50 Years of Water Diplomacy in the Americas

OAS | More rights for more people

Water Born

This interplay of figure and water began in meditative moments contemplating the vast sea surrounding me and the watery landscape below. Through juxtaposition of painted papers these works suggest a fluidity that engulfs and defines the human form.

Deanna Schwartzberg is an artist who lives and works in the Washington DC area. Although her paintings and assemblages are intrinsically abstract, she has become more involved with specific imagery over the years. Since 2000 her work has focused on the shared presence of humanity and the natural world. Through several series; one based on human involvement with a water environment, as well as themes of cosmic relevance such as dawn and dusk she seeks to explore her relationship to the world around her.

Schwartzberg's interest in abstract painting began with her earliest studio art experiences as an undergraduate at New York University where she received a B.A. Later, her years spent studying painting at The Art Students League of New York with Vacylav Vytlacil, who painted with Hans Hofmann, laid the groundwork for her life's work as a painter.

Deanna Schwartzberg's work has been exhibited widely throughout of career. Most recently she has had the privilege of sharing her work with a greater audience to include the countries of South and Central America. In 2015 her solo show “Primal Connections” was exhibited at the F Street Gallery of The Art Museum of the Americas in Washington DC. In 2016 she presented a one woman exhibition “Deanna Schwartzberg Then and Now” at the Salon de las Artes, Embassy of Uruguay in Washington DC. Her work can be found in numerous collections both public and private.

Over the course of her career, Deanna Schwartzberg has been mentor and teacher to many well received artists in the Washington area.

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50 Years of Water Diplomacy in the Americas

Alexandra Carlier - Maximiliano Campos

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Message from the OAS Secretary General

The water wealth of the Americas, with nearly half of the world's water, has contributed significantly to promote the development and quality of life of the citizens of the hemisphere; activities such as hydroelectric generation, regional and interoceanic transport, irrigation for agricultural productivity, ecological and landscape tourism, and the wide coverage of drinking water systems, among others, are clear examples of this wealth and wellbeing.

The OAS is proud to have been part, for more than 50 years, of this positive management in company of Member States and important specialized agencies. During this period, more than 160 initiatives of cooperation and exchange of experiences have been developed, which have facilitated the political dialogue allowing agreements to be reached favoring the protection, conservation and sustainable use of water in the Americas.

Despite being a hemisphere with abundant water resources, it is necessary to take into account the growing challenges facing the planet in this area and how this has a direct and indirect effect on the well-being of the society of the Americas. In the global sphere, the relationship between water and climate is increasingly determinant, the manifestations of a changing climate due to anthropogenic actions or natural variations of the atmosphere put at risk the advances in the productivity and competitiveness of the countries of the continent, also impacting the social and economic security of the citizenship of the Americas.

Additional to this problem is the accelerated contamination of surface water and aquifers. Also, the limited financial investment to develop infrastructure works that guarantee a better use of the resource. Finally, population growth puts additional pressure on the resource; directly on services for the supply of potable water and indirectly on water services that grow exponentially, such as energy and food production. The Sustainable Development Goals (SDGs), the 2030 Agenda and the Inter-American Program for Sustainable Development of the OAS are fundamental instruments that contribute to face the different problems associated with water along with a vision of the future.

In order to support the Member States in this field, it is necessary for the OAS water agenda to continue adapting in a dynamic way in order to stimulate the necessary political dialogues to face with determination the most urgent needs of the countries of the continent. This will be possible if it is based on the solid institutional framework of the OAS and its application in the pillar of development, the support of its Member States and partner countries.

By reaching a level where all the elements of good water governance are combined with issues of rights, inclusion and equity, the OAS is able to raise its goals in this area and to support with determination the achievement of the SDGs, in which water resource is a cross-cutting theme, and consolidate water as an articulator of peace, democracy and good neighborliness among the countries of the hemisphere.

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This publication would not have been possible without the valuable collaboration of the staff members of the Organization of American States, its Member States professionals, academics from mayor universities in the world, non-profit organizations, the private sector and the youth of the Americas, who with their support and commitment contributed to the preparation and validation of this publication's content.

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Special recognition is given to Deanna Schwartzberg for her contribution to design the cover of this publication and our acknowledgement for her contribution to water management in the Americas through art.

This publication is especially dedicated to all and each of the citizens of Americas Continent who in many stages of their lives have stopped to think about the fundamental value of water in the development of their lives and the wellbeing of human beings.

Authors

Alexandra Carlier

PhD from the Université Libre de Bruxelles (Belgium), with an Interuniversity Post-Graduate Diploma between the *Université Catholique de Louvain*, Saint Louis and the *Université Libre de Bruxelles*. She is a specialist in Anthropology applied to the Integrated Water Resources Management in the Andean region, in watersheds affected by glacier retreat and conflicts associated with the mining sector.

She is a lecturer in the Master of Integrated Water Resources Management and in the Water and Mining Diploma of the Pontifical Catholic University of Peru (PUCP), an associate researcher in the Intercultural and Environmental Group from the Institute for the Sciences of Nature, Territory and Renewable Energies (INTE) of the PUCP, consultant of the IWRM Section of the Department of Sustainable Development from the OAS and the Canadian International Resources and Development Institute (CIRDI). She has been a Program Manager for Global Water Partnership South America and consultant of different organizations specialized in Water Resources Management and Climate Change.

Maximiliano Campos Ortiz

With an academic background in Earth Sciences and Meteorology from Millersville University of Pennsylvania and the University of Costa Rica, Maximiliano Campos is since October 2009, the Principal Specialist and Senior Chief for the Integrated Water Resources Management Division at the Organization of American States (OAS). Previously he was the Executive Secretary for the Regional Committee on Hydraulic Resources (CRRH), the agency for the Central America Integration System (SICA), specialized on integrated water resources management, hydro meteorology and climate.

Maximiliano Campos has made a long profession on science administration as well as on formulation and evaluation of projects working for several international organizations. He has contributed through his work, research and publications with the development of the agenda on climate change in Latin America. He also contributes to the Intergovernmental Panel on Climate Change Special Reports on Impacts of Climate Change as lead author, and has coordinated the Latin America chapter for the Third Assessment report on impacts and adaptation. He was also the review editor to the Forth Assessment (IPCC WG2 Latin America Chapter) which is particularly relevant because it lead IPCC to obtain the Nobel Peace Prize.

Collaborators

Andrés Felipe Sánchez Peña

Environmental Economist from Los Andes University (Colombia). He holds further studies in Business Administration and on Integrated Water Resources Management (IWRM); and a Master's degree on Environmental Sciences and Policy from the Johns Hopkins University (United States). Mr. Sánchez currently works as a projects coordinator in Integrated Water Resources Management at the Department of Sustainable Development (DSD) of the Organization of American States (OAS) supporting the implementation, execution and monitoring of the OAS Global Environmental Facility (GEF) projects portfolio.

Estefanía Jiménez

Estefanía holds a Bachelor Degree in Atmospheric Science from the University of Costa Rica and pursues her Master's Degree in Climate Change Law and Policy at the University of Strathclyde in Scotland.

With working experience in climate change at the National Meteorological Institute of Costa Rica and, since 2014, at the Department of Sustainable Development of OAS where she is project coordinator for the Integrated Water Resources Management area.

CONTENT

1. Programa Interamericano Desarrollo Sostenible (PIDS), DDS/SEDI/OAS.

Amazon River

Acronyms

AG/RES	General Assembly / Resolution (acronym in Spanish)
COBINABE	Bi-National Commission of Development of the Upper Bermejo River Basin and the Grande Tarija River (acronym in Spanish)
DSD	Department of Sustainable Development
FAO	Food and Agriculture Organization of the United Nations
FSPA	Framework of Strategic Actions Program
GAS	The Guarani Aquifer System
GEF	Global Environment Facility
GIS	Geographic Information System
GWP	Global Water PartnershipFood and Agriculture
IAH	International Association of Hydrogeologists
ICC	Inter-governmental Coordinating Committee
IHP	International Hydrological Programme

ILO	International Labor Organization
INDM	Inter-American Network for Disaster Mitigation
IWRM	Integrated Water Resources Management
IWRN	Inter-American Water Resources Network
ISARM	Internationally Shared Aquifer Resources Management
OAS	Organization of American States
SAP	Strategic Action Plan
SEDI	Executive Secretariat for Integral Development (acronym in Spanish)
SIWI	Stockholm International Water Institute
TAS	Transboundary Aquifer Systems
TDA	Transboundary Diagnosis Analysis
UNECE	United Nations Economic Commission for Europe
UNDP	United Nations Development Program
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCWA	United Nations Economic and Social Commission for Western Asia
WB	World Bank

Cuenca del Rio San Francisco, Brasil.

Introduction

The Organization of American States (OAS) is the oldest regional institution in the world. Created in 1948 after the signing of the Charter of the OAS (hereinafter "the Charter"), its origins go back to the First International Conference of American States, which took place between 1889 and 1890, in Washington, D.C., when it was agreed to promote the creation of the International Union of American Republics, which subsequently constituted the Inter-American system.

The OAS groups the Western Hemisphere States that comprise the Americas, to strengthen cooperation ties and safeguard their common interest. In fact, as it is established under the first article of the Charter, the Organization was founded to ensure that its Member States "*achieve an order of peace and justice, to promote their solidarity, to strengthen their collaboration, and to defend their sovereignty, their territorial integrity, and their independence*." (OAS, 1948).

One of the central themes in the structuring process of the cooperation ties and in the construction of common interests amongst the Organization Member States is sustainable management of water resources. Within this framework of action, water constitutes an opportunity to propel Pan-American union and solidarity which leads to consider that the strengthening of democracy and cooperation is fundamental to guarantee the human right to water.

The geographical layout of water resources in the Americas is integrating, since it provides the conditions needed to promote solidarity and cooperation. As an example of this, is the fact that

can be mentioned is that twenty-four countries in the region share sixty-eight transboundary[2] aquifer systems (UNESCO-OAS, 2007, 2008). Taking into account that water is also a promoter of development, its availability in the American continent is favorable for its stimulation as about 45% of the fresh water worldwide is located in the region.[3]

In spite of the development possibilities that water resources offer, in the Americas there is many challenges that persist related to such as access to water of optimal quality and sufficient quantity, water resources conflicts, and use of transboundary[4] waters, among other issues related to sustainable water management.

It is for the reason of a sufficient and complex vicissitudes range, that the OAS assumed 50 years ago the water resources concerns of the Member States as an important item in its agenda. This led the Organization to undergo a series of changes in its institutional structure and in its normative and conceptual frameworks to respond to water management challenges in the Americas and the growing visibility of water resources concerns in government agendas.

Throughout this time, the Organization was able to promote a process through which water became an articulating element of peace, integration and sustainable development in the Americas. For this purpose, through Integrated Water Resources Management, which has been the approach promoted from the OAS Department of Sustainable Development (DSD), debates, counseling services, exchanges of experience and good practices have been fostered, as well as cooperation projects with different governments and cooperation agencies to foster water governance and governability, a dialogue culture in the Americas, the sustainable use of water resources, the human dimension of water and its management as well as transboundary water resources system management, among other issues.

The lessons learnings during over fifty years of water resources management at the OAS have been multiple. Direct work in different countries and in regional and local areas have modeled the experiences and the approaches of the Organization, allowing the formulation of proposals that are pertinent (in line with real needs), timely (actions planned at the right moment), professional (based on international and national standards for water and environmental management), respectful (based on respect for national sovereignty), equitable (based on the fair distribution to satisfy all the water use demands) and people-centered (rights approach).

The accumulated experience of the OAS through its DSD, led to view that it was imperative that water resources management should be integral. Based on this, it was assumed that strengthening of democracy, and governance and governability, are vital to guaranteeing the human right to water, social inclusion and sustainable development.

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2. It is understood as “transboundary aquifer” or transboundary aquifer system” the groundwater shared by two or more countries that are “part of an ecosystem that includes the soil, the air and eventually the superficial waters (UNESCO 2008:5)
3. Copyright 2006 SASI Group (University of Sheffield) and Mark
Newman (University of Michigan).
4. United Nations Convention about the Right to use International Water Courses for different purposes than Navigation of 1997 (Water Convention, UN, May 21, 1997): a particular type of transboundary water resources that are now being taken care in an ongoing work of the UN, within their Project of Articles about the Rights of Transboundary Aquifers that proposes detailed definitions of the transboundary aquifers.

It is with the objective of sharing reflections, concerns, progress and challenges that the DSD/OAS acquired over half a century, that this publication has been produced. The book is made up of four parts, through which lines of reflection and water resources actions, that are the result of concrete experiences, are developed and have accumulated over time as part of the commitment of the DSD/OAS to promote sustainable use of water resources in the Americas.

The first chapter presents the general outlook of water resources management within the DSD/OAS. It provides the main organizational, normative and conceptual changes in the OAS work in the field of water resources.

In the second chapter four emblematic cases of water resources initiatives promoted from the DSD are presented. The achievements made by these initiatives are listed and future challenges are laid out. The selection of these cases was complex because in over fifty years, more than one hundred sixty projects have been completed. Therefore, the cases presented in this book were selected because they illustrate the sustainable development possibilities that can be generated through the cooperation of bordering countries that share water resources.

