the Party of origin's competent authority must contain, at least, the information specified in Appendix II of the Convention[126].

Before making a final decision on the proposed activity, the aforementioned documentation concerning areas likely to be affected should be made available to the affected party and its authorities, as well as to the public[127].

Once this phase of the procedure has concluded, the Party of origin will enter into discussions with the other party about the potential transboundary impacts of the proposed activity, including mitigation measures, zero option or non-project possibilities, and provide mutual assistance for reducing any type of harmful transboundary impacts[128].

When making final decisions about any proposed activity, the parties involved shall ensure that the results of the EIA, the documentation and other additional comments are taken into account.

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124 Article 3.6.

125 Appendix IV contains detailed measures on the appointment of members of the Commission, its internal procedures, research processes, etc.

126 The following is listed under Appendix II: "a) A description of the proposed activity and its purpose; b) A description, where appropriate, of reasonable alternatives [...] to the proposed activity and also the no-action alternative; c) A description of the environment likely to be significantly affected by the proposed activity and its alternatives; d) A description of the potential environmental impact of the proposed activity and its alternatives and an estimation of its significance; e) A description of mitigation measures to keep adverse environmental impact to a minimum; f) An explicit indication of predictive methods and underlying assumptions as well as the relevant environmental data used; g) An identification of gaps in knowledge and uncertainties encountered in compiling the required information; h) Where approapriate, an outline for monitoring and management programmes and any plans for post-project analysis; i) A non-technical summary including a visual presentation as appropriate [...]".

127 Article 4.

128 Article 5.

The Party of origin must inform the affected party of the final decision regarding the proposed activity[129].

The Espoo Convention contains specific provisions on post-project analysis, such as monitoring and tracking how measures are enforced, the degree of compliance and overall effectiveness. It establishes that the interested parties, at the request of other parties involved, shall determine the need to carry out further assessments, including monitoring of activities and defining possible adverse transboundary impacts. If the post-project analysis determines that adverse transboundary impacts are imminent or likely to occur, the parties concerned shall enter into discussions in order to determine the best course of action to reduce or eliminate these impacts[130].

5.5 Ecosystem conservation

At the international level, States have expressed on countless occasions the importance of freshwater ecosystems in supplying water, and the need to consequently ensure that these ecosystems are recognised as water suppliers and users.

The participants to the International Conference on Freshwater recommended that:

- Water must be distributed in an equitable manner in order to meet, first and foremost, basic human needs, and to allow the proper functioning of ecosystems and of water's different uses for the economy, including to guarantee food safety;
- Mechanisms for the distribution of water should strike a balance between competing water demands, and the social, economic and environmental value of water must be taken into account. These mechanisms should promote an integrated form of management. In other words, the relationship between surface water and groundwater, inland and coastal regions, urbanisation, land administration, desertification, environmental degradation, and ecosystem integrity, should all be taken into account;
- The integrated management of water resources must be sustainable and provide the maximum benefits to humans, while still protecting the integrity of ecosystems;
- The overall value and operational uses of ecosystems must be recognised in terms of water distribution and water basin management;
- Water distribution processes must ensure a minimum level of flow, so that ecosystem integrity can be maintained.

The ecosystems[131] fulfill various roles which go from the regulation of essential ecological processes (e.g. that of the climate, water and biological control), to information (spiritual, historical, educational,

129 Article 6.
130 Article 7.
131 In accordance with Article 2 of the Convention on Biological Diversity, an ecosystem is a complex dynamic community of plants, animals and micro-organisms, including that of the non-living environment, interacting as a functional whole. According to the Vision for Water and Nature, an ecosystem is a limited area consisting of a biotic community that interacts with the physical environment, in such a manner that a flow of energy leads to a clearly defined trophic structure (food network) and to material cycles within the system.

scientific, recreation), production (such as food, genetic resources, fuels) and to the provision of habitats for plants and wild animals of diverse biological and genetical backgrounds.

Part IV of the 1997 Convention refers to the protection of ecosystems. The 1997 Convention establishes[132] that States must protect and preserve their own resources and, where collectively appropriate, the ecosystems of international watercourses. There is also a provision[133] linked to the obligation to take every possible measure to control the introduction of potentially harmful exotic species into the ecosystems of international watercourses.

One issue that has not been sufficiently clarified is the actual scope of protection. The provisions of the 1997 Convention on the protection of ecosystems raise the following questions: which ecosystem does this refer to? Is it the ecosystem of the watercourse as a whole, or the ecosystem of a particular riparian State?

Given the need for a suitable ecosystems approach[134], the only possible answer to these questions is that the Convention refers to the watercourse ecosystem as a whole. In support of this argument is the fact that the 1997 Convention also establishes the need to take every possible step to protect and preserve the marine environment, including that of estuaries[135], once again demonstrating a comprehensive approach to the management of international watercourses.

Other international treaties such as the Helsinki Convention include more extensive provisions on the subject. In accordance with the provisions of this particular Convention, States shall, among other duties, take all of the necessary measures to ensure the conservation of the watercourse and, where necessary, the restoration of ecosystems.

The Agreement concerning Cooperation for the Sustainable Development of the Mekong River Basin contains, possibly, the most complete set of provisions on the subject, since it stipulates that States have an obligation to protect the environment, natural resources, fauna, aquatic conditions and the ecological balance of the Mekong River basin, against pollution and other adverse effects that result from the development of specific plans or of certain uses of water and of other related natural resources found within the basin[136].

The majority of agreements on shared basins adopted from 1990 onwards, reflect not only an obligation to control pollution but also the obligation to include environment-related considerations related to the conservation of species, to ecosystems and to the preservation and control of impacts on the marine environment. In the case of the Helsinki Convention, the 1997 Convention, the Convention on the Mekong River Basin, or the Protocol on Shared Watercourses Systems in the Southern African

132 Article 20.
133 Article 22.
134 The ecosystem approach is a strategy for integrated management of land, water and living resources, promoting conservation and sustainable use in an equitable way. It attempts to meet human needs in terms of fresh water usage, but at the same time, tries to conserve the biodiversity and hydrological and ecological processes necessary for maintaining the structure, composition and functions of the ecosystems. In other words, it is a comprehensive approach that aims to achieve the Convention on Biological Diversity´s three objectives in a balanced way: conservation, sustainable use and fair and equitable sharing of benefits arising from the use of genetic diversity.
135 Article 23.
136 Article 3.

Development Community (SADC), it is stated that the States of a shared basin system must maintain a proper balance between the development of the basin for a better standard of living for the population and the preservation and improvement of the environment for the promotion of sustainable development[137].

Environmental flows

The need to provide environmental flows is increasingly accepted as an essential part of integrated water management, especially for resolving issues relating to the overall health of freshwater ecosystems, their sustainable development and the equitable distribution of the benefits derived from these ecosystems among all of its users, including the environment.

At the national level, only a small number of countries recognise the importance of non-consumptive uses of water and, therefore establish specific provisions for environmental flows.[138] Nevertheless, there appears to be growing awareness of these issues.

The concept of environmental flow has evolved over time. The book FLOW[139] establishes that environmental flow is the system employed within a river, wetland or coastal zone for maintaining ecosystems and their benefits, in cases where there are competing uses of water and where the flows have been regulated.

Environmental flow is not the same as the minimum or average flow. For its stabilisation, it is essential to ensure the natural variability of the body of water and to adopt accompanying measures through specific management practices at the water basin level -such as water concessions or measures for regulating the use of land.

The importance of sustaining environmental flows stems from the overall need to maintain the assets and services that constitute freshwater ecosystems (e.g. drinking water, fisheries, fibre and timber production, flood mitigation processes, water quality and quantity maintenance, aquifer replenishment, recreational needs, transportation routes, cultural, aesthetic and leisure activities and values).

In terms of determining and regulating the flow, it is essential to note that the degree of environmental health of ecosystems is a decision made by society. In future, bearing that in mind, it will be necessary to achieve a balance between ecological requirements for the maintenance of the ecosystems and that of other requirements, such as the generation of hydro-electrical power or irrigation.

Based on this potential conflict of interests, it will be necessary to define the basic standards on which decisions will be taken, to anticipate the expected results and to assess the cost-benefits of the adoption of a regulatory system. Ultimately, the allocation of water for different uses is a political decision which may involve the central or local governments, and even environmental groups and communities of irrigators. This allocation should be part of a participatory and multisectoral, integrated management plan at the water basin level.

In general, the system used for governing a body of water entails determining the rights and duties of all users in relation to its use. If this system is ultimately destined for regulating environmental flows,

137 Article 1.

138 For example: Australia, Spain, South Africa, USA, and Switzerland.

139 Flow: essential elements of environmental flows, IUCN Regional Office for Mesoamerica and IUCN Centre for Mediterranean Cooperation, 2004.

it must be acknowledged that the environment is a user of water. If the environmental flow is not already recognised within the water resource system, it will need to be recognised, in the sense that the lack of clear regulations will lead to a lack of environmental protection for other water users.

It is important to note that the mere recognition of the environment as a user of water will not be enough if this recognition is not accompanied by means for its implementation and for appropriate legal action. Among these measures, the following distinctions should be made:

a) Scale;

b) Organisational measures;

c) Preventive measures;

d) Dissuasive measures;

e) Participatory measures;

f) Corrective or palliative measures.

The measures for determining scale are intended to establish the context in which the environmental flow system operates. As an indivisible management unit, the water basin is the most appropriate measurement system. Nevertheless, the implementation of this scale presents a number of complications, due to the legal and institutional fragmentation that exists in terms of the regulation and management of all resources found within a water basin.

A certain degree of harmonisation between the laws of the States sharing the basin will be necessary if decisions are to be taken at the level of the water basin.

Another drawback in using the water basin as a management unit for providing environmental flows is the application of the principle of subsidiarity. In the context of water resources, this principle establishes the need to manage the resource at the lowest possible level. It may present practical difficulties, in the sense that the water basin as a unit is not necessarily the lowest common denominator.

Organisational measures aim to establish a structure capable of allocating water for different uses, to centralise the possible exchange of water rights, determin any compensation levels that may be necessary for different water uses, make sure that land and industries are unaffected, and establish a governing authority.

Preventive measures are steps for preventing impacts and any possible damage which could be caused to the environment, and as such, these result in setting up systems for environmental impact assessments of projects, programmes, plans, policies, and legislation.

Dissuasive measures relate to the control of activities which could directly or indirectly affect the sustainability of water resources. Among these can be outlined the fixing of fair water prices in order to avoid waste; the establishment of disposal or landfill fees for controlling pollution; and the implementation of a system for penalties and fines.

Participatory measures are rules to guarantee public participation in decision-making processes which here, relate to water resources, and to ensure the community has a role as comptroller during the implementation of such decisions.

Palliative or corrective measures within a system of environmental flow are based on the premise that such a scheme can be adapted to specific phenomena such as climate variability, the need to preserve rare habitats or endangered species, the specific requirements of certain landscapes or water cycles, or any possible change in perception from the community concerning the allocation of water and its uses.

The third part of the definition of an environmental flow relates to the various uses of the resources originating from a body of water, which refers to the existence of competition over the use of water or, in other words, to a situation in which the environmental use of water is in direct competition with domestic, agricultural, industrial or recreational uses.

Throughout the process of allocating a suitable amount of environmental space within the context of competing water usage, it is important to clarify that, from the perspective of water resource conservation, allocating water to the environment as a physical user of this resource is very different to determining the amount of water to be attributed to different uses and only establishing water conservation requirements at an incidental level. In this case where other competing uses of water also exist, water is not directly allocated to the environment unless there is a general duty to conserve water for purposes other than for the environment.

The existence of indirect protection measures such as those described above should not be construed as precluding the need to directly recognise the environment as a user of water in its own right, in the sense that there should also be a specific quota for the environment when decisions are made on the allocation of water to be distributed equitably for all its different uses.

Lastly, one final aspect of environmental flow is its relationship with already regulated flows. In other words, the application of an environmental flow concept implies, in addition to competition between the environment and other water users, the inexistence of a pristine body of water free from human intervention.

As stated at the beginning of this section, only some States have succeeded in regulating environmental flows within their national laws.

In comparison to regulating environmental flows within a specific country, this provision in the context of shared water resources between two or more States is a burdensome task. This is because it is not enough to adopt a law recognizing the environment as a water user in its own right, therefore allocating a certain quota, if States have not first reached an agreement recognising the environmental use of water as one of the determinants of equitable and reasonable use, or, in other words, if there is no agreement between States which take the environment into account when allocating shared waters, in addition to human, industrial, farming and mining considerations.

The allocation of water for the environment in the context of transboundary water resources shares a common problem with the allocation of water for the environment at the national level: the problem of recognising the environment as a water user and, possibly, recognising that it has a share when it comes to water distribution. How is this distribution carried out? In an *a priori* manner? What role does society play? This depends on the legislation. In a nutshell, for the environmental flow to be effective, a series of measures that go beyond simply providing a law for establishing minimum or ecological flow levels must be adopted.

As previously described, this is not an easy task at the national level, and is even more complex at the international or transboundary level. It does not only require that a single society recognises that freshwater ecosystems are in need of protection, but also that at least two States agree on this.

The supply of environmental flows in a shared basin context requires that States look beyond their own personal interests and consider the health of the water basin as a whole. From a practical perspective, this requires the application of existing principles as well as new and dynamic ways of managing water basins for the fair distribution of the various uses of water among all States, and the development of compromises as well as the equitable sharing of benefits derived from all different uses.

In order to establish a system of environmental flows which ensures the health of ecosystems, it will be necessary to take a number of measures, beginning with the comprehensive review of all water uses, for the subsequent adoption of an agreement establishing the distribution of available water.

Through specific treaties between States, international law has regulated river flows in order to facilitate navigation, produce electricity, protect commercial fisheries, enable timber flotation, provide flood control and maintain operations in purifying rivers among other things; various examples already exist in this respect.

The need to provide environmental flows in order to conserve the ecological integrity of water basins is becoming more and more important[140]. Recognition of the duty to protect ecosystems, as set out in the 1997 Convention and the Helsinki Convention, in addition to that established in the Ramsar Convention, is discussed in the next section, setting the stage for the provision or regulation of environmental flows in shared basins.

As an upshot of what has been discussed above, it can be stated that the supply of environmental flows, defined as a water resources management system including measures on water quality and quantity, can serve as a vehicle for giving practical meaning to the obligations and duties of the States, for example in terms of the equitable use of water and the duty not to cause damage or harm within the general context of the obligation to cooperate and, above all, for the conservation of ecosystems.

The Convention on Wetlands of International Importance (Ramsar Convention)[141]

The Ramsar Convention was the first global environmental treaty to refer exclusively to the protection of natural habitats. Although not a treaty concerning the management and conservation of shared basins in itself, but on account of its fundamental importance in protecting aquatic ecosystems, including fresh water systems, in addition to development that has taken place in recent decades in relation to wetlands in a water basin context, it is necessary to underline some of the Convention's most important aspects in relation to the subject matter of this book. The Convention´s Preamble recognises "the fundamental ecological functions of wetlands as regulators of water regimes and as

140 Examples include: the Agreement on Cooperation for the Sustainable Development of the Mekong River Basin; the Convention on Cooperation for the Protection and Sustainable Use of the Waters of Hispano-Portuguese Water Basins; the Framework Agreement for the Sava River Basin.

141 The Convention on Wetlands of International Importance, especially as Waterfowl Habitat, was adopted in the city of Ramsar, Iran, on February 2, 1971.

habitats supporting a characteristic flora and fauna, especially waterfowl". The Convention currently considers wetlands within the comprehensive aquatic systems concept. Rivers can be included within the broad concept of wetlands, as stated in Article 1[142].

The progress made by the Ramsar Convention in relation to water basin issues has been due, in essence, to the resolutions and guidelines adopted by the Conference of the Parties. Such tools or instruments suggest and recommend that the Ramsar Parties adopt certain measures, programmes and policies, which act as recommendations and are therefore not of a mandatory nature. The Conference of the Parties has recognised the hydrological, biological and ecological importance of wetlands in the context of a water basin[143]. There is a complex relationship between rivers and wetlands in the sense that they both act as water reservoirs, filling and emptying aquifers, or acting as protection against floods or intrusions from the sea. Changes in systems governing rivers affect the associated wetlands and vice versa. The poor management of environmental flows can have a significant impact on wetlands and their associated biodiversities and, in turn, can adversely affect the health of the river and the water basin. The Convention recognises this relationship and proposes a series of measures for the regulation of wetlands.

Based on the idea of the sensible use of wetlands[144], the initial guidelines adopted in 1990[145] and supplemented in 1993[146] have determined that States Parties must establish their own national policies on wetlands, taking into consideration overall improvements in institutional and legal frameworks, improvements in the understanding of the value of wetlands, a revision of the status and the identification of priorities for all wetlands and the resolution of specific problems in certain areas.

During the Seventh Conference of the Parties, additional guidelines were adopted for promoting the sensible use of water, particularly Guidelines for reviewing laws and institutions, with the aim of promoting the conservation and intelligent use of wetlands[147], in addition to Guidelines for integrating the conservation and sensible use of wetlands within the water basin management system[148]. These final guidelines have useful recommendations concerning the conservation of water basin ecosystems. During the Eighth Conference of the Parties held in Valencia in 2002, the Contracting Parties adopted Guidelines for the fair distribution and management of water resources, aimed at maintaining the ecological functions of the wetlands[149]. Recognising the variety of services provided by wetlands and the need to fairly distribute water resources in order to maintain natural conditions, the Resolution goes on to outline the principles of sustainability, clarity in the process, fair participation and decision-making factors, scientific basis credibility, transparency in implementation, management

142 "For the purposes of this Convention, wetlands are areas of marsh, swamps and peat land, or surface areas covered with water -whether natural or artificial- permanent or temporary, static or flowing, fresh, brackish or salty, including areas of marine water whose depth at low tide does not exceed six metres".

143 Recommendation 4.2, Montreaux, 1990.

144 Defined as the sustainable use of wetlands for the benefit of mankind, in a manner consistent with maintaining the ecosystem's natural properties.Recommendation 3.3.Conference of the Parties, Regina, 1987.

145 Annex to Recommendation 4.10. Conference of the Parties, Montreaux, 1990.

146 Annex to Recommendation 5.6. Conference of the Parties, Kushiro, 1993.

147 Resolution VII.7. Conference of the Parties, San José, 1997.

148 Resolution VII.18. Conference of the Parties, San José, 1997.

149 Resolution VII.1.

flexibility and responsibility in honouring decisions, including work flow management guidelines for the maintenance of wetlands and their ecological functions.

Although the recommendations and guidelines adopted by the Conference of the Parties have expanded the spectrum of issues considered by the Convention, and although States Parties have undertaken to promote the rational use of all wetlands located within their territories, the key focus within the Ramsar Convention is on wetlands of international relevance, including the commitment to maintain ecological characteristics through the rational use of resources. The Convention does not, however, cover water basins. To put it simply, water basins include wetlands, but not vice versa. Hence, although a treaty on wetlands in a water basin context can contribute to its good governance, it does not substitute a treaty or agreement that, at a specific water basin level, must assist States in the regulation of a wide range of resources that come into play when sharing a water basin. The Ramsar Convention can supplement but not replace the lack of an agreement for regulating the entire basin.

It should be emphasized that the progress made by the Ramsar Convention in relation to water basin issues was due to the resolutions and guidelines adopted by the Conference of the Parties. Such tools or instruments suggest and recommend that Ramsar States Parties adopt certain measures, programmes and policies. However, these are recommendations and as such, they do not confer any obligations on the Parties to the Convention.

6 Relevant cases

Some of the most relevant cases decided by various courts will be discussed in this chapter, to illustrate some of the points outlined in the previous chapters, in particular relating to the rights and duties of basin States.

Each of the cases referred to below includes a summary of the facts that originally gave rise to the dispute, followed by the most important aspect of the court or tribunal ruling and arbitration award.

6.1 Case of the Oder River[150]

Facts

This is a dispute that arose, on one side between Czechoslovakia, Denmark, France, Germany, the United Kingdom and Sweden and, on the other side, Poland, concerning the territorial jurisdiction of the International Commission of the River Oder (herein referred to as ICRO), established by the Treaty of Versailles after the First World War. The case was brought to the Permanent Court of International Justice (herein referred to as PCIJ) in 1929.

Poland argued that the jurisdiction of the ICRO did not extend to the sections of the Warthe and Netze rivers, the respective tributaries and sub-tributaries of the Oder River, located in Polish territory. The jurisdiction of ICRO should have remained confined, according to Poland, to the sections of these rivers located in Germany.

However, the UK and other countries felt that the ICRO's jurisdiction should extend to the sections of the Warthe and Netze rivers located in Polish territory.

Article 331 of the Treaty of Versailles renders a number of rivers international, including the Oder River, from its confluence with the River Oppa to all other navigable sections within the basin (including the Warthe and the Netze) naturally providing Statesaccess to the sea.

The PCIJ was asked to determine whether the ICRO´s jurisdiction extended to the tributaries and sub-tributaries of the Oder located in Polish territory.

Ruling

- The jurisdiction of the ICRO extends to all sections of the water basin which may be considered international.
- The PCIJ established that it was not possible to reach a decision on the basis of a grammatical analysis of the text of the Treaty of Versailles. For this reason it was agreed to be imperative to refer to the principles of general international water law and to consider the position adopted by the Treaty of Versailles in respect thereof.

150 Judgement of 10th September 1929, PCIJ Ser. A, No.16.

- The PCIJ recognised, as claimed by Poland, that the desire to provide the upstream States with the possibility of free access to the sea played a considerable role in the development of the principle of freedom of navigation along the so-called international rivers. However, when considering the manner in which States examined concrete situations arising from the fact that a watercourse crosses or separates the territory of more than one State, including the possibility of complying with the requirements of justice, as well as the considerations of convenience that this highlights, it can immediately be seen that the solution to the problem has already been found, not in the sense of giving right of passage to upstream States, but in establishing a certain community of interests of the riparian States.
- This community of interests within a navigable river becomes the basis for a community of law, whose essential features are that of total equality between all co-riparian States along the entire course of the river, and the exclusion of any particular river privileges for a State over the others.
- If the community of law rests on the existence of a navigable waterway that separates or crosses several States, it is clear that this community extends to the entire river and does not in any way stop at the final frontier.

6.2 The case of Lake Lanoux

Facts

Lake Lanoux is situated in the eastern Pyrenees region of France. This lake is fed by streams which flow entirely through French territory, and consist of a natural outlet, the Font-Vive River, which flow into the Carol River. After flowing for approximately 25 km through French territory, the Carol River crosses the Spanish border and continues its course for about 6 km until it joins the Segre River, which flows into the River Ebro which, in turn, reaches the Mediterranean Sea.

This case concerns the construction of a large hydro-electric project of large magnitude in France by Electricité de France (EDF), originally setting out to divert part of the water away from the lake, and to compensate Spain´s loss of water resources by channelling a certain volume of water through an underground tunnel.

A controversy ensued that had several repercussions. Spain's position was clear and was established in a declaration on 9th April 1957, which stipulated that the extraction of water within French territories could cause a great deal of harm. This position did not change, not even when France suggested to build a dam on the lake that Spain could use during the dry season.

Ultimately, Spain condemned France's excessive freedom of action, arguing that it was inconsistent with the provisions of international law. Spain also declared that if France went ahead with the project in question, the matter would be referred to an arbitration court. Indeed an arbitration agreement was reached in Madrid, on 19th November 1956.

According to France, the project did not prejudice the rights, interests and other considerations outlined in the Treaty of Bayonne of 26th May 1866, including its Additional Protocol of the same date, due to the way it was implemented and because of the guarantees that were provided, demarcating

the border of the Valley of Andorra to the Mediterranean and establishing a water usage system that was common to the two countries.

Meanwhile, Spain maintained that the project would be detrimental to its interests due to the disruption caused to the natural conditions of Lake Lanoux's water basin, as the water was diverted into the Ariège River. As a consequence, Spain would have to rely on the good will of France to receive the water from the Carol River. All of this would ultimately result in a *de facto* dominance by one party over the other and would go against the principle of equality between parties, as called for by the above mentioned Treaty of Bayonne.

Both States agreed that the Court, in its interpretation of the 1866 Treaty and its Additional Protocol, should take into account the initial good will that led the parties to conclude the Treaty of the Pyrenees, as well as the rules of international law.

The court thus had to determine whether, by carrying out works on the waters of the Lake Lanoux without obtaining prior consent from the Government of Spain, the French Government had violated the 1866 Treaty of Bayonne of and its Additional Protocol.

Arbitration Award

- The Court found that the French Government, through whose territory the water flowed, was entitled to exercise all of its rights, including acting unilaterally. It accepted the existence of a principle of international law relating to the respect of boundaries and good neighbourliness, but did not mention any violation of France of these principles.
- Good neighbourliness does not imply the need to reach an agreement on each section of the border area. This would paralyse the powers of the State. As such, the powers exercised by France in this area did not affect Spanish interests.
- The Court rejected Spain's argument that the plan would harm the conditions of the water basin, and that the transfer of water depended on human intervention, and would therefore not preserve the equal rights of both parties. Spain argued that there had been a violation of the 1866 Treaty of Bayonne and its Additional Protocol. On this basis, an agreement between the two governments was needed in order to carry out the project.
- Traditional law in the Pyrenees and general international law do not provide sufficient evidence to interpret the provisions of the Treaty of Bayonne and its Additional Protocol as calling for the need for prior approval. Accordingly, France does not need to be in agreement with Spain in order to carry out the project.
- The Court upheld, in accordance with the rules of good faith, that the upstream State is obliged to take into account the different interests of the case in question, to try to find a solution that is consistent with its own interests and therefore demonstrate that it is genuinely interested in reconciling its own interests with that of other riparian States.
- The upstream State is not obliged to collaborate with the downstream State when developing work plans. If in the course of discussions, the upstream State presents plans to the downstream State relating to the project, the latter must examine them. However, the upstream State has the

right to give priority to the alternatives within its own work plans, providing that it has properly taken into consideration the interests of the downstream State.

- The court found that France had taken the interests of Spain into account, and found no case of violation of the 1866 Treaty of Bayonne and its Additional Protocol, when carrying out works for the utilisation of the waters of Lake Lanoux without the prior consent of Spain.

6.3 Case of the Helmand river delta[151]

A dispute between Afghanistan and Iran (known as Persia at the time) occurred after the exploitation of the waters of the Helmand River.

The river, which originates in the mountains of Afghanistan, about 35 miles west of the capital, runs through Afghanistan from north to south and then, after delimiting the border between the two countries, flows into Lake Seistan, in Iran.

In 1872, an arbitration award under the 1857 Peace Treaty between the United Kingdom and Iran provided that none of the riparian States should carry out works that could compromise the water supply requirements of the River Helmand for the irrigation of its banks.

In 1905, Sir Henry McMahon drafted a series of recommendations to give practical effect to the 1872 arbitration award, known as the Goldsmid Award.

Both parties accepted suggestions to change the borders of the two countries, due to a variation in the river course. However, the recommendations that awarded a third of the waters of the Helmand River to Persia (about 35 miles into Afghan territory), were accepted by Afghanistan but rejected by Persia because the 1873 Award established more favourable conditions for the latter.

In 1950, the two countries agreed to establish the so-called Helmand River Delta Commission, which is made up of experts in water resource management. This Commission is the basis for resolving disputes within this particular basin. Iran declared in front of the Commission that:

- Each riparian State has the right to extract its own historic supply of water from an international river, for irrigation or domestic consumption.
- Historic irrigation has priority over any other proposed appropriation of the river's waters.
- Riparian States are entitled to share the water remaining after extraction based on historic supply, for the use and development of joint supplies.
- The remaining water should be equitably shared, taking into account the individual requirements of each riparian State. Riparian States have the power to increase the amount of available water by carrying out engineering works, and have to cooperate to safeguard the interests of the other State in relation to river development.

151 See Mayors St. John, Lovett and Evan Smith and Major General Sir Frederick John Goldsmid, Eastern Persia. An Account of the Journeys of the Persian Boundary Commission, 02.01.1870, London, 1876, Vol.1, page 413.

6.4 Case of the Lauca River

Facts

The Lauca River originates in Chile and flows in south-east across the border into Bolivia. Once in Bolivian territory, the river continues its course in the same direction until it empties into Lake Coipasa, under exclusive Bolivian sovereignty.The river is approximately 255 km long, 75 km in Chilean territory, with the other 150 km located in Bolivia.

Pedro Aguirre Cerda, the president of Chile at the time, visited the port city of Arica (Chile) In June, 1939. During his visit, taking into consideration requests from various trade and industry associations of the Azapa Valley, he stated that the Chilean government would promote the expansion of irrigated areas in that region to the neighbouring port, making use of the waters of the Upper River Lauca for that purpose. The main objective of the project was to increase food production for the population of the region and reduce unemployment.

On 11th July 1939, the Government of Bolivia communicated with the Chilean government its reservations concerning the possible diversion of water through an irrigation channel on the bed of the Lauca River. Studies indicated that the amount of water that the Chilean authorities wanted to divert represented approximately 25% of the total water basin area in the Chilean territory, which in turn meant that the measures taken to meet the Chilean project would require and could use up to 46.7% of the total flow of the river before entering Bolivian territory. Nonetheless the Chilean authorities, concerned with irrigation and power generation, developed a series of public works in the area that included a diversion dam and a 33km canal to irrigate the agricultural area of the Azapa Valley.

The Dispute

President Aguirre Cerda's announcement, in 1939, concerning the irrigation of the Azapa Valley region using part of the waters from the Lauca River, led Bolivia´s Minister of foreign affairs and culture to express the country´s reservation on the possible diverting of the water, on 11th July 1939. The Bolivian government thus expressed its objection to the Chilean plans and reiterated its objections the following month. In the city of La Paz, the then Chilean ambassador stated that the project did not involve any diversion of the Lauca River, but only the natural use of its channel.

The Chilean government said that the irrigation project was in compliance with the 1933 Montevideo Declaration adopted by the Seventh Pan American Conference, which both States had adopted. A little later on during the month of September, the same diplomat referred to the idea of "channelling" and not diverting the course of the Lauca River, and in November, reiterated the concept of natural use of the river's waters. The Bolivian government remained silent on the subject until 1947 when it started protesting again against the use of the waters from the Lauca River.

In December 1947, Bolivia and Chile reached an agreement on the conflict by setting up a joint commission to address the issue. The two foreign ministries discussed various issues, including questions of meteorology, hydrology, agriculture and other subjects, took place between the two foreign ministries. Finally, in 1949, the commission came up with a proposal on the amount of water to be diverted for irrigation purposes. After the proposal was made, three months were then given for the parties to submit their observations.

The deadline expired in early December 1949. By means of a memorandum issued on 10th March 1954, the Chilean government made it clear that its Bolivian counterpart had not filed any objection or observation within the framework of the 1949 negotiations.

Subsequently, by means of a memorandum on 24th June 1958, the Bolivian government reminded Chile that the two countries had not reached a satisfactory agreement and, faced with this situation, presented a new proposal calling upon the Chilean government to provide Bolivia with technical and precise details of all works in and around the Lauca River within Chilean territory, including modifications made during previous years, so that Bolivia would then have the necessary technical data to appreciate the significance of the development works. On this basis, the Chilean and Bolivian governments would then have the conditions to reach a definite agreement on the issue.

The Solution

In 1960, Bolivia, in an apparent search for a solution to the dispute, referred the issue to the Organization of American States (OAS). Bolivia accused Chile of committing an act of aggression against it, threatening peace in the Americas, and requested a consultative meeting of Foreign Affairs Ministers in order to cease aggressions, demanding that sanctions be applied towards the designated aggressor. On 24th May 1962, eighteen countries, excluding Chile and Bolivia, unanimously adopted a resolution rejecting Bolivia's pretenses.

The OAS limited its actions, discretely hoping that diplomatic relations between the two governments would be restored as soon as possible, and urging the two countries to resolve the dispute. Bolivia consistently rejected this proposal and demanded something that was unacceptable to the Chilean government: to halt the diverting of the waters from the Lauca River.

On 6th December 1962, the Bolivian government made a proposal to the Eleventh Inter-American Conference. Bolivia's aspirations in having a port on the Pacific were to be included as part of the agenda.

Chile acknowledged that Bolivia had water rights and was in favour of recognising that the 1933 Declaration of Montevideo could be considered as a codification of generally accepted principles in this area. This declaration recognised, among other factors, the exclusive right of a State to use a portion of a contiguous or successive river within its jurisdiction, but that the rights of another co-riparian State should not be affected in relation to the portions of river within its respective territory. Both states had divergent opinions on this stance. While Bolivia believed that such a declaration incorporated international law and forced Chile not to implement the project without its prior consent, Chile understood the statement as outlining the need for Bolivia to give its consent only in cases where the project could potentially be harmful, and that Bolivia had not provided any such evidence that it had or would be affected by the diverting of the river's waters. Finally, around 1975, diplomatic relations between the two countries returned to normal after nearly 33 years of instability, thanks to an initiative from the Chilean government to initiate talks to give Bolivia possible access to the Pacific Ocean.

In short, the dispute over the Lauca River served the Bolivian government as a vehicle in alerting its population about another problem: being landlocked. Ultimately, even though the case contains important aspects of water law, particularly on the powers of States in utilising a shared basin, it also

demonstrates political vulnerability in the context of complex bilateral relations.

6.5 Case of the sinking of the River Danube (Donauversinkung)[152]

In 1927, the *Staatsgerichtshof* (the High Court of Germany at the time) had the opportunity to decide on a case in which the federal States (*Länder*) of Württemberg and Prussia sued the State of Baden because of the sinking of the Danube River (*Donauversinkung*).

In addition to the facts of the case, what is most interesting here is the decision of the *Staatsgerichtshof* to implement certain rules and regulations within international law[153] due to the impossibility of using the domestic laws of the States involved in the dispute or the rules and regulations of the Constitution of Germany.

Facts

The Danube, has its source in the Black Forest in Germany, and flows through the Jura Mountains in the Swabia region located between Baden and Württemberg.

At certain times of the year, the river loses a considerable amount of flow due to an underground filtration process in its river bed and river banks. It then flows underground through a series of channels and emerges once again at the source of the Aach River in the State of Baden. It is necessary to point out that the Aach is a high flow-rate river, used for industrial activities.

In this particular case, the Danube was dry at certain periods of the year along specific sections of the river within the state of Württemberg, located downstream from the State of Baden.

Württemberg filed a lawsuit before the *Staatsgerichtshof* against the State of Baden, claiming that it had increased the Danube's natural subsidence because of:

a) The floodgates of the river in the Immendingen area, that were used to provide motive power to a factory. These gates caused the water level to rise, which, by means of openings in the banks and through a filtration process in the river bed, caused the water to flow more quickly, therefore increasing the flow of the Aach River;

b) The fact that the aforementioned State did not carry out any maintenance of the river banks and river bed throughout the Möhringen area, as well as the fact that it precluded the population from carrying out similar tasks, which resulted in the accumulation of sand and gravel on the river bed and would subsequently cause the Danube's waters to flow or be diverted into the Aach.

For the reasons outlined above, Württemberg requested that Baden:

a) Remove, rebuild or reposition the Immendingen floodgates in order to prevent water subsidence;

b) Allow free flow of the Danube by removing all natural obstacles, including any sand and gravel that accumulated on the bed and on its banks near the town of Möhringen;

152 Würtemberg und Preußen v. Baden (Donauversinkung), Deutscher Staatsgerichtshof, 18th June 1927, Entscheidungen des Reichsgerichts in Zivilsachen, Vol. 116, Appendix, page 18-45.

153 Moreover, international law formed part of federal law, according to Article 4 of the Constitution.

c) Ensure continuous water flow along the river by building a permanent riverbed.

Baden, meanwhile, argued that Württemberg prevented the natural drainage of the Danube into the Aach within the Fridingen area, since it had:

a) Artificially sealed some of the natural holes located along river through which the water was filtered;

b) Authorised the construction and operation of a hydro-electric power plant utilising the entire flow of the Danube, pumping water from its natural course, in an area with filtration capabilities.

For the above reasons, Baden requested that the Tribunal order Württemberg to restore the river near the town of Fridingen as it was prior to the construction of the power plant, and to seal the artificial filtration holes.

As it was downstream from Württemberg, the Prussian State was also affected by water subsidence along the Danube. It entered the dispute in favour of Württemberg.

Ruling

As highlighted earlier in this section, the *Staatsgerichtshof* made use of international law in this particular case. The Tribunal acknowledged that international law did not contain specific rules relating to the case in question, (to the filtration of water from one water basin to another). Natural phenomena such as this one are very rare, making it necessary to apply the principles of international law relating to river flows due to a lack of specific rules in this area.

According to the Tribunal, when a State uses a portion of an international water basin passing through its territory, it is bound by the principle that derives from the idea put forward by the community of nations, which is not to harm another State. States located within the same basin must duly consider the requirements of the other States, and not substantially affect natural possibilities for the provision of water to a neighbouring State. The application of this rule is governed by the circumstances of each individual case. The legitimate interests of each State should be equally considered, so that the benefits gained by any of these States may be weighed against the harm suffered by the other.

The Tribunal found that the principle of international law according to which States are discouraged from exploiting the flow of a river, which could potentially cause adverse effects to another State, is related to interferences caused by human activities and not to natural causes.

States must therefore accept the natural course of a river. The sinking of the Danube was an extremely rare natural phenomenon that Prussia and Württemberg had to accept. As such, they could not oblige Baden to take positive measures to mitigate the effects of this phenomenon.

The Tribunal stated that since Baden was responsible through its actions of increasing the sinking process and these effects had extended beyond its borders, it amounted to an unjustified interference in the water rights of other federal states or *Länder*, and constituted a violation of international rights that the States located downstream could not accept. This did not necessarily imply that Baden had to remove the Immendingen floodgates, but that it had to decide on how to address the negative effects caused by them.

While a State had no obligation to intervene in the natural course of a river in favour of another State,

the Tribunal specified that this obligation is subject to an exception: the duty to observe the common practices of States in relation to rivers.

A State should refrain from changing the course of a river at the expense of its neighbours, and should make sure there are no violations based on the expected behaviour of States with regards to their rivers.

If a government does not go ahead with or prohibits the carrying out of measures that should be adopted in accordance with the rules of law and economic policy, and as such, causes damage to the interests of another State, this would therefore be considered as not being in accordance with the objectives of the Community of Nations. In this case, what originally started out as a passive attitude would become an unlawful conduct. The duty to carry out certain positive acts has been clearly recognised in relation to navigation on international rivers and there was no reason, according to the Tribunal in this case, why the same should not apply to matters relating to river flows used for industrial purposes.

Baden's failure to maintain a minimum water level, thus increasing the sinking process and harming its neighbours, should be considered as unlawful. Nevertheless, the Court did not substantiate the claims of Württemberg that Baden should carry out improvements to the river in the Möhringen Area through the construction of a permanent artificial bed. Baden, on the other hand, was instructed not to cause any further sinking of the Danube through the Immendingen floodgates and the accumulation of sand and gravel, although no obligations were imposed on carrying out improvements to the river bed.

Lastly, the Court requested Württemberg to refrain from causing any natural reductions in the sinking of the river through work carried out in the town of Fridingen, including the artificial blocking of filter holes, as such activities are deemed as going beyond normal rights in maintaining the river's natural flow.

6.6 The Gabcikovo-Nagymaros Case[154]

Facts

This case, decided by the International Court of Justice (hereinafter referred to as the ICJ) is associated with the use of an area of approximately 200 km of the Danube River between the cities of Bratislava (Slovakia) and Budapest (Hungary).

After passing through Bratislava, the Danube forms an alluvial plain. For the most part, the boundary between the two States consists of the main river channel. Cunovo and Gabcikovo are locations within Slovak territory, while Dunakiliti and Nagymaros are situated downstream in Hungarian territory.

In 1977 Czechoslovakia and Hungary signed a treaty on the construction and operation of a system of floodgates in Gabcikovo-Nagymaros (hereinafter called the 1977 Treaty). The 1977 Treaty established that Czechoslovakia and Hungary would jointly build and operate a system of floodgates.

154 Case Concerning the Gabcikovo-Nagymaros Project (Hungary/Slovakia), Ruling of 25th September 1997, 1997 ICJ 7.

The 1977 Treaty's preamble provides that the system was designed to facilitate the use of a wide range of the Danube's natural resources between Bratislava and Budapest, and to develop additional water resources, energy, transportation, agriculture and other sectors of the economy. In other words, the project was aimed at producing hydroelectric power, improving navigation on certain sections of the river and protecting a number of regions against flooding. The parties agreed not to alter the quality of the Danube's waters.

The 1977 Treaty outlined the construction of two sets of gates: one set in Gabcikovo (territory in the then Czechoslovakia) and the other in Nagymaros (in Hungary), designed to form a single and indivisible operational system.

Work began in 1978. At the request of Hungary, two Protocols were signed in 1983 in which it was agreed to interrupt the work and postpone the launch of the power plants. Later on, it was agreed to accelerate the project through another Protocol in 1989. However, the project received intense criticism in Hungary, and the Hungarian government decided to once again suspend construction works at Nagymaros until further studies had been completed. Shortly afterwards, the Hungarian government decided to permanently abandon the works at Nagymaros and to maintain the *status quo* in Dunakiliti. Due to this change in circumstances, Czechoslovakia and Hungary negotiated various alternatives: Czechoslovakia considered a so-called "C Variant", which involved diverting the main course of the Danube within its own territory, about 10 miles upstream from Dunakiliti. In its final phase, the aforementioned "C variant" included the construction of a containment dam and a dyke in Cunovo.

In 1991, Czechoslovakia began construction in Gabcikovo. Work relative to the "C Variant" began in November. The two States continued negotiating, but in 1992 the Hungarian government informed their Czechoslovak counterpart about the expiry of the 1977 Treaty. In October 1992, Czechoslovakia began construction work aimed at closing the Danube, proceeding with the construction of a dam.

In 1993, Slovakia became an independent state. Through a special agreement signed that same year, the Parties then agreed to establish a provisional system of river management.

The ICJ had to decide several issues concerning Hungary's decision to suspend and abandon the works at Nagymaros, including which portions of the Gabcikovo project Hungary was responsible for, in addition to other matters related to the legally binding effects of the provisional solutions and the notifications negotiated between the Parties.

Ruling

Here are some of the most important sections of the ICJ´s ruling.

The ICJ signalled the existence of a general obligation of States to ensure that the activities taking place within their jurisdiction or under their control, respect the environment, and that areas beyond national jurisdiction are governed by the section of international law related to the environment[155].

It is important to highlight the reference made by the ICJ to the "community of interests", which was elaborated by the PCIJ in the Oder River case explained previously, and which is here referred to in the context of international water courses. It appears that the main consequence of establishing

155 Paragraph 41.

such a community is a State's inability to unilaterally assume control of a shared natural resource, even in cases in which such control is consented to by the other party (as explained above).

The ICJ stated that the fact that Czechoslovakia diverted the river's waters constituted a disproportionate measure in relation to Hungary's complaint about the validity of the 1977 Treaty and must be highlighted. The ICJ reached this conclusion based on the principle of equitable and reasonable use of the water and not on the provisions of the 1977 Treaty.

The ICJ also cited the 1997 Convention, as a text of reference on matters concerning shared waters.

In this particular case, the Court stated that both parties must jointly reconsider the environmental impacts of the Gabcikovo power plant. In particular, they must find a satisfactory solution to the volume of water to be discharged into the old Danube riverbed and into its different branches on both sides of the river[156].

6.7 The Kasikili/Sedudu Island Case[157]

Facts

The dispute revolves around the demarcation of the border between Namibia and Botswana and the legal system applicable to Kasikili/Sedudu Island. The Island is located on the Chobe River along the border between the two countries, and covers approximately 5 km².

The dispute between the two countries occurred shortly after Namibia's independence, and related to the positioning of the boundary around the Island. In May 1992, the intention was to establish the boundaries through the assistance of a joint team of technical experts, however, by 1995, the team had still not reached any agreement. The two countries then decided to refer the dispute to the International Court of Justice (ICJ).

While there is no specific legal instrument applicable to the dispute, the first point of reference is the Anglo-German Agreement of 1890 (hereinafter the 1890 Treaty). The geographical scope of this Treaty (1st June 1890) covers this particular case. It was drafted as an agreement between Germany and Great Britain for them to demarcate their areas of influence in West Africa.

When both countries submitted the case to the ICJ, they requested that the case be resolved taking into account the 1890 Treaty as part of applicable law.

In its closing speech, Botswana indicated that, in accordance with the 1890 Treaty, and since the northern and western channel of the Chobe River is the river's "main channel", it therefore had exclusive sovereignty over Kasikili/Sedudu Island.

For its part, Namibia stated that the Island's south channel was the "main channel" of the Chobe River and that it did not extend to the north, and therefore that the island's legal system corresponded to the part of the territory under its own sovereignty.

156 Paragraph 140.

157 Case relative to the Kasikili/Sedudu Island (Botswana against Namibia).Ruling of 13th December 1999. Summaries of the Rulings, advisory opinions and orders of the International Court of Justice. 1997 – 2002. United Nations, New York. 2005.

The real dispute between the countries related to the location of the river's "main channel" since that is where the border between the two countries was to be set. According to Botswana this was located at the base (*Thalweg*) of the river's northern channel, whereas Namibia considered the center of the southern channel as the "main channel". The problem stemmed from the fact that the "main channel" was not defined by the 1890 Treaty.

Additionally, there was a problem of terminology, as the English version of the treaty referred to the "center" of the "main channel", while the German version used the phrase "Thalweg des Hauptlaufes" referring to the base of the channel.

Ruling

The ICJ considered it of fundamental importance to determine which was the River´s "main channel" and considered that this should be determined according to the most commonly used criteria in international law and in practice. It took into account the river's depth, width and navigability. The ICJ also took into account the results of three field studies carried out in 1912, 1948 and 1985, and concluded that the main channel of the Chobe River was the northern one.

The ICJ subsequently recognised and confirmed that, according to the original meaning of the 1890 Treaty, the northern channel of the Chobe River around Kasikili/Sedudu was the main channel. Consequently, and based on its interpretation of the provisions of the 1890 Treaty, the ICJ concluded that the border between Botswana and Namibia around the often cited island of Kasikili/Sedudu, was the northern channel of the Chobe River.

With regards to terminology, the ICJ upheld that for the Treaty to be adequately interpreted, the aforementioned concepts had been used as synonyms.

Botswana and Namibia agreed that the connecting channel (Thalweg) of the Chobe River consisted of a line at the river's deepest point, however, the ICJ concluded that the border followed the line of the northern channel around the Island.

The ICJ resolved that the Kasikili/Sedudu Island formed part of Botswana's territory. However, in response to a joint statement by the Presidents of the two countries, the ICJ emphasised three decisive points according to which:

- Social interaction between the people of Namibia and Botswana should continue.
- Economic activities such as fishing should carry on as normal, based on the understanding that fishing nets must not cross the entire river.
- Navigation should continue unimpeded, including the free movement of tourists.

In accordance with the above, the ICJ emphasised that, along the Island´s southern channel, Namibian nationals and vessels should be treated in the same way as Botswana's nationals and vessels. It was also established that the nationals and vessels of both countries would be subject to the same conditions with regard to navigation and environmental protection. All this should also be the applicable rules within the Chobe River´s northern channel.

6.8 Case of the Cellulose Pulp Mills on the River Uruguay

Facts

Controversy began following the construction of a cellulose pulp mill along the River Uruguay, a watercourse shared between Argentina and the Eastern Republic of Uruguay.

The River Uruguay originates in Brazil at the Serra Geral mountain range, and defines the border between Uruguay and Argentina, before reaching the La Plata River. It has a total length of 1770 km, with much of its course representing the border between the two countries.

As a legal precedent, in 1975 Argentina and Uruguay signed the Statute of the River Uruguay (hereinafter called the 1975 Statute), with the aim of "establishing the joint mechanisms necessary for the optimal and rational utilisation of the River Uruguay". Through this Statute the two countries undertook to "protect and preserve the aquatic environment and, in particular, to prevent its pollution, by prescribing appropriate rules and measures in accordance with applicable international agreements". The statute further established that if any "Party plans to construct new channels, substantially modify or alter existing ones or carry out any other works which are liable to affect navigation, the regime of the river or the quality of its waters, it shall notify the Commission, which shall determine on a preliminary basis and with a maximum period of 30 days whether the plan might cause significant damage to the other Party".[158]

In 2002, the Finnish company Botnia built a cellulose pulp mill on the river bank, on Uruguayan territory, in an area located between the border cities of Fray Bentos (Uruguay) and Gualeguaychú (Argentina). The first is a city with a population of around 23,000 people, with an economy traditionally based on farming. The second city, located in Argentina, has a population of 76,000 and is located 8 km from the River Uruguay and 30 km from Fray Bentos. Its economy relies mostly on regional ecotourism.

Both cities are connected by the Libertador General San Martín International Bridge. Due to its strategic importance, the bridge is of great interest for the economy, for trade and for tourism in both countries.

The construction and operation of the Botnia pulp mill in the area caused a series of public demonstrations in both countries, from 2001 onwards. These protests were generally only held at a national level, but activists from both Uruguay and Argentina organised joint protests on several occasions which took place on the bridge.

In 2005, the Gualeguaychú Citizens Environmental Assembly was founded in the city of Gualeguaychú, with protests taking place on a more organised and permanent basis. This included systematic and ongoing blockades on the bridge. Meanwhile, in Uruguay, public opinion about the construction of the cellulose pulp mill began to radically change. A majority of the population started to view the setting up of this company as a major economic opportunity. Demonstrations of nationals from both Uruguay and Argentina concerning mills and their potential environmental, economic and social impacts, in addition to other political and economic interests related to the case, led to a major political crisis between the two countries.

158 Statute of the River Uruguay of 26th February 1975.

In order to overcome political and social difficulties, the governments of Argentina and Uruguay appointed a joint committee to suggest possible solutions to the conflict. However, in 2006, the committee's failure was imminent as the technical information provided by each of the Parties differed on essential points and because of irreconcilable political views.

Legal Action

On 4th May 2006, the Argentinian government accused Uruguay before the International Court of Justice (ICJ) of having unilaterally authorised the construction of the pulp company's facilities in October 2003, without having first complied with the mandatory notice and general consultation procedures as provided for in the Statute of the River Uruguay of 1975.

In its allegations, Argentina added that despite continuous protests aimed directly at the Uruguayan government, and despite the creation of an administrative organisation set up to ensure compliance with the 1975 Statute, Uruguay still refused to conform to established procedures. Argentina stated that things kept on getting worse since Uruguay had authorised the construction of a second factory and a port for the transport of goods. In its petition, Argentina requested a declaration that the Uruguayan government had failed in its obligations under the 1975 Statute and, by virtue of this, demanded all illegal activities to stop and the full repair of all damages caused by the aforementioned failure to comply with obligations.

Additionally, Argentina presented a petition for precautionary measures in which it argued that the construction of the pulp mills would aggravate the economic crisis, cause a number of social impacts in the region and have profound consequences on the environment of the River Uruguay. It therefore asked the ICJ to order Uruguay to immediately suspend the construction of the factories in question.

The Court held a hearing in order to find out more about the precautionary measures, in which Argentina reaffirmed its arguments and explained the need to suspend work until an environmental impact assessment could be carried out by a third party. Uruguay pointed out that there was no objective evidence to prove the occurrence of environmental damage and reaffirmed that the technology that would be used in the mill would be the best one available and would be in accordance with European standards.

The Court rejected the petition for precautionary measures, arguing that Argentina did not demonstrate the required conditions under Article 41 of its Statutes in exercising these privileges. The Court specifically reasoned that Argentina failed to prove the existence of any pollution that could cause irreparable damage to the river. Furthermore, the production plants were not functioning at the time of the ruling, leading the Court to conclude that Uruguay "assumes all risks relating to the verification of any underlying issues that the Court may find in the future" and that the construction of pulp mills on the current sites can not be used to create a fait accompli or irreversible decision. Uruguay upheld that, in relation to the underlying issues, not only does the country respect the 1975 Statute, but that it also respects the rules of international law and the general principles of law. It held that it was Argentina that was not aware of the rules of international law when it allowed organised blockades by its citizens on the Libertador General San Martín International Bridge. It also pointed out that there had been several conversations and exchanges of information between the two countries,

citing documents in which Uruguay and Argentina had resolved differences related to the construction of the pulp mills on the River Uruguay. Lastly, Uruguay maintained that the cellulose production plants used the best technology available. Later on that year, on 29th November 2006, Uruguay filed a prohibitory injunction against Argentina for the roadblocks allegedly organised by Argentinean nationals on the international bridge. In accordance with the information presented by the Uruguayan government, Argentina intentionally took no action to prevent the protests and it was feared that this would happen again in the future. The Uruguayan government argued that this could be a strategy to force Uruguay into accepting its demands, particularly on the construction and operation of the cellulose pulp mill. Uruguay also declared that Argentina's conduct aggravated the conflict, and therefore requested the ICJ to declare, as a precautionary measure, Argentina's obligation to take all reasonable and appropriate steps to set aside or prevent the interruption of traffic between the two countries, including that of blocking roads and bridges, as well as to refrain from any activities which might aggravate, extend or render the settlement of the conflict more difficult. Argentina contested Uruguay's claims in their entirety. Ultimately, the ICJ rejected Uruguay's request, given that "it does not see at present any imminent risk of irreparable prejudice to the rights of Uruguay due to disputes caused by blockades of bridges and roads connecting the two countries.

Furthermore, the Court does not consider that the blockades themselves can justify the last two precautionary measures requested by Uruguay, resulting in an absence of conditions in being able to impose the first precautionary measure."[159]

The underlying issues of the case are still pending before the ICJ in The Hague.

6.9 Case of the San Juan River

The delimitation treaty between Costa Rica and Nicaragua was signed in 1858 and establishes the border on the right bank of the San Juan River. This kind of agreement was used to demarcate several other international rivers around the same time period[160]. The delimitation treaty however led to a series of disputes between the two signatory countries. These disputes mostly occurred due to the manner in which the treaty was interpreted over the right to free navigation along the San Juan River[161].

159 IJC. Press Release 2007/2. Pulp Mills on the River Uruguay (Argentina vs Uruguay). The Hague, Netherlands, 23rd January 2007.

160 See Querol, M., "Rethinking International Rivers and Lakes boundaries", in Boissons de Chazournes L / S. M.A. Salman (Editors), Les ressources in eau et le droit international / Water Resources and international law, Hague Academy of international law, The Hague, Martinus Nijhoff Publishers, 2005, pages 97-132, especially pages 101-104.

161 Relevant Documents.Treaty of Limits between Costa Rica and Nicaragua, Cañas-Jerez. San Jose, 15th April 1858, Arbitration Award issued by the President of the United States, Grover Cleveland, 22nd March 1888, Ruling passed by the Central American Court of Justice in the case of Costa Rica vs Nicaragua of 13th September 1916. The Supplementary Agreement to Article IV of the Pact of Amity, Washington, 9th January 1956. The Agreement of 26th September 2002, known as the Tovar-Caldera Agreement. Rules and principles of international law.

Geographical context

The San Juan River basin covers an area of approximately 38,500 km², split between the south-eastern region of Nicaragua (24,500 km ²) and north-eastern region of Costa Rica (14,000 km²). This is the most important water basin in Central America. The San Juan River flows from west to east, and covers 210 km from Lake Nicaragua to the Atlantic Ocean.

The estimated average flow of the San Juan River is 833 m³/s (where it meets with the Sarapiqui River tributary) with "85% coming from Costa Rican water basins and 15% generated in Nicaragua"[162]. The water basin consists of a total of 37 municipalities in Nicaragua and 7 provinces in Costa Rica. Approximately 1,070,000 people live in the basin area: 780,000 (75%) in Nicaragua and nearly 290,000 (25%) in Costa Rica. The density of the Nicaraguan population is 46 inhabitants per km². In Costa Rica, 85% of the population is rural, with a population density of 22 inhabitants per km², less than half of that of Nicaragua[163].

Historical Background

Cañas-Jerez Treaty

On 15th April 1858, Costa Rica and Nicaragua concluded a treaty delimiting their common border. In accordance with Article VI of the Treaty "The Republic of Nicaragua will have exclusive dominion and supreme governance over the waters of the San Juan River, from the point at which the waters exit the Lake up until their discharge into the Atlantic Ocean; with the Republic of Costa Rica having permanent freedom of navigation along these waters from the aforementioned discharge point into the Atlantic for a full three English miles before reaching Castillo Viejo, for purposes of commercial interest with Nicaragua or internally within Costa Rica itself along the San Carlos or Sarapiqui Rivers, or by any other route from the banks of the San Juan River, as deemed appropriate. The vessels of either country shall be permitted to dock on the banks of the river along the common navigation section without levying any taxes unless previously agreed between both Governments".[164]

Arbitration Award

The first dispute between the two States arose due to natural changes in the geographical configuration of the most extreme part of the San Juan River between 1860 and 1870. On 24th December 1886, the two States reached a compromise, and referred the dispute to the President of the United States for subsequent arbitration.

The award (known as the Cleveland Award) of 22nd March 1888, declared the 1858 Treaty valid, emphasising that according to Article VI of the Cañas-Jerez Treaty, Costa Rica had no right to navigate the Rio San Juan with armed warships, but had the right to navigate with customs related patrol ships for commodities-trading purposes, as set out in the aforementioned Article, or as deemed necessary for providing adequate protection.

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162 UNEP, Government of Costa Rica / Government of Nicaragua, Environmental management and sustainable development of the San Juan River Basin. Diagnostic Study of the San Juan River Basin and the Plan of Action guidelines, the OAS General Secretariat, UNEP/OAS, 1997, page 19.

163 OAS; UNEP; Government of Costa Rica and the Government of Nicaragua. Dialogue on Water and the Climate. Technical Report, September 2002.

164 Boundary Treaty between Nicaragua and Costa Rica. Cañas-Jerez Treaty, 15th April 1858. Article VI., The Rights of Costa Rica and Nicaragua on the San Juan River, San José, Librería Lehman, 1983.

Point six of the Award states that "the Republic of Costa Rica cannot prevent the Republic of Nicaragua from carrying out works of improvement at its own expense and within its own territory, providing that such improvement works do not result in the occupation, flooding or damage to Costa Rican territory, the destruction or any serious deterioration to the River's navigation capacities, or to any of its tributaries at any point where Costa Rica has the right to navigate". Furthermore, the Award rejected the seventh point of the Nicaraguan petition which proposed to change the endpoint at Punta Castilla to that of the river mouth, using a branch of the Colorado River. However, the arbitrator ruled that Costa Rica could deny Nicaragua the right to divert the waters of the San Juan River in the event that any such diversion resulted in serious deterioration to navigation.

Costa Rica had the right to be compensated for any occupation, without prior consent, of any portion of its territory on the right banks of the river, or for flooding or damage that such land may suffer as a consequence of improvement works on the river carried out by Nicaragua.

Delimitation Treaty and the rulings of Engineer-Arbitrator E.P. Alexander

The delimitation of the border between the two States gave rise to a treaty, the Matus-Pacheco Treaty of 27th March 1896, which resulted in so many disagreements that an arbitrator, the Engineer E.P. Alexander (USA), had to be appointed. This led to five rulings between 1897 and 1900 which underlined the broad scope of numerous provisions of the 1858 treaty which were subject to discussions.

The Bryan-Chamorro Treaty with the Central American Court of Justice

The Rio San Juan was again the subject of a dispute in 1916. The dispute was brought by Costa Rica to the Central American Court of Justice, the first permanent court in the history of international law. Costa Rica claimed that a treaty signed between Nicaragua and the United States - the Bryan-Chamorro Treaty, for the construction of an inter-oceanic canal, signed on 18th February 1915, damaged its rights to free navigation. The Central American Court of Justice delivered its ruling on 30th September 1916 in favour of Costa Rica[165], although Nicaragua refused to cooperate, and alleged that that Court had no jurisdiction over the matter.

Rights and obligations involving the San Juan River

The 1858 Treaty provides for the "dominion and supreme governance" of Nicaragua over the waters of San Juan. It also establishes Costa Rica´s right over free shipping for the "purposes of commerce", as well as its powers of a "custodian" nature along the banks of the river, for its own defence (Art. IV). The Treaty finally declares the two bays at both extremes of the border as communal or shared (Bahia de Salinas on the Pacific side, and Bahia de San Juan del Norte on the Atlantic).