The third chapter presents water reflection lines that the DSD/OAS considers as central consequences of the experiences generated by the water resources management projects.

Finally, the last part of the book provides general conclusions presented as challenges for Integrated Water Resources Management in the future.

Through this structure, it is expected to show how the OAS through its DSD, assumed the water resources topic in its agenda based on its guiding principles to promote a holistic approach of water resources management that, finally would turn into projects and reflections that are part of an agenda in the Americas.

Fifty years of work are not possible to synthesize in so few pages, therefore, the analysis and the experiences presented give faith of general action lines and reflections on water, environment and development issues. The aim of this book is not solely to illustrate more than one hundred sixty projects executed by the OAS related to water, but also to share about fundamental ideas for the DSD and OAS activities. However, it does allow appreciating that the integrated water resources management approach driven by the DSD, has always sought to boosting strategies for the protection, conservation and sustainable use of water resources, promoting water resources diplomacy, care of the bordering shared ecosystems, and the ecosystem goods and services, based on diagnostic and scientific studies that create and strengthen environmental and water resources institutions of the Member States as well as citizenship participation.

Cuenca del Rio San Francisco, Brasil.

Chapter 1

OAS commitment to sustainable water management

This first section's objective is to presents the growing importance that water resources have in the agenda of the OAS; as well as the approaches promoted in the Americas by its DSD. In this manner, the impact on water resources in the Western Hemisphere can be illustrated into the Organization's political vision and operational structure.

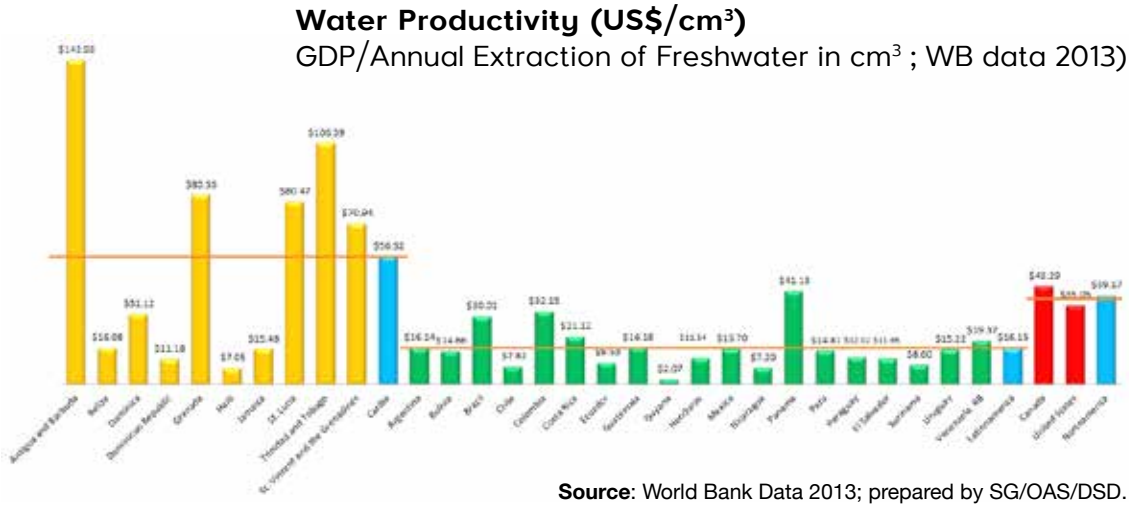
1.1 Why is water a concern in the OAS?

The American continent has the largest quantities of water in the world (Pacific Institute 2011, UNESCO 2003). This abundance fosters a friendly and positive relationship between local populations and their water resources (UN-WWAR, 2014); which to a large extent, fuels the exponential socio-economic growth of the American continent.

Activities such as hydro-electricity, agriculture, inter-oceanic transportation and tourism, among others, transformed the hemisphere's landscape, thereby; converting large cities and regions into poles of well-being and development. Relative to this concept, Figure 1 illustrates the contribution that water resources have make to the gross domestic product (GDP) of each country and how socio-economic development can be driven by water abundance on the American continent. The figure also presents some of the problems related to water resource management by contrasting local/sub-regional issues such as: availability, sanitation, access, investment, ge-

ography, institutionalism, and governance. Direct investments towards the development and improvement of water management tools contributed in large part to the increase in economic gains for the benefit of both the state and its citizenry.[5]

Figure 1: Water resources contribution in the GDP of the countries of the Americas (in US$)



Source: World Bank Data 2013; prepared by SG/OAS/DSD.

However, due to the extension of the American continent, its climatic diversity, and topographical characteristics; its resource distribution is physically unequal (Figure 1). When factors such as, public management and social inclusion issues are then added to the mix, the citizens are unable to suitable access water of satisfactory quality and in sufficient quantity (United Nations, 2010). This explains the fact that approximately 35 million people do not have access to improved water sources and more than 118 million still do not have basic and adequate sanitation services (WHO-UNICEF, 2012).

With regard to the relationship between the issue of water access and social inclusion, it is relevant to mention that in the Americas, the African-descendants and indigenous populations live in a situation of structural discrimination which does not allow them to have access to water of sufficient quality or in sufficient quantity when they need it (Casas Zamora et al., 2011).

Access and sanitary problems when combined with the consequences of global climate change and climate variability, creating more scarcity of water resources - for human consumption, the generation of hydro-electricity, the satisfaction of industrial demands, agricultural activities, and inter-oceanic transportation - as well as the disasters associated with the water-climate binomial, and water quality pollution; the latter being a consequence of business and unsustainable urban practices as well as the challenges of the established environmental and water resources

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5. To invest between 15 and 30 billion dollars in the improvement of water resources management (in developing countries), may generate annual direct benefits of 60 billion dollars, which mean that for each invested dollar in basin protection, between US$ 7.5 to 200 can be saved, only in costs for new treatment and water filtration facilities (WWAP 2012, mentioned at UNESCO 2005).

institutions. Under this scenario, the conditions between a variable water supply and its growing demand have gradually generated propitious conditions for the emergence of friction between diverse sectors, communities, countries, and regions in the American Hemisphere.

Throughout the last 50 years, the Organization has given special attention to these facets of the water problem. Because of this, the Organization's interest in water issues has emphasized the need to design, implementation, and management of plans for alternatives that contribute to the solutions to help solve these water-management problems in the American continent and that help to: boosting productivity, promoting resource conservation, contributing reduce poverty, and reducing social inequality, promoted within a framework of programs and projects directed towards reducing these access gaps to water.

The initiatives that the OAS has promoted around water were prepared based on its institutional pillars and the concerns of the Member States to implement an *Integrated Water Resources Management* (IWRM) model and promote a propitious culture that would generate democratic and sustainable water resources policies.

On one hand, democracy, human rights, security, and development constitute the pillars that have steered the political and technical guidelines of the Organization in the environmental and water management sectors. On the other hand, not since 1964 have actions been taken to promote the implementation of these initiatives; which respond both to the aforementioned pillars as well as to the interest and concerns which are common between the Member States, in the environment, development, and water management fields, amongst others (Annex I).

The relationship between the foundational pillars of the OAS and the Member States requests is fundamental.[6] Only when such are combined it is it possible to formulate and sustain the proposals, projects, and reflections that the OAS uses to promote social peace, political dialogue, and cooperation that the Americas needed to consolidate an agreed, inclusive, and sustainable development agenda that unifies them together in amidst their diversity. In fact, consequently, it is necessary that the countries of the Americas show political will and generate consensus and agreements, given that the OAS embraces their concerns and acts according to them, in compliance with its foundational Charter. It is because of this that under the framework of the water resources management proposals:

> *"The activities that are developed on water management in the area of the OAS Integral Development are based on the agreements reached during Presidents meetings, the General Assembly Resolutions and on the Declarations and Resolutions of Ministerial meetings, during such, the countries clearly express specific concerns about water problems associated, not only to the OAS development pillar, but also to the issues related to security, transparence, human rights, peace and democracy" (OAS, 2013).*

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6. The Organization initiatives respond to the Member States' needs. Action is only taken when one or more of them request technical assistance or other type of intervention directed to encourage sustainable water resources management. In this manner action is taken according to the sovereignty principle of each national state.

The water topic constitutes a transversal concern of the four pillars of the OAS. Its management within the Organization is aligned within the global as well as Inter-American efforts that promote sustainable development. In addition, it is part of the ecological agenda that the OAS has promoted since its formation in 1948. Nevertheless, it can also be said that this interest goes back to 1938, at the time of the *Pan American Union*, when the Eighth Pan American Conference established a commission to prepare a plan of action, relative to what became of the discussions at the Convention for the Protection of the Flora, Fauna and the Natural Scenic Beauties of the American Countries of 1940 (Gonzales, 2008).

Water resources management is a common concern between all of the OAS Member States. As such, throughout over the past 50 years, the OAS has provided technical assistance and coordinated the implementation and execution of more than 160 projects. These interventions focused around water use and distribution, were intended to promote and foster dialogue, democracy, protection, and action in a wide range of fields, including but not limited to: water management, eradication of poverty, social inclusion, security, and sustainable development (Annex I).

Water also has political, social, cultural, and environmental value, because it is a complex resource and because of its multiple valuations, uses and dimensions (Boelens 2008, Carlier 2013, Chaplin 2009, Isch 2012 and Panfichi 2010). Fifty years of work in water issues have been more than enough for the OAS to be aware that the value of water goes beyond its economic dimension; which unfortunately is one of the greatest concerns of today, in the grips of global economic hardship, governments, public policy makers, entrepreneurs, and of the citizenry alike.

Beyond the economic, socio-cultural, and political interests behind water management still is one critical facet, the human interest. Water management extends beyond the promotion of the IWRM and water culture to prevent conflicts, avoid ecological disturbances, boosting sustainability of ecosystem services and promoting water security. The central issue today, above all else, is to recognize that water is a human right[7]; the viability of this application of human rights is greatly determined by the quality water governance in the Member States.

In the case of the Americas, the value that the states and the citizens assign to water, has made this to be an element that, in spite of being framed as a critical resource in social conflict scenarios- due to its use, access and administration – has facilitated the dialogue and research processes for common interests. In this scenario, the OAS role in the water issue has consisted in representing and reflecting nationally complementary and diverse realities; as well as a group of common interests of each Member State (Gonzales, 2008). In addition, the OAS has promoted a paradigm of water as an essential human right at its General Assembly, mandating that all Member States follow suit. It should be mentioned that the mandate constitutes, more precisely, a technical and political recommendation to the Member States that is based on solidarity and imperative principles of an ethical and moral character oriented to contribute with multilateral operation.

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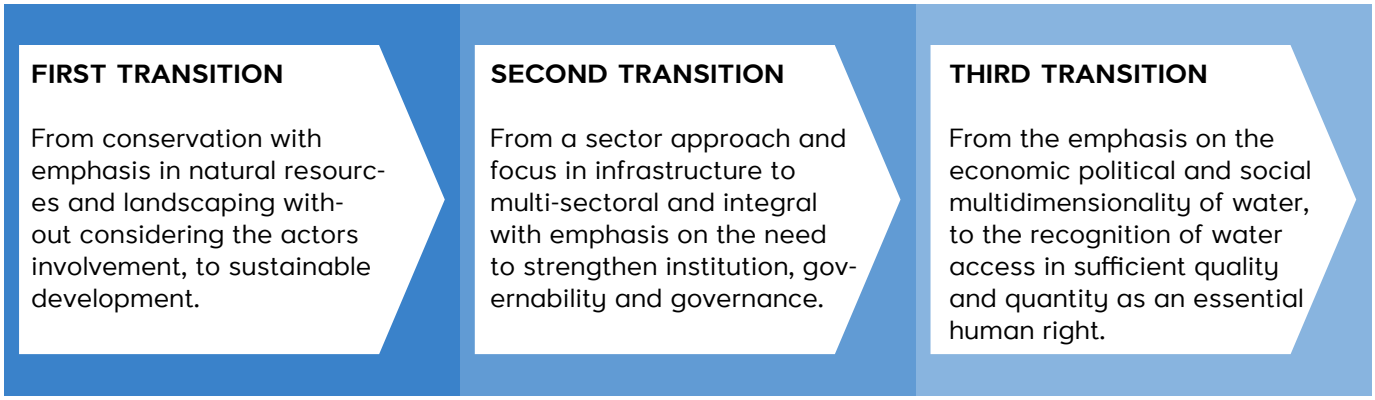
7. AG/RES. 2760 (XLII-O/12): Human right to potable water and sanitation.

The 50 years that the OAS has been involved in the environmental and water sectors showcase a process of learning where to focus efforts, legislative production, and institutional organization. On one part, there were three major transitions:

Figure 2: Main changes in the OAS water resources approach.



Source: Compiled by author.

The transition presented in Figure 2 contains a critical dimension which is important to showcase: the role granted to the human being. The first transition is given under a historic and anthropocentric context in which the relation between geography, environment, and culture, could be seen as separate realities. Human beings were not seen, necessarily, as part of the ecosystem, structure, or in any case, they were seen as just informants. Because of this, the main change between conservatism and sustainable development consists that in the first paradigm, the conversation and the environmental register were made for the good of people, but without their participation. Instead, with the sustainability approach it was gradually assumed that development requires popular involvement. This consideration was changed in the second and third transition, until an approach was consolidated where citizen's participation constitutes a central dimension of sustainable development.