The current dispute

The restrictions imposed by Nicaragua on Costa Rica in the nineties (on tourist boats in 1994, and on armed Costa Rican police routes in 1998) gave rise to new tensions. Rounds of diplomatic negotiations organised in an attempt to mediate the situation by the Secretary General of OAS, (in 2000), did not result any agreement. Finally, on 29th September 2005, after failing to reach an amicable settlement through bilateral or third party mediation, and through expiry of the Tovar-Caldera Agreement,

165 Central American Court of Justice, Journal of the American Court of Justice, Volume V, No. 14-16, San Jose, CJC, page 130-176.

Costa Rica submitted a claim to the ICJ against Nicaragua arguing that its right of free navigation had been hindered because of a Nicaraguan decision to tax Costa Rican tourist boats and to prevent armed Costa Rican police forces from sailing on the San Juan River.

In its allegations, Costa Rica argued that Nicaragua had imposed a series of restrictions on the navigation of Costa Rican vessels and their passengers on the San Juan River and had violated the rights recognised under the 1858 Treaty, further confirmed by the 1988 Cleveland arbitration award, the ruling of the Central American Court of Justice of 1916, and a series of connected "rights" that Nicaragua had been awarding to the riparian populations and to the boats of Costa Rican residents and tourists over the years.

Nicaragua rejected these accusations, arguing that these restrictions were inconsistent with the wording and the spirit of the 1858 Treaty and that the evolutionary interpretation of the concept of navigation for the "purposes of commerce" made by Costa Rica went against the principle of good faith and the notion of "dominion and supreme governance" as agreed in 1858.

In the final oral speeches presented in The Hague in March 2009[166], both States referred to potential new disputes that could arise in relation to the San Juan River in future. Costa Rica argued that it must be notified, for prior consultation, about any pipeline or hydroelectric dam projects on the San Juan River, while Nicaragua argued that pollution from the Costa Rican San Juan tributaries, as detected by UNEP and OAS[167] were the cause of great concern, equally raising the point that the mining project to extract gold from an open-pit located in the border region of Crucitas (Costa Rica) could result in a lawsuit being brought against Costa Rica over potential environmental damage. The case is still pending before the ICJ[168].

Crucitas

Crucitas is an open-pit gold mining project located on the border between Costa Rica and Nicaragua, and is the subject of much debate in recent times, especially since 2008, when Costa Rica officially resumed operations which had been temporarily suspended by a governmental decree between 2002 and 2008. Disagreement has arisen between the two countries over the mine's proximity to the San Juan River (4.5 km in a straight line, 8 miles by water), which, from that particular sector, is no longer a national Nicaraguan river (both sides being Nicaraguan) and becomes an international river.

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166 Final oral arguments of Costa Rica (www.ICJ-cij.org/docket/fles/133/15078.pdf) and Nicaragua (www.ICJ-cij.org/docket/fles/133/15098.pdf) with respective dates of 9th and 12th March.

167 OAS/UNEP; op.cit.

168 Relevant points of the Petition: a.) The obligation to facilitate and expedite traffic on the San Juan River under the terms of the Treaty of 15th April 1858 and its interpretation given by the Arbitration Award of 22nd March 1888. b.) The obligation to allow Costa Rican boats and their passengers to navigate freely and without impediment on the San Juan River and moor freely on the banks of the San Juan River without paying any charges or having to stop at any Nicaraguan posts along the River, being for commercial purposes, including passenger transportation and tourism. c.) The obligation in allowing Costa Rica right of navigation on the San Juan River in official vessels, for organising supplies, replacing personnel at border posts used for protection purposes along the River, including transportation of necessary ammunition and weapons, as established in the relevant legal instruments. d.) The obligation to cooperate with Costa Rica in meeting these obligations and activities, requiring joint efforts on the part of both States.

The geographical proximity of Crucitas in relation to the San Juan River is emphasised from a hydrological point of view by the high levels of rainfall in this area, reported by UNEP and OAS as being between 3500 to 4000 mm per year[169]. The Ministry of Environment and Natural Resources of Nicaragua (MARENA) indicated that the subsequent entering into operation of the project would affect several municipalities located on the shores of Lake Nicaragua and along the San Juan River, including impacts that would be felt in terms of sedimentation, water quality, damage to the biodiversity of the San Juan River, as well as potential damage to tourism.

MARENA stated that this was a planned project in a border region, involving a complex international basin, in which the environmental impacts on both sides of the border should be duly considered[170].

According to the environmental impact assessment submitted to the National Environmental Technical Secretariat of Costa Rica (SETENA), the project is viable from a hydrogeological point of view, with there being no expected negative effects on groundwater provided that all control, prevention and mitigation measures are properly put into place. Indeed, Nicaraguans were invited to the public hearing process during the EIA[171].

This case highlights the need to strengthen international cooperation mechanisms within international basins, including the need to provide clear guidelines to help States reach sustainable development.

169 On this issue, see BOEGLIN N., "Las implicaciones internacionales jurídicas para Costa Rica de la minería en Crucitas", Environmental Journal (National University of Costa Rica - UNA), February 2009, Heredia, UNA, pages 13-14. Available at: www.ambientico.una.ac.cr/185.pdf.

170 MARENA outlines the Status the environmental impact of the "Crucitas" mining project on the San Juan River. 22nd April 2009. Available at www.marena.gob.ni.

171 La Nación newspaper, Costa Rica. 'The Mining Project in Crucitas is Viable'. Jorge Rodriquez. 27th February 2009.

Short Answers

Chapter 1 Space in motion

1.1 What are the practical differences between a shared river, a shared basin and an international watercourse?

A shared basin is a water basin that extends across the territory of two or more States or countries, which means that is can be characterised as a shared natural resource within a particular territorial region or area.

An international watercourse is more of a limited concept in the sense that it does not define a geographical area or territory in the same way a shared basin does, but it forms a system of surface waters (rivers, lakes, canals) and a connected tributary groundwater system that normally flows to a shared or common river mouth.

The river defines the linear space of the basin and is its central component. There are no water basins without rivers, nor are there rivers without water basins.

1.2 How are different water basin States defined?

These are defined by international water law as “Riparian States”, when surface waters are shared.

In the case of shared groundwater, the chosen terminology is “Basin State” or “Basin Participating State”.

The Convention on the Law of Non-Navigational Uses of International Watercourses (1997 Convention), refers to the expression “Watercourse State” when defining the States that share a water basin.

1.3 How are the resources linked water resources regulated?

Riparian States have limited sovereignty over resources related to rivers within a shared basin. This means that there is a limit to sovereignty over such resources because of the rules and principles of international law, such as good neighbourliness, cooperation, or even abuse. This is because certain actions by States in the area of the water basin that crosses over into their territories, may cause damage to other co-riparian States.

1.4 What does it mean for a basin to be shared?

A shared basin is a water basin that extends across the territory of two or more States or countries, which means that is can be characterised as a shared natural resource within a particular territorial region or area.

1.5 What is the difference between a shared basin and an international basin?

In principle, these terms can be used interchangeably because they refer to a water basin, which is defined by a river that crosses the borders of a State. However, the term “international” may be understood as”internationalised”, which, when applied to a river, implies that there is a transfer of sovereignty to a supranational body for the management of the basin.

1.6 What is the difference between a shared basin and a transboundary basin?

The term ‘shared’ is very broad and includes not only the transboundary basins but the border basins as well. This includes water basins formed by successive rivers that flow through the territory of two or more countries to the river mouth (Colorado) and the basins of contiguous rivers that serve as a boundary between two or more countries (the Oder River between Poland and Germany, for example). There may indeed be differences, although minimal, between shared basins and transboundary basins.

1.7 What is the difference between a transboundary basin and an international basin?

An international basin includes border rivers and transboundary rivers. However, if the term ‘international’ is also used to denote the internationalisation of a river, there would be a distinction, through the existence of a supranational authority for the management of the basin, between a ‘transboundary’ and an ‘international’ river.

1.8 What is the difference between a border basin and a transboundary basin?

Border rivers serve as the political boundaries between two or more States, whereas transboundary or successive rivers are those that originate in one State, cross into the territory of another State (or other States), continuing their flow until they reach the river mouth.

1.9 What consequence does the use of this different terminology have in practice?

All words used (shared, international, border or transboundary) are interchangeable, because in essence, they refer to the presence of a body of water that crosses the territory of more than one State. However, as previously explained, some of these terms can have political connotations. ‘Shared’ is the most generic term, and the one which best describes a river (and its water basin) located in the territory of more than one national State.

1.10 How is the concept of a basin applied in practice?

The International Law Association (ILA) in the 1958 New York Declaration, was the first to adopt the concept of the water basin, and of the fair and equitable sharing of its waters by riparian States. The Treaty on the Danube discusses the concept of a “water basin”, while the La Plata Basin Treaty adopts the concept of a basin in its reference to the “La Plata Basin and its areas of influence”. It should be noted that the 1997 Convention does not use the concept of a “shared basin”, but uses a more limited concept referred to as an “international watercourse”.

1.11 How are limits established within a water basin that separates or crosses over into the territory of two or more States?

In the case of transboundary rivers and successive rivers, the boundaries between States are generally established by an imaginary line that crosses the river and connects to the outer limits of the territorial boundaries. In other words, the boundary is established through an extension of the limits already set on land. In the case of a border or contiguous river, the delimitation of boundaries is more complex since it depends on physical and geographical factors, such as the behaviour and size of the river. The boundaries in these particular cases can be determined by an imaginary line, equidistant from each of the banks, set as the geographical centre of the river. However, several international agreements have incorporated the *Thalweg* method of determining the limits of the basin due to variations in flow along certain rivers. The *Thalweg* indicates the deepest channel of the river and is the best system for regulating navigation.

1.12 Is it possible to change the borders of the States that are part of a basin in order to characterise a shared basin?

No. Characterising a basin as shared does not imply removing State sovereignty over respective areas. Moreover, defining a basin as shared is an imperative that stems from the existence of a shared resource. This does not imply that the aforementioned resource should be placed under a supranational authority over which the States which share the resource have no jurisdiction or authority, nor does it imply that the part of the shared resource that is in one State´s territory shall not be under that State´s jurisdiction. Notwithstanding the above, when Basin States agree to establish a supranational authority to manage the basin's resources, they do to a certain extent cede a portion of their functional sovereignty (linked to certain aspects of the basin's management) to the supranational authority or institution with the aim of achieving the equitable use of resources, including water. However, it can not be concluded from this that the transfer of part of a State's sovereignty can change the territorial boundaries of the States that share the basin. These remain unchanged.

1.13 What are the limits of a shared basin? Where does it begin and where does it end?

There are two types of limits: geographical and political.

The geographical boundaries are the same for all types of basins (whether shared or not). Every water basin is defined by a drainage divide, which determines its limits from other water basins. The water basin begins or ends in a drainage divide which, in some jurisdictions is commonly referred to as a watershed, or drainage divide.

Whether a basin is shared or not depends on the political boundaries between States. In other words, the term "shared" goes hand in hand with the existence of borders or political boundaries that divide the resource among the States on whose territories the basin is located. In short, the water basin is defined by geographical and geomorphological criteria, whereas the shared basin is defined by political criteria.

1.14 What part is shared? The water, the river, or other natural resources of the river?

The water basin includes other resources besides the river and which are connected to it. Some of these are divisible by nature, such as the channel for example, where each State exercises limited

sovereignty over the portion of the channel passing through its territory. The water flowing in the basin itself is a non-divisible natural resource. States exercise joint ownership over this resource which leads to shared sovereignty. The same applies to the living resources that inhabit the waters and which have independent mobility.

Chapter 2 From principles to tools

2.1 What are the theories that explain the use of water within a shared basin?

The theory of *absolute territorial sovereignty* of States over the water resources within their respective territories has not yet been applied in practice. Although it has also not been applied a lot, the theory of *territorial integrity* favours downstream States by recognizing their authority to give consent for any type of modification to the natural flow. The theory of *Equitable Use* has been used a lot in practice and calls for the equal rights of riparian States over the water basin. Lastly, the theory of *Joint Management* goes beyond the equitable use of resources and calls for integrated resource management, through the joint regulation of the river and its ecosystems by a supranational institution.

2.2 What are the principles that govern the behaviour of different States in relation to shared basins?

The principle of cooperation establishes a general obligation of riparian States to act jointly and in good faith in the management of shared water resources. The principle of '*integrated management*' points to the duty of States to manage the basin as a unit, including that of surface and underground waters and any connected resources. The principle of *sustainability* implies the need to consider the waters of a shared basin within the particular context of the ecosystems of which they are part, in order to ensure a balance between environmental protection and use. The *precautionary* principle refers to the need to prevent, reduce or control damage or harm to the aquatic environment, even when there is no certainty that damage may be caused. The *duty not to cause harm* refers to a due diligence duty to avoid known risks that could result in damage to the basin's resources. The *participation* principle establishes equitable, reasonable and sustainable use of the basin. It also refers to public participation in the management of the basin.

2.3 Do these principles establish binding obligations and what purpose do they serve?

Most of these principles are part of so-called soft law. Although not binding, these are accepted by the international community as models of behaviour and may even become formal rules once included in agreements and treaties. However, some of these principles are required as part of common law or customary law, and become binding when incorporated into the provisions of a treaty or international agreement, such as in an agreement regulating a water basin.

2.4 What laws apply to shared basins?

The laws of each State apply to the portion of the water basin within their respective territories, in addition to the applicable rules and principles of international law.

2.5 How do the laws of a Basin State apply when this basin is shared between other States?

The laws of a basin State apply to the portion of the basin within that State's territory.

As frequently occurs when signing international agreements, States cede some of their sovereignty over the object of the agreement, as well as in areas involving cooperation and international relations.

If a Basin State enters into an agreement which establishes an institution or organisation for managing the basin, guidelines or standards may be drawn up to be transposed in the domestic laws of each States sharing the basin. Such an agreement could also establish certain restrictions to the sovereignty of each State and in the management of the shared basin.

2.6 What are the benefits of co-regulating a shared basin between States?

Joint regulation of the basin results in a good balance of the interests of States, in terms of the uses and needs of water. There is also the assumption that States will share substantial benefits derived from the water basin.

2.7 What types of activities are permitted within a shared basin?

Basin States are allowed to undertake activities within their own jurisdiction, also in accordance with the rules and principles of international law – in particular, the principle of equitable use, the principle of cooperation and the duty not to cause harm, and in accordance with the agreements signed between the States involved.

States should make sure that their activities are directed towards the equitable use of the basin, and must fulfil certain duties in this regard, such as protecting the water basin and its ecosystems from significant damage, sharing information, and providing consultation and negotiation services.

2.8 What types of activities are, or should be, forbidden within a shared basin?

Water basin States should refrain from carrying out, in their respective jurisdictions, any activity that may adversely affect another State´s use of the basin or which may cause environmental damage.

2.9 How are the activities that occur within these shared basins regulated?

Activities are regulated by the national laws of each Basin State, and also by the principles, rights and obligations of international law.

States should agree on a consultation system in situations where activities are carried out in their respective territories that could have a transboundary environmental impact. Additionally, a transboundary EIA system should be agreed that guarantees public participation, irrespective of the Basin State in which individuals reside.

Chapter 3 In agreement with the agreements

3.1 What standards are applicable to a shared basin?

Frameworks for international, national and local standards can be applied.

3.2 What treaties apply to a shared basin?

Treaties that apply to shared basins are those that arise through developments in State practices, as well as those for adopting agreements in regulating water basins. There is, however, a wide variety of treaties on shared basins. Of particular interest here are: the 1815 Congress of Vienna declaring the opening of international rivers for commercial navigation, and the 1997 Convention on the Law of Non-Navigational Uses of International Watercourses.

3.3 Is it possible to regulate a shared basin by means of a law?

Water needs to be regulated in the same way as any other resource within a country. Law, or an equivalent instrument depending on the country, is the necessary management tool for implementing a country's policies on water or any related issue.

Since a shared basin is a shared resource, its regulation requires that all Basin States be actively involved in its management, either by agreeing to harmonise national laws that influence its management (laws concerning water, forests, land, etc…), by regulating the basin through an agreement or international treaty that promotes the harmonisation or bringing together of basin State's water legislation (and other relevant legislation), or through an agreement or treaty that regulates the basin through a supranational institution vested with the authority to adopt binding measures for States.

3.4 What are the difficulties in developing and implementing a treaty on shared basins?

Given its economic and social importance, water is a highly political resource. This implies a certain complexity in balancing the various interests relating to water, not only within the territory of a Basin State but also between States that are part of that same basin. Political will is necessary in order to overcome varying interests and potential disputes.

3.5 Is it necessary to prepare a treaty for regulating the management of a shared basin?

A treaty is needed to unify policies among different Basin States. A treaty is written proof that States agree to the equitable use of the resource.

3.6 How does general international law apply to shared basins?

It applies in terms of the common institutional framework established by Basin States, as a supplement to national and bilateral policies and regulations.

3.7 Who do these legal instruments apply to?

To the governments of the States that are part of the same water basin, and to the institutions responsible for the management of the water basin.

3.8 What rights and obligations do upstream and downstream States have?

Part of this question was answered when analysing what activities are allowed within a shared basin. The upstream and downstream States have a community of interests revolving around the water basin, governed by the principle of equitable and intelligent use and limited by a duty not to cause significant harm.

3.9 What rights do the bordering or contiguous (river) basin States have?

See the answer to the previous question.

3.10 Is it necessary to have a specific basin policy in order to manage a shared basin?

Given its comprehensive approach, the water basin is the most appropriate framework of reference for managing water resources. The existence of a national policy on resources/water/basins that defines the water basin as the management unit of the water resources within a given country, undoubtedly contributes to an integrated water basin management system, irrespective of whether it is shared or not, and to the sustainable management of the natural resources contained within. Since the shared basin is a shared natural resource, some form of agreement or treaty is required between the Basin States so that the basin can be effectively regulated. Through the joint resolve of Basin States through a written agreement, we can therefore see evidence of a common policy which transcends the national borders of each Basin State.

3.11 Are there any successful examples of policies at the international level involving shared basins?

There are several examples that outline advances made in the governance of shared waters through the establishment of supranational institutions in charge of the management of a basin, and through which States have agreed to cooperate on the sustainable management of water basin resources. For example, the Lake Tanganyika Convention establishes the Lake Tanganyika Authority, consisting of the Conference of Ministers, the Management Committee and the Secretariat; the La Plata Basin Treaty establishes the Intergovernmental Coordinating Committee as a standing committee for promoting, coordinating and following the progress of measures aimed at the integrated development of the La Plata Basin; the institutional process established by the Agreement on Cooperation for the Sustainable Development of the Mekong River Basin, led to the creation of the Mekong River Commission, which is an international legal entity.

3.12 What are the benefits for riparian States of cooperating in the management of a transboundary basin?

There are a number of additional benefits to cooperating for the integrated management of shared basins, irrespective of any reduction in individual costs for each State. Some of these benefits are non-quantifiable, such as regional integration, economic diversification, or improvements in political relations. Other benefits, not necessarily considered at the beginning of the process, but which may appear later on include, specific projects for environmental services, power generation, improving livelihoods, or reducing poverty.

3.13 How is a cooperative process for the management of a transboundary basin developed between States?

There can be varying levels of cooperation when jointly managing a shared basin. These different levels of cooperation can be seen as the successive phases of a process that enables States to go from a context of potential disputes to one of integration. Certain obligations, such as the exchange of information concerning the basin's overall condition, as well as communication and notification on planned activities and projects, are viewed as unilateral activities that set the basis for cooperative management. In more advanced stages of the process, the national authorities of cooperating States have set out a number of joint national projects aimed at reducing costs and generating greater amounts of benefits. In yet more advanced phases of cooperation, in which these processes have already been institutionalised, joint management entities and full projects are called upon to facilitate and give continuity to the process.

3.14 What is a code of conduct?

A code of conduct is a document which has been voluntarily written by two or more parties, whether physical or legal entities, public or private, who agree to commit themselves to a series of principles and abide by a set of goals or standards.

Chapter 4 Rethinking the institutions

4.1 Is it necessary to establish institutions for the management of shared basins?

The setting up of an institution is a mechanism to promote integrated water basin management, to provide relevant content and implement the duties and powers of the States to use water in an equitable manner, and not to cause damage.

4.2 What type of institutions should be established?

The institutional framework will depend on the will of the States involved. An appropriate solution would be to establish supranational institutions as legal entities, comprised of members of each Basin State. However, these institutions cannot ensure an effective system of shared basin governance if they are not supported by the political will of States.

4.3 What sort of characteristics do these institutions have for the management of shared river basins?

The particular characteristics of these institutions largely depend on the powers that the States assign to them. They may range from supranational bodies with complex characteristics, to more informal mechanisms for bringing together national authorities in charge of the management of water resources. In general, these institutions are characterised by their willingness to exchange and distribute information and knowledge among all water basin States, breaking with past schemes where mistrust often prevails. This is a prerequisite in getting States motivated to cooperate for the joint management of water basins.

4.4 With regards to the administration of shared basins, what exactly is the level of input by States into the institutions?

The ability of States to properly manage water basin resources depends on political will in moving towards an effective form of cooperation for this management to be beneficial to all riparian States within a framework of sustainability. National institutions responsible for water basin management within their respective territories will influence the decisions of the institution or organisation established by agreement for the management of shared waters. Its degree of interference will be linked to the framework of competence attributed to that institution.

4.5 What roles do the private and the productive sectors play in institutions entrusted with the responsibility of managing a shared basin?

In the end, the management of a shared basin is in the hands of the Basin States. It is their governments, through the ministries of foreign affairs, who must work towards the sustainable and equitable use of the basin. This does not prevent States, through their own democratic channels, from facilitating or reflecting on citizen or corporate sector participation, the latter´s claims and demands within the competent political authorities in charge of negotiating on behalf of the State.

4.6 How can cooperation between States, local authorities and the inhabitants of a shared basin be encouraged?

The participation of inhabitants in the management of a water basin should not simply be limited to consultation schemes and other types of representations that have no capacity for decision-making. Participation should guarantee real decision-making powers for members of society. Real power refers to guaranteeing minimum representation for all stakeholders, including water users, local and regional entities, citizens represented through environmental associations in decision-making processes. This occurred for example within the Water Councils of the Spanish Water Confederations (Confederaciones Hidrográficas).

There is nothing to prevent water basin riparian States from establishing formal mechanisms (whether individually for the portion of the water basin located within a State´s territory, or through the setting up of joint partnerships for the entire basin) to involve the relevant local authorities, civil society and the productive sector in the water basin's management.

For example, this could be a committee where various sectors of society are represented and which would be used to discuss matters of interest across all sectors or just within certain areas. It could also be used as an advisory body for making recommendations on specific issues concerning the management of water and other resources within the basin.

4.7 What does it mean to manage a basin in an integrated manner?

Integrated water basin management implies understanding that water resources are part of a dynamic system where interactive processes occur between water, flora (forests), soil, groundwater and fauna, and between these resources and society.

4.8 What does integrated management of water resources consist of?

Integrated water resources management (IWRM) is defined by the Global Water Partnership as a "process which promotes the coordinated development and management of water, land and related resources in order to maximise the resultant economic and social welfare in an equitable manner, without compromising the sustainability of vital ecosystems".

4.9 What are the differences, at theoretical and practical levels, between the integrated management of water resources and the ecosystem approach?

According to the Convention on Biological Diversity, the ecosystem approach is a strategy for the integrated management of land, water and living resources, which promotes conservation as well as fair and sustainable use. This approach involves people as the key participants in defining areas of activity as well as the structural and functional characteristics (goods and services) that must be preserved within the ecosystem. The ecosystem approach can be applied in different contexts, not just to water basins, sub-basins or micro-basins, but also to landscape management for example, or to other well defined areas. Integrated water resources management takes the very same elements into account, but has no special emphasis on the goods and services of ecosystems, nor does it award any substantial value to the environment or to nature and its close interaction with humans and their livelihoods.

4.10 What are a water basin´s management or operational plans?

They are tools for the management of a water basin, based on the principles of sustainable development.

4.11 Who prepares these management or operational plans?

The plans are prepared by an integrated water basin commission or agency, for various social, political and economic stakeholders, such as users and various forms of authorities at national, regional and local levels, neighbourhood associations, and so on.

4.12 Who or what is the target audience of a management or operational plan?

Plans are aimed at national, regional, local and civil society stakeholders interested in water resources management.

4.13 How is a management or operational plan enforced?

This instrument depends on the political will of the basin States. For shared management to be effective, it is necessary for States to respect the agreements reached throughout the development of the management plan.

4.14 From a legal or national legislation perspective, how can a shared basin be managed in an integrated manner?

Given the current legal vacuum and the absence of an international treaty for regulating shared basins and establishing a specific institution for this purpose, coordination and cooperation between the national institutions of Basin States is an effective mechanism for integrated watershed management. These institutions are usually called water basin councils, development committees or

something similar. Even though they do not have a specific mandate for managing the shared basin in an integrated manner due to their transboundary and legal nature, they are ideal forums to ensure participation of the public and to encourage direct dialogue between users in riparian States.

4.15 How should any disputes that arise from the use of shared basin resources be resolved?

If States fail to reach an agreement, conflicts may be settled through diplomatic or internationally oriented legal channels, or through the use of alternative tools for resolving disputes (mediation, arbitration, conciliation).

Chapter 5 The dynamics of change

5.1 Who is responsible for negotiating within the context of shared basins?

The regulation of a shared basin is part of a political process that primarily involves States.

5.2 Which authorities are involved in negotiating agreements concerning shared basins?

Although there are differences between countries, the negotiation of a treaty basically involves two different branches of government: the executive branch, mainly through the foreign affairs ministries, and the legislative branch, for what is linked to the approval and internal implementation process, once the treaty has been adopted.

5.3 Who makes the decisions when negotiating agreements?

The negotiation of a treaty or an international agreement is a lengthy process that begins with a unilateral action of a State expressing its interests for one particular topic to be regulated by international law. In order to initiate the process, an invitation is sent to one or more State to establish contact and with the aim of starting a dialogue on the selected topic which is of common interest.

Given that States are legal entities, the aforementioned invitation, negotiation and dialogue cannot be directly administrated by these entities, but by physical persons representing the State as a legal entity. The appointment of a representative is a matter regulated by the domestic law of each State. However in international law, the State will supposedly be represented by one of the following individuals: the Head of State, the Head of Government or the Minister of Foreign Affairs.

Full powers must be granted to all other individuals with whom the State wishes to engage with in negotiating a treaty, through the provision of a document that originates from the State's competent authority, designating one or more person to represent the State in the negotiation of a treaty.

Heads of diplomatic missions and heads of delegations participating in international conferences are supposedly authorised to negotiate treaties for the State that they represent, or within the framework of the Conference in which they participate.

5.4 What are the steps for reaching an agreement on matters concerning shared basins?

The first step is to rely on the political will of the Basin States in bringing forward the management of shared resources. If an agreement is reached, it can then be expressed in a policy or legal document in the form of a treaty.

5.5 What are the steps for negotiating a treaty related to shared basins?

The adoption of a treaty consists of the following phases: interpretation and negotiation of the text, its adoption and authentication, consent to be bound by the treaty (signing, ratification or accession), and finally, the entry into force of the instrument.

5.6 What is the influence of a "border-zone" on the integrated management of shared basins?

Transboundary cooperation for the governance of shared waters may originate from a local territorial unit due to this being a shared area where people live in close proximity, even though separated by a border. People living on both sides of a political border not only share the same natural resources but generally suffer from the same problems despite living in different States. This can easily generate the formulation of cooperation processes across various management projects.

5.7 What are the practical implications of decentralised environmental governance for shared water management?

Decentralised environmental governance is a concept that presupposes inclusive participation processes as well as horizontal power relationships. It seeks to promote decentralisation by putting together strategies to make sure that local issues are included in the national political agenda. In this respect, local perspectives are supplementary to the tools traditionally used for the management of shared waters, such as treaties and agreements between Basin States in particular, and therefore contribute to the establishment of a new approach to the legal and institutional aspects of shared water governance.

5.8 What are the characteristics of a good environmental impact assessment (EIA) procedure?

The EIA is a preventive environmental management tool that evaluates the potential effects of an activity or group of activities in relation to the basin. In the event of possible transboundary environmental risks, riparian States are not only obliged to notify and consult each other (according to the principle of good neighbourliness), but also to act upon such duties by carrying out an EIA. A good EIA procedure is one that incorporates good neighbourliness and precautionary principles in order to avoid harm being caused to others.

5.9 How can it be ensured that an EIA procedure is respected?

The developer or proponent of a project taking place within the basin must have a permit or licence to determine the environmental feasibility of the activity, work or project that it intends to carry out. This permit or license shall be granted on the basis of the national legislations of the country where the work is going be carried out, or as part of a regional environmental assessment process. The proponent or developer will not be entitled to carry out the activity, work or project if no environmental permit or licence is held. The environmental authorities of neighbouring countries must be notified about any activity, work or project that could have a significant impact on the particular part of the basin located within its territory. Furthermore, the EIA procedure should ensure public participation by all parties potentially affected by the activity, work or project.

An effective environmental assessment must take several environmental management processes into account, such as the evaluation of cumulative effects and an assessment of environmentally fragile areas.

5.10 How can it be ensured that the provisions of an agreement on shared basins are respected?

According to international law, States must comply with treaties in good faith. One of the possible measures for ensuring compliance with the provisions of an agreement on the sharing of water between Basin States would be to establish an appropriate institution, to which States submit regular reports concerning compliance with their obligations. In the event of non-compliance, the institution may request that the State carries out alternative measures. This is designed to encourage cooperation, rather than directly resort to forms of international resolution and responsibility.

5.11 Who is responsible in situations where a shared basin may be contaminated, when this contamination derives from another State?

Once a State has been called upon to act in good faith in accordance with the law but has failed to respond to such a request to settle the issue by peaceful means, it is possible to refer to legal institutions set up by international law.

5.12 Who must pay for the cleaning of a contaminated river when the basin in question is shared?

The principle of international law known as the “polluter-pays” principle applies. The environment must be restored to its previous condition if one State causes environmental damage to another. The State should provide financial compensation for damage caused in such situations where restoring the situation to normal is not possible.

5.13 How is water distribution to be negotiated within a shared basin?

It must be negotiated by seeking a balance between the various competing demands and by taking into account the social, economic and environmental value of water. An integrated form of management must be adopted. This means one that takes into account existing interlinkages between surface water and groundwater, inland and coastal regions, urbanisation, land administration, desertification, environmental degradation, and the integrity of ecosystems.

5.14 Are there any priority levels in allocating the use of water within shared basins?

Water must be distributed in an equitable manner in order to attend to, first and foremost, basic human needs and to allow ecosystems and different water uses to function properly within their respective economies, including for food security.

5.15 How can environmental flows be regulated within a shared basin?

In order to establish a system of environmental flow and to ensure the health of ecosystems, it is necessary to take different measures starting with a comprehensive review of all water uses, upon which could be developed an agreement establishing the distribution of the water available.

5.16 Who will represent the environment in negotiations concerning the allocation of water within a shared basin?

Basin States shall represent environmental interests when discussing the allocation of water use. The supply of environmental flow within a shared basin context requires that States look beyond their personal interests and consider the health and integrity of the water basin as a whole.

Conclusion

One of the so-called "Bonn Keys"[172] relates to good governance and promotes the need to establish national water management strategies "to address the fundamental responsibilities of governments: laws, rules and standard setting; the movement from service delivery to the creator and manager of an effective legal and regulatory framework".

This statement is not only of relevance to national water resources, it is also important for resources that are shared with other States. It would only be necessary in such case to refer to treaties and agreements instead of laws and regulations, and to refer to government plans and strategies. The problems and needs remain the same. The only things that change are the context and the stakeholders.

Despite differences in context and, to some extent, despite the presence of different stakeholders, the good governance of water resources at the national level is intimately linked to the good governance of such resources (shared basins) at the international level.

To give an idea of this dependence and of the difficulties in establishing clear-cut divisions between its different components, namely between national and international water policies and between national and international water laws, let us consider a case where over 60% of a country's territory is located within a shared basin or, in other words, where the majority of the water that enters or is produced within that country, leaves its territory and flows into one or more other countries.

In such a case, the adoption of a national water policy that does not adequately take this situation into account is not a very sensible way forward, nor is the regulation of water through a national law which shows no regard to international commitments (commitments for now or for the future) on how shared water is regulated in cooperation with neighbouring States. This does not mean that national water law should establishing principles and institutions for the regulation of an international basin that a State shares with its neighbour, or that an international treaty for the regulation of a transboundary river should establish the provisions which regulate, for example, the price and distribution of drinking water at the national level. What this means is that a State will sooner or later be forced to consider and regulate the interrelation between the existing national and international aspects of the waters that flow through its territory.

This type of situation is found in many States and it shows that the governance of water resources in general is a complex system of continuous and reciprocal influences in the sense that one component has a continuous influence over the other. International law influences and conditions national law, while international policies influence national policies and vice versa.

To underline the veracity of what was outlined in the previous paragraphs on the unsuitability of creating strong divisions for the regulation of (un)shared waters, it must be said that water as a

172 Adopted at the International Conference on Freshwater in Bonn, Germany, from 3rd to 7th December 2001.

resource can be shared between several States which do not share borders, and that through the hydrological cycle and its inherent processes, it moves from one State to another irrespective of political boundaries.

Similar conclusions can be drawn regarding virtual water. Virtual water is used to create a product; in other words, it is the amount of water which can be linked to the creation of a product[173]. Quantifying virtual water has transnational implications. This suggests that it is not enough for such virtual water to be evaluated only by the country that produces the goods, but that it is necessary to consider the transnational aspects of this issue.

This book has analysed in detail the principles and rules of international law applicable to rivers and lakes shared between two or more States, with a particular focus on the provisions of the 1997 Convention.

This Convention, although not currently in force, establishes certain parameters to allow States to govern their relations concerning shared water cooperation, and which are essential for promoting the conservation and sustainable use of bodies of water. Such parameters may include: the duty to exchange information, participation by all Basin States, the duty not to cause significant damage, and to use water in an equitable and reasonable manner. The Convention has certain shortcomings, however, which need to be underlined. One of the Convention´s limits is that its scope is limited to watercourses and not to water basins, which to a certain extent, conditions the view that rivers are critical components of ecosystems, and that they provide a vital set of functions and a whole range of services, which go from the conservation of biodiversity, to the preservation of certain lifestyles, and to the replenishment of aquifers. The other limit stems from the distinction made by the Convention concerning national and international spheres of use, and the fact that it is exclusively devoted to interstate cooperation.

This distinction, as already explained, does not necessarily promote effective and integrated water governance, which requires in reality a more holistic approach, taking the resource into account, here the river as well as its associated resources, but without the obstacles that can so easily arise because of political or administrative divisions. Nevertheless, a treaty of this kind, however imperfect it is, must be contextualised so that it promotes cooperation and consensus between States, and for it to serve as a basis for the adoption of specific agreements on water basins.

Integrated management is the new paradigm for water resource management.

Integrated Water Resources Management (IWRM) emphasises three interrelated processes:

- The recognition of all uses of water;
- Intersectoral management (e.g. agriculture, industry, environment); and
- Intersectoral coordination (local, national, regional, international).

173 For a more detailed discussion on this issue, see Iza, Alejandro, An approach to the legal aspects of virtual water, Acts III-IV-V, International Symposium on Environmental Law and Justice, Editorial Dykinson, 2005, page 403.

A key element for the effective implementation of integrated management is the ecosystem approach[174], which promotes the participatory management of water resources at the water basin level. This approach, when applied to integrated water management, promotes an integrated and holistic view of water management and the water basin as a management unit.

There are no doubts about the benefits of taking water basins into account in the management of water resources. The disadvantage, however, of using the water basin as a unit in a transnational context, stems not only from how to achieve its regulatory acceptance from a political standpoint, but also on how to ensure its practical application. International water law does not fully incorporate concepts such as the water basin, environmental protection and sustainable development. The implementation of these concepts, however, can derive from other branches of law, insofar as the environment is not an abstract idea, as stated by the International Court of Justice in the Gabcikovo-Nagymaros case, but represents a set of interactions in which various ecosystems are linked and where the law has to reflect such interactions.

The scarcity of water, its strategic importance and its immediate link with issues of sovereignty, explains the timid progression towards the incorporation of environmental issues, and partly justifies the reluctance of States to accept to see the water basin concept applied within a transnational context.

The consideration of environmental variables in the context of a shared basin indicates the need to consider the impacts of projects on all the elements that make-up a water basin´s environment. Faced with an obligation to protect a shared basin's environment, a downstream State could potentially stop a venture that an upstream state intends to carry out if the venture is seen to have a negative effect on the water basin's environment. Arriving at this conclusion is not easy because, as previously explained, the basic principle governing shared waters is the principle of equitable use, which implies taking into account the individual characteristics of each watercourse.

This publication has tried to explain, in a simplified way, the most important principles and rules of international law which apply to shared waters within the context of a water basin and according to an ecosystem approach. The aim of this book is to provide tools for those who are generally interested in this subject, whether or not experts in law, so that they can familiarise themselves with this complex field of work and continue to delve deeper into the issues raised. The ultimate aim is to influence the development of fairer, more equitable and more effective systems of shared water governance.

174 Ecosystem approach: The Ecosystem Management strategy seeks integrated management of terrestrial and aquatic living resources in a manner that promotes conservation and sustainable use at an equitable level. Meeting the needs of people (the human being is an integral part of the ecosystem) is a central component of the ecosystem approach, which seeks to:
- Maintain ecosystem functions and services;
- Improve the distribution of benefits in an equitable manner;
- Promote adaptive management strategies;
- Implement decentralised management activities; and
- Encourage intersectoral and interdisciplinary cooperation.

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Annex I

Basic guidelines on how to reach a consensus or general agreement

The basic guidelines for reaching consensus and agreements that are outlined below, are based on the technical aspects presented within this publication and aim to provide the reader with a practical view of the most important aspects that have to be considered for promoting the better governance of shared waters.

Governance of water and of shared waters in particular, requires that the parties involved evaluate policies and governance measures, the levels of interaction of various stakeholders and the legal frameworks through which these measures are to be implemented, as well as the stakeholders to whom they apply.

These guidelines, which are in no way exhaustive, are designed as a rough outline and as a framework of reference for the setting up or management of a process that could potentially lead to political or legal agreements on the management of waters shared between States.

Preliminary assessment

1. Analyse legal and international policies that are relevant in this area

- Define major international and regional policies which States currently adhere to;
- Assess regional and international legal obligations related to water and which the State has the obligation to implement;
- Evaluate levels of compliance with these obligations;
- Establish whether harmonisation between international obligations and the national government system exists. In other words, assess to what extent international obligations apply at national and local levels;
- Establish whether there are any ongoing negotiations with neighbouring States concerning shared basins, determining the extent to which these negotiations have been developed.

2. Prepare a detailed report on all the shared basins of a State

- Obtain relevant information about a shared water basin and all its components, in cooperation with the other State(s) which are part of the basin;
- Prepare technical and social studies in order to compile as much scientific and cultural elements as possible.

3. **Prepare a cultural-historical study on the region and its border zones**

- Determine integration, collaboration or joint management of natural resources, including water basins, where they exist;
- Identify past, recent or current negotiation processes from which it is possible to summarise teachings, thereby fostering cooperation among States.

4. **Map out stakeholders and state-run institutions**

- Determine the degree of importance and level of urgency that issues related to the management of shared waters have for States;
- Identify the level of knowledge that government officials have in relation to the manner in which shared waters are utilised and managed;
- Determine the ability of government officials to negotiate agreements with their respective counterparts in other States;
- Analyse the level of training of legislators and parliamentarians on matters of shared waters;
- Take lower levels of government into consideration, such as municipalities, Ejidos or other constituencies, particularly those located in border areas, and assess the training levels of those involved in making decisions.

5. **Map out the main social stakeholders**

- Identify the major social groups and community leaders;
- Identify additional community stakeholders of a social, economic and religious nature which have an impact on the most representative social groups within border areas.

6. **Evaluate the levels of cohesion between border States**

- Determine the existing level of cohesion between neighbouring States at national and local levels;
- Identify the type of existing social dynamics on both sides of the border;
- Identify potential connections and areas of cooperation between border populations.

7. **Evaluate the extent to which a State is decentralised**

- Determine the extent of water management decentralisation;
- Evaluate the role of local governments and their relationships with national authorities;
- Consider whether the agencies and institutions responsible for making decisions have public legitimacy.

8. **Consider public participation levels in decision-making processes**

- Determine the level of organisation and promotion of public participation in local and national decision-making;

- Determine whether it is possible to participate in decision-making processes on transboundary issues;
- Assess the level of political commitment in involving civil society in decision-making processes;
- Evaluate whether civil society feels it is represented by water management institutions.

General Guidelines

After having made a preliminary assessment of stakeholder (in)direct involvement, whether in whole or in part, with other States in various aspects of shared water management, a plan should be drawn up on how to manage activities in this particular area.

Ideally, these plans will start out as new, although in the majority of cases they will be taken up from previous plans, from where they last ended. Parties responsible for initiating these processes should be in a position to direct and guide events, as and when necessary, in order to reach agreements that best serve the interests of the States in question. Nevertheless, processes of this nature vary according to certain circumstances such as time and place and are not linear. This means that each of the steps shown below does not necessarily follow the same set of sequences for all cases. These guidelines correspond to a transboundary policy model determined by government stakeholders and executed by a State's own institutions.

1. Evaluate the status of the process

The first step for any form of action in seeking consensus and reaching agreements is to assess the current situation. It is therefore essential to assess all of the facts in question, including a study (albeit preliminary) of other previously signed or already existing agreements.

Dialogue will be necessary if the process has not been effectively initiated. However, if the process is at a more advanced stage, the next step will be to identify as much as possible the overall status of the following points.

2. Initiate dialogue

This process is initiated after a series of official letters and communications expressing interest in establishing a process that allows both States to opt for a cooperative management system. This kind of dialogue normally occurs in parallel with technical offices which can be used to promote and strengthen the process.

3. Exchange of information

Given the differences that exist between different national systems in terms of water management, it is essential that Basin States exchange scientific and non-scientific information to allow the sharing of technical knowledge and to ensure that States have balanced relationships with regards to current negotiations or to the negotiations that will be initiated in the future.

4. Institutionalisation of cooperation through transboundary organisations with specific mandates

Cooperation through technical institutions capable of measuring water flow or predicting droughts and floods, for example, can lay the basis for a political dialogue and cooperation agenda.

5. Transmission and exchange of information on individual management projects

Based on the principles of international law, it is necessary to inform other riparian States about the intention to execute management plans or develop future projects, supporting political dialogue and establishing the foundations for cooperation. This builds confidence between parties and a greater willingness to negotiate in the future.

6. Development and coordination of joint management strategies

States may reduce the individual costs of management and increase the amount of benefits and services obtained from the transboundary basin, by means of cooperative schemes for the management of shared waters.

7. Setting-up protected and jointly conserved areas

Protected areas, from an ecosystemic point of view, must be established in border zones and in safeguarded transboundary areas, and must be jointly managed. This not only promotes the conservation and sustainable use of resources, but also strengthens the channels of cooperation between public and private stakeholders.

8. Involvement of border communities

Together with the development of official joint activities, it is necessary to establish the groundwork to encourage the participation and involvement of civil society in decision-making processes on issues that have a direct impact on communities living in border areas, or on the natural resources found in these areas.

9. Joint management of shared waters

The investment in development projects in border areas and in shared basins, and the management and conservation of resources, generates revenue and profits beyond the State in which the investment was initially made and where the conservation measures were implemented, and may result in the establishment of activities, projects, programs and support measures being identified and adopted in unison with other parties, having distributional benefits for all Basin States.

10. Formalising cooperative agreements

This refers to the institutionalisation of the cooperative process, which has a binding nature and which, in practice, translates into the creation of an organisation for coordinating the activities of co-riparian States. This organisation then promotes the development of infrastructure works for the benefit of the whole basin, and other collaborative tools for the promotion of the integrated and sustainable management of the water basin and its resources.

Annex II

Treaties and instruments relating to shared waters

Of a global nature

- The Convention on the Law of the Non-Navigational Uses of International Watercourses

Of a regional nature

- Tripartite Agreement between the Republic of Mozambique, South Africa and the Kingdom of Swaziland on cooperation and sustainable use of water resources on the Incomati and Maputo Rivers
- Convention on the Protection of the Rhine
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes
- Amazon Cooperation Treaty
- La Plata Basin Treaty
- Statute of the River Uruguay

Other instruments

- Code of Conduct for achieving sustainable and equitable management of the shared water resources of the Volta Basin

Instruments of a global nature

Convention on the Law of the Non-Navigational Uses of International Watercourses[175]

The Parties to the present Convention,

Conscious of the importance of international watercourses and the non-navigational uses thereof in many regions of the world,

Having in mind Article 13, paragraph 1(a), of the Charter of the United Nations, which provides that the General Assembly shall initiate studies and make recommendations for the purpose of encouraging the progressive development of international law and its codification,

Considering that successful codification and progressive development of rules of international law regarding non-navigational uses of international watercourses would assist in promoting and implementing the purposes and principles set forth in Articles 1 and 2 of the Charter of the United Nations,

175 U.N. Doc. A/51/869, adopted in New York on 21st May 1997.

Taking into account the problems affecting many international watercourses resulting from, among other things, increasing demands and pollution,

Expressing the conviction that a framework convention will ensure the utilization, development, conservation, management and protection of international watercourses and the promotion of the optimal and sustainable utilization thereof for present and future generations,

Affirming the importance of international cooperation and good-neighbourliness in this field,

Aware of the special situation and needs of developing countries,

Recalling the principles and recommendations adopted by the United Nations Conference on Environment and Development of 1992 in the Rio Declaration and Agenda 21,

Recalling also the existing bilateral and multilateral agreements regarding the non-navigational uses of international watercourses,

Mindful of the valuable contribution of international organizations, both governmental and non-governmental, to the codification and progressive development of international law in this field,

Appreciative of the work carried out by the International Law Commission on the law of the non-navigational uses of international watercourses,

Bearing in mind United Nations General Assembly resolution 49/52 of 9 December 1994,

Have agreed as follows:

PART I INTRODUCTION

Article 1: Scope of the present Convention

1. The present Convention applies to uses of international watercourses and of their waters for purposes other than navigation and to measures of protection, preservation and management related to the uses of those watercourses and their waters.
2. The uses of international watercourses for navigation is not within the scope of the present Convention except insofar as other uses affect navigation or are affected by navigation.

Article 2: Use of terms

For the purposes of the present Convention:

a) "Watercourse" means a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus;

b) "International watercourse" means a watercourse, parts of which are situated in different States;

c) “Watercourse State” means a State Party to the present Convention in whose territory part of an international watercourse is situated, or a Party that is a regional economic integration organization, in the territory of one or more of whose Member States part of an international watercourse is situated;

d) “Regional economic integration organization” means an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it.

Article 3: Watercourse agreements

1. In the absence of an agreement to the contrary, nothing in the present Convention shall affect the rights or obligations of a watercourse State arising from agreements in force for it on the date on which it became a party to the present Convention.
2. Notwithstanding the provisions of paragraph 1, parties to agreements referred to in paragraph 1 may, where necessary, consider harmonizing such agreements with the basic principles of the present Convention.
3. Watercourse States may enter into one or more agreements, herein after referred to as“ watercourse agreements”, which apply and adjust the provisions of the present Convention to the characteristics and uses of a particular international watercourse or part thereof.
4. Where a watercourse agreement is concluded between two or more watercourse States, it shall define the waters to which it applies. Such an agreement may be entered into with respect to an entire international watercourse or any part thereof or a particular project, programme or use exception so far as the agreement adversely affects, to a significant extent, the use by one or more other watercourse States of the waters of the watercourse, without their express consent.
5. Where a watercourse State considers that adjustment and application of the provisions of the present Convention is required because of the characteristics and uses of a particular international watercourse, watercourse States shall consult with a view to negotiating in good faith for the purpose of concluding a watercourse agreement or agreements.
6. Where some but not all watercourse States to a particular international watercourse are parties to an agreement, nothing in such agreement shall affect the rights or obligations under the present Convention of watercourse States that are not parties to such an agreement.

Article 4: Parties to watercourse agreements

1. Every watercourse State is entitled to participate in the negotiation of and to become a party to any watercourse agreement that applies to the entire international watercourse, as well as to participate in any relevant consultations.
2. A watercourse State whose use of an international watercourse may be affected to a significant extent by the implementation of a proposed watercourse agreement that applies only to a part of the watercourse or to a particular project, programme or use is entitled to

participate in consultations on such an agreement and, where appropriate, in the negotiation thereof in good faith with a view to becoming a party thereto, to the extent that its use is thereby affected.

PART II GENERAL PRINCIPLES

Article 5: Equitable and reasonable utilization and participation

1. Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.
2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention.

Article 6: Factors relevant to equitable and reasonable utilization

1. Utilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances, including:
   a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
   b) The social and economic needs of the watercourse States concerned;
   c) The population dependent on the watercourse in each watercourse State;
   d) The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
   e) Existing and potential uses of the watercourse;
   f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
   g) The availability of alternatives, of comparable value, to a particular planned or existing use.
2. In the application of article 5 or paragraph 1 of this article, watercourse States concerned shall, when the need arises, enter into consultations in a spirit of cooperation.
3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

Article 7: Obligation not to cause significant harm

1. Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States.
2. Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.

Article 8: General obligation to cooperate

1. Watercourse States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse.
2. In determining the manner of such cooperation, watercourse States may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions.

Article 9: Regular exchange of data and information

1. Pursuant to article 8, watercourse States shall on a regular basis exchange readily available data and information on the condition of the watercourse, in particular that of a hydrological, meteorological, hydrogeological and ecological nature and related to the water quality as well as related forecasts.
2. If a watercourse State is requested by another watercourse State to provide data or information that is not readily available, it shall employ its best efforts to comply with the request but may condition its compliance upon payment by the requesting State of the reasonable costs of collecting and, where appropriate, processing such data or information.
3. Watercourse States shall employ their best efforts to collect and, where appropriate, to process data and information in a manner which facilitates its utilization by the other watercourse States to which it is communicated.

Article 10: Relationship between different kinds of uses

1. In the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses.
2. In the event of a conflict between uses of an international watercourse, it shall be resolved with reference to articles 5 to 7, with special regard being given to the requirements of vital human needs.

Part III Planned measures

Article 11: Information concerning planned measures

Watercourse States shall exchange information and consult each other and, if necessary, negotiate on the possible effects of planned measures on the condition of an international watercourse.

Article 12: Notification concerning planned measures with possible adverse effects

Before a watercourse State implements or permits the implementation of planned measures which may have a significant adverse effect upon other watercourse States, it shall provide those States with timely notification thereof. Such notification shall be accompanied by available technical data and information, including the results of any environmental impact assessment, in order to enable the notified States to evaluate the possible effects of the planned measures.

Article 13: Period for reply to notification

Unless otherwise agreed:

a) A watercourse State providing a notification under article 12 shall allow the notified States a period of six months within which to study and evaluate the possible effects of the planned measures and to communicate the findings to it;

b) This period shall, at the request of a notified State for which the evaluation of the planned measures poses special difficulty, be extended for a period of six months.

Article 14: Obligations of the notifying State during the period for reply

During the period referred to in article 13, the notifying State:

a) Shall cooperate with the notified States by providing them, on request, with any additional data and information that is available and necessary for an accurate evaluation; and

b) Shall not implement or permit the implementation of the planned measures without the consent of the notified States.

Article 15: Reply to notification

The notified States shall communicate their findings to the notifying State as early as possible within the period applicable pursuant to article 13. If a notified State finds that implementation of the planned measures would be inconsistent with the provisions of articles 5 or 7, it shall attach to its finding a documented explanation setting forth the reasons for the finding.

Article 16: Absence of reply to notification

1. If, within the period applicable pursuant to article 13, the notifying State receives no communication under article 15, it may, subject to its obligations under articles 5 and 7, proceed

with the implementation of the planned measures, in accordance with the notification and any other data and information provided to the notified States.

2. Any claim to compensation by a notified State which has failed to reply within the period applicable pursuant to article 13 may be offset by the costs incurred by the notifying State for action undertaken after the expiration of the time for a reply which would not have been undertaken if the notified State had objected within that period.

Article 17: Consultations and negotiations concerning planned measures

1. If a communication is made under article 15 that implementation of the planned measures would be inconsistent with the provisions of article 5 or 7, the notifying State and the State making the communication shall enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation.
2. The consultations and negotiations shall be conducted on the basis that each State must in good faith pay reasonable regard to the rights and legitimate interests of the other State.
3. During the course of the consultations and negotiations, the notifying State shall, if so requested by the notified State at the time it makes the communication, refrain from implementing or permitting the implementation of the planned measures for a period of six months unless otherwise agreed.

Article 18: Procedures in the absence of notification

1. If a watercourse State has reasonable grounds to believe that another watercourse State is planning measures that may have a significant adverse effect upon it, the former State may request the latter to apply the provisions of article 12. The request shall be accompanied by a documented explanation setting forth its grounds.
2. In the event that the State planning the measures nevertheless finds that it is not under an obligation to provide a notification under article 12, it shall so inform the other State, providing a documented explanation setting forth the reasons for such finding. If this finding does not satisfy the other State, the two States shall, at the request of that other State, promptly enter into consultations and negotiations in the manner indicated in paragraphs 1 and 2 of article 17.
3. During the course of the consultations and negotiations, the State planning the measures shall, if so requested by the other State at the time it requests the initiation of consultations and negotiations, refrain from implementing or permitting the implementation of those measures for a period of six months unless other wise agreed.

Article 19: Urgent implementation of planned measures

1. In the event that the implementation of planned measures is of the utmost urgency in order to protect public health, public safety or other equally important interests, the State planning the measures may, subject to articles 5 and 7, immediately proceed to implementation, not withstanding the provisions of article 14 and paragraph 3 of article 17.

2. In such case, a formal declaration of the urgency of the measures shall be communicated without delay to the other watercourse States referred to in article 12 together with the relevant data and information.

3. The State planning the measures shall, at the request of any of the States referred to in paragraph 2, promptly enter into consultations and negotiations with it in the manner indicated in paragraphs 1 and 2 of article 17.

Part IV Protection, preservation and management

Article 20: Protection and preservation of ecosystems

Watercourse States shall, individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses.

Article 21: Prevention, reduction and control of pollution

1. For the purpose of this article, "pollution of an international watercourse" means any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct.

2. Watercourse States shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse. Watercourse States shall take steps to harmonize their policies in this connection.

3. Watercourse States shall, at the request of any of them, consult with a view to arriving at mutually agreeable measures and methods to prevent, reduce and control pollution of an international watercourse, such as:

   a) Setting joint water quality objectives and criteria;

   b) Establishing techniques and practices to address pollution from point and non-point sources;

   c) Establishing lists of substances the introduction of which into the waters of an international watercourse is to be prohibited, limited, investigated or monitored.

Article 22: Introduction of alien or new species

Watercourse States shall take all measures necessary to prevent the introduction of species, alien or new, into an international watercourse which may have effects detrimental to the ecosystem of the watercourse resulting in significant harm to other watercourse States.

Article 23: Protection and preservation of the marine environment

Watercourse States shall, individually and, where appropriate, in cooperation with other States, take all measures with respect to an international watercourse that are necessary to protect and preserve the marine environment, including estuaries, taking into account generally accepted international rules and standards.

Article 24: Management

1. Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism.
2. For the purposes of this article, "management" refers, in particular, to:
   a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and
   b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.

Article 25: Regulation

1. Watercourse States shall cooperate, where appropriate, to respond to needs or opportunities for regulation of the flow of the waters of an international watercourse.
2. Unless otherwise agreed, watercourse States shall participate on an equitable basis in the construction and maintenance or defrayal of the costs of such regulation works as they may have agreed to undertake.
3. For the purposes of this article, "regulation" means the use of hydraulic works or any other continuing measure to alter, vary or otherwise control the flow of the waters of an international watercourse.

Article 26: Installations

1. Watercourse States shall, within their respective territories, employ their best efforts to maintain and protect installations, facilities and other works related to an international watercourse.
2. Watercourse States shall, at the request of any of them which has reasonable grounds to believe that it may suffer significant adverse effects, enter into consultations with regard to:
   a) The safe operation and maintenance of installations, facilities or other works related to an international watercourse; and
   b) The protection of installations, facilities or other works from wilful or negligent acts or the forces of nature.

Part V Harmful conditions and emergency situations

Article 27: Prevention and mitigation of harmful conditions

Watercourse States shall, individually and, where appropriate, jointly, take all appropriate measures to prevent or mitigate conditions related to an international watercourse that may be harmful to other watercourse States, whether resulting from natural causes or human conduct, such as flood or ice conditions, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification.

Article 28: Emergency situations

1. For the purposes of this article, "emergency" means a situation that causes, or poses an imminent threat of causing, serious harm to watercourse States or other States and that results suddenly from natural causes, such as floods, the breaking up of ice, and slides or earthquakes, or from human conduct, such as industrial accidents.
2. A watercourse State shall, without delay and by the most expeditious means available, notify other potentially affected States and competent international organizations of any emergency originating within its territory.
3. A watercourse State within whose territory an emergency originates shall, in cooperation with potentially affected States and, where appropriate, competent international organizations, immediately take all practicable measures necessitated by the circumstances to prevent, mitigate and eliminate harmful effects of the emergency.
4. When necessary, watercourse States shall jointly develop contingency plans for responding to emergencies, in cooperation, where appropriate, with other potentially affected States and competent international organizations.

Part VI Miscellaneous provisions

Article 29: International watercourses and installations in time of armed conflict

International watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non-international armed conflict and shall not be used in violation of those principles and rules.

Article 30: Indirect procedures

In cases where there are serious obstacles to direct contacts between watercourse States, the States concerned shall fulfil their obligations of cooperation provided for in the present Convention, including exchange of data and information, notification, communication, consultations and negotiations, through any indirect procedure accepted by them.

Article 31: Data and information vital to national defence or security

Nothing in the present Convention obliges a watercourse State to provide data or information vital to its national defence or security. Nevertheless, that State shall cooperate in good faith with the other watercourse States with a view to providing as much information as possible under the circumstances.

Article 32: Non-discrimination

Unless the watercourse States concerned have agreed otherwise for the protection of the interests of persons, natural or juridical, who have suffered or are under a serious threat of suffering significant transboundary harm as a result of activities related to an international watercourse, a watercourse State shall not discriminate on the basis of nationality or residence or place where the injury occurred, in granting to such persons, in accordance with its

legal system, access to judicial or other procedures, or a right to claim compensation or other relief in respect of significant harm caused by such activities carried on in its territory.

Article 33: Settlement of disputes

1. In the event of a dispute between two or more parties concerning the interpretation or application of the present Convention, the parties concerned shall, in the absence of an applicable agreement between them, seek a settlement of the dispute by peaceful means in accordance with the following provisions.
2. If the parties concerned cannot reach agreement by negotiation requested by one of them, they may jointly seek the good offices of, or request mediation or conciliation by, a third party, or make use, as appropriate, of any joint water course institutions that may have been established by them or agree to submit the dispute to arbitration or to the International Court of Justice.
3. Subject to the operation of paragraph 10, if after six months from the time of the request for negotiations referred to in paragraph 2, the parties concerned have not been able to settle their dispute through negotiation or any other means referred to in paragraph 2, the dispute shall be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the parties otherwise agree.
4. A Fact-finding Commission shall be established, composed of one member nominated by each party concerned and in addition a member not having the nationality of any of the parties concerned chosen by the nominated members who shall serve as Chairman.
5. If the members nominated by the parties are unable to agree on a Chairman within three months of the request for the establishment of the Commission, any party concerned may request the Secretary-General of the United Nations to appoint the Chairman who shall not have the nationality of any of the parties to the dispute or of any riparian State of the watercourse concerned. If one of the parties fails to nominate a member within three months of the initial request pursuant to paragraph 3, any other party concerned may request the Secretary-General of the United Nations to appoint a person who shall not have the nationality of any of the parties to the dispute or of any riparian State of the watercourse concerned. The person so appointed shall constitute a single-member Commission.
6. The Commission shall determine its own procedure.
7. The parties concerned have the obligation to provide the Commission with such information as it may require and, on request, to permit the Commission to have access to their respective territory and to inspect any facilities, plant, equipment, construction or natural feature relevant for the purpose of its inquiry.
8. The Commission shall adopt its report by a majority vote, unless it is a single-member Commission, and shall submit that report to the parties concerned setting forth its findings and the reasons there for and such recommendations as it deems appropriate for an equitable solution of the dispute, which the parties concerned shall consider in good faith.