On the other hand, this political vision also changed over time. Even since its foundation, the OAS provided technical assistance in water resources and initially did this from the perspective of environmental development.

The General Assembly's Resolutions strictly presented environmental concerns based on debates and approaches promoted from diverse spheres, platforms and global events such as the *Stockholm Declaration (1972), the Water Conference of La Plata (1977), the Asuncion Declaration (1990), the Dublin Declaration (1992), the Environmental and Development Conference of Rio de Janeiro (1992), the Santa Cruz Declaration (1997), the Muscat Declaration on Water (2009)I and the Rio +20 Conference (2012)*, among other paradigm shifting events and gatherings.

In spite of acting within these frameworks, it was after the Declaration of Santa Cruz de la Sierra (Bolivia 1991) that the OAS systematically incorporated within its political approach the notion

of water resources. In this manner, a process began in which the affairs related to water management began to be understood as specific and unique issues within General Assembly Resolutions, granting them an elevated space within environmental and sustainable development concerns.

Finally, the challenges of the global water agenda, and the technical assistance and cooperation requests that the Member States presented to the OAS, led to changes in its overall structure. As such, it had to be adapted to the growing demands and needs, adopting a Pan-American agenda on water issues.

In summary, the Organization's concerns for the water issue implied a complex and transformative process, based on learning from field experience, and advocacy generated by DSD. In this manner, the hemisphere's water concerns gained their own space and also continued to register on the environmental development agenda. This was possible thanks due to the support of the Member States and the commitment that they assumed to generate consensus and points of dialogue, as well as to address the demands that the OAS pillars present. Without this joint work within the Americas, it would have not been possible to convert water into an articulator axis for peace, cooperation, development, and democracy.

1.2 OAS structure and political vision surrounding water

Over time, the Organization and its political visions have been evolving based on diverse global and hemispheric challenges of different types, which also have influence over the water resources agenda.

After the *Buenos Aires Protocol* (1967), the General Assembly became the OAS' supreme body. As such, it assumed the right to “decide on the action and the general policy of the Organization, to determine the structure and activities of its bodies and to consider any affair related to the American States' coexistence” (Berenson, 2001), as well as to “decree provisions to coordinate the activities of all the bodies with each other and of them with other Inter-American institutions that are not part of the OAS” (Berenson, 2001).

In general, parts of the water issues are seen from the DSD of the Executive Secretariat for Integral Development (SEDI, its Spanish acronym). Through this department, the OAS i) supports Member States in the design and implementation of policies, programs and projects which objective aimed at: integrating environmental concerns with poverty reduction and the socioeconomic development goals; protecting the environment and ii) executing projects on issues such as Integrated Water Resources Management, energy and climate change mitigation, risk management and climate change adaptation, biodiversity and sustainable land management, as well as environmental rights, policy, and governability.[8]

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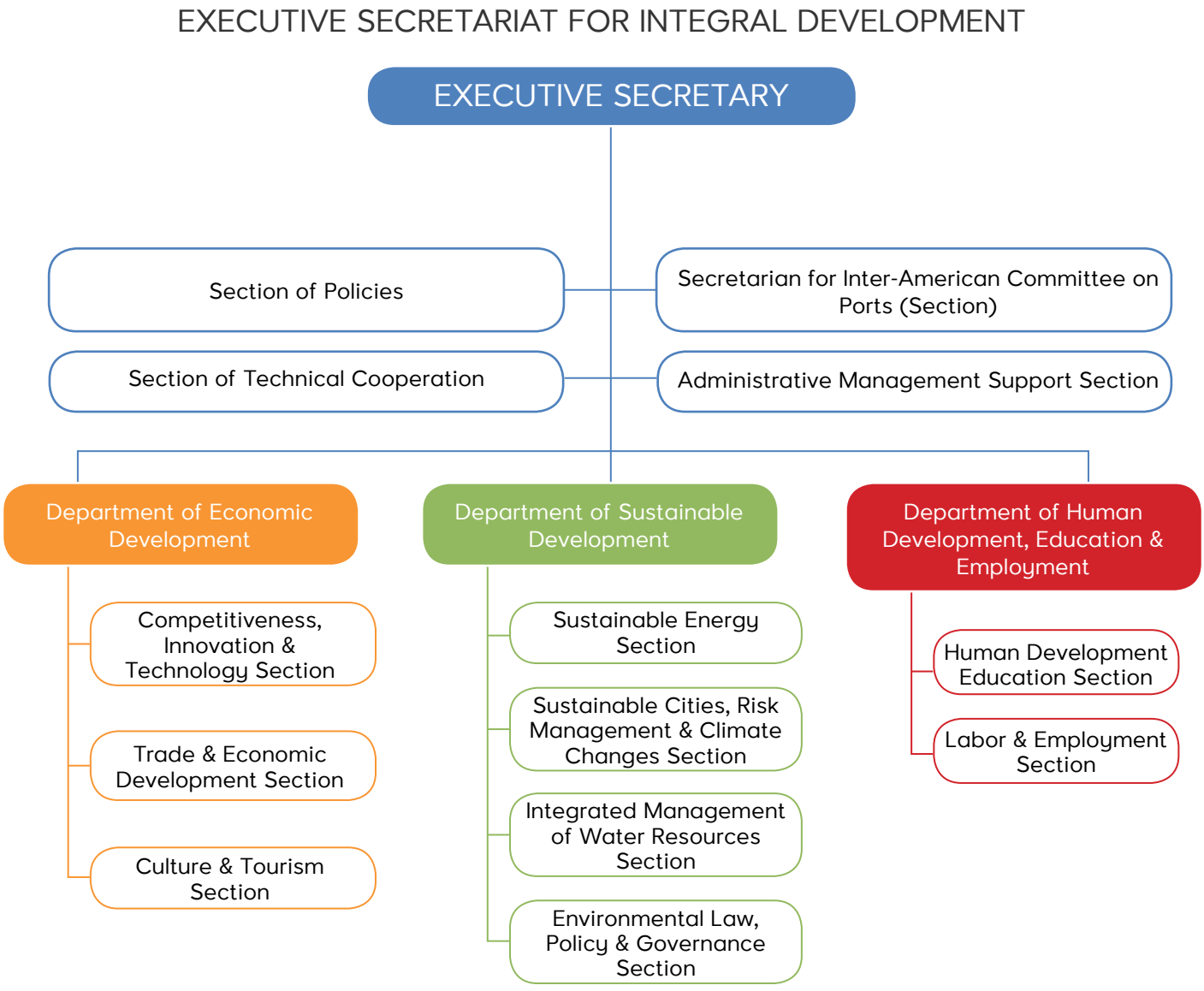
8. http://www.oas.org/es/sedi/dsd/Mision.asp (last visit January 4, 2015)

Under the framework of SEDI, the DSD has four sections[9]: Sustainable Energy; Sustainable Communities, Risk Management and Climate Change; Environmental Law, Policy and Good Governance; and the IWRM section. Each one is a technical arm of the department and their function is to provide counseling to the General Secretariat and to Member States.

Figure 3: Organizational Chart of the Executive Secretariat for Integral Development.



Source: OAS

9. The Department of Sustainable Development is the result of an organizational change process, promoted by the different concerns and demands of the Americas. Constituted as such in 2007- through Executive Order No 05-13, Rev.4, was founded over the basis of the Sustainable Development and Environment Office, which was preceded by Sustainable Development and Environment Unit. The latter was created by Executive Order No 96-06, in order to replace the Department of Regional Development of the OAS that operated during the period 1963-1996.

Water problems are specifically addressed by the IWRM Section, which is the technical area of the DSD specialized in matters related to water management. From it initiatives are implemented and directed to:

> *Support Member States in their efforts to improve management, conservation and sustainable use of superficial water and groundwater with the promotion of social and economic growth in those regions. Specific actions include i) water management promotion; ii) assistance in the development of policies, laws and regulations of integrated water resources management; iii) capacity building in regional, national and local institutions; and iv) the support of information exchange through specialized water resources networks [...] (and to act) as a regional execution agency for diverse projects of water resources management in multinational rivers and transboundary aquifers in the Americas.*[10.]

Before the creation of the IWRM Section, the water issues were transversal to other areas of the DSD. Under this scenario, and given the growing need to respond to water demands of the Member States relative to managing their water problems; the OAS contributed with the creation of the *Inter-American Water Resources Network* (IWRN).

Designed as a network of networks, since 1993 the IWRN has constituted a fundamental instrument for the development of an Inter-American water agenda and the processes resulting from the *Earth Summit of Rio de Janeiro*, (June 3–14, 1992). In effect, the Member States made this network a focal point, with the initial objective of sharing experience to facilitate exchange of information through Inter-American Dialogues amongst governmental bodies, social organizations, private companies, and academic institutions interested in sustainable management of water resources within the Americas (Annex II).

Later in 2008, a specialized water resources section was established from an integrated management perspective to promote an inter-disciplinary, inter-sector, democratic, dialogic, and sustainable approach to the issue. In this manner, the Organization adapted its structure to new and challenging demands.

At the level of the OAS approaches politically, the IWRM was confirmed as a fundamental support tool for sustainable development through Resolution 2780 of the General Assembly, entitled: "Promoting Integrated Water Resources Management in the Americas"[12]. Reinforcing the paradigm of rights relative to water issues, which began to be promoted in 2007 through Resolution 2349 of the General Assembly[13].

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10. Source: http://www.oas.org/dsd/WaterResources/default_esp.asp (Last visit January 3, 2015)
11. AG/RES. 2780 (XLIII-O/13): Promoting integrated water resources management in the Americas.
12. AG/RES. 2760 (XLII-O/12): Human rights for potable water and sanitation.
13. AG/RES. 2349 (XXXVII-O/07): Water, health and human rights.

It is important to mention that as a consequence of the OAS political process, on June 4th 2012 the General Assembly approved the Social Charter of the Americas, through which at article 20 established that "water is fundamental for life and central to socioeconomic development and environmental sustainability and that non-discriminatory access by the population to safe drinking water and sanitation services, in the framework of national laws and policies, contributes to the objective of combating poverty" (OAS, 2012).

General Assembly Resolution 2349 (2007) is also paradigmatic to the OAS' history in water issues in that It is the first Resolution that covers specifically the issue of water management. Before, water management issues remained under-exposed within the realm of environmental concerns; but after the adoption of this Resolution, it started to be understood as an issue by itself[14]. Thus, gradually water issues gained a space and relevant role within the Organization's discussions.

Chart 1

OAS Resolution related to water management	
AG/RES. 2201 (XXXVI-O/06):	Strategic plan of solidary cooperation for integral development 2006-2009
AG/RES.2312(XXXVII-O/07	Report of the First Inter-American Meeting of Ministers and high authorities of sustainable development in CIDI area.
AG/RES. 2314 (XXXVII-O/07	Reduction of natural disasters, risk management and assistance in case of natural disasters and other disasters.
AG/RES. 2347 (XXXVII-O/07)	Inter-American Meeting about economic, social and environmental aspects related to potable water availability and access.
AG/RES. 2349 (XXXVII-O/07)	Water, Health and Human Rights.
AG/RES. 2391 (XXXVIII-O/08	Inter-American Meeting: Improving availability and access to potable water and sanitation services.
AG/RES. 2588 (XL-O/10)	Climate change in the hemisphere countries.
AG/RES. 2644 (XLI-O/11)	Report on the Second Inter-American Meeting of Ministers and high authorities of sustainable development in CIDI area.
AG/RES. 2649 (XLI-O/11)	Climate change in the hemisphere countries.
AG/RES. 2741 (XLII-O/12)	Extension of the Strategic plan of solidary cooperation for integral development 2006-2009 validity.
AG/RES. 2760 (XLII-O/12)	Human rights to potable water and sanitation.
AG/RES. 2780 (XLIII-O/13):	Promotion of integrated water resources management in the Americas.
AG/RES. 2816 (XLIV-O/14):	Promoting hemisphere initiatives in sustainable development.
AG/RES. 2818 (XLIV-O/14):	Climate change under the frame of the hemisphere sustainable development.
AG/RES. 2819 (XLIV-O/14):	Sustainable and equitable cities and communities in the Americas.

Source*:* OAS, 2013: Fundamental documents of the Executive Secretariat for Integral Development (SEDI) relative to water management in the Americas.

14. It is important to highlight that 1997 was the first year in which for the first time water resources are mentioned under an OAS resolution and it should be also highlighted that this theme constituted a discussion field at the Summit of the Americas about Sustainable Development, in Santa Cruz. For further information, please see: AG/RES. 1511 (XXVII-O/97)

The AG/RES. 2349 (XXXVII-O/07) is important not only because it is the first Resolution focused specifically on the issue of water, but also. It is also important because through it recognizes water as a resource that guarantees life, health, and human dignity. Further, it encourages the Member States to formulate policies, actions and strategies that guarantee potable water supply and sanitation as well as the conservation and sustainable use of transboundary water resources. Thus, this Resolution established the argument for human rights, with respect to water valuation; because it placed life and human integrity as its supreme purposes.