9. The expenses of the Commission shall be borne equally by the parties concerned.

10. When ratifying, accepting, approving or acceding to the present Convention, or at any time thereafter, a party which is not a regional economic integration organization may declare in a written instrument submitted to the depositary that, in respect of any dispute not resolved in accordance with paragraph 2, it recognizes as compulsory ipso facto, and without special agreement in relation to any party accepting the same obligation:

    (a) Submission of the dispute to the International Court of Justice; and/or

    (b) Arbitration by an arbitral tribunal established and operating, unless the parties to the dispute otherwise agreed, in accordance with the procedure laid down in the annex to the present Convention.

    A party which is a regional economic integration organization may make a declaration with like effect in relation to arbitration in accordance with subparagraph (b).

Part VII Final clauses

Article 34: Signature

The present Convention shall be open for signature by all States and by regional economic integration organizations from 21 May 1997 until 20 May 2000 at United Nations Headquarters in New York.

Article 35: Ratification, acceptance, approval or accession

1. The present Convention is subject to ratification, acceptance, approval or accession by States and by regional economic integration organizations. The instruments of ratification, acceptance, approval or accession shall be deposited with the Secretary-General of the United Nations.

2. Any regional economic integration organization which becomes a Party to this Convention without any of its member States being a Party shall be bound by all the obligations under the Convention. In the case of such organizations, one or more of whose member States is a Party to this Convention, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under the Convention. In such cases, the organization and the member States shall not be entitled to exercise rights under the Convention concurrently.

3. In their instruments of ratification, acceptance, approval or accession, the regional economic integration organizations shall declare the extent of their competence with respect to the matters governed by the Convention. These organizations shall also inform the Secretary-General of the United Nations of any substantial modification in the extent of their competence.

Article 36: Entry into force

1. The present Convention shall enter into force on the ninetieth day following the date of deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession with the Secretary-General of the United Nations.
2. For each State or regional economic integration organization that ratifies, accepts or approves the Convention or accedes thereto after the deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the deposit by such State or regional economic integration organization of its instrument of ratification, acceptance, approval or accession.
3. For the purposes of paragraphs 1 and 2, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States.

Article 37: Authentic texts

The original of the present Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned Plenipotentiaries, being duly authorized thereto, have signed this Convention.

DONE at New York, this twenty-first day of May one thousand nine hundred and ninety-seven.

Annex Arbitration

Article 1

Unless the parties to the dispute otherwise agree, the arbitration pursuant to article 33 of the Convention shall take place in accordance with articles 2 to 14 of the present annex.

Article 2

The claimant party shall notify the respondent party that it is referring a dispute to arbitration pursuant to article 33 of the Convention. The notification shall state the subject matter of arbitration and include, in particular, the articles of the Convention, the interpretation or application of which are at issue. If the parties do not agree on the subject matter of the dispute, the arbitral tribunal shall determine the subject matter.

Article 3

1. In disputes between two parties, the arbitral tribunal shall consist of three members. Each of the parties to the dispute shall appoint an arbitrator and the two arbitrators so appointed shall designate by common agreement the third arbitrator, who shall be the Chairman of the

tribunal. The latter shall not be a national of one of the parties to the dispute or of any riparian State of the watercourse concerned, nor have his or her usual place of residence in the territory of one of these parties or such riparian State, nor have dealt with the case in any other capacity.

2. In disputes between more than two parties, parties in the same interest shall appoint one arbitrator jointly by agreement.
3. Any vacancy shall be filled in the manner prescribed for the initial appointment.

Article 4

1. If the Chairman of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the President of the International Court of Justice shall, at the request of a party, designate the Chairman within a further two-month period.
2. If one of the parties to the dispute does not appoint an arbitrator within two months of receipt of the request, the other party may inform the President of the International Court of Justice, who shall make the designation within a further two-month period.

Article 5

The arbitral tribunal shall render its decisions in accordance with the provisions of this Convention and international law.

Article 6

Unless the parties to the dispute otherwise agree, the arbitral tribunal shall determine its own rules of procedure.

Article 7

The arbitral tribunal may, at the request of one of the parties, recommend essential interim measures of protection.

Article 8

1. The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, using all means at their disposal, shall:
   a) Provide it with all relevant documents, information and facilities; and
   b) Enable it, when necessary, to call witnesses or experts and receive their evidence.
2. The parties and the arbitrators are under an obligation to protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.

Article 9

Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the costs of the tribunal shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its costs, and shall furnish a final statement thereof to the parties.

Article 10

Any party that has an interest of a legal nature in the subject matter of the dispute which may be affected by the decision in the case, may intervene in the proceedings with the consent of the tribunal.

Article 11

The tribunal may hear and determine counter claims arising directly out of the subject matter of the dispute.

Article 12

Decisions both on procedure and substance of the arbitral tribunal shall be taken by a majority vote of its members.

Article 13

If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue the proceedings and to make its award. Absence of a party or a failure of a party to defend its case shall not constitute a bar to the proceedings. Before rendering its final decision, the arbitral tribunal must satisfy itself that the claim is well founded in fact and law.

Article 14

1. The tribunal shall render its final decision within five months of the date on which it is fully constituted unless it finds it necessary to extend the time limit for a period which should not exceed five more months.
2. The final decision of the arbitral tribunal shall be confined to the subject matter of the dispute and shall state the reasons on which it is based. It shall contain the names of the members who have participated and the date of the final decision. Any member of the tribunal may attach a separate or dissenting opinion to the final decision.
3. The award shall be binding on the parties to the dispute. It shall be without appeal unless the parties to the dispute have agreed in advance to an appellate procedure.
4. Any controversy which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the final decision may be submitted by either party for decision to the arbitral tribunal which render edit.

Instruments of a regional nature

Tripartite Agreement between the Republic of Mozambique, South Africa and the Kingdom of Swaziland on cooperation and sustainable use of water resources on the Incomati and Maputo Rivers

Preamble

The Republic of Mozambique, the Republic of South Africa and the Kingdom of Swaziland (hereinafter jointly referred to as the "Parties");

BEARING IN MIND the principles advocated in the Declaration by the Heads of State or Government of Southern African States "Towards the Southern African Development Community" and the Treaty of the Southern African Development Community signed on 17 August 1992 and the Revised Protocol on Shared Watercourses in the Southern African Development Community signed on 7 August 2000;

HAVING RESOLVED to pursue the guidelines established by the Agreement between the Government of the Republic of South Africa and the Government of the Republic of Portugal in regard to Rivers of Mutual Interest and the Cunene River Scheme signed on 13 October 1964, to which the Republic of Mozambique succeeded in 1975 and the Kingdom of Swaziland acceded to in 1967;

MINDFUL of the spirit of co-operation and good understanding reached by the implementation of the Piggs Peak Agreement of 15 February 1991;

TAKING INTO ACCOUNT the modern principles and norms of International Law as reflected in the Convention on the Law of the Non-Navigational Uses of International Watercourses adopted by the General Assembly of the United Nations on 21 May 1997;

CONSCIOUS of the mutual advantages of concluding agreements on co-operation on shared watercourses;

DETERMINED to co-operate and seek mutually satisfactory solutions for the needs of the Parties towards water protection and to the sustainable utilization and development of the water resources with a view to improving the standard of living of their populations;

EXPRESSING the common desire to proceed with sustainable development on the basis of Chapter 18 of Agenda 21, adopted by the United Nations Conference on Environment and Development on 14 June 1992;

RECOGNISING that the Parties need to agree on water use in the shared watercourses to enable sustainable development;

MINDFUL of the fact that good relationships between the people and the governments of the Parties, good neighbourliness and mutual respect, will contribute to the improvement of co-operation on the protection and utilization of waters for the benefit and the welfare of their populations;

TAKING into consideration the interim nature of this Agreement;

HEREBY AGREE as follows:

Article 1: Definitions

For the purposes of this Agreement the following terms shall have the meanings ascribed to them hereunder:

"catchment" means an area through which any rainfall will drain into the watercourse through surface flow to a common point;

"emergency situation" means a situation that causes or poses an imminent threat of causing serious harm to the Parties and which results suddenly from natural causes, such as torrential rains, floods, landslides or earthquakes, or from human conduct;

"environmental impact assessment" means a national procedure for evaluating the likely impact of a planned measure on the environment;

"impact" means any effect on the environment caused by an activity; such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape, socio-economic environment or the interaction among these factors and cultural heritage or socio-economic conditions resulting from alterations to these factors;

"Incomati watercourse" means the system of the Incomati River, which includes the tributaries Mazimechopes, Uanetze, Massintonto, Sabie, Crocodile, Komati Rivers and the estuary;

"Maputo watercourse" means the system of the Maputo River, which includes the tributaries Pongola and Usuthu Rivers and the estuary;

"ministers" means Ministers responsible for the water affairs of the Parties;

"ongoing activity" means any activity that would have been subjected to a decision of a competent authority in accordance with an applicable national procedure if it had been a planned measure;

"Piggs Peak Agreement" means the agreement reached at the Tripartite Ministerial Meeting of Ministers Responsible for Water Affairs, signed in Piggs Peak on 15 February 1991;

"planned measure" means any activity or a major change to an ongoing activity subject to a decision of a competent authority in accordance with applicable national procedures;

"pollution" means any detrimental alteration in the composition or quality of the waters of a shared watercourse, which results directly or indirectly from human conduct;

"Protocol" means the Revised Protocol on Shared Watercourses in the Southern African Development Community signed on 7 August 2000 in Windhoek;

"sustainable development" is development which meets the needs of present generations without compromising future generations to meet their own needs;

"TPTC" means the Tripartite Permanent Technical Committee established by the Agreement between the Government of the Republic of South Africa, the Government of the Kingdom of Swaziland and the Government of the People's Republic of Mozambique relative to the establishment of the Tripartite Permanent Technical Committee, signed in Pretoria on 17 February 1983;

"transboundary impact" means any adverse effect, caused by human conduct, within an area under the jurisdiction of a Party caused by a proposed activity, the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party;

"watercourse" means a system of surface and ground waters constituting by virtue of their physical relationship a unitary whole normally flowing into a common terminus such as the sea, lake or aquifer.

Article 2: General Objective

This Agreement aims to promote co-operation among the Parties to ensure the protection and sustainable utilisation of the water resources of the Incomati and Maputo watercourses.

Article 3: General Principles

For purposes of this Agreement, the general principles of the Protocol shall apply, especially-

(a) sustainable utilization principle;

(b) equitable and reasonable utilisation and participation principle;

(c) prevention principle; and

(d) co-operation principle.

Article 4: Responsibilities of the Parties

The Parties shall, individually and, where appropriate, jointly, develop and adopt technical, legal, administrative and other reasonable measures in order to-

(a) prevent, reduce and control pollution of surface and ground waters, and protect and enhance the quality status of the waters and associated ecosystems for the benefit of present and future generations;

(b) prevent, eliminate, mitigate and control transboundary impacts;

(c) co-ordinate management plans and planned measures;

(d) promote partnership in effective and efficient water use;

(e) promote the security of relevant water related infrastructures and prevent accidents;

(f) monitor and mitigate the effects of floods and droughts;

(g) provide warning of possible floods and implement agreed upon urgent measures during flood situations;

(h) establish comparable monitoring systems, methods and procedures;

(i) exchange information on the water resources quality and quantity, and the uses of water;

(j) promote the implementation of this Agreement according to its objectives and defined principles;

(k) implement capacity building programmes in accordance with Article 14; and

(l) co-operate with the SADC organs and other shared watercourse institutions.

Article 5: Shared Watercourses Institution

(1) The joint body for co-operation between the Parties shall be the TPTC.

(2) The TPTC shall exercise the powers established in this Agreement, as well as those conferred by the Parties, in order to pursue the objectives and provisions established herein.

(3) For the purpose of implementation of this Agreement the TPTC shall meet at least twice a year.

(4) The official working languages for the purpose of implementation of this Agreement shall be English and Portuguese.

(5) After the entry into force of this Agreement, the TPTC shall adopt, by consensus, rules of procedure which will govern its meetings. Until such rules of procedure are adopted by the TPTC, those contained in the TPTC Agreement shall govern such sessions of the TPTC, taking into account the provisions of subArticles (3) and (4).

Article 6: Protection of the Environment

(1) The Parties shall, individually and, where appropriate, jointly, protect and preserve the aquatic environment of the Incomati and Maputo watercourses, taking into account generally accepted international rules and standards.

(2) The Parties shall, individually and, where appropriate, jointly, take all measures to protect and preserve the ecosystems of the Incomati and Maputo watercourses.

(3) The Parties shall take all measures necessary to prevent the introduction of species, alien or new, into the Incomati and Maputo watercourses, which may have effects detrimental to the ecosystems of the watercourses resulting in significant harm to other Parties.

Article 7: Sustainable Utilisation

(1) The Parties shall be entitled, in their respective territories, to optimal and sustainable utilisation of and benefits from the water resources of the Incomati and Maputo watercourses, taking into account the interests of the other Parties concerned, consistent with adequate protection of the watercourses for the benefit of present and future generations.

(2) The Parties shall co-ordinate their management activities by-

(a) the exchange of information on their respective experiences and perspectives; and

(b) the co-ordination of management plans, programmes and measures.

(3) In pursuing the objective of this Article, the Parties shall follow the flow regimes stipulated in Annex I as determined according to Article 9.

(4) In further pursuance of the objective of this Article the Parties disclose in Annex II their intentions of developing new projects that fall outside the scope of Annex I during the period of validity of this Agreement.

(5) The Parties are committed to develop measures towards improvement of efficiency and rational use of water and its conservation and to promote more efficient water use through adopting better available technology.

Article 8: Water Quality and Prevention of Pollution

(1) In order to protect and conserve the water resources of the Incomati and Maputo watercourses, the Parties shall, through resolutions adopted by the TPTC, and, when appropriate, through the co-ordination of management plans, programmes and measures, proceed to-

(a) endeavour to develop an evolving classification system for the water resources of the Incomati and Maputo watercourses;

(b) classify and state the objectives and criteria in respect of water quality variables to be achieved through the agreed classification system for the water resources;

(c) adopt a list of substances the introduction of which, into the water resources of the Incomati and Maputo watercourses, is to be prohibited or limited, investigated or monitored;

(d) adopt techniques and practices to prevent, reduce and control the pollution and environmental degradation of the Incomati and Maputo watercourses that may cause significant harm to the other Parties or to their environment, including human health and safety, or to the use of the waters for any beneficial purpose, or to the living resources of the watercourses; and

(e) implement a regular monitoring programme, including biological and chemical aspects for the Incomati and Maputo watercourses and report, at the intervals established by the TPTC, on the status and trends of the associated aquatic, marine and riparian ecosystems in relation to the water quality of the said watercourses.

(2) Until such time that water quality objectives and criteria are determined, the Parties shall comply with the provisions of the Resolution of the TPTC on Exchange of Information and Water Quality. The Resolution may be reviewed by the TPTC from time to time.

Article 9: Flow Regimes

(1) The agreed flow regime of the Incomati watercourse is contained in Annex I, which complements the flow regime as determined in the Piggs Peak Agreement, and the agreed flow regime of the Maputo watercourse is contained in the same Annex.

(2) Any abstraction of waters from the Incomati or Maputo watercourses, regardless of the use or geographic destination of such waters, shall be in conformity with the flow regimes of Annex I and relevant provisions of this Agreement and its Annexes.

(3) The Parties have considered the following criteria in establishing the flow regimes contained in Annex I:

(a) The geographic, hydrological, climatic and other natural characteristics of each watercourse;

(b) the need to ensure water of sufficient quantity with acceptable quality to sustain the watercourses and their associated ecosystems;

(c) any present and reasonably foreseeable water requirements, including afforestation;

(d) existing infrastructure which has the capacity to regulate streamflow of the watercourses; and

(e) agreements in force among the Parties.

(4) The following short to medium term water requirements of each of the Parties are recognised in particular:

(a) The strategic importance to Mozambique of augmenting the water supplies to the city of Maputo and its metropolitan area from one or both of the Incomati and Maputo watercourses;

(b) the importance to Swaziland of developing the Lower Usuthu Smallholder Irrigation Project in the Usuthu River catchment; and

(c) the importance to South Africa of establishing and developing emerging irrigation farmers in the Incomati River catchment.

(5) The additional water requirements of the city of Maputo, for which additional water must be secured, have been reserved in Annex I.

Article 10: Droughts and Floods

(1) The Parties undertake to co-ordinate their actions within six months to one year and to develop measures to mitigate the effects of droughts and floods.

(2) The flow regimes of the Incomati and Maputo watercourses during flood and drought periods shall be adjusted in accordance with the measures referred to in subArticle (1).

(3) The Parties shall notify each other without delay and by the most expeditious means of any flood danger.

(4) During flood alarm situations, the affected Party may require the other Parties to adopt the measures referred to in subArticle (1) and any other urgent measures agreed upon, which may be deemed necessary.

(5) During a drought period, the Parties shall be obliged to manage, in a co-ordinated manner, water storage infrastructure in accordance with the measures referred to in Sub-Articles (1) and (2).

Article 11: Incidents of Accidental Pollution and Other Emergency Situations

(1) The Parties shall, without delay and by the most expeditious means available, notify other potentially affected Parties, the SADC organs or any other authorized institutions and competent international organisations of any incidents of accidental pollution and other emergency situations originating within their respective territories and shall promptly supply the necessary information to such affected Parties and competent organisations with a view to co-operate in the prevention, mitigation and elimination of the harmful effects of the emergency.

(2) The Parties shall, individually and, where appropriate, jointly, develop contingency plans for responding to any incidents of accidental pollution and other emergency situations in co-operation, where appropriate, with other potentially affected Parties and competent international organisations, to take immediately all practicable measures necessitated by the circumstances to prevent, mitigate and eliminate the harmful effects of the emergency.

Article 12: Exchange of and Access to Information

(1) The Parties shall, within the TPTC, exchange available information and data regarding the hydrological, geohydrological, water quality, meteorological and environmental condition of the Incomati and Maputo watercourses to enable planning, development and management of these shared watercourses.

(2) The Parties shall exchange data, information and study reports on the activities that are likely to cause significant transboundary impacts.

(3) To enable compliance with subArticle (2), the polluting substances subject to special attention shall be as agreed in the Resolution and regularly reviewed by the TPTC.

(4) The Parties shall exchange information and consult each other and if necessary, negotiate the possible effects of planned measures on the condition of the Incomati and Maputo watercourses. The Parties shall employ their best efforts to collect and where appropriate, to process data and information in a manner, which facilitates its utilisation by the other Party to which it is communicated.

(5) If a Party is requested by another Party to provide data or any information in sub Articles (1) and (2), and that information is not readily available, it shall employ its best efforts to comply with the request but may condition its compliance upon payment by the requesting Party of the reasonable costs of collecting and where appropriate processing such data or information.

(6) The Parties shall provide one another, at intervals agreed to by the TPTC, information on the use, quantity and quality of the water resources and the ecological state of the Incomati and Maputo watercourses necessary for the implementation of this Agreement.

(7) The Parties shall develop the appropriate measures to ensure that the information is homogeneous, compatible and comparable, as agreed by the TPTC.

(8) The Parties shall create the necessary conditions to ensure that, in conformity with applicable domestic law or International Law, information on matters covered by this Agreement is available to whoever makes a reasonable request.

Article 13: Transboundary Impacts

(1) Planned measures listed in Annex II, regardless of their location, that by themselves or by accumulation with the existing ones, have the potential of a significant transboundary impact on the watercourse, shall not commence before the provisions of Article 4(1) of the Protocol are complied with.

(2) Whenever, a planned measure, not listed in Annex II, is likely to cause a significant transboundary impact or any of the Parties expresses concern that such may occur, it shall not commence before the provisions of Article 4(1) of the Protocol are complied with.

(3) In case of a planned measure involving significant transboundary impact of substantial magnitude the Parties shall conduct an environmental impact assessment, which takes transboundary impact into account in accordance with procedures determined by the TPTC.

(4) Whenever an ongoing activity causes or is likely to cause a significant transboundary impact, which will lead the Party to fail to comply with an obligation under Articles 4, 8 or 9, the national procedures on the subject shall apply and the Parties concerned shall endeavour to address the matter through the co-ordination of management plans, programmes or measures.

Article 14: Capacity Building

(1) The TPTC shall -

(a) identify capacity building programmes necessary for the implementation and monitoring of this Agreement; and

(b) prioritise the capacity building programmes for implementation.

(2) The Parties shall, individually and, where appropriate, jointly, be responsible for ensuring that capacity is developed in their respective States and in the shared basins to effectively implement this Agreement.

Article 15: Settlement of Disputes

(1) Any dispute between the Parties concerning the interpretation or implementation of this Agreement shall be settled amicably through consultation and negotiations between the Parties.

(2) Where the dispute has not been settled within one year, from the date upon which such negotiations were requested, it may be submitted to arbitration by either Party. If the disputing parties do not agree on the subject matter of the dispute, the arbitral tribunal shall determine the subject matter.

(3) The arbitration shall operate according to the following rules:

(a) The number of arbitrators shall amount to a total of three.

(b) The Parties initiating the arbitration shall appoint one arbitrator and the other Party or Parties shall appoint one other arbitrator. The aforesaid two arbitrators shall jointly designate a third arbitrator who shall chair the arbitral tribunal.

(c) The arbitrators shall be appointed within a three-month period. Should the time limit elapse and any one of the disputing parties have not appointed any arbitrator, the arbitrator shall be appointed by the President of the SADC Tribunal at the request of a Party. Pending the establishment and entering into operation of the SADC Tribunal the aforementioned appointment shall be made by the President of the International Court of Justice.

(d) In case of a dispute between the arbitrators designated by the disputing parties as to the designation, within two months, of the final arbitrator, the latter shall be designated by the President of the SADC Tribunal at the request of a Party. Pending the establishment and entering into operation of the SADC Tribunal the aforementioned designation shall be made by the President of the International Court of Justice.

(e) Based on International Law and in particular on the basis of this Agreement, the rules of procedure to be followed by the arbitral tribunal shall be decided by the tribunal, who shall also determine the distribution between the disputing parties of the costs of the arbitration.

(f) The arbitral tribunal shall render its decisions in accordance with the provisions of this Agreement and International Law.

(g) The arbitral tribunal may, at the request of one of the disputing parties, recommend interim measures of protection.

(h) Decisions of the arbitral tribunal, both on procedure and substance, shall be taken by a majority vote of its members.

(i) The arbitral award shall be submitted in writing and shall be signed by all arbitrators.

(j) The arbitral award shall be final and binding.

Article 16: Annexes

The Annexes are an integral part of this Agreement. Annexes I, II, III, IV and V can be modified by a decision of the Ministers upon recommendation by the TPTC.

Article 17: Existing Watercourse Agreements

The stipulations of existing bilateral and trilateral agreements among the Parties concerning the present subject (Annex IV) will remain in force as far as they are not in conflict with this Agreement.

Article 18: Entry into Force, Termination and Amendments

(1) This Agreement shall enter into force on the date of the last notification to the Depositary of this Agreement of the fulfilment of the internal procedure for the conclusion of international agreements.

(2) This Agreement shall remain in force until 2010 or until superseded for the relevant watercourse by comprehensive water agreements on the Incomati and Maputo watercourses supported by joint studies, whichever is the earlier. The Parties shall adhere to the time frames set out in Annex V.

(3) This Agreement may be amended at any time by mutual consent of the Parties, by an exchange of notes between the Parties through the diplomatic channels. The date of entry into force shall be the date of the last notification.

Article 19: Depositary of the Agreement

(1) The Republic of Mozambique shall be the Depositary of this Agreement.

(2) The Depositary of this Agreement shall perform the following functions:

(a) inform the Parties of instruments of ratification, withdrawal or termination or of any other information or declarations relevant to this Agreement;

(b) inform the Parties of the date of the entry into force of this Agreement;

(c) register this Agreement with the Secretariat of the United Nations and with the SADC Secretariat; and

(d) send certified copies of the authentic texts of this Agreement and other relevant documents to the Parties.

IN WITNESS WHEREOF the undersigned, being duly authorised by their respective Governments, have signed and sealed this Agreement in triplicate in the English and Portuguese languages, with both texts being of equal standing.

Signed at Johannesburg on the 29th August, 2002.

Convention on the Protection of the Rhine[176]

The Governments of the Federal Republic of Germany, the French Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the Swiss Confederation and the European Community,

Desiring to work towards the sustainable development of the Rhine ecosystem on the basis of a comprehensive approach, taking into consideration the natural wealth of the river, its banks and alluvial areas;

Desiring to increase their level of cooperation in conserving and improving the Rhine's ecosystem;

Referring to the Convention of 17th March 1992 on the protection and use of transboundary watercourses and international lakes and the Convention of 22nd September 1992 on the protection of the marine environment of the north-east Atlantic;

Taking into account the work carried out under the Agreement of 29 April 1963 concerning the International Commission for the Protection of the Rhine against Pollution and the Additional Agreement of 3 December 1976;

Considering that efforts must be made to further the improvement in water quality achieved under the Convention of 3 December 1976 for the protection of the Rhine against chemical pollution and under the Rhine Action Programme of 30 September 1987;

Aware that the restoration of the Rhine is also necessary to conserve and improve the ecosystem of the North Sea;

Aware of the importance of the Rhine as a European waterway and of its various uses;

Have agreed as follows:

Article 1: Definitions

For the purposes of this Convention:

a) "Rhine" means the Rhine from the outlet of Lake Untersee and, in the Netherlands, the branches Bovenrijn, Bijlands Kanaal, Pannerdensch Kanaal, IJssel, Nederrijn, Lek, Waal, Boven-Merwede, Beneden-Merwede, Noord, Oude Maas, Nieuwe Maas and Scheur and the Nieuwe Waterweg as far as the base line as specified in Article 5 in connection with Article 11 of the United Nations Convention on the Law of the Sea, the Ketelmeer and the Ijsselmeer;

b) "Commission" means the International Commission for the Protection of the Rhine (ICPR).

176 Signed at Berne on 12th April 1999. Text available in the Official Journal of the European Union, No. L 289 of 16/11/2000 p.31 to 37.

Article 2: Scope

This Convention applies to:

a) the Rhine;

b) ground water interacting with the Rhine;

c) aquatic and terrestrial ecosystems which interact or could again interact with the Rhine;

d) the Rhine catchment area, insofar as its pollution by noxious substances adversely affects the Rhine;

e) The Rhine catchment area, insofar as it is of importance for flood prevention and protection along the Rhine.

Article 3: Aims

The Contracting Parties shall pursue the following aims through this Convention:

1. sustainable development of the Rhine ecosystem, in particular through:

   a) maintaining and improving the quality of the Rhine's waters, including the quality of suspended matter, sediments and ground water, notably by:

   – preventing, reducing or eliminating as far as possible pollution caused by noxious substances and by nutrients from point sources (e.g. industry and municipalities) and diffuse sources (e.g. agriculture and traffic) - including that from groundwater - and pollution from shipping;

   – ensuring and improving the safety of installations and preventing incidents and accidents;

   b) protecting populations of organisms and species diversity and reducing contamination by noxious substances in organisms;

   c) maintaining, improving and restoring the natural function of the waters; ensuring that flow management takes account of the natural flow of solid matter and promotes interactions between river, ground water and alluvial areas; conserving, protecting and reactivating alluvial areas as natural floodplains;

   d) conserving, improving and restoring the most natural habitats possible for wild fauna and flora in the water, on the river bed and banks and in adjacent areas, and improving living conditions for fish and restoring their free migration;

   e) ensuring environmentally sound and rational management of water resources;

   f) taking ecological requirements into account when implementing technical measures to develop the waterway, e.g. for flood protection, shipping or the use of hydroelectric power;

2. the production of drinking water from the waters of the Rhine;

3. improvement of sediment quality in order that dredged material may be deposited or spread without adversely affecting the environment;

4. general flood prevention and protection, taking account of ecological requirements;

5. to help restore the North Sea in conjunction with the other actions taken to protect it.

Article 4: Principles

To this end, the Contracting Parties shall be guided by the following principles:

a) precautionary principle;

b) principle of preventive action;

c) principle of rectification, as a priority at source;

d) polluter-pays principle;

e) principle of not increasing damage;

f) principle of compensation in the event of major technical measures;

g) principle of sustainable development;

h) application and development of the state of the art and best environmental practice;

i) principle of not transferring environmental pollution from one environment to another.

Article 5: Undertakings by the Contracting Parties

To achieve the aims set out in Article 3, and in the light of the principles set out in Article 4, the Contracting Parties undertake:

1. to step up their cooperation and to inform one another, particularly regarding actions taken in their territory to protect the Rhine;
2. to implement in their territory the international measuring programmes and the studies of the Rhine ecosystem agreed upon by the Commission and to inform the Commission of the results;
3. to carry out analyses with a view to identifying the causes of and parties responsible for pollution;
4. to initiate the autonomous actions they deem necessary in their territory, and in any event ensure that:

   a) discharging of wastewater liable to affect water quality is subject to prior authorisation or to general rules laying down emission limits;

   b) discharges of hazardous substances are gradually reduced with a view to complete elimination;

   c) compliance with authorisations and general rules is monitored, as are discharges;

   d) authorisations and general rules are periodically examined and adjusted where substantial improvements in the state of the art so permit or where the state of the receiving medium so necessitates;

   e) the risk of pollution from incidents or accidents is reduced as far as possible by regulations, and the requisite measures are taken in the event of an emergency;

   f) technical measures liable to have a serious effect on the ecosystem are subject to prior authorisation, along with the necessary conditions, or to general regulations;

5. to initiate the necessary actions in their territory to implement decisions taken by the Commission in accordance with Article11;
6. in the event of incidents or accidents that might threaten the quality of the water of the Rhine or in the event of imminent flooding, immediately to inform the Commission and the Contracting Parties liable to be affected, in accordance with the warning and alert plans coordinated by the Commission.

Article 6: Commission

1. To implement this Convention, the Contracting Parties shall pursue their cooperation within the Commission.
2. The Commission shall have legal personality. In the territory of the Contracting Parties it shall, in particular, enjoy the legal capacity conferred on legal persons by domestic law. It shall be represented by its Chairman.
3. Questions of labour legislation and social matters shall be governed by the law of the country in which the Commission has its seat.

Article 7: Organisation of the Commission

1. The Commission shall consist of the delegations of the Contracting Parties. Each Contracting Party shall appoint its delegates, one of whom shall be head of delegation.
2. The delegations may enlist the services of experts.
3. The Commission shall be chaired for three years by each delegation in turn in the order of Contracting Parties listed in the preamble. The delegation chairing the Commission shall appoint the Chairman. The Chairman shall not act as spokesman for his delegation.

   Should a Contracting Party waive its right to chair the Commission, the next Contracting Party shall take the Chair.
4. The Commission shall draft its rules of procedure and financial regulations.
5. The Commission shall decide on matters of internal organisation, the working structure it deems necessary and the annual operating budget.

Article 8: Tasks of the Commission

1. To achieve the aims set out in Article 3 the Commission shall accomplish the following tasks:
   a) prepare international measuring programmes and studies of the Rhine ecosystem and make use of their results, in cooperation with scientific institutions if necessary;
   b) make proposals for individual measures and programmes of measures, where appropriate including economic instruments and taking into account the expected costs;
   c) coordinate the Contracting States' warning and alert plans for the Rhine;
   d) evaluate the effectiveness of the actions decided upon, notably on the basis of the reports of the Contracting Parties and the results of the measuring programmes and studies of the Rhine ecosystem;

e) carry out any other tasks entrusted to it by the Contracting Parties.

2. To this end, the Commission shall take decisions in accordance with Articles 10 and 11.
3. The Commission shall submit an annual activity report to the Contracting Parties.
4. The Commission shall inform the public as to the state of the Rhine and the results of its work. It may draft and publish reports.

Article 9: Plenary sessions of the Commission

1. At the invitation of the Chairman, the Commission shall meet for one plenary session per year.
2. Extraordinary plenary sessions may be called by the Chairman, upon his initiative or at the request of at least two delegations.
3. The Chairman shall propose the agenda. Each delegation shall have the right to have items included on the agenda that it wishes to have discussed.

Article 10: Decision-making in the Commission

1. Decisions of the Commission shall be taken unanimously.
2. Each delegation shall have one vote.
3. If measures to be carried out by the Contracting Parties in accordance with Article 8(1)(b) fall within the competence of the European Community, the latter shall vote with the number of votes corresponding to the number of its Member States which are Contracting Parties to this Convention, notwithstanding paragraph 2 above. The European Community shall not vote in cases where its Member States vote and vice versa.
4. Abstention of only one delegation shall not constitute an impediment to unanimity. This shall not apply to the delegation of the European Community. Absence of a delegation shall be considered as abstention.
5. The rules of procedure may provide for a written procedure.

Article 11: Implementation of Commission Decisions

1. The Commission shall communicate to the Contracting Parties, in the form of recommendations, its decisions on the measures referred to in Article 8(1)(b), which shall be implemented in accordance with the national law of the Contracting Parties.
2. The Commission may stipulate that these decisions:
   a) shall be applied by the Contracting Parties on the basis of a timetable;
   b) shall be implemented in a coordinated manner.
3. The Contracting Parties shall report regularly to the Commission on:
   a) the legislative, regulatory and other measures they have taken with a view to implementing the provisions of this Convention and on the basis of the Commission's decisions;
   b) the results of the measures implemented in accordance with subparagraph (a);
   c) problems arising in the implementation of the measures referred to in subparagraph (a).

4. If a Contracting Party cannot implement the Commission's decisions, in full or in part, it shall report this within a specific time limit set by the Commission on a case-by-case basis and shall give its reasons. Each delegation may submit a request for consultation, to which a response must be given within two months.

   On the basis of the reports from the Contracting Parties or of consultations, the Commission may decide that measures will be taken to assist the implementation of the decisions.

5. The Commission shall keep a list of its decisions addressed to the Contracting Parties. The Contracting Parties shall add to the list annually with updates on the progress made in implementing the Commission's decisions, at the latest two months before the Plenary Session of the Commission.

Article 12: Secretariat of the Commission

1. The Commission shall have a permanent secretariat, which shall carry out the tasks entrusted to it by the Commission and be headed by an executive secretary.
2. The Contracting Parties shall decide on the headquarters of the secretariat.
3. The Commission shall appoint the executive secretary.

Article 13: Distribution of costs

1. Each Contracting Party shall bear the costs of its representation in the Commission and its working structure, and each Contracting State shall bear the costs of the studies and actions it carries out within its territory.
2. The distribution of costs relating to the annual operating budget between the Contracting Parties shall be laid down in the Commission's rules of procedure and financial regulations.

Article 14: Cooperation with other States, other organisations and external experts

1. The Commission shall cooperate with other intergovernmental organisations and may address recommendations to them.
2. The Commission may recognise as observers:

   (a) States that have an interest in the work of the Commission;

   (b) intergovernmental organisations whose work is related to the Convention;

   (c) non-governmental organisations, insofar as their field of interest or activities are relevant.

3. The Commission shall exchange information with non-governmental organisations insofar as their fields of interest or activities are relevant. The Commission shall in particular consult such organisations before discussing decisions liable to have an important impact on them and shall inform them as soon as such decisions have been taken.
4. Observers may submit to the Commission any information or reports relevant to the aims of the Convention. They may be invited to participate in Commission meetings without having the right to vote.

5. The Commission may decide to consult specialists representing the recognised non-governmental organisations or other experts and invite them to its meetings.
6. The conditions for cooperation and those for eligibility and participation shall be laid down in the rules of procedure and financial regulations.

Article 15: Working languages

The working languages of the Commission shall be Dutch, French and German. Detailed arrangements shall be laid down in the rules of procedure and financial regulations.

Article 16: Settlement of disputes

1. If a dispute arises between Contracting Parties regarding the interpretation or application of this Convention, the Parties concerned shall seek a solution through negotiation or any other form of dispute settlement acceptable to them.
2. If the dispute cannot be settled in this manner, it shall, unless the Parties to the dispute decide otherwise, be submitted, at the request of one of them, to arbitration in accordance with the provisions of the Annex to this Convention, which shall form an integral part thereof.

Article 17: Entry into force

Each Contracting Party will notify the Government of the Swiss Confederation once it has completed the procedures necessary to bring this Convention into force. The Government of the Swiss Confederation will confirm the receipt of notifications and also inform the other Contracting Parties. The Convention will enter into force on the first day of the second month following receipt of the last notification.

Article 18: Withdrawal

1. Three years after its entry into force, any of the Contracting Parties may at any time withdraw from this Convention by means of a written declaration to the Government of the Swiss Confederation.
2. Withdrawal from of the Convention shall take effect only at the end of the following year.

Article 19: Repeal and continued application of current law

1. With the entry into force of this Convention and notwithstanding paragraphs 2 and 3 of this Article, the following shall be repealed:
   a) Agreement of 29 April 1963 concerning the International Commission for the Protection of the Rhine against Pollution;
   b) Additional Agreement of 3 December 1976 to the Agreement of 29 April 1963 concerning the International Commission for the Protection of the Rhine against Pollution;
   c) Convention of 3 December 1976 for the protection of the Rhine against chemical pollution.
2. Decisions, recommendations, limit values and any other arrangements adopted on the basis of the Agreement of 29 April 1963 concerning the International Commission for the Protection of the

Rhine against Pollution, the Additional Agreement of 3 December 1976 and the Convention of 3 December 1976 for the protection of the Rhine against chemical pollution shall remain applicable without any change to their legal nature, provided the Commission does not explicitly repeal them.

3. The distribution of costs relating to the annual operating budget defined in Article 12 of the Agreement of 29 April 1963 concerning the International Commission for the Protection of the Rhine against Pollution as amended by the Additional Agreement of 3 December 1976 shall remain in force until the Commission has established a distribution in its rules of procedure and financial regulations.

Article 20: Original and Deposit

This Convention, drafted in the Dutch, French and German languages, each of the three texts being equally authentic, is deposited with the Government of the Swiss Confederation, which will transmit a certified copy to each of the Contracting Parties.

Annex: Arbitration

1. Unless the parties to the dispute decide otherwise, the arbitration procedure shall be conducted in accordance with the provisions of this Annex.
2. The arbitral tribunal shall consist of three members. The claimant and the defendant shall appoint one arbitrator each; the two arbitrators so appointed shall by common consent designate a third who shall chair the tribunal.

   If the chair of the arbitral tribunal has not been appointed within two months of the appointment of the second arbitrator, the President of the International Court of Justice shall appoint an arbitrator within two further months at the request of the first party to act.
3. If one of the parties to the dispute has not appointed a member of the tribunal within two months of receipt of the request provided for in Article 16 of the Convention, the other party may submit the matter to the President of the International Court of Justice who shall appoint the chair of the arbitral tribunal within a further two months. Once appointed, the chair shall request the party which has not yet appointed an arbitrator to do so within two months. Upon expiry of this time limit he or she shall submit the matter to the President of the International Court of Justice who shall make this appointment within a further two months.
4. If, in one of the cases referred to above, the President of the International Court of Justice is prevented from acting or is a national of one of the parties to the dispute, the Vice-President of the Court or the most senior member of the Court who is not prevented from acting and is not a national of one of the parties to the dispute shall appoint the chair of the arbitral tribunal or an arbitrator.
5. These provisions shall apply, *mutatis mutandis*, to the filling of posts which have become vacant.
6. The arbitral tribunal shall decide on the basis of the rules of international law and in particular on the basis of the provisions of this Convention.

7. As regards both procedural and substantive matters, the arbitral tribunal shall decide by a majority of its members' votes; the absence or abstention of one of the members of the tribunal appointed by the parties shall not prevent the tribunal from reaching a decision. In the event of parity of votes, the chairman shall have the casting vote. The decisions of the Tribunal shall be binding on the parties. Each party shall bear the costs of the arbitrator appointed by it and shall share the other costs equally. For other matters, the arbitral tribunal shall establish its own rules of procedure.
8. In the case of a dispute between two Contracting Parties, only one of which is a Member State of the European Community, which is itself a Contracting Party, the other Party shall simultaneously transmit its request to that Member State and to the Community, which shall jointly notify the party within two months following receipt of the request whether the Member State, the Community or the Member State and the Community together are parties to the dispute. If such notification is not given within the appointed time, both the Member State and the Community shall be regarded as constituting one and the same party to the dispute for the purposes of applying this Annex. The same shall obtain when the Member State and the Community are jointly a party to the dispute.

Protocol of signature

In signing the Convention for the Protection of the Rhine, the heads of delegation in the ICPR agree upon the following points:

1. The following shall remain unaffected by the Convention:
   a) the Convention of 3 December 1976 for the protection of the Rhine against Pollution by Chlorides;
   b) the Exchange of letters of 29 April/13 May 1983 on the above mentioned Convention, which exchange entered into force on 5 July 1985;
   c) the Declaration of 11 December 1986 of the heads of delegation of the Governments Party to the Agreement of 29 April 1963 concerning the International Commission for the Protection of the Rhine against Pollution;
   d) the Additional Protocol of 25 September 1991 on the Convention of 3 December 1976 for the protection of the Rhine against Pollution by Chlorides;
   e) the Declaration of 25 September 1991 of the heads of delegation of the Governments Party to the Agreement of 29 April 1963 concerning the International Commission for the Protection of the Rhine against Pollution.
2. "State of the art" and "best available techniques" are synonymous expressions and, like the expression "best environmental practice", must be understood as defined in the Convention of 17 March 1992 on the protection and use of transboundary watercourses and international lakes (Annexes I and II) and the Convention of 22 September 1992 for the protection of the marine environment of the north-east Atlantic (Appendix 1).
3. The Commission shall continue to have its seat in Koblenz.

4. In cases of settlements of disputes between Member States of the European Community which do not concern any other State, Article 219 of the Treaty establishing the European Community shall apply.

Done at Bern, 12th April 1999.

Convention on the Protection and Use of Transboundary Watercourses and International Lakes[177]

Preamble

The Parties to this Convention,

Mindful that the protection and use of transboundary watercourses and international lakes are important and urgent tasks, the effective accomplishment of which can only be ensured by enhanced cooperation.

Concerned over the existence and threats of adverse effects, in the short or long term, as well as changes in the conditions of transboundary watercourses and international lakes in terms of the environment, economies and well-being of the member countries of the Economic Commission for Europe (ECE).

Emphasizing the need for strengthened national and international measures to prevent, control and reduce the release of hazardous substances into the aquatic environment and to abate eutrophication and acidification, as well as pollution of the marine environment, in particular coastal areas, from land-based sources.

Commending the efforts already undertaken by the ECE Governments to strengthen cooperation, on bilateral and multilateral levels, for the prevention, control and reduction of transboundary pollution, sustainable water management, conservation of water resources and environmental protection.

Recalling the pertinent provisions and principles of the Declaration of the Stockholm Conference on the Human Environment, the Final Act of the Conference on Security and Cooperation in Europe (CSCE), the Concluding Documents of the Madrid and Vienna Meetings of Representatives of the Participating States of the CSCE, and the Regional Strategy for Environmental Protection and Rational Use of Natural Resources in ECE Member Countries covering the Period up to the Year 2000 and Beyond.

Conscious of the role of the United Nations Economic Commission for Europe in promoting international cooperation for the prevention, control and reduction of transboundary water pollution and sustainable use of transboundary waters and, in this regard, recalling the ECE Declaration of Policy on Prevention and Control of Water Pollution, including Transboundary Pollution; the ECE Declaration of Policy on the Rational Use of Water; the ECE Principles Regarding Cooperation in the Field of Transboundary Waters; the ECE Charter on Groundwater Management; and the Code of Conduct on Accidental Pollution of Transboundary Inland Waters.

177 Signed at Helsinki on 17th March 1992. Text available in 1936 UNTS (United Nations Treaty Series) 269

Referring to decisions 1(42) and 1(44) adopted by the Economic Commission for Europe at its forty-second and forty-fourth sessions, respectively, and the outcome of the CSCE Meeting on the Protection of the Environment (Sofia, Bulgaria, 16th October to 3rd November 1989).

Emphasising that cooperation between member countries in regard to the protection and use of transboundary waters shall be implemented primarily through the elaboration of agreements between countries bordering the same waters, especially where no such agreements have yet been reached,

Have agreed as follows:

Article 1: Definitions

For the purposes of this Convention,

1. "Transboundary waters" means any surface or ground waters which mark, cross or are located on boundaries between two or more States; wherever transboundary waters flow directly into the sea, these transboundary waters end at a straight line across their respective mouths between points on the low-water line of their banks;
2. "Transboundary impact" means any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors;
3. "Party" means, unless the text otherwise indicates, a Contracting Party to this Convention;
4. "Riparian Parties" means the Parties bordering the same transboundary waters;
5. "Joint body" means any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties;
6. "Hazardous substances" means substances which are toxic, carcinogenic, mutagenic, teratogenic or bio-accumulative, especially when they are persistent;
7. "Best available technology" (the definition is contained in annex I to this Convention).

Part I Provisions relating to all parties

Article 2: General provisions

1. The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impacts.
2. The Parties shall, in particular, take all appropriate measures:
   a. To prevent, control and reduce pollution of waters, causing or likely to cause transboundary impacts.

b. To ensure that transboundary waters are used for the purposes of ecologically sound and intelligent water management, conservation of water resources and environmental protection.

c. To ensure that transboundary waters are used in a reasonable and equitable manner, taking into account their particular transboundary character, in the case of activities which cause or are likely to cause transboundary impacts.

d. To ensure conservation and, where necessary, restoration of ecosystems.

3. Measures for the prevention, control and reduction of water pollution shall be taken, where possible, at source.

4. These measures shall not directly or indirectly result in a transfer of pollution to other parts of the environment.

5. In taking the measures referred to in paragraphs 1 and 2 of this article, the Parties shall be guided by the following principles:

   a. The precautionary principle, by virtue of which action is to avoid the potential transboundary impact of the release of hazardous substances, shall not be postponed on the ground that scientific research has not fully proved a causal link between these substances, on the one hand, and the potential transboundary impact, on the other.

   b. The polluter-pays principle, by virtue of which, costs of pollution prevention, control and reduction measures shall be borne by the polluter.

   c. Water resources shall be managed so that the needs of the present generation are met without compromising the ability of future generations to meet their own needs.

6. The Riparian Parties shall cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements, in order to develop harmonised policies, programmes and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact, and aimed at the protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment.

7. The application of this Convention shall not lead to the deterioration of environmental conditions nor lead to increased transboundary impact.

8. The provisions of this Convention shall not affect the right of Parties, individually or jointly, in adopting and implementing more stringent measures than those set down in this Convention.

Article 3: Prevention, control and reduction

1. To prevent, control and reduce transboundary impact, the Parties shall develop, adopt, implement and, as far as possible, render compatible relevant legal, administrative, economic, financial and technical measures, in order to ensure, inter alia, that:

   a. The emission of pollutants is prevented, controlled and reduced at source through the application of, among other factors, low and non-waste technology.

b. Transboundary waters are protected against pollution from point sources through the prior licensing of waste-water discharges by the competent national authorities, making sure that the authorised discharges are monitored and controlled.

c. Limits for waste-water discharges, stated in permits, are based on the best available technology for discharges of hazardous substances.

d. Stricter requirements, even leading to prohibition in individual cases, are imposed when the quality of the receiving water or the ecosystem so requires.

e. At least one type of biological treatment or equivalent process is applied to municipal waste water, as necessary, in a step-by-step approach.

f. Appropriate measures are taken, such as the application of the best available technology, in order to reduce nutrient inputs from industrial and municipal sources.

g. Appropriate measures and best environmental practices are developed and implemented for the reduction of inputs of nutrients and hazardous substances from diffuse sources, especially where the main sources are from agriculture (guidelines for developing best environmental practices are given in Annex II to this Convention).

h. Environmental impact assessment and other means of assessment are applied.

i. Sustainable water-resources management, including the application of the ecosystems approach, is promoted.

j. Contingency planning is developed.

k. Additional, specific measures are taken in order to prevent the pollution of groundwaters.

l. The risk of accidental pollution is minimised.

2. To this end, each Party shall set emission limits for discharges from point sources into surface waters based on the best available technology, which are specifically applicable to individual industrial sectors or industries from which hazardous substances derive. The appropriate measures mentioned in paragraph 1 of this article to prevent, control and reduce the input of hazardous substances from point and diffuse sources into waters, may, among other factors, include total or partial prohibition of the production or use of such substances. Existing lists of such industrial sectors or industries and of such hazardous substances in international conventions or regulations, which are applicable in the area covered by this Convention, shall be taken into account.

3. In addition, each Party shall define, where appropriate, water-quality objectives and adopt water-quality criteria for the purpose of preventing, controlling and reducing transboundary impacts. General guidance for developing such objectives and criteria is given in Annex III of this Convention. When necessary, the Parties shall endeavour to update this Annex.

Article 4: Monitoring

The Parties shall establish programmes for monitoring the conditions of transboundary waters.

Article 5: Research and development

The Parties shall cooperate in the carrying out of research and development of effective techniques for the prevention, control and reduction of transboundary impacts. To this effect, the Parties shall, on a bilateral and/or multilateral basis, while taking into account research activities pursued in relevant international forums, endeavour to initiate or intensify specific research programmes, where necessary, aimed at:

a. Methods for the assessment of the toxicity of hazardous substances and the noxiousness of pollutants.

b. Improved knowledge on the occurrence, distribution and environmental effects of pollutants and the processes involved.

c. The development and application of environmentally sound technologies, production and consumption patterns.

d. The phasing out and/or replacement of substances likely to have transboundary impacts.

e. Environmentally sound methods of disposal of hazardous substances.

f. Special methods for improving the conditions of transboundary waters.

g. The development of environmentally sound water-construction works and water-regulation techniques.

h. The physical and financial assessment of damage resulting from transboundary impacts.

The results of these research programmes shall be exchanged among the Parties in accordance with article 6 of this Convention.

Article 6: Exchange of information

The Parties shall cater for the widest exchange of information, as early as possible, on issues covered by the provisions of this Convention.

Article 7: Responsibility and Liability

The Parties shall support appropriate international efforts to elaborate rules, criteria and procedures in the field of responsibility and liability.

Article 8: Protection of information

The provisions of this Convention shall not affect the rights or the obligations of Parties in accordance with their national legal systems and applicable supranational regulations to protect information related to industrial and commercial secrecy, including that of intellectual property, or national security.

Part II Provisions relating to riparian parties

Article 9: Bilateral and multilateral cooperation

1. The Riparian Parties shall on the basis of equality and reciprocity enter into bilateral or multilateral agreements or other arrangements, where these do not yet exist, or adapt existing ones, where necessary to eliminate the contradictions with the basic principles of this Convention, in order to define their mutual relations and conduct regarding the prevention, control and reduction of transboundary impact. The Riparian Parties shall specify the catchment area, or part(s) thereof, subject to cooperation. These agreements or arrangements shall embrace relevant issues covered by this Convention, as well as any other issues on which the Riparian Parties may deem it necessary to cooperate.
2. The agreements or arrangements mentioned in paragraph 1 of this article shall provide for the establishment of joint bodies. The tasks of these joint bodies shall be, *inter alia*, and without prejudice to relevant existing agreements or arrangements, the following:
   a. To collect, compile and evaluate data in order to identify pollution sources likely to cause transboundary impact.
   b. To elaborate joint monitoring programmes concerning water quality and quantity.
   c. To draw up inventories and exchange information on the pollution sources mentioned in paragraph 2 (a) of this article.
   d. To elaborate emission limits for waste water and evaluate the effectiveness of control programmes.
   e. To elaborate joint water-quality objectives and criteria having regard to the provisions of article 3, paragraph 3 of this Convention, and to propose relevant measures for maintaining and, where necessary, improving the existing water quality.
   f. To develop concerted action programmes for the reduction of pollution loads from both point sources (e.g. municipal and industrial sources) and diffuse sources (particularly from agriculture).
   g. To establish warning and alarm procedures.
   h. To serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact.
   i. To promote cooperation and exchange of information on the best available technology in accordance with the provisions of article 13 of this Convention, as well as to encourage cooperation in scientific research programmes.
   j. To participate in the implementation of environmental impact assessments relating to transboundary waters, in accordance with appropriate international regulations.
3. In cases where a coastal State, being Party to this Convention, is directly and significantly affected by transboundary impact, the Riparian Parties can, if they all so agree, invite that coastal State to be involved in an appropriate manner in the activities of multilateral joint bodies established by Parties riparian to such transboundary waters.

4. Joint bodies according to this Convention shall invite joint bodies, established by coastal States for the protection of the marine environment directly affected by transboundary impact, to cooperate in order to harmonize their work and to prevent, control and reduce the transboundary impact.
5. Where two or more joint bodies exist in the same catchment area, they shall endeavour to coordinate their activities in order to strengthen the prevention, control and reduction of transboundary impact within that catchment area.

Article 10: Consultations

Consultations shall be held between the Riparian Parties on the basis of reciprocity, good faith and good-neighbourliness, at the request of any such Party. Such consultations shall aim at cooperation regarding the issues covered by the provisions of this Convention. Any such consultations shall be conducted through a joint body established under article 9 of this Convention, where one exists.

Article 11: Joint monitoring and assessment

1. In the framework of general cooperation mentioned in article 9 of this Convention, or specific arrangements, the Riparian Parties shall establish and implement joint programmes for monitoring the conditions of transboundary waters, including floods and ice drifts, as well as transboundary impact.
2. The Riparian Parties shall agree upon pollution parameters and pollutants whose discharges and concentration in transboundary waters shall be regularly monitored.
3. The Riparian Parties shall, at regular intervals, carry out joint or coordinated assessments of the conditions of transboundary waters and the effectiveness of measures taken for the prevention, control and reduction of transboundary impact. The results of these assessments shall be made available to the public in accordance with the provisions set out in article 16 of this Convention.
4. For these purposes, the Riparian Parties shall harmonize rules for the setting up and operation of monitoring programmes, measurement systems, devices, analytical techniques, data processing and evaluation procedures, and methods for the registration of pollutants discharged.

Article 12: Common research and development

In the framework of general cooperation mentioned in article 9 of this Convention, or specific arrangements, the Riparian Parties shall undertake specific research and development activities in support of achieving and maintaining the water-quality objectives and criteria which they have agreed to set and adopt.

Article 13: Exchange of information between Riparian Parties

1. The Riparian Parties shall, within the framework of relevant agreements or other arrangements according to article 9 of this Convention, exchange reasonably available data, *inter alia*, on:
   a. Environmental conditions of transboundary waters.
   b. Experience gained in the application and operation of best available technology and results of research and development.

c. Emission and monitoring data.

d. Measures taken and planned to be taken to prevent, control and reduce transboundary impact.

e. Permits or regulations for waste-water discharges issued by the competent authority or appropriate body.

2. In order to harmonize emission limits, the Riparian Parties shall undertake the exchange of information on their national regulations.

3. If a Riparian Party is requested by another Riparian Party to provide data or information that is not available, the former shall endeavour to comply with the request but may condition its compliance upon the payment, by the requesting Party, of reasonable charges for collecting and, where appropriate, processing such data or information.

4. For the purposes of the implementation of this Convention, the Riparian Parties shall facilitate the exchange of best available technology, particularly through the promotion of: the commercial exchange of available technology; direct industrial contacts and cooperation, including joint ventures; the exchange of information and experience; and the provision of technical assistance. The Riparian Parties shall also undertake joint training programmes and the organization of relevant seminars and meetings.

Article 14: Warning and alert systems

The Riparian Parties shall without delay inform each other about any critical situation that may have transboundary impact. The Riparian Parties shall set up, where appropriate, and operate coordinated or joint communication, warning and alarm systems with the aim of obtaining and transmitting information. These systems shall operate on the basis of compatible data transmission and treatment procedures and facilities to be agreed upon by the Riparian Parties. The Riparian Parties shall inform each other about competent authorities or points of contact designated for this purpose.

Article 15: Mutual assistance

1. If a critical situation should arise, the Riparian Parties shall provide mutual assistance upon request, following procedures to be established in accordance with paragraph 2 of this article.

2. The Riparian Parties shall elaborate and agree upon procedures for mutual assistance addressing, *inter alia*, the following issues:

a. The direction, control, coordination and supervision of assistance.

b. Local facilities and services to be rendered by the Party requesting assistance, including, where necessary, the facilitation of border-crossing formalities.

c. Arrangements for holding harmless, indemnifying and/or compensating the assisting Party and/or its personnel, as well as for transit through territories of third Parties, where necessary.

d. Methods of reimbursing assistance services.

Article 16: Public Information

1. The Riparian Parties shall ensure that information on the conditions of transboundary waters, measures taken or planned to be taken to prevent, control and reduce transboundary impact, and the effectiveness of those measures, is made available to the public. For this purpose, the Riparian Parties shall ensure that the following information is made available to the public:
   a. Water-quality objectives.
   b. Permits issued and the conditions required to be met.
   c. Results of water and effluent sampling carried out for the purposes of monitoring and assessment, as well as results of checking compliance with the water-quality objectives or the permit conditions.
2. The Riparian Parties shall ensure that this information shall be available to the public at all reasonable times for inspection free of charge, and shall provide members of the public with reasonable facilities for obtaining from the Riparian Parties, on payment of reasonable charges, copies of such information.

Part III Institutional and final provisions

Article 17: Meeting of Parties

1. The first meeting of the Parties shall be convened no later than one year after the date of the entry into force of this Convention. Thereafter, ordinary meetings shall be held every three years, or at shorter intervals as laid down in the rules of procedure. The Parties shall hold an extraordinary meeting if they so decide in the course of an ordinary meeting or at the written request of any Party, provided that, within six months of it being communicated to all Parties, the said request is supported by at least one third of the Parties.
2. At their meetings, the Parties shall keep under continuous review the implementation of this Convention, and, with this purpose in mind, shall:
   a. Review the policies for and methodological approaches to the protection and use of transboundary waters of the Parties with a view to further improving the protection and use of transboundary waters.
   b. Exchange information regarding experience gained in concluding and implementing bilateral and multilateral agreements or other arrangements regarding the protection and use of transboundary waters to which one or more of the Parties are party.
   c. Seek, where appropriate, the services of relevant ECE bodies as well as other competent international bodies and specific committees in all aspects pertinent to the achievement of the purposes of this Convention.
   d. At their first meeting, consider and by consensus adopt rules of procedure for their meetings.
   e. Consider and adopt proposals for amendments to this Convention.
   f. Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention.

Article 18: Right to vote

1. Except as provided for in paragraph 2 of this article, each Party to this Convention shall have one vote.
2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States which are Parties to this Convention. Such organizations shall not exercise their right to vote if their member States exercise theirs, and vice versa.

Article 19: Secretariat

The Executive Secretary of the Economic Commission for Europe shall carry out the following secretariat functions:

a. The convening and preparing of meetings of the Parties;

b. The transmission to the Parties of reports and other information received in accordance with the provisions of this Convention;

c. The performance of such other functions as may be determined by the Parties.

Article 20: Annexes

Annexes to this Convention shall constitute an integral part thereof.

Article 21: Amendments to the Convention

1. Any Party may propose amendments to this Convention.
2. Proposals for amendments to this Convention shall be considered at a meeting of the Parties.
3. The text of any proposed amendment to this Convention shall be submitted in writing to the Executive Secretary of the Economic Commission for Europe, who shall communicate it to all Parties at least ninety days before the meeting at which it is proposed for adoption.
4. An amendment to the present Convention shall be adopted by consensus of the representatives of the Parties to this Convention present at a meeting of the Parties, and shall enter into force for the Parties to the Convention which have accepted it on the ninetieth day after the date on which two thirds of those Parties have deposited with the Depositary their instruments of acceptance of the amendment. The amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits its instrument of acceptance of the amendment.

Article 22: Settlement of disputes

1. If a dispute arises between two or more Parties about the interpretation or application of this Convention, they shall seek a solution by negotiation or by any other means of dispute settlement acceptable to the parties to the dispute.
2. When signing, ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a Party may declare in writing to the Depositary that, for a dispute not resolved in accordance with paragraph 1 of this article, it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation:

a. Submission of the dispute to the International Court of Justice.

b. Arbitration in accordance with the procedure set out in annex IV.