2007 was a year of progress in water resources issues within the OAS; a second specialized resolution was approved on water issues. With Resolution 2347 of the General Assembly, the commitment implied that the Santa Cruz Declaration was reaffirmed. In this manner, the need to promote technical cooperation to access sustainable technologies that would efficiently optimize water supply and utilization; and the constant dialogue among national authorities to design, implement, and comply with the IWRM[15] was reinforced.

During the past fifty years the OAS has approached the problems surrounding water resource management in the Americas from a holistic perspective. During this time, the search for water management slants implied changes at the level of organizational structure, normative, and approach of the issues. As a consequence, the water issue began to gain a unique title, and its own space within the environmental agenda promoted by the OAS General Assembly.

It is under this scenario that the IWMR Section was created and later strengthened through Resolution No. 5 of the Third Commission[16], to advise Member States in the process of the IWRM implementation. It is under this context that the OAS will continue adopting approaches that will always respond to the needs of change; which imply a complex agenda such as that of water resources management in the Americas.

1.3 OAS approach on water

There is no unique approach to achieving universal access to water of optimal quality and quantity, when such is required by the populace for their diverse needs. For this reason, any water strategy requires an internal and contextual analysis of each country's situation.

Even though the social, cultural, political, and economic realities of each OAS Member State are diverse, there are however, some common problems with respect to sustainable water management, such as: conflicts of access, use and administration of water resources, citizen's and business' practices that alter water quality and quantity, weak water resources agendas of local governments, inappropriate waste-water discharges, limited political participation of the citizen-

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15. AG/RES. 2347 (XXXVII-O/07): Inter-American Meeting about economic, social and environmental aspects related to potable water availability and access
16. Inter-American Summit and participation of civil society; Inter American Council for Integral Development (CIDI - Spanish)

ry in decision making processes relevant to water resources management, and water availability in a climate change and variability context.

This consideration led the OAS to assume an IWRM approach; to the extent that its principles consider a perspective of rights, sustainability, gender equality, popular participation, and permanent dialogue among the involved parties related to water utilization and care. Furthermore, it is a management perspective that can be adapted and implemented under diverse social, cultural, political, and economic contexts.

Chart 2:
IWRM PRINCIPLES

- Water is a finite and vulnerable resource, essential to maintain life, development and the environment.
- Water management and development should be based on a participatory approach that involves users, planners and policy makers at all levels.
- Women have a central role in the supply, management and protection of water.
- Water has economic value in all its uses, competing among them, and should be recognized as an asset, economic as well as a social one.

Source: *Global Water Partnership, 2012.*

Figure 4: Water vision in a sustainable development scheme at the OAS.

Water resource management can be considered one of the best examples contained within the sustainable development scheme.[17] Figure 4 clearly illustrates a water vision based on social, economic, and environmental foci; it highlights its crosscutting nature within the OAS pillars, and its relation to the other fundamental aspects of development such as education, culture, gender, and participation.

The IWRM/OAS approach is supported on the Organization's pillars, as well as the principles of this water management paradigm. In fact, on one part the organizational pillars generate ethical and political support, which provides emphasis in its human dimension, assigning preferential value to life and human integrity above the political, economic, and social dimensions of water

17. *Sustainable development (definition): To meet the needs of the present generations without committing the future possibilities to cover their own needs. (Our Common Future: Brundtland Report, 1987. ONU).*

management. From the perspective of the OAS, the IWRM is rooted in human principles and on an approach of the human right to water.

This last consideration complements the IWRM foundational principles which were determined during the *International Water and Environment Conference in Dublin in 1992*[18], to the extent that it emphasizes on gender equality, political participation, and the socio-economic value of water access and its sustainability; but do not mention explicitly the human dimensions relative to water.

However, the IWRM/OAS approach, not only depends on the close relationships amongst the organizational pillars and the principles of the IWRM. There are in addition, three considerations that complete the paradigm of water management for the DSD of the OAS: the analysis of processes, adaptation to specific realities, and its interdisciplinary nature.

In first place, the analysis of processes as an approach responds to the growing need for having a historically relevant outlook relative to the water and environmental agenda promoted by the OAS and other international organizations. In this sense, the IWRM constitutes a social process and therefore is subject to critical analysis and to a historic narrative, through which we can come closer to the events and the actors that participate in its formulation and implementation in forums, assemblies, and projects.

In the second instance, the adaptation of paradigms (or belonging) is justified by the need to continually design and redesign strategies, plans, and actions in accordance to the specific realities of each country or region. These considerations have taken the OAS towards the need of implementing, and to put into practice specific proposals which will respond to the reality of intervention areas, and the problems and unique demands of the Member States; based on a political, analytical, and rights oriented approach. For this reason, research constitutes a major pillar of the entire water agenda.

Finally, the IWRM paradigm is completed through the use of the approach promoted by the OAS. This had not been a regular factor in the implementation of the environmental or water initiatives. Notwithstanding, the turn towards the social actors, its organizations and forms to access and manage water, generated a process of change.

With the recognition of the water multidimensionality, and the efforts to promote the human dimension of IWRM, began to face theoretical and methodological challenges. The early focus on the juridical, engineering, and biochemical perspectives of water began to be replaced by; a social sciences and humanities perspective as began to have influence over the water agendas policy makers and research sought, to understand the complex dynamics of water resources and its management within a specific territory or society, through the voices of social actors.

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18. http://www.gwp.org/GWP-Sud-America/PRINCIPALES-DESAFIOS/Que-es-la-GIRH/Principios-de-la-GIRH/ (Last visit January 4, 2015)

From there, an inter-learning process began amongst the different disciplines as well as a series of debates around the fading of the "academic borders" that strengthened the OAS' work.

The IWRM is not limited to a simple statement of its principles or problems, but to include considerations such as the social process, its adaptation to a specific context, humanity and search for interdisciplinary approaches. The OAS has, through 50 years of work, decided to introduce into its water agenda a series of Resolutions, organizational changes, and dynamic approaches, which it views as a perquisite for effective water management. In this sense, the most appropriate course of action may not consist in upholding what the IWRM constitutes the OAS approach per se. And it is that, above all, that the OAS approach to managing water problems in the Americas consists of the permanent analysis of the socio-historical, political, environmental, economic, and cultural perspective of each of the Member States; to provide them advice and suggest alternatives that are best suited for their current and future needs and to the foundational pillars of the OAS.

1.4 Water Reflexivity

Reflexivity is the capacity to reflect around a theme or phenomena, the involved social actors, and the social world in which they circumscribe, as integrated dimensions. But perhaps its main characteristic is to become a process (of reflection) that, to a good extent, falls over the person that interpolates over his actions, position, and ideas; to orient them and re-orientate himself (Guber 2005, Hammersley and Atkinson 1995, Rosaldo 1991).

Throughout time, the OAS, has had to develop reflexive processes around diverse matters (such as the environment and water) and experiences to change its approaches and organizational structure. In this sense, the transformations that have occurred throughout the past 50 years in the case of the environmental and water management, are the results of environmental and water reflexivity that respond to the challenges that the socio-cultural and political dynamics present to the water agenda.

The self-critical organizational spirit of the OAS has not only been expressed in ample debates and resolutions, but also through publications. An example of this is the book called *Planning of Integrated Regional Development: Guidelines and Studies of Cases extracted from the OAS Experience (OAS, 1984)*, which constitutes a register of lessons learned:

> *This book is a register of experiences in regional development planning and in the formulation of investment projects, including the incorporation of environmental considerations within such processes. It examines also the implementation of development according to the established plans. Successes have been registered as well as failures, as help to teach those that practice development and what has worked or not in Latin America under different circumstances (OAS, 1984).*

Environmental reflexivity and the water reflexivity are defined, from the OAS' experience, as a dialogue process and permanent institutional evaluation that is based on sharing work experiences in different regions of the Americas. It is not then, about a process that is disassociated from the social and cultural reality of the populations involved with projects promoted by the OAS; but rather, it emerges from the interdisciplinary analysis (wherein sociology and anthropology play critical roles), and from a continuing process of thinking and re-thinking the dynamics from the field based on the epistemology care.[19] For this reason, every line of work relative to water resources requires the methodic processing of direct experiences with international organizations, governments, civil society, and diverse populations.

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19. Epistemology care is the group of methods and techniques designed to register and process and analyze information coming from diverse socio-cultural, political, economical and geographical content of the Americas. It should be mentioned that one of the water agenda challenges consists in generating information management systems that would contribute to improve ex-ante, in situ y ex-post analysis of projects directed to promote water resources sustainable management.

Chapter 2

Building the water approach: Experiences from the Americas

During these past fifty years of the water agenda in the Americas, the OAS has participated in more than 160 technical cooperation efforts; supporting both programs and projects, stimulating the political processes and dialogues between regions, countries, and communities, as well as through the exchange of experiences and good practices. Throughout this time, many lessons have been learned about the promotion and development of water management in the hemisphere, and such have been incredibly useful in the continued shaping of the future of the Organization's assistance to its Member States, in the implementation of IWRM.

The size and scope of these programs and projects do not allow for a general recount of each of them in this publication. However, under Annex I a summary is presented of the principal documents produced during the past 50 years.[20] Notwithstanding, under this section four emblematic programs are presented, not only because of their results, but because of the learning experiences attained and their contributions to important political processes in the Americas.

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20. This publication's digital format hyperlinks these actions with the complete content of the documents produced throughout the fifty years of the OAS water management.

2.1 Internationally Shared Aquifer Resources Management Program of the Americas (ISARM): a case of transboundary water management and cooperation in the Americas.

Following the 14th Session of the Inter-Governmental Council of the International Hydrological Programme (IHP) of the United Nations Educational, Scientific and Cultural Organization (UNESCO); in June 2000, the Internationally Shared Aquifer Resources Management (ISARM) emerged as a joint effort involving the Food and Agriculture Organization of the United Nations (FAO), the United Nations Economic Commission for Europe (UNECE), the United Nations Economic and Social Commission for Western Asia (UNESCWA) and the International Association of Hydrogeologists (IAH). The program which started its activities in 2003 aimed to promote the proper understanding of transboundary ground water resources, and the collaboration required among countries that share the same resource; in order to reach consensus of the scientific, environmental, institutional, socio-economic and legal areas of interest (UNESCO-OAS 2010).

Throughout the twelve years of ISARM's activity, there have been both achievements and learning experiences about transboundary water resources management in general; and in the case of the Americas, great strides have been made in the comprehension and understanding of the 68 registered cases of Transboundary Aquifer Systems (TAS).

Among more than 160 projects that have been undertaken by the Organization, ISARM is the program which has gathered data about continental processes of incorporation relative to the management of transboundary aquifers within the water agendas of the Member States, promoting sustainable development, care of ecosystems and dialogue between the countries that share those aquifers. Because of this, it constitutes one of the major cases presented in this fifty-year frame review of OAS' commitment to water resources management.

2.1.1 The ISARM Program and its potentialities in the Americas

Since 2003, the ISARM-Americas Program has been driven and coordinated by IHP-LAC/UNESCO and the DSD/OAS.

Through ISARM-Americas, UNESCO and the OAS promote knowledge of the geographical, hydrological, socio-political, and legislative realities of the transboundary aquifers of the Americas; in order to systematically promote a process of continental unity and awareness of the economic and social potential of the TAS within the democratic culture, sustainable development and water resources management policies.

In terms of the potential of the TAS within the democratic culture of the Americas, they represent an optimal opportunity for integration and regional collaboration amongst water users of the Americas (UNESCO, OAS, 2008). It is not solely promoting environmental, economic, or social

development processes circumscribed by the borders of each state, but also to promoting co-operation and dialogue which propels a transboundary democratic culture.

Additionally, the TAS represents an opportunity for sustainable development of border areas by establishing them as vital ecosystems, which generate ecosystem services, that, if properly managed, provide the border communities of each country with a fresh possibility to reduce poverty levels and increase fulfillment of their needs. For this, the ISARM experience has indicated that the sustainability of transboundary aquifers and their ecosystem services require special care. In that respect, it should be mentioned that ground water contamination seriously de- grades the quality of natural resources and may threaten human health and the health of those vital ecosystems (UNESCO-OAS 2010).

Chart 3

Ecosystems Services of the Transboundary Aquifer Systems			
	North America	**Central America**	**South America**
Ecosystems services by activity and regions	Agro-industry (agricultural production) and cattle	Agriculture and cattle	Agriculture and cattle
	Tourism	Domestic use	Fishing
	Industry		Industry
	Irrigation		Tourism
	Domestic use		Domestic use

Source*:* UNESCO, OAS, 2010.

Finally, the TAS is a source of experience and learning for the IWRM and groundwater resources management. To the extent that the national Governments have not developed a legislative framework that is sufficiently broad to manage transboundary groundwater (UNESCO-OAS, 2008), the ISARM-Americas has been orienting and stimulating the reversal of this situation. In this manner-through the efforts of UNESCO, the OAS and its Member States, the recognition has been able to be spread throughout the Americas: water laws should begin at the borders and should be considered within the sustainable development policies of TAS management and always from an perspective of human rights, democracy, sustainability, and sovereignty. Further it has become clear that the human right to water should not be restricted by national borders, even more so when such areas are inhabited by citizens who constantly tend to move from one country to another, living in situations of poverty.

In summary, continuing with what had been mentioned in the first section; the ISARM potential in the Americas goes well beyond the economic dimensions and concerns of the IWRM, because

these concerns are based in its democratic and human dimensions.

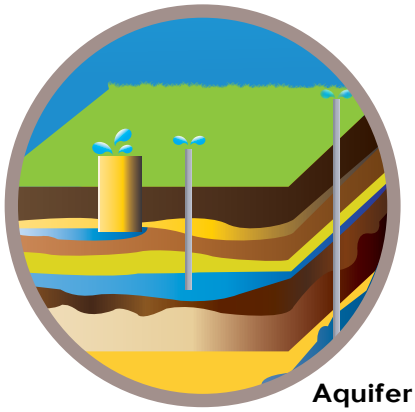
2.1.2 Main ISARM findings and achievements

ISARM Americas has generated baseline information related to the conditions of transboundary aquifers within the Americas, and the legal frameworks which regulate their management. Also, it has started an awareness process of the legal "gaps" in the matter of transboundary water management of different Member States, in order to propel sustainable and democratic agreements relative to TAS use without affecting national level legislation. It is relevant to mention that the systematic experiences in the book series "Transboundary Aquifer Systems in the Americas. Preliminary Evaluation" (UNESO-OAS, 2007), "Legal and Institutional Framework for the Management of TAS in the Americas" (UNESO-OAS, 2008) and "Socioeconomic, Environmental, and Climatic Aspects of the TAS in the Americas" (UNESCO-OAS, 2010), have helped to:

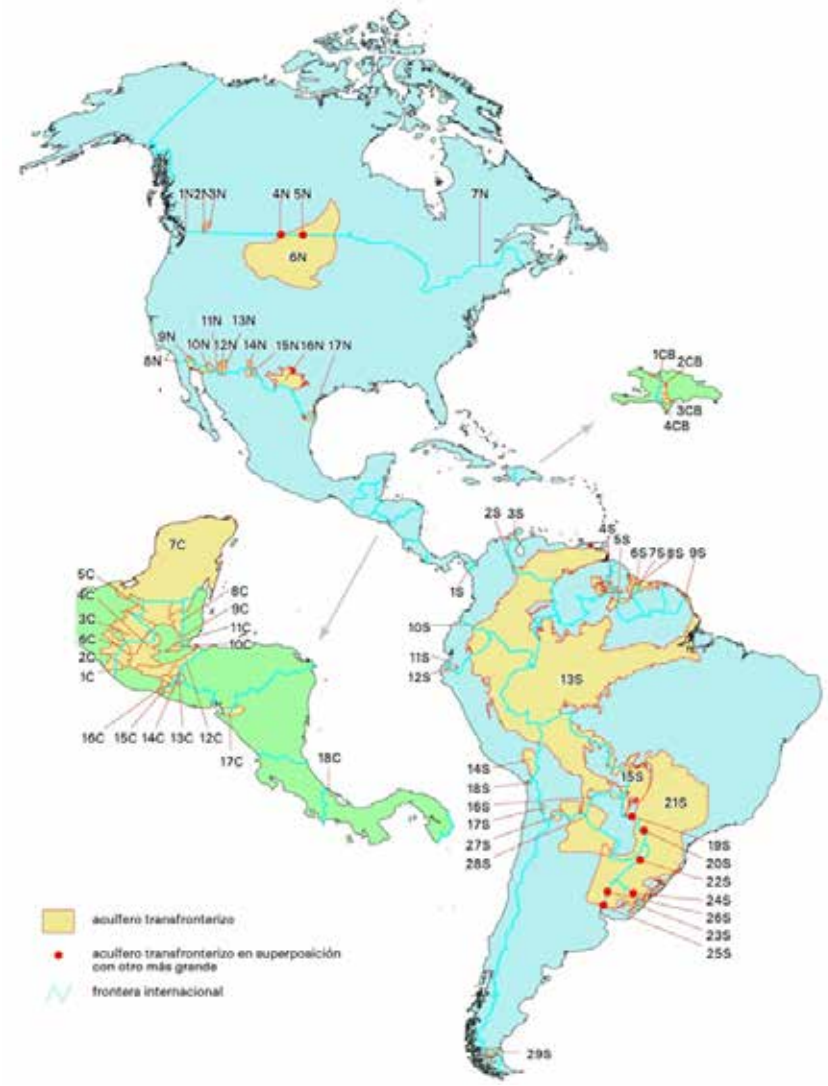
- To promote better knowledge of the transboundary groundwater resources of the Americas from a scientific, environmental, legal, and institutional point of view; through the preparation of the inventory of the Transboundary Aquifers of the Americas, and an analysis of the legislation that OAS Member States have developed to manage transboundary water resources;.
- To introduce plans focused on TAS management within the national water agendas, as well as to contribute to transform controversies into collaboration dynamics among countries.
- To systematize, process, and disseminate scientific information which promotes and supports institutional measures directed towards enhancing the efficiency of TAS management.
- To identify case studies based on the inventory in order to implement pilot projects in diverse regions of the Americas, based on criteria that would respond to the OAS and the IWRM principles, as well as to the Member States needs.
- To design a specialized system in TAS consisting of a group of measures based on the country's experiences to promote an IWRM which responds to specific cases.

On one level, this inventory has allowed the identification of the importance of optimal water quality, even though there are aquifers that are quickly degrading as a consequence of natural causes, as well as human causes. An example of contaminated aquifers that are contaminated due to natural causes is the one in the Low Basin of the Bravo/Grande River, shared by Mexico and the United States. In this case, the presence of 10,000 ppm (parts per million) of dissolved solids in clayey-sandy sediments were found (UNESCO-OAS 2010). In the case of degradation generated by human intervention, it can mention the Caicauá-Bruru-Araray (Brazil-Paraguay) aquifer, and the Paz River Aquifer (Salvador-Guatemala), among others, where contamination is due in large part to practices related to major agriculture activities.

Figure 5: Inventory of the transboundary aquifer systems of the Americas (UNESCO-OAS 2007)



Aquifer



Under the knowledge management frame of the ISARM, it was also determined that the relevance that transboundary aquifers have in the countries is heterogeneous. This determines the importance that the countries have granted to their management and the level of coordination commitment. In effect, it has been registered that such aquifers can constitute as misused resources or as a main supply source. Also, for most of the cases, including the case of the El Pantanal Aquifer system that is shared by Brazil, Bolivia, and Uruguay, these are fundamental for the ecosystems that depend on them. It is important to indicate that throughout the Program's implementation it was found that still there are no land or water resources management plans for most of the aquifers registered by the inventory and in those cases where they do exist, they tend to be unilateral.

On the other hand, due to the environmental and management conditions of the aquifers, transboundary programs such as the *Global Environment Facility (GEF)-World Bank (WB) - OAS project in the "Guarani Aquifer system" and the "Integrated Ecosystems Management of the Bi-national Basin of the Sixaola River"* project (Idem) have been prepared to promote aquifer care, and also care of the ecosystems which depend on them.

2.1.3 Challenges: managing the future

Perhaps the biggest challenge facing the ISARM-Americas Program is to spread and to position among the Member Countries that share TAS, the idea that water laws do not end at the borders, and that on the contrary, they start on these borders.

To propel international cooperation processes in transboundary aquifer systems with regards to the promotion of ecosystems care and sustainable development is a complex practice. In spite of the years of the program's activity, there are still cases where water legislation is being passed its attention and expertise in transboundary aquifer systems management. In this regard, it is possible that by analyzing the border policies of each Member State, a clear identification of issues can be achieved, determining if this situation could be explained by a general border policy; or if it corresponds with more intensity, to difficulties of integrally driving water management.

However, focusing attention on the TAS as water policy is the challenge of promoting a democratic culture based on dialogue and cooperation. The latter becomes important to avoid delays or issues in the agreements generation process and their compliance.

Border zones are social spaces which have been historically sensitive to a wide range of issues. They are full with the memories of conflicts which determined territorial limits and sovereignties. While such conflicts under specific circumstances, have presented difficulties for the achievement of agreements, they do not determine nor do they explain the transboundary water management problems, especially as the course of the Americas thus far has been towards integration. Because of this, the second major challenge of the Program has been to continue promoting trans-national agendas. For this, it will be necessary to assume a major task: to update the inventory of information and to complement it with socio-cultural data of the areas in order to rescue the human dimension of IWRM.

2.2 Environmental Protection and Sustainable Development of the Guarani Aquifer System (Guarani Program)

The *Guarani Aquifer System (GAS)* is one of the largest groundwater deposits of the world. It is a water resource that provides water for domestic, industrial, agricultural, and touristic purposes to citizens in four countries: Argentina, Brazil, Paraguay and Uruguay. Therefore, it is an aquifer system that requires a multipartite management model.

With a water deposit of approximate 37,000 km^3, and a natural recharge rate of 166 km^3 per year, the GAS constitutes an essential water resource for the life of an about of 24 million people whom inhabit its surrounding area; and about 70 million more that live in direct or indirect influence areas of the aquifer. Thus its effective management constitutes a critical water imperative.[21]

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21. Source: http://www.oas.org/DSD/WaterResources/Pastprojects/Guarani_esp.asp (Last visit: January 27, 2015)

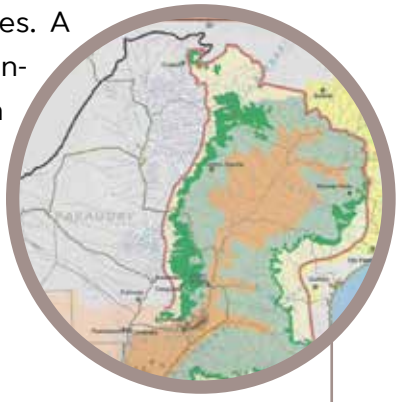
Mindful of the transcendent nature of this aquifer system for the border economies of each country, and considering its importance as a mediating element for success, promoting cooperation, social peace, democracy, and sustainability, in 2003, the OAS as GEF executing agency together with the World Bank, as the GEF implementing agency, began the implementation of Guarani Program. Over a 6-year period, technical assistance was provided to the countries that share the GAS in defining and implementing a shared and agreed-upon framework of institutional, legal, and technical level actions.

In the course of these activities it was determined that the GAS should be preserved and managed in such a way that it would satisfy the needs of its population in a sustained manner. To this end, seven components were established: i) expansion and consolidation of the current scientific and technical knowledge of the GAS, ii) development and joint implementation of the management framework of the GAS (based on a Strategic Action Plan), ii) promotion of public participation, social communication and environmental education, iv) supervision and evaluation of the project and dissemination of the project results, v) development of ground water-management and mitigation in areas identified as critical, vi) evaluation of the potential use of geothermal energy, "clean energy", of the Guarani Aquifer System and vii) project coordination and management [22].

The experience generated by the Guarani Project is of great importance. While ISARM-Americas offered a general transboundary management framework, the GAS is a specific case that constituted a symbol of union and collaboration amongst four countries that have achieved its main objectives (OAS, 2009). Thus, this is the importance of assessing the six years it lasted.

2.2.1 Potentialities of the Program for the Americas

The Guarani Program has great potentials for promoting a common water agenda across the Americas. Firstly, it is a case that illustrates the relationship between research and political management. Secondly, it outlines the diplomacy behind water management as a strategy for generating sustainable cooperation processes among border countries. A third potential lies in its participative dynamic; because not only does it incur the generation of work mechanisms with public policy and decision makers, it also promotes popular participation. Finally, the Guarani Program shows a process in which water, in this case materialized through the GAS, can take on a fully integrated social dimension, and become a promoter of development.