3. If the parties to the dispute have accepted both means of dispute settlement referred to in paragraph 2 of this article, the dispute may be submitted only to the International Court of Justice, unless the parties agree otherwise.

Article 23: Signature

This Convention shall be open for signature at Helsinki from 17 to 18 March 1992 inclusive, and thereafter at United Nations Headquarters in New York until 18 September 1992, by States members of the Economic Commission for Europe as well as States having consultative status with the Economic Commission for Europe pursuant to paragraph 8 of Economic and Social Council resolution 36 (IV) of 28 March 1947, and by regional economic integration organizations constituted by sovereign States members of the Economic Commission for Europe to which their member States have transferred competence over matters governed by this Convention, including the competence to enter into treaties in respect of these matters.

Article 24: Depositary

The Secretary-General of the United Nations shall act as the Depositary of this Convention.

Article 25: Ratification, acceptance, approval and accession

1. This Convention shall be subject to ratification, acceptance or approval by signatory States and regional economic integration organizations.

2. This Convention shall be open for accession by the States and organizations referred to in article 23.

3. Any organization referred to in article 23 which becomes a Party to this Convention without any of its member States being a Party shall be bound by all the obligations under this Convention. In the case of such organizations, one or more of whose member States is a Party to this Convention, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under this Convention. In such cases, the organization and the member States shall not be entitled to exercise rights under this Convention concurrently.

4. In their instruments of ratification, acceptance, approval or accession, the regional economic integration organizations referred to in article 23 shall declare the extent of their competence with respect to the matters governed by this Convention. These organizations shall also inform the Depositary of any substantial modification to the extent of their competence.

Article 26: Entry into force

1. This Convention shall enter into force on the ninetieth day after the date of deposit of the sixteenth instrument of ratification, acceptance, approval or accession.

2. For the purposes of paragraph 1 of this article, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States members of such an organization.

3. For each State or organization referred to in article 23 which ratifies, accepts or approves this Convention or accedes thereto after the deposit of the sixteenth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the date of deposit by such State or organization of its instrument of ratification, acceptance, approval or accession.

Article 27: Withdrawal

At any time after three years from the date on which this Convention has come into force with respect to a Party, that Party may withdraw from the Convention by giving written notification to the Depositary. Any such withdrawal shall take effect on the ninetieth day after the date of its receipt by the Depositary.

Article 28: Authentic texts.

The original of this Convention, of which the English, French and Russian texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto, have signed this Convention.

DONE at Helsinki, this seventeenth day of March one thousand nine hundred and ninety-two.

Annex I Definition of the term “best available technology”

1. The term “best available technology” is taken to mean the latest stage of development of processes, facilities or methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set of processes, facilities and methods of operation constitute the best available technology in general or individual cases, special consideration is given to:
   a. Comparable processes, facilities or methods of operation which have recently been successfully tried out;
   b. Technological advances and changes in scientific knowledge and understanding;
   c. The economic feasibility of such technology;
   d. Time limits for installation in both new and existing plants;
   e. The nature and volume of the discharges and effluents concerned;
   f. Low- and non-waste technology.
2. It therefore follows that what is “best available technology” for a particular process will change with time in the light of technological advances, economic and social factors, as well as in the light of changes in scientific knowledge and understanding.

Annex II Guidelines for developing best environmental practices

1. In selecting for individual cases the most appropriate combination of measures which may constitute the best environmental practice, the following graduated range of measures should be considered:
   a. Provision of information and education to the public and to users about the environmental consequences of the choice of particular activities and products, their use and ultimate disposal;
   b. The development and application of codes of good environmental practice which cover all aspects of the product's life;
   c. Labels informing users of environmental risks related to a product, its use and ultimate disposal;
   d. Collection and disposal systems available to the public;
   e. Recycling, recovery and reuse;
   f. Application of economic instruments to activities, products or groups of products;
   g. A system of licensing, which involves a range of restrictions or a ban.
2. In determining what combination of measures constitute best environmental practices, in general or in individual cases, particular consideration should be given to:
   a. The environmental hazard of:
      i. The product;
      ii. The product's production;
      iii. The product's use;
      iv. The product's ultimate disposal;
   b. Substitution by less polluting processes or substances;
   c. Scale of use;
   d. Potential environmental benefit or penalty of substitute materials or activities;
   e. Advances and changes in scientific knowledge and understanding;
   f. Time limits for implementation;
   g. Social and economic implications;
3. It therefore follows that best environmental practice methods for a particular source will change with time in the light of technological advances, economic and social factors, as well as that of scientific knowledge and understanding.

Annex III Guidelines for developing water-quality objectives and criteria

Water-quality objectives and criteria shall:

a. Take into account the aim of maintaining and, where necessary, improving the existing water quality;

b. Aim at the reduction of average pollution loads (in particular hazardous substances) to a certain degree within a certain period of time;

c. Take into account specific water-quality requirements (raw water for drinking-water purposes, irrigation, etc.);

d. Take into account specific requirements regarding sensitive and specially protected waters and their environment, e.g. lakes and groundwater resources;

e. Be based on the application of ecological classification methods and chemical indices for the medium- and long-term review of water-quality maintenance and improvement;

f. Take into account the degree to which objectives are reached and the additional protective measures, based on emission limits, which may be required in individual cases.

Annex IV Arbitration

1. In the event of a dispute being submitted for arbitration pursuant to article 22, paragraph 2 of this Convention, a party or parties shall notify the secretariat of the subject-matter of arbitration and indicate, in particular, the articles of this Convention whose interpretation or application is at issue. The secretariat shall forward the information received to all Parties to this Convention.

2. The arbitral tribunal shall consist of three members. Both the claimant party or parties and the other party or parties to the dispute shall appoint an arbitrator, and the two arbitrators so appointed shall designate by common agreement the third arbitrator, who shall be the president of the arbitral tribunal. The latter shall not be a national of one of the parties to the dispute, nor have his or her usual place of residence in the territory of one of these parties, nor be employed by any of them, nor have dealt with the case in any other capacity.

3. If the president of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the Executive Secretary of the Economic Commission for Europe shall, at the request of either party to the dispute, designate the president within a further two-month period.

4. If one of the parties to the dispute does not appoint an arbitrator within two months of the receipt of the request, the other party may so inform the Executive Secretary of the Economic Commission for Europe, who shall designate the president of the arbitral tribunal within a further two-month period. Upon designation, the president of the arbitral tribunal shall request the party which has not appointed an arbitrator to do so within two months. If it fails to do so within that period, the president shall so inform the Executive Secretary of the Economic Commission for Europe, who shall make this appointment within a further two-month period.

5. The arbitral tribunal shall render its decision in accordance with international law and the provisions of this Convention.
6. Any arbitral tribunal constituted under the provisions set out in this annex shall draw up its own rules of procedure.
7. The decisions of the arbitral tribunal, both on procedure and on substance, shall be taken by majority vote of its members.
8. The tribunal may take all appropriate measures to establish the facts.
9. The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, using all means at their disposal, shall:

   a. Provide it with all relevant documents, facilities and information;

   b. Enable it, where necessary, to call witnesses or experts and receive their evidence.
10. The parties and the arbitrators shall protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.
11. The arbitral tribunal may, at the request of one of the parties, recommend interim measures of protection.
12. If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue the proceedings and to render its final decision. Absence of a party or failure of a party to defend its case shall not constitute a bar to the proceedings.
13. The arbitral tribunal may hear and determine counter-claims arising directly out of the subject-matter of the dispute.
14. Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the expenses of the tribunal, including the remuneration of its members, shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its expenses, and shall furnish a final statement thereof to the parties.
15. Any Party to this Convention which has an interest of a legal nature in the subject-matter of the dispute, and which may be affected by a decision in the case, may intervene in the proceedings with the consent of the tribunal.
16. The arbitral tribunal shall render its award within five months of the date on which it is established, unless it finds it necessary to extend the time limit for a period which should not exceed five months.
17. The award of the arbitral tribunal shall be accompanied by a statement of reasons. It shall be final and binding upon all parties to the dispute. The award will be transmitted by the arbitral tribunal to the parties to the dispute and to the secretariat. The secretariat will forward the information received to all Parties to this Convention.

18. Any dispute which may arise between the parties concerning the interpretation or execution of the award may be submitted by either party to the arbitral tribunal which made the award or, if the latter cannot be seized thereof, to another tribunal constituted for this purpose in the same manner as the first.

Treaty for Amazonian Cooperation[178]

The Republics of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.

CONSCIOUS of the importance to each one of the Parties of their respective Amazonian regions as an integral part of their respective territories,

INSPIRED by the common aim of pooling the efforts being made, both within their respective territories as well as among them-selves, to promote the harmonious development of the Amazon region, to permit an equitable distribution of the benefits of said development among the Contracting Parties so as to raise the standard of living of their peoples and so as to achieve total incorporation of their Amazonian territories into their respective national economies,

CONSCIOUS of the usefulness of sharing national experiences in matters pertaining to the promotion of regional development,

CONSIDERING that, so as to achieve overall development of their respective Amazonian territories, it is necessary to maintain a balance between economic growth and conservation of the environment,

CONSCIOUS that both socio-economic development as well as conservation of the environment are responsibilities inherent in the sovereignty of each State, and that cooperation among the Contracting Parties shall facilitate fulfilment of these responsibilities, by continuing and expanding the joint efforts being made for the ecological conservation of the Amazon region,

CONFIDENT that cooperation among the Latin American nations on specific matters which they have in common shall contribute to progress on the road towards the integration and solidarity of all Latin America,

CONVINCED that this Treaty represents the beginning of a process of cooperation which shall benefit their respective countries and the Amazon region as a whole,

RESOLVE TO SIGN THE FOLLOWING TREATY:

Article I: The Contracting Parties agree to undertake joint actions and efforts to promote the harmonious development of their respective Amazonian territories in such a way that these joint actions produce equitable and mutually beneficial results and achieve also the preservation of the environment, and the conservation and rational utilization of the natural resources of those territories.

Paragraph: to this end, they would exchange information and prepare operational agreements and understandings as well as the pertinent legal instruments which will permit the aims of the present Treaty to be attained.

178 Signed at Brasilia on July 3, 1978; text available at 1202 UNTS (United Nations Treaty Series) 1979.

Article II: This Treaty shall be in force in the territories of the Contracting Parties in the Amazonian Basin as well as in any territory of a Contracting Party which, by virtue of its geographical, ecological or economic characteristics is considered closely connected with that Basin.

Article III: In accordance with and without prejudice to the rights granted by unilateral acts, to the provisions of bilateral treaties among the Parties and to the principles and rules of International Law, the Contracting parties mutually guarantee on a reciprocal basis that there shall be complete freedom of commercial navigation on the Amazon and other international Amazonian rivers, observing the fiscal and police regulations in force now or in the future within the territory of each. Such regulations should, insofar as possible, be uniform and favour said navigation and trade.

Paragraph: This article shall not apply to cabotage.

Article IV: The Contracting Parties declare that the exclusive use and utilization of natural resources within their respective territories is a right inherent in the sovereignty of each state and that the exercise of this right shall not be subject to any restrictions other than those arising from International Law.

Article V: Taking account of the importance and multiplicity of the functions which the Amazonian rivers have in the process of economic and social development of the region, the Contracting Parties shall make efforts aimed at achieving rational utilization of the hydro resources.

Article VI: In order to enable the Amazonian rivers to become an effective communication link among the Contracting Parties and with the Atlantic Ocean, the riparian states interested in any specific problem affecting free and unimpeded navigation shall, as circumstances may warrant, undertake national, bilateral or multilateral measures aimed at improving and making the said rivers navigable.

Paragraph: For this purpose, they shall carry out studies into the means for eliminating physical obstacles to the said navigation as well as the economic and financial implications so as to put into effect the most appropriate operational measures.

Article VII: Taking into account the need for the exploitation of the flora and fauna of the Amazon region to be rationally planned so as to maintain the ecological balance within the region and preserve the species, the Contracting Parties decide to:

a) Promote scientific research and exchange information and technical personnel among the competent agencies within the respective countries so as to increase their knowledge of the flora and fauna of their Amazon territories and prevent and control diseases in said territories;

b) Establish a regular system for the proper exchange of information on the conservationist measures adopted or to be adopted by each State in its Amazonian territories; these shall be the subject of an annual report to be presented by each country.

Article VIII: The Contracting Parties decide to promote coordination of the present health services in their respective Amazonian territories and to take other appropriate measures to improve the sanitary conditions in the region and perfect methods for preventing and combating epidemics.

Article IX: The Contracting Parties agree to establish close cooperation in the fields of scientific and technological research, for the purpose of creating more suitable conditions for the acceleration of the economic and social development of the region.

Paragraph One: For purposes of this Treaty, the technical and scientific cooperation among the Contracting Parties may be as follows:

a) Joint or coordinated implementation of research and development programs;

b) Creation and operation of research institutions or centres for improvement and experimental production;

c) Organization of seminars and conferences, exchange of information and documentation, and organization of means for their dissemination.

Paragraph Two: The Contracting Parties may, whensoever they deem it necessary and convenient, request the participation of international agencies in the execution of studies, programs and projects resulting from the forms of technical and scientific cooperation defined in Paragraph One of this Article.

Article X: The Contracting Parties agree on the advisability of creating a suitable physical infrastructure among their respective countries, especially in relation to transportation and communications. They therefore undertake to study the most harmonious ways of establishing or improving road, river, air and telecommunication links bearing in mind the plans and programs of each country aimed at attaining the priority goal of fully incorporating those respective Amazonian territories into their respective national economies,

Article XI: In order to increase the rational utilization of the human and natural resources of their respective Amazonian territories, the Contracting Parties agree to encourage joint studies and measures aimed at promoting the economic and social development of said territories and generating complementary methods for reinforcing the actions envisaged in the national plans of their respective territories.

Article XII: The Contracting Parties recognize the benefit to be derived by developing, under equitable and mutually beneficial conditions, retail trade of products for local consumption among the respective Amazonian border populations, by means of suitable bilateral or multilateral agreements.

Article XIII: The Contracting Parties shall cooperate to increase the flow of tourists, both national and from third countries, in their respective Amazonian territories, without prejudice to national regulations for the protection of indigenous cultures and natural resources.

Article XIV: The Contracting Parties shall cooperate in ensuring that measures adopted for the conservation of ethnological, and archaeological wealth of the Amazon region are effective.

Article XV: The Contracting Parties shall seek to maintain a permanent exchange of information and cooperation among themselves and with the agencies for Latin American cooperation in the areas pertaining to matters covered by this Treaty.

Article XVI: The decisions and commitments adopted by the Contracting Parties under this Treaty shall not be to the detriment of projects and undertakings executed within their respective territories, according to International Law and fair practice between neighbouring and friendly countries.

Article XVII: The Contracting Parties shall present initiatives for undertaking studies for the elaboration of programs of common interest for developing their Amazonian territories and in general terms provide for the fulfilment of the actions contemplated in the present Treaty.

Paragraph: The Contracting Parties agree to give special attention to the consideration of initiatives presented by the least developed countries which require joint action and efforts by the Contracting Parties.

Article XVIII: Nothing contained in this Treaty shall in any way limit the rights of the Contracting Parties to conclude bilateral or multilateral agreements on specific or generic matters, provided that these are not contrary to the achievement of the common aims for cooperation in the Amazonian region stated in this instrument.

Article XIX: Neither the signing of this Treaty nor its execution shall have any effect on any other international treaties in force between the Parties nor on any differences with regard to limits or territorial rights which may exist between the Parties nor shall the signing or implementation of this Treaty be interpreted or invoked to imply acceptance or renunciation, affirmation or modification, direct or indirect, express or tacit, of the position or interpretation that each Contracting Party may hold on these matters.

Article XX: Notwithstanding the fact that more adequate frequency for meetings can be established at a later date, the Ministers of Foreign Affairs of the Contracting Parties shall convene meetings when deemed opportune or advisable, in order to establish the basic guidelines for common policies, for assessing and evaluating the general development or the process of Amazonian cooperation and for taking decisions designed to carry out the aims set out in this document.

Paragraph One: Meetings of Foreign Affairs Ministers shall be convened at the request of any of the Contracting Parties, provided that the request has the support of no fewer than four Member States.

Paragraph Two: The first Meeting of Foreign Affairs Ministers shall be held within a period of two years following the date of entry into force of this Treaty. The venue and date of the first meeting shall be established by agreement among the Ministries of Foreign Affairs of the Contracting Parties.

Paragraph Three: Designation of the host country for the meetings shall be by rotation and in alphabetical order.

Article XXI: The Amazonian Cooperation Council comprising of top level diplomatic representatives shall meet once a year. Its duties shall be as follows:

1. To ensure that the aims and objectives of the Treaty are complied with.
2. To be responsible for carrying out the decisions taken at meetings of Foreign Affairs Ministers.
3. To recommend to the Parties the advisability and the appropriateness of convening meetings of Foreign Affairs Ministers and of drawing-up the corresponding Agenda.
4. To take under consideration initiatives and plans present by the Parties as well as to adopt decisions for undertaking bilateral or multilateral studies and plans, the execution of which as the case may be, shall be the duty of the Permanent National Commissions.
5. To evaluate the implementation of plans of bilateral or multilateral interest.
6. To draw-up the Rules and Regulations for its proper functioning.

Paragraph One: The Council shall hold special meetings through the initiative of any of the Contracting Parties with the support of the majority of the rest.

Paragraph Two: The venue of regular meetings shall be rotated in alphabetical order among the Contracting Parties.

Article XXII: The functions of the Secretariat shall be performed *Pro Tempore* by the Contracting Party in whose territory the next regular meeting of the Amazonian Cooperation Council is scheduled to be held.

Paragraph: The *Pro Tempore* Secretariat shall send the pertinent documentation to the Parties.

Article XXIII: The Contracting Parties shall create Permanent National Commissions charged with enforcing in their respective territories the provisions set out in this Treaty, as well as carrying out the decisions taken at meetings of Foreign Affairs Ministers Amazonian Cooperation Council, without jeopardizing other tasks assigned them by the State.

Article XXIV: Whenever necessary, the Contracting Parties may set up special Commissions to study specific problems or matters related to the aims of this Treaty.

Article XXV: Decisions at meetings held in accordance with Articles XX and XXI shall always require the unanimous vote of the Member Countries of his Treaty. Decisions made at meetings held in accordance with Article XXIV shall always require the unanimous vote of the participating countries.

Article XXVI: The Contracting Parties agree that the present Treaty shall not be susceptible to interpretative reservation or statements.

Article XXVII: This Treaty shall remain in force for an unlimited period of time, and shall not be open to adherence.

Article XXVIII: This Treaty shall be ratified by all the Contracting Parties and the instruments of ratification shall be deposited with the Government of the Federative Republic of Brazil.

Paragraph One: This Treaty shall become effective thirty days after the last instrument of ratification has been deposited by the Contracting Parties.

Paragraph Two: The intention to denounce this Treaty shall be communicated by a Contracting Party to the remaining Contracting Parties at least ninety days prior to formal delivery of the instrument of denunciation to the Government of the Federative Republic of Brazil. This Treaty shall cease to have effect for the Contracting Party denouncing it one year after the denunciation has been formalized.

Paragraph Three: This Treaty shall be drawn up in English, Dutch, Portuguese and Spanish, all having equal validity.

IN WITNESS WHEREOF, the undersigned Foreign Ministers have signed the present Treaty.

EXECUTED in the city of, Brasilia on July 3, 1978, to be deposited in the archives of the Ministry of Foreign Affairs of Brazil which shall provide the other signatory countries with original copies.

Treaty of the River Plate Basin[179]

The Governments of the Republics of Argentina, Bolivia, Brazil, Paraguay and Uruguay, represented at the First Extraordinary Meeting of Foreign Ministers of the Countries of the River Plate Basin, held at Brasilia on 22 and 23 April 1969,

CONVINCED of the need to join forces in order to achieve the fundamental objectives laid down in the Joint Declaration of Buenos Aires of 27 February 1967 and the Act of Santa Cruz de la Sierra of 20 May 1968, and guided by a strong spirit of co-operation and solidarity;[1]

CONFIDENT that joint action will permit the harmonious and balanced development and optimum utilization of the principal natural resources of the region and will ensure the conservation of those resources for future generations if they are utilized rationally;

CONSIDERING further that the Foreign Ministers have adopted a Statute for the Intergovernmental Co-ordinating Committee of the Countries of the River Plate Basin;

Have decided to conclude this Treaty in order to establish firmer institutional arrangements for the River Plate Basin and, to that end, have designated their plenipotentiaries, who have agreed as follows:

Article I: The Contracting Parties agree to join forces to promote the harmonious development and physical integration of the River Plate Basin and its zones of direct and measurable influence.

Paragraph 1. To that end, they shall promote, in the region of the Basin, the identification of areas of mutual interest, the carrying out of studies, plans and works and the formulation of such operating arrangements and legal instruments as they may deem necessary to achieve the following objectives:

a) Facilitating and assisting navigation;

b) The rational utilization of water resources, in particular by the regulation of watercourses and their multipurpose and equitable development;

c) The conservation and development of animal and plant life;

d) The improvement of road, rail, river, air, electrical and telecommunications interconnections;

e) Regional complementarity, by promoting and establishing industries for the development of the Basin;

f) The economic complementarity of areas bordering on the Basin;

g) Co-operation with respect to education, health and disease control;

h) The promotion of other projects of mutual interest, in particular those relating to the surveying, evaluation and development of the natural resources of the area;

i) A comprehensive knowledge of the River Plate Basin.

179 Brasilia, April 23, 1960, text available at 875 UNTS (United Nations Treaty Series) 1972.

Article II: The Ministers for Foreign Affairs of the countries of the River Plate Basin shall meet once a year on a date to be suggested by the Intergovernmental Coordinating Committee in order to lay down basic joint policy guidelines for the attainment of the objectives established in this Treaty; to assess and evaluate the results obtained; to hold consultations on the activities of their respective Governments relating to the multinational integrated development of the Basin; to guide the work of the Intergovernmental Coordinating Committee and, in general, to adopt such provisions as are necessary to ensure the implementation of this Treaty through the specific measures called for herein.

Paragraph 1. The Ministers for Foreign Affairs may meet in extraordinary session after being convened by the Intergovernmental Coordinating Committee on the request of at least three of the Contracting Parties.

Paragraph 2. In the event that, owing to exceptional circumstances, the Minister for Foreign Affairs of a Contracting Party should be unable to attend a regular or extraordinary meeting, he shall be represented by a special delegate.

Paragraph 3. Decisions taken at meetings held pursuant to this article shall require the unanimous vote of the five countries concerned.

Article III: For the purposes of this Treaty, the Intergovernmental Co-ordinating Committee is recognized as the permanent body for the Basin and shall be responsible for promoting, coordinating and following the progress of multinational efforts to ensure the integrated development of the River Plate Basin and of the technical and financial assistance which it may organize with the support of such international agencies as it deems appropriate, and for implementing the decisions adopted by the Ministers for Foreign Affairs[5].

Paragraph 1. The Intergovernmental Coordinating Committee shall be governed by the Statute adopted at the Second Meeting of Foreign Ministers of the Countries of the River Plate Basin held at Santa Cruz de la Sierra, Bolivia, from 18 to 20 May 1968.[6]

Paragraph 2. At an extraordinary meeting specially convened for the purpose, the Ministers for Foreign Affairs may amend the Statute of the Intergovernmental Coordinating Committee, but such amendment shall require the unanimous vote of the five countries concerned.

Article IV: Without prejudice to the domestic legislation of each country, the national commissions or secretariats established pursuant to the Joint Declaration of Buenos Aires shall be the organs of co-operation among the Governments concerned and shall provide them with advice. The said commissions or secretariats may establish bilateral contacts, which shall in all cases be in conformity with the rules and regulations of the countries concerned, and shall keep the Intergovernmental Coordinating Committee informed as appropriate.

Article V: Any joint activities undertaken by the Contracting Parties shall be carried out without prejudice to such projects and undertakings as they may decide to execute within their respective territories, in accordance with respect for international law and fair practice among neighbouring friendly nations.

Article VI: The provisions of this Treaty shall not prevent the Contracting Parties from concluding specific or partial bilateral or multilateral agreements designed to achieve the general objectives of the development of the Basin.

Article VII: This Treaty shall be known as the Treaty of the River Plate Basin and shall remain in force for an indefinite period.

Article VIII: This Treaty shall be ratified by the Contracting Parties and the instruments of ratification shall be deposited with the Government of the Federative Republic of Brazil.

Paragraph 1. This Treaty shall enter into force 30 days after the instruments of ratification of all the Contracting Parties have been deposited.

Paragraph 2. Pending ratification of this Treaty by the Contracting Parties and the deposit of their instruments of ratification, any multinational activities they may undertake to develop the River Plate Basin shall be subject to the provisions agreed upon in the Joint Declaration of Buenos Aires and the Act of Santa Cruz de la Sierra.

Paragraph 3. A Contracting Party shall notify the other Contracting Parties of its intention to denounce this Treaty at least 90 days before it formally transmits its instrument of denunciation to the Government of the Federative Republic of Brazil. Once the Treaty has been formally denounced, it shall cease to have effect, so far as the Contracting Party denouncing it is concerned, within one year.

IN WITNESS WHEREOF, the undersigned plenipotentiaries, having deposited their full powers, found in good and due form, sign this Treaty.

DONE in the city of Brasilia on 23 April 1969 in one copy in the Spanish and Portuguese languages to be deposited in the archives of the Ministry of Foreign Affairs of Brazil, which shall transmit certified true copies to the signatory countries.

Statute of the River Uruguay

The Government of the Eastern Republic of Uruguay and the Government of the Argentine Republic, motivated by the fraternal spirit inspiring the Treaty concerning the Rio de la Plata and the Corresponding Maritime Boundary, signed at Montevideo on 19 November 1973, have agreed as follows:

Chapter I Purposes and definitions

Article 1: The Parties agree on this Statute, in implementation of the provisions of article 7 of the Treaty concerning the Boundary Constituted by the River Uruguay, of 7 April 1961, in order to establish the joint mechanisms necessary for the optimum and rational utilization of the River Uruguay, in strict observance of the rights and obligations arising from treaties and other international agreements in force for each of the Parties.

Article 2: For the purposes of this Statute:

a) "Parties" means the Eastern Republic of Uruguay and the Argentine Republic.

b) "Treaty" means the Treaty between the Eastern Republic of Uruguay and the Argentine Republic concerning the Boundary Constituted by the River Uruguay signed at Montevideo on 7 April 1961;

c) “River” means the section of the River Uruguay referred to in article 1 of the Treaty;

d) “Statute” means this legal instrument.

e) “Commission” means the Administrative Commission of the River Uruguay established under the Statute.

f) “Protocol” means the Protocol concerning the Delimitation and Marking of the Argentine-Uruguayan Boundary Line in the River Uruguay, signed at Buenos Aires on 16 October 1968.

Chapter II Navigation and works

Article 3: The Parties shall afford each other the necessary assistance so as to provide the best possible facilities and safety for navigation.

Article 4: The Parties shall agree on provisions governing the safety on the river and the use of the main channel.

Article 5: The Commission shall assign to the Parties, following joint planning, such tasks of dredging, buoying and conservation in the sections of the main channel as it may periodically determine on the basis of the use of the channel and the availability of technical facilities.

Article 6: For the purposes indicated in article 5, each Party shall, within its jurisdiction, permit the competent services of the other Party to carry out the respective tasks, following notification through the Commission.

Article 7: If one Party plans to construct new channels, substantially modify or alter existing ones or carry out any other works which are liable to affect navigation, the regime of the river or the quality of its waters, it shall notify the Commission, which shall determine on a preliminary basis and within a maximum period of 30 days whether the plan might cause significant damage to the other Party.

If the Commission finds this to be the case or if a decision cannot be reached in that regard, the Party concerned shall notify the other Party of the plan through the said Commission.

Such notification shall describe the main aspects of the work and, where appropriate, how it is to be carried out and shall include any other technical date that will enable the notified Party to assess the probable impact of such works on navigation, the regime of the river or the quality of its waters.

Article 8: The notified Party shall have a period of 180 days in which to respond in connection with the plan, starting from the date on which its delegation to the Commission receives the notification.

Should the documentation referred to in article 7 be incomplete, the notified Party shall have 30 days in which to so inform, through the Commission, the Party which plans to carry out the work.

The period of 180 days mentioned above shall begin on the date on which the delegation of the notified Party receives the full documentation.

This period may be extended at the discretion of the Commission if the complexity of the plan so requires.

Article 9: If the notified Party raises no objections or does not respond within the period established in article 8, the other Party may carry out or authorize the work planned.

Article 10: The notified Party shall have the right to inspect the works being carried out in order to determine whether they conform to the plan submitted.

Article 11: Should the notified Party come to the conclusion that the execution of the work or the programme of operations might significantly impair navigation, the regime of the river or the quality of its waters, it shall so notify the other Party, through the Commission, within the period of 180 days established in article 8.

Such notification shall specify which aspects of the work or the programme of operations might significantly impair navigation, the regime of the river or the quality of its waters, the technical reasons on which this conclusion is based and the changes suggested to the plan or programme of operations.

Article 12: Should the Parties fail to reach agreement within 180 days following the notification referred to in article 11, the procedure indicated in chapter XV shall be followed.

Article 13: The rules laid down in articles 7 to 12 shall apply to all works referred to in article 7, whether national or bi-national, which either Party plans to carry out within its jurisdiction in the River Uruguay outside the section defined as a river and in the areas affected by the two sections.

Chapter III Pilotage

Article 14: The profession of pilot on the river shall be exercised only by qualified pilots authorized by the authorities of one of the Parties.

Article 15: Any vessel departing from a Uruguayan or an Argentine port shall, when required to do so, take on a pilot of the nationality of the port of departure.

Vessels coming from a port of a third State shall, when required to do so, take on a pilot of the nationality of the port of destination.

No contact which the vessel may have, outside port, with the authorities of either Party shall alter the criterion originally followed to determine the nationality of the pilot.

In other cases, the pilot shall be of either Uruguayan or Argentine nationality, without distinction.

Article 16: Once they have completed their tasks, Uruguayan and Argentine pilots may disembark freely in the ports of either Party entered by the vessels in which they fulfilled those tasks.

The Parties shall extend to the above-mentioned pilots all necessary facilities for the optimum performance of their duties.