Development of the Guaraní Aquifer System (Argentina-Brazil-Uruguay-Paraguay)

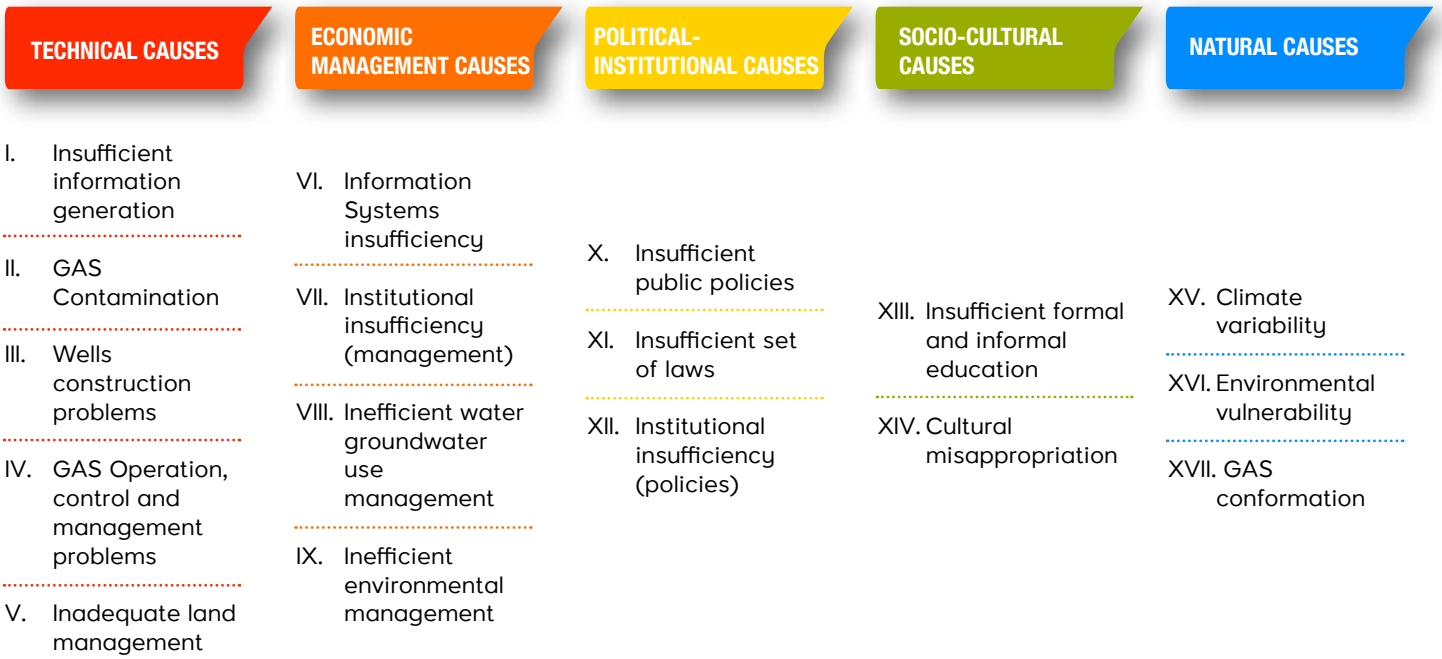
22. *Idem*

The relationship between research and political management of water issues is fundamental. This is shown by the Guarani Program through knowledge of its biochemical, geographic, socio-cultural, and political realities; as it was possible to implement a Strategic Action Plan (SAP). For this, a premise was taken as a base of reference which arose from the analysis of historical processes related to GAS management.

> *Based on a brief analysis of the historic situation related to water resources management in each of the countries, performed during the project preparation stage, it became evident that its proposal would find fertile land and would collaborate in the strengthening of expectations and shy management initiatives underway in each of the participating countries. Groundwater management constituted an issue still not defined in the GAS region, without a clear perspective. The initiatives were isolated and restricted to the areas where historically groundwater had a propeller role of development (OAS, 2009).*

But additionally, the research allowed the identification of a group of factors which took the GAS towards a critical juncture. This made the identification of courses of action and priorities possible; which in turn allowed generation of a strategic action plan in accordance with the realities of the local area. Thus, the relevance of the GAS SAP was validated through a knowledge and production process collected from experience in direct field work carried out in the area.

Figure 6: Synthesis of causal chains of the GAS critical issues.



Source: Transboundary Diagnosis Analysis (TDA) for the Project for the Environmental Protection and Sustainable Development of the Guarani Aquifer System.

Within this frame of problems, water diplomacy was presented as a pertinent strategy because it is directed towards the identification of common interests between countries, to generate agreements, without jeopardizing the sovereignty or laws of each country. Thusly, in order to properly develop the GAS, the La Plata Basin Treaty (September 2001), was taken as the legal base of dialogue for the implementation of action. This in turn, implied the creation of an institutional body which was comprised of a Regional Cooperation Council, technical committees, and a Promotion Group of the Local Management and Local Management Support Commissions. It should be mentioned that such architecture required a social division of functions and responsibilities among the countries.

The Guarani Program's third potential is in its citizen participation policy as an essential point of ethics and as a strategic precept. On one hand, the ethical dimension of citizen participation is based on the right of the people to be informed, to give their opinion, and to present suggestions, particularly when external agents structure processes that even though are oriented by democratic and humanistic values, will have an impact in their lives. On the other hand, the strategic aspect consists in validating the initiatives with the population in order to have their acceptance and to establish cooperation and trust with civil society that strengthens the validity of water governance.

The social-political situation presented by the relation between research, strategic planning, water diplomacy and citizen participation, constitute the framework of the fourth potential of the Guarani Project for the Americas: the reinforcement of an experience which allows for appropriate maintenance; that in fact it is possible to promote a political culture of dialogue, sustainability, and American integrity based on a water agenda.

2.2.2 Main findings and achievements

In broad terms, these are the findings of the Guarani Project. In the first place, it is the hydrological characterization of the GAS. This suggests that it is a water resource that is for the most part of optimal quality, even in areas where it is not exempt from natural or anthropic contamination processes.

Also, it was found that the countries that share transboundary aquifer systems have political will to build joint water agendas, with the principal objective of securing sustainable development in border areas, both specifically and generally. The latter suggest that even the formulation of border-oriented water regulation with attention towards social awareness of groundwater maintenance is still needed; the social-political scope is ideal to the extent that the Member States may demonstrate their will and provide technical assistance for transboundary issues without compromising their national sovereignty or interests, while still establishing points of political coincidence.

Finally, the experience of the Guarani Project established that through effective water diplomacy, water can constitute a catalyst for integral development. Its multiple-dimension, allows for the directing of processes which visualize its human, democratic, and integral dimensions. In this last sense, water does not constitute a conflictive element *per se*.

These findings or empiric considerations are translated into the Guarani Program's objective compliance. In effect, after six years of the Program, it was possible to provide the necessary technical assistance to design and implement the framework of the GAS protection and sustainable development. As a consequence, each country currently involved in the GAS management has clearly defined and non-delegable attributions, and have the necessary technical base to guarantee the Program's sustainability (OAS- 2009).

Beyond the achievement of main objectives, there were five scopes or accomplishments that generated the necessary context for the Program success. Firstly, technical knowledge was acquired and necessary information was generated to orient the GAS management and development of a groundwater regulation model in each of the four participating countries. Secondly, it was possible to complete the Transboundary Diagnosis Analysis (TDA), through which main problems, causes, information gaps, and necessary mitigation actions can be taken to solve the critical issues which are currently pressing for the GAS (*Idem*).

Thirdly, the first SAP in the world was prepared, with a focus on transboundary groundwater management. Fourthly, through the Guarani Fund of Universities it was possible to support research and academic training initiatives in socio-environmental matters in the region's universities.

Finally, through the Guarani Fund for Citizenship, it was possible to strengthen water governance. For this, the realization of civil society activities was promoted in the field of participation, environmental education (through its formal and non-formal approach), and communication. On this respect, it is important to indicate that through this fund, initiatives were completed in order to insert social and environmental concerns of groundwater management into the agenda of civil society.

2.2.3 Challenges: managing the future

The Guarani Program's success does not imply sustainability *per se*. To guarantee its continuity a process of monitoring should be implemented, including monitoring of compliance of agreements and programmed activities under the program's framework to establish a continuous counseling plan. This monitoring scheme is of high importance in a context in which rapid rotation of government officials or representatives take place and where the water laws still do not establish a specialized normative framework in transboundary groundwater management.

The generated risk in this context, consists in an attempt to avoid forgetting commitments and setbacks in the progress achieved throughout these six years. Also, an additional risk arises: the

weakening of water institutions that were built for the Guarani Program. Therefore, perhaps the major challenge to be assumed is to promote the gradual strengthening of such institutions in order to not lose the progress achieved in research, participation, education and governance.

2.3 The Bermejo River Basin: Implementation of an Strategic Action Program (SAP)

Between 2001 and 2009, the *Bi-National Commission of Development of the Upper Bermejo River Basin and the Grande Tarija River* (COBINABE as its acronym in Spanish), along with the OAS' Department of Sustainable Development and the *United Nations Environmental Programme* (UNEP)[23], initiated the SAP of the Bermejo River Bi-National Basin.

The Bi-National Bermejo Basin SAP constituted a challenge for the governments of Bolivia and Argentina; not only because it was the sustainable and brotherly management of a transboundary basin, but also because of the importance of the ecosystems, population and national economies of both countries.

Bermejo River

With a length of 1,300 km, the Bermejo River waters generate ecosystem services for approximately 1,330,000 inhabitants. Through such waters, close relations are reached among the mountainous ecosystems of the Andes Mountain Range, the Chaco plain ecosystems and the La Plata water system (COBINABE 2010a). Additionally, the Bi-National Bermejo River Basin is fundamental for the hydrological, geo-morphological and ecological processes, and forms the landscaping of a great variety of ecosystems and biodiversity (COBINABE 2010b).

Notwithstanding the Bermejo River potentialities, there was a predicament generated, basically by natural variability of the water; in dry periods the water opportunity and quantity was affected for its multiple uses and, in abundance times, floods were produced in the rural peri-urban and urban areas (COBINANE, 2010a). Also, the Bi-national Basin of the Bermejo River presented a soil erosion process due to local forms of land uses, among other problems that should be managed from an IWRM approach[24].

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23. The UNEP action was given as the implementation agency of the Global Environmental Facility (GEF).
24. The identification of these problems and their causes was the result of a previous study, promoted under the SAP frame of the Bi-national Bermejo River Basin.

Chart 4: Relation between water problems and structural-general causes.

PROBLEMS	STRUCTURAL-GENERAL CAUSES OF THE PROBLEMS
Soil degradation, intense erosion and desertification processes. Scarcity and restrictions in the utilization of the water resource. Water quality degradation. Destruction of habitats, loss of biodiversity and deterioration of biotic resources. Conflicts due to floods and other natural disasters. Deterioration of the population living conditions and loss of cultural resources.	Weakness of the political, juridical and institutional for transboundary management. Difficulties to generate inter and intra jurisdictional coordination. Scarce knowledge, involvement and participation of the communities in management processes. Inadequate financing and support mechanisms. Access problems to sustainable technologies and their application.

Source*:* COBINABE, 2010a. Integral Management Program of the Bi-national Bermejo River Basin. General Guidelines. Pp. 16-17.

Prior to this situation, national governments had decided to establish cooperation ties and had resorted to a technical assistance process. Under this context, the SAP was conceived as a management tool for addressing the environmental problems identified through the diagnosis to promote the Basin's sustainable development, through the technical application of the IWRM approach. For this, four strategic areas were promoted, which specifically corresponded to Program's objectives.

Chart 5: Correlation between strategic areas and objectives

STRATEGIC AREAS	OBJECTIVES BY AREA
Institutional development and strengthening for the planning and integrated management of the Basin.	To develop and strengthen the institutional capacities to establish an integrated planning and management process of the Basin.
Prevention, protection and environmental rehabilitation.	To prevent environmental degradation through an environmental protection policy and strategy, establishing strategic rehabilitation initiatives.
Sustainable development of natural resources	To promote sustainable development through the promotion of eco-efficient practices that does not damage the ecosystem services and the natural resources.
Awareness and public participation and replication of the Project activities.	To generate educational processes that promote public participation of the citizens, as well as the replication of initiatives designed under the Project frame.

Source*:* COBINABE, 2010a and OAS (Compiled by author).

As it can be appreciated through Chart 5, both the formulation of the strategic areas as well as the objectives, correspond to an IWRM approach. Such were complied throughout eight years, and through them a dialogue and cooperation practice process was consolidated between Argentina and Bolivia, confirming that water, duly managed, is a source of peace. Hence, firm statements that indicate that water policy dimension is based on the conflicts around it do not constitute unquestionable and unique arguments, according to the field work experiences in the Americas.

2.3.1 Potentialities of the Bi-National Bermejo River Basin for the Americas

The potential of this experience for the Americas are multiple; to the extent that they correspond to achievements of the different strategic areas. However, there are two aspects to highlight: the example that represents the creation of an organizational structure to manage a transboundary basin and the changes that can be generated through institutions and organizations strengthening processes, as fundamental complement of the technological and infrastructure development, and of a bet for environmental education.

Bermejo River Basin

On one part, the organizational structure that was created to manage the Bermejo River polishes off about water diplomacy that emerged from Argentina and Bolivia which was strengthened with technical assistance. Additionally, it is important to indicate that the initiatives of each of the national states generated the macro-political context that was necessary to implement an IWRM approach.

The COBINABE constitutes the institutional and organizational framework of the bi-national management of the Bi-National Bermejo River Basin. It was created before the start of the project. In effect, in 1974, Bolivia and Argentina in a joint effort with OAS to support and promote the sustainable use of the Upper Bermejo River Basin, to maximize benefits, according to the priorities established by each government under their national plans (COBINABE, 2010b). As a consequence of this first approach, a technical Bolivian-Argentinian group was created for the Upper Bermejo River Basin, which had its first meeting in October, 1987.

Eight years later, in 1995 after a series of dialogue processes, generation of information and knowledge exchange, the Agreement for the Multiple Utilization of the Upper Bermejo River Ba-

sin and the Grande de Tarija River Resources was adopted (hereinafter called the Oran Treaty).

The Oran Treaty called for general action and coordination guidelines which generated the necessary context so that the Project for the Bermejo River Water Utilization would drive the constructions of three dams - the Las Pavas, Arrazayal and Cambari dams- along the Bermejo and Grande Tarija Rivers waters. In this manner, the dams were constructed in transboundary surroundings to generate electricity and regulate the use of the waters (Idem). Further, a base of operations was also placed so that the Bermejo SAP could begin operating immediately; thereafter, followed a long and sustainable process of water diplomacy and reflexivity.

On the other hand, the Bermejo SAP is an example of empowerment and capacity building of governmental and non-governmental organizations, as well as for the citizenship, as part of a strategy oriented to build and strengthen water governability and governance through an environmental education program.

Governance strengthening was carried out through technical assistance plans oriented by a precept: "the institutional scope constitutes a strategic structural axis of the sustainable development process" (COBINABE, 2010c). From this premise, this project related the need to strengthen and articulate different institutional levels: bi-national institutions (for transboundary management), national institutions (to manage the basin in each national area), and jurisdictional institutions (to manage the basin in the political-administrative local spaces of each country) (Idem). In this sense, the need was highlighted to strengthen the articulations and the processes of the global, regional, national and local processes, since none of them constitutes a separate reality.

Finally, the governance strengthening comes to the side of the promotion of a public participation culture. This effort was carried out over the base of a prior OAS consideration that was assumed by the COBINABE:

> *The knowledge of a community from the social and anthropological point of view is essential to facilitate the design of public participation mechanisms and to select the adequate level of language to use and the operational strategies, based on the objective achievements of each program (COBINABE, 2010d).*

Compliance of the Bi-National Bermejo River Basin SAP objectives has not only been possible due to the success of the engineering and technological initiatives driven between the seventies

and eighties. The institutional theme has been fundamental too. The latter implies knowing, registering and listening to the citizenry and their social organizations in order to exchange knowledge based on approaches guided by the socio-cultural specifications of each location. It is therefore an experience that informs about the potentiality of governability strengthening and water governance in the Americas.

2.3.2 Main findings and achievements

The main achievement of the Bermejo River Basin SAP, was the establishment of a participative process that is defined as innovator at the time of project completion, as it has demonstrated that: i) IWRM is an evolving slow process that connects peace and sustainable development, ii) the structures that restrict citizen participation can compromise socio-environmental sustainability, governability and governance, iii) the IWRM infrastructure works are important but is insufficient, iv) all hydro-political process should articulate the processes and jurisdiction levels (what is global is local and what is local is global), and v) environmental education constitutes a central element for sustainability.

The installed process objective is intended to be a "catalyst" for the implementation of an IWRM approach in the Bi-National Basin (COBINABE, 2010a) that propelled a formal and non-formal educational process necessary to propitiate the construction of new local knowledge and wisdoms. Within this general framework, the Project achieved the following results:

i) Promoted the institutionalization of basin organizations or entities at local, national and bi-national level.

ii) Established an environmental education process that empowered citizens, civil society and governments.

iii) Generated participation and decision making joint spaces where multiple actors could meet dialogue and establish agreements.

iv) Started a process to prevent the ecosystems alteration and loss and to recover affected natural resources.

v) Generated access to reliable academic and scientific information for water and environmental public policy makers, in general.

All these achievements revealed the true capacity that social organizations and citizens have to contribute to IWRM. It is about voices, that for different reasons are not necessarily considered but have experiences and knowledge that the IWRM needs for its effective implementation. Therefore, it is important to listen to these voices, to value them and to incorporate them in every IWRM process.

2.3.3 Challenges: managing the future

In the Americas, the IWRM challenges fall on democracy operation challenges, its governability and governance, logical aspects of a young continent. It is then about challenges presented by a structural complex scenario that leads to decide for a constant water reflexivity. Due to this, every successful experience is not defined for having reached project objectives, but rather for their constant monitoring, until the technical, cultural, and institutional considerations manifest themselves as a sustainable reality, necessary for the sustainable development to transcend at the end of projects. In addition, a central challenge remains, which is to continue promoting the appropriate operation of the transboundary water institutionalization, so that it responds to the challenge of a local, global and dynamic world under constant change.

2.4 Sustainable Management of Water Resources of the La Plata Basin in the Context of Climate Variability and Change

The La Plata Basin occupies one-fifth of South America and constitutes one of the most important hydric and political areas of the hemisphere. Its territory of 3.1 million of km2 encompasses part of the southeastern part of Bolivia, the southern part of Brazil, Paraguay entirely, parts of central and northern Argentina and part of Uruguay. Seventy percent of the Gross Domestic Product (GDP) of the five countries is generated at the Basin; and according to a recent population census: 101,652.445 persons 25 live there. Additionally, La Plata Basin has a significant hydropower potential estimated in 92,000 MW that has inspired the construction of more than 150 hydropower centers, out of which 72 are greater than 10 MW[26].

La Plata river basin, Argentina – Bolivia.

25. http://proyectoscic.org/lacuencadelplata/poblacion-y-economia. (Last visit: January 11, 2015).
26. *Idem*:

Chart 6: Population Data (it only corresponds to states, departments or provinces that belong to the basin)

Countries (States or Provinces)	Total
Argentina (2)	26.274.861
Bolivia (3)	1.718.908
Brazil (4)	65.455.629
Paraguay	5.163.598
Uruguay (5)	3.043.969
Total Population	**101.652.965**

Source: Framework Program Sustainable Management of Water Resources of the La Plata Basin with Respect to the Effects of Climate Variability and Change 2012.

The importance of La Plata Basin for the development of each of the five countries and for the consolidation of agreed mechanisms for transboundary water management, led to the celebration of the first meeting of Foreign Affairs Ministers of the involved governments in 1967. At this meeting, the Inter-governmental Coordinating Committee (ICC) was formed to assume the responsibility to promote, coordinate, and continuing support to the multiple-national programs for the integrated development in La Plata Basin, with the financial and technical assistance of international agencies.

Recognizing that the harmonious and balanced development of La Plata Basin and the cooperative relations in the Americas require joint action to sustainably utilize natural resources in the face of climate variability and change; the governments of Argentina, Bolivia, Brazil, Paraguay, and Uruguay, signed in 1969 the La Plata Basin Agreement to strengthen the institutionalization of such basin systems and to join efforts to promote its amicable development and physical integration of their direct and praiseworthy influence areas[27].

At the 4th Inter-American Dialogue on Water Management (2001), the need for an Integrated Management Program to address climate variability and change was accepted. This program was initiated in 2003 in order to strengthen transboundary cooperation among the governments of Argentina, Bolivia, Brazil, Paraguay, and Uruguay to guarantee management of water resources shared in the basin in an integrated and sustainable manner; within the context of climate variability and change, and the need to capitalize on opportunities for development[28]. In this manner, the CIC, as the transnational institutional framework, has given continuity to efforts which began in the sixties; demonstrating the capacity to think and reflect about water management in the face of new global challenges of regional and local impact such as climate change and variability.

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27. See: http://www.cicplata.org/?id=tratado (Last visit February 07, 2015).
28. See: http://proyectoscic.org/programa-marco/estructura-del-programa-marco (Last visit February 97, 2015)

2.4.1 Potentialities of the Program for the Americas

The experience generated by the Framework Program for Sustainable Management of Water Re- sources of the La Plata Basin with Respect to the Effects of Climate Variability and Change, transcend the efforts to generate scientific knowledge of the socio-environmental system of the basin. This is focused on at least, two main considerations: the generation of academic knowledge for the formulation of national and transnational public policies specialized in water resource management; and the importance of promoting water diplomacy so that water policy can be a source of peace and cooperation rather than one of conflict.

As in the case of ISARM-Americas, the action proposals for the La Plata Basin were based on a prior and holistic study of the basin's characteristics. This inter-disciplinary research perspective initiative allowed for the knowledge produced by the earth sciences to be complemented with that of the social sciences based on one purpose: to reduce the risks of falling into imprecise analysis through an inter-disciplinary research perspective.

Even today; inter-disciplinarily action seems to be a valued aspect of any legislation, and is assumed by public policy makers, however reality is different. Some of the foremost approaches focus almost exclusively on biochemistry or engineering; or on the ethnographic or social aspects. This situation generates a propitious situation for the production of fragmented knowledge that does not provide water policy with the multi-dimensionality and the products derived from them. Consequently, without inter-disciplinary action, it is possible to leave aside the identification processes of critical aspects which need to be managed.

Thanks to the research efforts it was possible to prepare a plan of action for the La Plata Basin. This plan identified that in the Basin there are problems related to climate variability and change, such as: recurrent droughts and floods; reduction of water quality as a consequence of improper agricultural practices; a lack of quality standards, limitations on navigation due to sedimentation, loss of biodiversity, and unsustainable use of the aquifers and fishing resources. Only after the identification of these problems was it possible to establish a framework of potential actions.

Chart 7. Structure of the Framework of Strategic Actions Program (FSAP) including four action components (2010-2015)

Strengthening of the Cooperation Capacity for Integrated Water Resources Management with emphasis on hydro-climatic aspects, including: the consolidation of coordination, planning and management capacity of the ICC and the technical and institutional capacities of the participating institutions and the harmonization of a legal framework for the La Plata Basin for Integrated Water Resources Management in accordance with the sustainable development vision that will be promoted in foreseeable scenarios of climate variability and change.
Integrated Water Resources Management with emphasis on Integrated Water Resources Management of superficial groundwaters and their adaptation to climate variability and change.
Hydro-climatic Prediction System of the La Plata Basin and adaptation to the hydrological effects of climate variability and change, oriented to obtaining more knowledge, technical and operational capacity in the five countries of the La Plata Basin in order to predict, with more safety and anticipation, the hydrological effects of climate variability and change and to consider, in particular, the mitigation of disasters associated to floods and draughts and climate adaption and the Basin hydrological regimes.
Preparation of the Framework of Strategic Actions Program (FSAP), technically justified and socially agreed, that would go deep into the FSAP proposal based on the adjustment and more details of the Transboundary Diagnosis Analysis (TDA) in the results of priority and demonstrative projects, as well as specific complementary studies to be carried out as part of the PFSAP formulation.

Source: Inter-Government Coordinator Committee of the La Plata Basin Countries (CIC), 2011. Program for Sustainable Management of the La Plata Basin countries water resources in relation to climate change and variability. Page 6

Secondly, in the Americas the constancy of water diplomacy which was structured through La Plata Basin is highlighted. It is an organizational system that has almost fifty years of operation. Without this, it would not have been possible to complete the research processes that resulted in the formulation of a framework for work action and technical assistance lines, oriented to boost the economic, social, political and human benefits of the La Plata Basin.

2.4.2 Main findings and achievements

The first Program's foundation was the identification of problems that affect La Plata Basin sustainability based on a transboundary diagnosis to implement pertinent initiatives for the region. This laid the basis for a second instance, the strengthening of the cooperative capacity for IWRM with emphasis on hydro-climate issues; for which contributions with the generation of legal-institutional improvement processes, promotion of popular participation, communication and the generation of educational plans, as well as an initiative monitoring strategy to evaluate progress in the case that strengthening efforts have been made.

A third achievement was the creation of an implementation process for IWRM as a general framework for sustainable development. Monitoring plans were designed for water quality and quantity, integrated management of groundwater and restoration of aquatic ecosystems under degradation process. Also, pilot projects were designed for the establishment of new environmental practices.

Fourthly, the project established a reflexive and practical line focused on hydro-climate issues and adaptation to climate change, thereby fostering initiatives which were oriented towards implementation and prediction, and the design of hydro-climate alert systems (to reduce vulnerability and for disaster risk management).

Finally, vulnerability and risk management evaluation systems were incentivized, and public awareness and involvement measures within the Basin management was increased.

All these achievements were based on the recognition of six crucial aspects in La Plata Basin: (1) climate variability and change; (2) disasters due to natural causes and human action; (3), unsustainable agricultural systems (due to their environmental risks); (4), alteration of biodiversity and fishing areas of indigenous villages, urban and peri-urban sanitation problems and lack of normative frameworks to facilitate navigation.

2.4.3 Challenges: managing the future

La Plata basin

The La Plata Basin presents challenges for the water diplomacy and sustainability. Progress could easily have been lost without proper observational mechanisms, and without a continual renewal of initiatives of solidarity and fraternity built throughout the almost fifty years through the will of Argentina, Brazil, Bolivia, Paraguay and Uruguay. It is necessary to update hydro-climatic data and to continue strengthening trans-national and national institutional capacities of Member States to generate adaptability in the face of climate change and variability. In this last sense, the main challenge of this initiative consists in not jeopardizing the development possibilities of each country or of the populations that benefit directly and indirectly from the La Plata Basin. Because of this, the IWRM has within this scope the duty to continue promoting a sustainable development culture and an environment of peace, dialogue and democracy.

2.5 Integrated Water Resources Management and Sustainable Development of the San Juan River Basin and its Coastal Area.

The water resources of the San Juan River Basin are the most important in the Central American Isthmus and constitute a strategic resource for any sustainable development plan. Within this context, an agreement was signed in October 1994 to promote the efforts of Costa Rica and Nicaragua in the execution of the Environmental Management and Sustainable Development of the San Juan River Basin Project (Procuenca San Juan). It was agreed that the OAS would be the Executing entity of this technical cooperation and the activities of the project started in June, 1995 (UNEP-OAS, 1997).