Chapter IV Port facilities, unloading and additional loading

Article 17: The Parties hereby undertake to conduct the necessary studies and take the necessary steps to ensure the maximum efficiency of their port services, in order to offer optimum performance and safety conditions, and to expand the facilities which they accord each other in their respective ports.

Article 18: The unloading and additional loading of cargo shall be carried out exclusively in the area established in each case by the competent authority within its respective jurisdiction according to technical and safety requirements, especially in respect of pollutant or dangerous cargoes.

Chapter V Safeguarding of human life

Article 19: Each Party shall be responsible for directing search-and-rescue operations within its jurisdiction.

Article 20: Without prejudice to the provisions of article 19, the authority initiating a search-and-rescue operation shall notify thereof the competent authority of the other Party.

Article 21: When the magnitude of the operation so warrants, the authority of the Party which requires the operation may request assistance from the authority of the other Party, although each Party shall retain control of the operations carried out within its jurisdiction.

Article 22: When, for whatever reason, the authority of one Party cannot initiate or continue a search-and-rescue operation, it shall request the authority of the other Party to take over the direction and conduct of that operation, extending it all possible cooperation.

Article 23: Surface or air units of either Party engaged in search-and-rescue operations may enter or leave either territory without fulfilling the normal formalities.

Chapter VI Salvaging

Article 24: The salvaging of vessels shall be carried out by the authorities or corporations of the Party within whose jurisdiction the accident occurred, without prejudice to the provisions of the following articles.

Article 25: The salvaging of a vessel in the main channel shall be carried out by the authorities or corporations of the Party within whose jurisdiction the accident occurred, in accordance with the criteria laid down in article 48.

Article 26: When the authorities or corporations of the Party responsible for salvaging are unable to perform that task, it may be carried out by the authorities or corporations of the other Party.

The inability to salvage referred to in the preceding paragraph shall be determined without delay and shall be communicated immediately to the other Party through the Commission.

Chapter VII Use of water

Article 27: The right of each Party to use the waters of the river, within its jurisdiction, for domestic, sanitary, industrial and agricultural purposes shall be exercised without prejudice to the application of the procedure laid down in articles 7 to 12 when the use is liable to affect the regime of the river or the quality of its waters.

Article 28: Every six months the Parties shall submit to the Commission a detailed report of the developments they undertake or authorize in the parts of the river under their respective jurisdictions, so that the Commission may verify whether the developments taken together are likely to cause significant damage.

Article 29: The provisions of article 13 shall apply to all developments which are liable to affect the regime of the river or the quality of its waters.

Chapter VIII Resources of the bed and subsoil

Article 30: Each Party may explore and exploit the resources of the bed and subsoil of the river in the area subject to its jurisdiction provided that it does not thereby cause significant damage to the other Party.

Article 31: Installations of other works required for the exploration or exploitation of the resources of the bed and subsoil of the river shall not interfere with navigation in the main channel.

Article 32: Any mineral deposit which extends on both sides of the line established in article 1 of the Treaty shall be mined in such a way that the volumes of the resource extracted from that deposit are shared proportionally to the overall volume of the deposit to be found on each side of the line.

Each Party shall explore and mine such deposits without causing significant damage to the other Party and in accordance with the requirements of a thorough and rational use of the resource, taking account of the criterion established in the preceding paragraph.

Article 33: In respect of concessions to extract sand, shingle or stones from the bed or subsoil of the river, the Party granting a concession must establish, *inter alia*, the following conditions:

a) That the residual matter left after washing and sorting the materials extracted may be unloaded only in the places which the Commission designates as dumps;

b) That no extractions may be carried out closer to the navigation channels and other parts of the river than indicated by the Commission.

Article 34: The provisions of articles 7 to 12 shall be applicable, where relevant, when the exploration and exploitation of the resources of the bed and subsoil of the river are liable to affect the regime of the river or the quality of its waters.

Chapter IX Conservation, utilization and development of other natural resources

Article 35: The Parties undertake to adopt the necessary measures to ensure that the management of the soil and woodland and the use of groundwater and the waters of the tributaries of the river do not cause changes which may significantly impair the regime of the river or the quality of its waters.

Article 36: The Parties shall co-ordinate, through the Commission, the necessary measures to avoid any change in the ecological balance and to control pests and other harmful factors in the river and the areas affected by it.

Article 37: The Parties shall agree on rules governing fishing activities in the river with regard to the conservation and preservation of living resources.

Article 38: When the volume of fishing activity so requires, the Parties shall agree on maximum catches per species and the corresponding periodic adjustments. Such catches shall be shared equally between the Parties.

Article 39: The Parties shall exchange regularly, through the Commission, relevant information on fishing activities and catches per species.

Chapter X Pollution

Article 40: For the purposes of this Statute, pollution shall mean the direct or indirect introduction by man into the aquatic environment of substances or energy which have harmful effects.

Article 41: Without prejudice to the functions assigned to the Commission in this respect, the Parties undertake:

a) To protect and preserve the aquatic environment and, in particular, to prevent its pollution, by prescribing appropriate rules and measures in accordance with applicable international agreements and in keeping, where relevant, with the guidelines and recommendations of international technical bodies;

b) Not to reduce in their respective legal systems:

1. The technical requirements in force for preventing water pollution, and
2. The severity of the penalties established for violations.

c) To inform one another of any rules which they plan to prescribe with regard to water pollution in order to establish equivalent rules in their respective legal systems.

Article 42: Each Party shall be liable to the other for damage inflicted as a result of pollution caused by its own activities or by those carried out in its territory by individuals or legal entities.

Article 43: The jurisdiction of each Party with regard to any violation of pollution laws shall be exercised without prejudice to the rights of the other Party to obtain compensation for the losses it has suffered as a result of such violation.

The Parties shall co-operate with one another to this end.

Chapter XI Research

Article 44: Each Party shall authorize the other Party to conduct scientific studies and research within its respective jurisdiction, provided that the said other Party has given it adequate advance notice through the Commission, indicating the nature of the studies or research envisaged and the areas and periods of time within which they are to be conducted.

Such authorization shall be denied only in exceptional circumstances and for limited periods.

The authorizing Party shall be entitled to participate in all phases of such studies and research and to be informed of and have access to their results.

Article 45: The Parties shall promote the conduct of joint scientific studies of common interest.

Chapter XII Attribution of powers

Article 46: The right of law enforcement on the river shall be exercised by each Party within its jurisdiction.

Without prejudice to the foregoing, if the authorities of one Party ascertain that an unlawful act is being committed within the jurisdiction of the other Party, they may seize the offender and must place him at the disposal of that other Party, with the exception provided for in article 48.

Similarly, the authorities of either Party may pursue vessels which, after committing an offence within their jurisdiction, enter the jurisdiction of the other Party.

In the cases envisaged in the second and third paragraphs, exercise of the right of law enforcement within the jurisdiction of the other Party must be brought immediately to its attention, and under no circumstances may be extended beyond a distance from the coast of that Party to be determined by the Commission in respect of each section.

The Parties shall co-ordinate the actions referred to in this article.

Article 47: The Parties shall ensure adequate supervision in a co-ordinated manner so as to prevent crimes and offences from being committed in the area between the lines defined in article 1, paragraphs A and B, subparagraph (ii) b), of the Treaty.

Article 48: Vessels which sail along the main channel shall be considered to be within the jurisdiction of one or the other Party in accordance with the following criteria:

a) Within the jurisdiction of either Party, vessels flying the flag of that Party.

b) Within the jurisdiction of the Eastern Republic of Uruguay, vessels flying the flags of third parties which are sailing upstream, and within the jurisdiction of the Argentine Republic, those sailing downstream, without prejudice to the provisions of subparagraphs c) and e).

c) Within the jurisdiction of either Party, vessels flying the flags of third parties involved in accidents with vessels flying the flag of that Party.

d) Within the jurisdiction of the flag State of the vessel of the greater tonnage when vessels flying the flags of both Parties are involved in an accident, unless one of them is a warship, in which case they shall be considered to be within the jurisdiction of the flag State of that vessel.

e) Within the jurisdiction of the relevant Party in accordance with the criterion in subparagraph b), applicable on the basis of the vessel of the greater tonnage, when only vessels flying the flags of third States are involved in an accident.

f) In other cases, the Commission shall decide.

This article shall not apply to cases involving warships, without prejudice to the provisions of subparagraph d).

Chapter XIII Administrative Commission

Article 49: The Parties hereby establish an Administrative Commission of the River Uruguay, consisting of an equal number of representatives of each Party.

Article 50: The Commission shall be made a legal entity in order to perform its functions.

The Parties shall provide it with the necessary resources and all the information and facilities essential to its operations.

Article 51: The Commission shall have its headquarters in the city of Paysandú, Eastern Republic of Uruguay, but may meet in the territory of either Party.

Article 52: The Commission may set up whatever subsidiary bodies it deems necessary. It shall function on a permanent basis and shall have its own secretariat.

Article 53: The Parties shall agree, by exchange of notes, on the Statute of the Commission. The Commission shall draw up its own rules of procedure.

Article 54: The Commission shall in due course conclude agreements with both Parties specifying the privileges and immunities enjoyed by its members and staff under international law.

Article 55: For the adoption of decisions of the Commission, each delegation shall have one vote.

Article 56: The Commission shall perform the following functions:

a) Draw up, *inter alia*, rules governing:

1. Safety of navigation on the river and use of the main channel;
2. Conservation and preservation of living resources;
3. Pilotage;
4. Prevention of pollution;
5. Installation of pipelines and cables under the river or overhead.

b) Coordinate the joint conduct of scientific studies and research and, in particular, studies for the comprehensive surveying of the river.

c) Establish, where appropriate, maximum catches of fish per species and adjust them periodically.

d) Coordinate between the competent authorities of the Parties activities for the prevention and prosecution of unlawful acts.

e) Coordinate the adoption of joint plans, handbooks, terminology and communication systems for search-and-rescue operations.

f) Establish the procedure to follow and the information to provide in cases where the units of one Party participating in search-and-rescue operations enter or leave the territory of the other Party.

g) Determine the formalities to fulfil in cases where equipment for the conduct of search-and-rescue operations must be introduced, on a temporary basis, into the territory of the other Party.

h) Co-ordinate navigation aids, buoying and dredging.

i) Establish the legal and administrative regime for the bi-national works and installations which are carried out and administer them.

j) Publish and update the official map of the river, with its indication of boundaries, in coordination with the Commission established under the Protocol.

k) Transmit as soon as possible to the Parties any communications, consultations, information and notifications which they may send to each other in accordance with the Statute.

l) Perform any other functions assigned to it by the Statute and those which the Parties may agree to entrust to it through an exchange of notes or any other form of agreement.

Article 57: The Commission shall report periodically to the Governments of the Parties on the progress of its activities.

Chapter XIV Conciliation procedure

Article 58: Any dispute which may arise between the Parties concerning the river shall be considered by the Commission at the proposal of either Party.

Article 59: If the Commission is unable to arrive at an agreement within 120 days, it shall so notify the two Parties, which shall attempt to resolve the issue by direct negotiations.

Chapter XV Judicial Settlement of Disputes

Article 60: Any dispute concerning the interpretation or application of the Treaty and the Statute which cannot be settled by direct negotiations may be submitted by either Party to the International Court of Justice.

In the cases referred to in articles 58 and 59, either Party may submit any dispute concerning the interpretation or application of the Treaty and the Statute to the International Court of Justice, when it has not been possible to settle the dispute within 180 days following the notification referred to in article 59.

Chapter XVI Transitional provisions

Article 61: The provisions of article 56, paragraph i), shall apply to bi-national works currently being carried out once they have been completed and when the Parties so agree through an exchange of notes or any other form of agreement.

Article 62: The Commission shall be set up within 60 days following the exchange of the instruments of ratification of the Statute.

Chapter XVII Ratification and entry into force

Article 63: This Statute shall be ratified in accordance with the procedures set forth in the Parties' respective legal systems and shall enter into force through the exchange of the instruments of ratification, which shall take place in the city of Buenos Aires.

DONE in the city of Salto, Eastern Republic of Uruguay, on 26 February 1975, in duplicate, both copies being equally authentic.

For the Argentine Republic: Alberto Juan Vignes, Minister of Foreign Relations and Culture.

For the Government of the Republic of Uruguay: Juan Carlos Blanco, Minister of Foreign Relations.

Other documents

Code of Conduct for the sustainable and equitable management of shared water resources of the Volta Basin

Preamble

The Governments of Burkina Faso and the Republic of Ghana

AWARE of the common interest of both States in the management of the shared water resources of the Volta Basin;

CONSIDERING the economic, strategic and environmental challenges of the Volta Basin for the six riparian countries namely, Benin, Burkina Faso, Cote d'Ivoire, Ghana, Mali and Togo which depend mainly on its resources for their economic and social development;

CONCERNED about the vulnerability of the Basin and the conflicts likely to arise from the management of any natural resource shared between two or more countries;

AWARE of the need for a concerted, interdependent and integrated management of the resources of the Basin and also the need for the harmonisation of policies and strategies and persuaded that it is the only way to sustainability of the resources and their use;

ACKNOWLEDGING that coordinated management approach of the shared ecosystems offers best results environmentally and generates economic benefits through fundamental services provided by ecosystems;

ACKNOWLEDGING that cooperation and participatory action promote peaceful relationships between the States and among people;

NOTING positively the efforts undertaken by the main stakeholders who are the States, international organisations, civil society organizations and the local communities through their several initiatives to ensure a sustainable management of the Basin;

MINDFUL of the multilateral and bilateral initiatives to provide the Basin with a legal management framework, namely the Volta Basin Technical Committee (VBTC) and the Burkina Faso – Ghana Joint Ministerial Declaration on the improved management of the natural resources of the Basin of April 13, 2004 and the setting up of the Burkina Faso – Ghana Joint Technical Committee on the Integrated Water Resources Management (JTC- IWRM) on December 6, 2005;

BEARING in mind the various international commitments of both States as part of the poverty reduction framework, in particular the Millennium Development Goals (MDGs) and the New Partnership for African Development (NEPAD) initiatives;

CONVINCED that a good cooperation in the framework of the Basin is likely to strengthen bilateral cooperation in other fields;

CONVINCED that these bilateral initiatives need to be reinforced by a non conventional but concerted tool which establishes the institutional and normative frameworks and which can contribute to achieve the objectives of a sustainable management of the Basin;

CONSCIOUS of the necessity to respect the general principles of water law resulting from international conventions and customary law, inspired by the law on international river courses;

DESIROUS of reinforcing cooperation among the riparian States of the Basin pursuant to the United Nations Charter and the Declaration on principles of international law on friendly relations and cooperation among States;

DELIRIOUS of providing sustainable and evolving frameworks to the common interest of the States and guaranteeing each user and each State, a reasonable and equitable advantage of use of water in conformity with the principle relating to shared water resources;

AGREE to adopt this Code of Conduct for the integrated, sustainable and equitable management of water resources of the Volta Basin hereinafter referred to as the Code of Conduct.

Part I General provisions

Article 1: Definitions and use of terms

Basin - refers to the Volta Basin;

States - refers to Burkina Faso and Ghana.

Other basin States - refers to the other four States of the basin, namely Benin, Côte d'Ivoire, Mali and Togo;

Riparian States - refers to the six States of the Volta Basin, namely Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo;

Ecosystem - refers to a dynamic complex constituted by communities of plants, animals and micro-organisms and their non living elements that by their interaction form a functional unit;

Environmental flow - refers to the water regime provided within a river, wetland or coastal zone to maintain ecosystems and their benefits where there are competing water uses and where flows are regulated;

Natural resources - refer to naturally occurring substances including soil, water, flora and fauna, which are considered valuable in their relatively unmodified form.

Article 2: Aims

The Code of Conduct defines the management principles for the shared water resources of the Volta Basin between Burkina Faso and Ghana which shall at all times guide both States for their interests, cooperation and good neighbourliness.

Article 3: Objective

The Code of Conduct, through its principles, guidelines, joint activities and implementation mechanisms, aims at promoting an integrated, sustainable and equitable management of the water resources of the Volta Basin based on a participatory approach which involves all the stakeholders, mainly the local communities.

An integrated, sustainable and equitable management of the water resources of the Basin necessarily takes into account the socio-economic needs, food security and poverty reduction dimensions through the preservation of services provided by the ecosystems and the improvement of the local communities' living conditions.

Article 4: Scope of application

The Code of Conduct applies to the shared water resources of the Volta Basin within the territories of the signatory States.

Article 5: Legal nature

The Code of Conduct is a non legally binding instrument. It is non conventional but a concerted tool issued from the agreement between the States to achieve integrated, sustainable and equitable management of the water resources of the Volta Basin.

Part II Management principles for the shared water resources of the Volta Basin

Article 6: Common heritage principle

(i) The water resources of the Basin constitute a common heritage for both States and their respective local communities which must be adequately managed and safeguarded.

(ii) It shall therefore be the duty of States and local communities to preserve this heritage, particularly the fragile ecosystems, for present and future generations.

Article 7: Principle of non-detrimental use of the national territory

In accordance with the United Nations Charter and principles of International Law, the States shall have the right to use the water resources following their development policies, and to ensure that activities carried out within their jurisdiction are not detrimental to the interests of the other States' territories.

Article 8: Principle of sustainable development

(i) In the process of the management of the water resources of the Basin, States have to balance the use for economic needs with environment protection and social development.

(ii) Preservation of ecosystem services is a prerequisite to economic development and social welfare of the people of the basin.

Article 9: Principle of conservation and sustainable use

(i) The States shall encourage the conservation and sound use of the water resources of the Basin to ensure sustainability for the benefit of present and future generations.

(ii) Further, the States shall ensure the security of the water resources of the Basin for the local communities.

Article 10: Cooperation principle

(i) The States shall encourage and promote cooperation on all issues of mutual interests in all areas, at all levels to avoid delays or unjustified blockages in the implementation of country specific/joint projects or programmes on conservation or sustainable use of the resources.

(ii) To optimize the management of the Basin's water resources, States shall encourage trans-boundary cooperation between the border administrative authorities on the one hand, and on the other, between the trans-boarder local communities. The administrative authorities and the local communities at the border shall be encouraged to set up structures or mechanisms, agreements such as protocols and Memoranda of Understanding.

Article 11: Principle of equitable use

The States shall make equitable use of the water resources of the Basin taking into consideration the legitimate interests and needs of the other riparian States of the Basin.

Article 12: Pollution prevention and polluter pays principles

(i) The States shall take all necessary measures to prevent, stop or minimize any possible pollution factors, which may endanger people, the environment and the water resources of the Basin.

(ii) If the Basin's water resources are severely affected by pollution, the States shall ensure that the concerned polluter bear the costs.

Article 13: Precautionary principle

In the event of serious or irreversible damage to the Basin's water resources, the lack of scientifically proved evidence cannot be used as an excuse to delay taking efficient measures which prevent the further degradation of these resources.

Article 14: Principle of benefit sharing

The States shall share together with the local population of the Basin, the benefits derived from the sustainable use and conservation of the water resources of the Basin.

Article 15: Principle of Participation

(i) The States shall involve stakeholders such as civil society groups, private sector, NGOs, community based organizations, traditional and customary authorities, women and youth groups to play a key role in the management of the water resources of the Basin owing to their presence on the ground and their good understanding of the local situation.

(ii) The states shall encourage and promote development of partnership and effective involvement of these organizations in designing and implementation of projects and programmes for a sustainable and equitable management of the Basin's water resources.

Article 16: Principle of mainstreaming women and youth

The states shall give priority to the participation of women and youth in this process of integrated, sustainable and equitable management of the water resources of the Basin.

Article 17: Principle of information, education and sensitization of the public

(i) The States shall ensure on a regular basis that the public has access to available data and information on water resources of the Basin and also to measures taken or planned for its conservation and sustainable use in accordance with appropriate modalities.

(ii) The States shall promote public education and sensitization on the issue of water resources to raise awareness of the public on the importance of sustainable use and conservation of the water resources.

Article 18: Principle of subsidiarity

(i) The States shall design policies on the management of the water resources of the basin and implement policies within the appropriate decision making level.

(ii) The States shall particularly promote a decentralized management of the water resources by recognizing the key role that local institutions have in the conception and implementation of sustainable policies, development programmes or projects in the Basin.

Article 19: Principle of environmental impact assessment

(i) Prior to undertaking any activity on shared water resources which may bear significant negative effects on the environment, the States must assess the impact on the environment and people.

(ii) The States shall encourage the sharing of the results of environmental impact assessments at appropriate levels and times.

Article 20: Principle of mutual information sharing

The States shall inform each other on a regular basis with the greatest transparency, on issues and initiatives of mutual interest in relation to the basin.

Article 21: Notification principle

(i) Whenever a State undertakes actions or takes measures likely to harm the environment or the water resources of the Basin States, this should be notified ahead of time.

(ii) The States shall inform each other and their respective local populations concerned as quickly as possible of any emergency situation which may suddenly cause harmful damage to the shared water resources of the Basin and should offer mutual assistance in this regard.

Article 22: Consultations and negotiations principle

(i) When the notification gives rise to a conflict, the States shall consult or negotiate to come to an agreement.

(ii) During consultations or negotiations, the States shall refrain from undertaking any initiative likely to aggravate the situation.

(iii) Consultations and negotiations shall be conducted in accordance with the principles of International Law.

Article 23: Compensation principle

The States shall facilitate the compensation of people who are victims of damage resulting from the management of the shared water resources of the Basin.

Article 24: Principles of Integrated Water Resources Management

The States shall apply the principles of Integrated Water Resources Management (IWRM) in the management process of the water resources of the Basin as follows:

(i) Fresh water is a finite and vulnerable resource, which is vital to life, development and the environment.

(ii) Development and management of water resources should follow a participatory approach, which involves users and decision makers at all levels.

(iii) Women play a key and strategic role in the supply, management and conservation of water.

(iv) Water has an economic and social value in all its uses and should be acknowledged as such.

Article 25: Principle of conflicting uses

(i) In the event of conflicting uses in a context of water shortage, the States shall pay particular attention to the basic human needs.

(ii) No State shall be denied sound and equitable use of the water just under the pretext of preserving the water for future use by another State.

Article 26: Principle of preservation of the quantity and quality of water resources

The States agree to safeguard and improve both quantity and quality of water resources of the Basin.

Article 27: Principle of management by hydrographical basin

The States shall adopt and implement an approach based on managing the hydrographical basin as a unit, which is the most appropriate framework for planning, mobilisation, management and protection of water resources.

Article 28: Principle of prevention of detrimental situations

The States shall adopt relevant measures to prevent human-driven and/or reduce the impact of natural situations that are likely to cause harm to the States, the Basin and/or the people. Such detrimental situations may include water borne diseases, silting up, erosion, and intrusion of salt water, drought or desertification.

Article 29: Principle of controlled introduction of new and foreign aquatic species[2]

The States shall adopt all necessary measures to avoid introduction into the Basin, new and foreign species which may cause prejudice to the ecosystem and eventually harm the States.

Article 30: Principle of priority conservation of aquatic ecosystems

The States shall give priority to the conservation of the biodiversity of aquatic ecosystems with regard to its role in the regulation and renewal of water resources, and to its social, economic and cultural dimensions.

Part III Guidelines

Article 31: Maintaining an environmental flow

In the management of the water resources of the basin, an environmental flow should be maintained for the conservation of aquatic ecosystems.

Article 32: Adoption of integrated strategies and efficient internal measures

The States shall make all efforts to adopt integrated policies and strategies, as well as efficient internal measures in order to achieve a sustainable development, conservation and use of the shared water resources of the Basin.

Article 33: Harmonisation of policies, strategies and legislative frames

The States shall ensure the harmonisation of their policies, strategies and legislation in relevant areas of water resource management.

Article 34: Promotion of good environmental practices

The State shall encourage the use of good environmental and traditional practices and local know-how in all areas of the sustainable management of the water resources of the Basin.

Article 35: Towards a multilateral convention on the Basin

(i) In the implementation of the Code of Conduct, the States shall work with other riparian states towards the adoption of a multilateral conventional tool in order to coordinate all initiatives pertaining to the Basin.

(ii) In this regard, the States shall with other riparian states contemplate creating institutional units such as commissions, authorities or organisations of the Basin to coordinate all initiatives related to the sustainable conservation and use of water resources in the Basin.

Part IV Joint actions

Article 36: Policies and strategies of sustainable conservation and use

The States shall, depending on the circumstances and means, jointly design and implement strategies, policies, plans, programmes, and development projects for a sustainable conservation and use of water resources in the Basin.

Article 37: Collection and sharing of data and information

(i) The States shall, through their national institutions facilitate joint campaigns for data collection on all the water resources of the basin.

(ii) They shall harmonize data collection methods and techniques, processing and storage.

(iii) They shall agree to regularly communicate and share the totality of the information, appropriate scientific and technological data on the water resources of the Basin.

(iv) They shall encourage the creation of common databases on the water resources of the Basin.

Article 38: Joint Studies and assessment

When a conflict arises in the use of the water resources of the Basin, the States should carry out joint surveys and assessments that will allow for appropriate and satisfactory solutions to these problems.

Article 39: Sensitisation of the local communities

The States shall encourage and facilitate the sensitization of local communities so as to give them a sense of responsibility and to raise their awareness for improved protection and conservation of the water resources of the Basin.

Article 40: Capacity building

The States shall design and implement capacity building programmes for all stakeholders involved in the sustainable management of the shared water resources of the Basin.

Article 41: Joint scientific research

In view of the essential role of scientific research, the States shall encourage research institutions to undertake joint research programmes on the sustainable management and use of water resources.

Article 42: Control and reduction of water pollution originating from waste

(i) The States shall undertake actions to control and reduce water pollution originating from waste, and if applicable, take measures for an ecologically sound management of waste, which will ensure the protection of human health and of the environment against adverse effects that this waste could have.

(ii) The States should ban the importation of foreign waste into the Basin.

Article 43: Emergency plans

The States shall develop and implement joint emergency preparedness plans to address unforeseen situations which may be injurious to the people, environment and the water resources of the Basin.

Article 44: Water resources audits and monitoring

(i) The States shall promote a better knowledge of the water resources by taking stock of the situation through assessments of the water resources of the Basin.

(ii) The States shall set up a mechanism to regularly monitor the quantity and quality of the water resources as well climatic data of the Basin.

Article 45: Control of siltation and protection of the river banks

(i) The States shall, in close collaboration with the local communities, implement programmes to control desertification, erosion and the siltation of the River Basin.

(ii) They shall also ensure the protection and restoration of river banks.

Article 46: Control of water-related diseases

The States shall develop and implement programmes and strategies to prevent and eradicate water-related diseases.

Article 47: Warning systems

The States agree to put in place early warning systems to prevent situations of natural or human occurrences that can cause damage to life, property, water resources and the environment.

Article 48: Control of invasive aquatic species

The States shall adopt all relevant measures to control invasive aquatic flora and fauna that adversely affect the ecosystem of the basin.

Article 49: Conservation of aquatic biodiversity

(i) For a sustainable use and better conservation, the States shall identify, regularly carry out inventory and monitor aquatic biodiversity and take appropriate measures for its conservation, in particular through protected areas.

(ii) Particular attention shall be paid to aquatic endangered species, and to those offering more potential for a sustainable use.

Article 50: Soil conservation

The States shall undertake measures for the protection, conservation and restoration of soils to ensure sustainable use of the land and water resources.

Part V Institutional Arrangements

Article 51: The Consultative Commission

There shall be established a Consultative Commission for the implementation of the Code of Conduct, hereinafter referred to as the “Consultative Commission”

Article 52: Mission of the Consultative Commission

(i) The Consultative Commission shall be responsible for the monitoring and coordinating the implementation of the Code of Conduct to achieve a sustainable and equitable management of water resources of the Volta Basin;

(ii) Pursuant to this objective, it shall make recommendations for the implementation of the Code of Conduct;

(iii) The States shall refer to it in the event of differences on the interpretation or application of the Code of Conduct.

Article 53: Composition of the Consultative Commission

The Consultative Commission shall include, among others, government representatives, local governments, extended to civil society organisations, grassroots communities, and private sector with equal representation.

Article 54: Composition, Functions and Operational Rules of the Consultative Commission

Addendum to be developed by the Burkina Faso-Ghana Joint Technical Committee on IWRM to address the detailed composition, functions and operational rules of the Consultative Commission, including the establishment and functions of a Secretariat to implement the Code of Conduct.

Part VI Dispute Resolution

Article 55: Peaceful Resolution of Disputes

(i) Pursuant to the United Nations Charter, the African Union's Constitutive Act and the Declaration pertaining to the principles of International Law on friendly relationships and cooperation among States, the States shall peacefully settle any dispute which may arise in the process of the management of the water resources of the Basin.

(ii) Any dispute or difference arising out of or as a result of the interpretation of the provisions of the Code of Conduct, the States shall refer to the Consultative Commission in order to resolve the dispute.

(iii) If an agreement is not reached, the States, through their Ministers of Foreign Affairs, shall use diplomatic channels to come to an agreement within a reasonable time.

(iv) During the period of settlement of the dispute, the States shall refrain from any behaviour likely to deteriorate the situation or create an obstacle to the out-of-court settlement of the dispute.

Part VII Promotion of the Code of Conduct

Article 56: Promotion of the Code of Conduct among the other Basin States

(i) The States shall promote membership of all other riparian States of the Basin to the Code of Conduct; encourage its dissemination in the educational institutions and to the local population for ownership by all the stakeholders.

(ii) They shall encourage the use of modern means of communication and to the extent possible, translation into the local languages.

Part VIII Final provisions

Article 57: Membership of other riparian states

(i) Any Riparian State willing to comply with the provisions of this Code of Conduct can apply for membership.

(ii) Signatory States of the Code, by consensus, shall approve the admission of applicants.

Article 58: Amendment and Revision of the Code of Conduct

(i) The Code may be amended or revised after its signature subject to mutual agreement.

(ii) One State may request such an amendment or revision after 3 months prior notice.

(iii) The decision to conduct such an amendment or revision is approved by consensus by the States after consultation with the Consultative Commission.

(iv) The amended or revised Code of Conduct shall become operative following similar conditions than the original Code of Conduct.

Article 59: Date of Effectiveness

This Code of Conduct shall take effect from the date of signing by the States' Ministers in charge of Water Resources.

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