The main objectives of the project were centered in human development and the preservation of natural resources and ecosystems. In that sense, priority was placed in the following aspects:

i. Transboundary basins and water resources conservation and management.

ii. Management of protected areas and conservation of biodiversity.

iii. Incentives for the development of economically sustainable activities.

iv. Overcoming of poverty conditions in the population, specially among indigenous groups.

v. Strengthening of institutions and introducing of legislation to reconcile key problems in the border and at the Central American level.

The project recommended the creation of binational mechanisms that allow technical and political dialogue between the countries that possess territory within the basin.

With respect to conservation efforts and sustainable use of natural resources that exist in the San Juan and its connected basins, the project; highlighted that continuous coordination is necessary at the level of strategy and action in the entire region for conservation and management of protected areas, which all participating states could agree upon. In addition, it was recommended that the technical knowledge of conditions at the basin had to be strengthened with respect to the availability, quantity, quality, dynamics, current use, and its potential benefit for the natural resources

(soil and water) of the area. Having systems of compatible classification for land use helped to facilitate the technical dialogue and future political agreements, which included the use of common interests and methods of coordinated management, and taking into account sovereignty considerations.

With regard to the conservation and sustainable use of water resources in the adjacent lakes, the project recommended the strengthening to a basic level of the local network of hydrological and hydro-meteorological observatories; as well as the development of the technical and institution- al bases for the binational monitoring of the quantity and quality of water resources in the basin.

The project used a model of participation that defined key points and approaches for other GEF-International Waters projects. A series of strategically defined and formulated pilot projects and basic studies, allowed for the building of institutional arrangements among governments, NGOs, universities, and research centers on both sides of the border. Several of these arrangements still persist and some of them have grown into more solid and inclusive structures, such as AMU- GRAN.

Under the project, an online tool was developed for the institutional mapping of the basin and its coastal zone, which was based on a Geographic Information System (GIS) platform, (IDRISI and ARC/INFO version); and a relational database that will formed the knowledge base of the project with tools capable of maintaining a transformative system for decision making in the basin. This tool for institutional mapping was a model for others within and without the region. Following its presentation in Dalian, China in 2003 during the GEF-International Waters Program congress, the tool served as the basis for the design and construction of the Online Systems of the IWRN and the Inter-American Network for Disaster Mitigation (INDM).

Chapter 3

Water approach and vision of the OAS Department of Sustainable Development

This last section presents the reflection lines that the DSD/OAS has developed as a consequence of the accumulated experience through the design and implementation of projects fostered over these fifty years to propitiate democratic and integral processes of water resources management. It is not about a listing activity directed to indicate only issues that were prioritized in the reflective process of the Organization's water agenda. The idea is to propose, first of all, that the organizational agendas and approaches should be based on theoretical and practical thoughts that orient the technical and political aspects of the development, environmental management, and water resources management proposals; within a social, cultural, political, and economic worldview which is in constant change. In this sense, it is believed that a water agenda is, by definition, an incomplete process.

3.1 From Infrastructure to Social Organizations

The Industrial Revolutions placed a strong emphasis on the idea of development and growth through technological innovation, effective investment of capital, wealth accumulation and income distribution processes. They guided the faith in society progress through science and

technology. But the two world wars that shocked the world during the first half of the 20th Century and the Cold War generated new demands and a new idea: that science and technology by themselves, do not guarantee development, social peace and wellbeing.

This paradigm change occurred through social movements that reclaimed violated human rights: the emergence of the feminist movement, the indigenous movement, and the environmental movement; are part of the landscape of the fifties, sixties and seventies. In this panorama, the OAS began its activities on water issues.

The search for new approaches was not alien to the OAS. After a little more than a decade of operations, the Regional Development Department (currently the Department of Sustainable Development) progressed from data collection about natural resources to a system involving the collection and analysis of social, cultural, political, and economic data; it also constituted part of a routine in the design of development strategies and in the formulation of investment projects (OAS, 1984).

Taking account of the socio-cultural, economic and political dimensions of the regions, in the water agendas of countries and communities has been a complex process for the Americas. It was assumed that access problems to optimal quality and sufficient quantity of water were, related mainly, to infrastructure. Further, because historically the world was just starting to accept that development did not depend solely and exclusively on science and technology[29].

Even when hydraulic infrastructure development contributed to the reduction of access gaps to water resources, promoted agricultural-industrial development and extractivism, the political management approaches had not fully incorporated a participative paradigm that would involve the civil society and citizens.

Initially, the OAS's emphasis on water was placed on the formulation of project proposals that were designed mainly from an intrinsic perspective of science and technology. Thus, the engineering approach during the decade of the 1960s constituted a work pillar of the Organization because it seemed to be the road to reduce access gaps to the water resource. It is because of this that the OAS projects had among their main objectives the identification of opportunities to conduct hydraulic infrastructure works.

The hydrological dimensions of the OAS's first initiatives placed an emphasis on the need to generate an infrastructure system which could optimize the use of water resources, to foster access to electricity, and to water of sufficient quality and quantity for human consumption. These early efforts also sought to bolster the development of agricultural-industrial activities to reduce poverty and increase access to basic services and industrial development. Consequently, the projects were oriented towards energy generation, water treatment, irrigation systems, transfer systems, among other initiatives (Annex I).

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29. During the first water management years within the OAS, governability and governance did not yet constitute a debate matter, duly articulated and diffused as development axis.

It is important to state that the engineering emphasis did not imply establishing a dynamic alternative to multidisciplinary work, on the contrary. Geographers, forest engineers, geologists, hydrologists and cartographic engineers that were part of the teams had to know the geographical and natural environment to propitiate works.

An example of this phase of initiatives of the Organization is the Natural Resources Inventory that was developed in the Dominican Republic between 1964 and 1966. Based on its conclusions, technical support processes were provided by the OAS (1964-1980) for the Dominican Republic, included the production of integrated maps that contained data related to vegetation, land use, hydrology, geology, soils, and land productive capacity, population distribution and transportation networks (Idem). These were useful to designing projects related to irrigation, drainage, flood control, crops diversification and agricultural production as well as research problems on mining and highway construction development (Idem).

The engineering perspective was complemented by an environmental perspective that emerged in the 1980s. This change produced incentivized formulation of projects with a strong emphasis on sustainable management of biodiversity and ecosystems issues. In this way, a specialized approach was secured in the promotion of infrastructure with a perspective that addressed natural, live and biochemical processes.

The emphasis established by the biochemical and engineering fields in 1980 constituted a global tendency which began to be questioned from the academic world thanks to the efforts of reorienting the manner in the understanding of what water is.

The classic –biochemical– definition of water as H2O, was redefined to the point of sustaining that water is a “hybrid thing”, to the extent that is condensed and has processes that are material, discursive, and symbolic all at the same time (Carlier 2013, Swyngedouw 1999, 2004). This begins the water agenda's approach towards incorporation with more clarity the socio-cultural, economic, and political paradigms of water; and it became understood that water is a physical and cultural resource at the same time (Budds, 2011). This generated a transit from a multi-disciplinary approach to an inter-disciplinary one.

Little by little, the DSD made their approaches and water reflection lines more complex, in light of conceptual reconsiderations and the experience gained throughout the years, which generated the need to take the look of the water agenda towards the political and social organizations.

In the 1980s, the systematization of project experiences of the Regional Development Department and the fresh academic fervor provided the necessary organizational panorama to build an integrated agenda whose goal was to propel developmental efforts in the Americas.

The challenge of generating consensus was assumed among sectors that in spite of having different interests and perspectives with respect to the use and administration of water resources, showed their will to pursue collaborative agreements. This led the OAS to develop and consol-

idate water diplomacy because it was expected that integrated planning would provide the necessary basis to foster coordination and dialogue processes among distinct sectors, to avoid natural resources depletion, to ensure economic productivity and to promote cooperation and peace in the Americas and in each Member State (OAS, 1984).

An example of the paradigm shift from the engineering approach towards an integrated approach is the study of the Pilcomayo River Basin (1975-1977). The experience generated by this study confirmed the need for the OAS to adopt an integrated management approach, and to promote guidelines that would promote international dialogue and strengthen government institutions and social organizational capacities[30].

One of the lessons learned during the actions taken in the Pilcomayo River Basin was the need to reinforce the efforts to work with both governmental and non-governmental institutions. Without optimum social and political conditions, the development initiatives could not prosper properly. Moreover, in the Paraguayan side, the presence of indigenous peoples generated the need for actions that would not affect their territories, and that would direct the formulation of projects and their implementation empowering the indigenous community self-determination, raise the income levels and their possibilities of increase their capacity to participate in decisions regarding the economic, social and cultural forms that would better complement their wishes and expectations (OAS, 1978).

The social tensions and conflicts that tend to appear around the use and management of water resources, particularly of transboundary aquifers, and of initiatives promoted by the OAS' water agenda (initially focused on an engineering and environmental perspective) produced that, in the nineties, an approach of Integrated Water Resources Management was consolidated to establish an equilibrium dynamic among the multiple perspectives, interests, objectives, and concerns pertinent to the Americas and the Member States citizenry.

In summary, the OAS' water reflexivity generated a turn towards social actors that, ultimately, are the ones who accept the projects proposed by the Organization, manage and use the hydrologic infrastructures and live with the development impacts. Because of this, in the case of indigenous communities and given the supranational normative that guides the conduct of the states and cooperation agencies; their rights to self-determination are taken into consideration, and in the non-indigenous zones participative processes that legitimate the viability and relevance of each initiative are promoted (OAS, 2001).

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30. The Pilcomayo River Basin constitutes a transboundary basin that involves Bolivia, Argentina and Paraguay. After approximately a decade of hydrological studies -climatologic and socioeconomic - and a technical assistance process, the three countries found common interest and objectives, to carry out projects focused on irrigation, hydropower generation, agricultural and cattle raising systems that would contribute in the fight against poverty within each national territory. However, by 1981 one of the riparian countries decided to alter the river bed, affecting the agreement of not using the river until a series of studies was completed. This generated in 1981 the momentary shutdown of negotiation and coordination. In 1983 when it was possible to restitute the Pilcomayo river bed, the necessary conditions for dialogue and negotiation were resumed.

3.2. Integrated Water Resources Management

The OAS assumed the challenge of promoting IWRM in its Member States to promote a management model that would be effective in promoting an integrated approach characterized by i) the conciliation of economic development with social wellbeing, ii) proposing the need of the protection of natural ecosystems, and iii) taking the basins as the geographical scope for planning and management of water resources.

As a model, the IWRM condensed the concerns and debates that had dominated water agenda of the past fifty years. It is, in this sense, a paradigm that is holistic and at the same time adaptable, what the Global Water Partnership (GWP) defines as a "process that promotes development and coordinated management of water, land and other related resources, in order to equitably maximize economic and social well- being without compromising the vital ecosystem sustainability"[31].

IWRM's general challenge consists of transforming unsustainable water use and management models through political strategies that promote the consolidation of an inter-sector water management dynamic. Rising to critique fragmented or inefficient management approaches.

The integrity promoted by the IWRM does not rest only in the adoption of inter-sector policies. It also rests in a conceptualization of water resources as a fundamental part of the ecosystems and of goods that possess a natural, social, and economic value. It is about a water perspective as a hybrid thing.

As an approach to water policy formulation and planning, the IWRM considers that water management should provide bridges among the diverse uses that are given of water to satisfy all the user demands and needs. This implies that the actors involved with water management are able to raise their voices in the planning processes of water resources management and use.

To the extent that the IWRM takes the basin as the territorial base of articulation and policy formulation, its implementation requires a fine articulation among national, regional and local policies of water management. Because of this, the decisions related to water taken at local and at the basin level, should be in line with the national scope objectives[32].

Currently, the IWRM/DSD has been promoting the IWRM approach through a series of projects that provide technical support to transform non-sustainable water uses into systematic practices of sustainable use of the water resources in national and transboundary basins. Chart 8 provides a general panorama of some of them.

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31. http://www.gwp.org/GWP-Sud-America/PRINCIPALES-DESAFIOS/Que-es-la-GIRH/ (Last visit: January 17,2015)
32. *Idem.*

Chart 8: Projects about IWRM in transboundary basins

CURRENT PROJECTS	MANAGEMENT PROBLEMS	OBJECTIVES
Sustainable Forest Management in the Transboundary **Gran Chaco Americano** Ecosystem	Severe degradation of the Gran Chaco natural resources as a consequence of biological and socioeconomic processes that generated disinfection and increase of disasters (floods). Non-sustainable management of water resources and lost of the biodiversity. Climate change.	To reverse degradation tendencies of the land in the Great Chaco through support in sustainable land management in the productive panorama. To strengthening of conservation areas and biological corridors, contributing to the recovery of the ecosystems functions and services. To developing tools and instruments that would establish SFM and SLM concerns in the planning and decision making processes. To designing and implementing local investments, to achieve high participation of stakeholders, increasing sustainable management practices to reduce land degradation and to fight arresting desertification that would contribute to poverty. To reduce poverty through sharing the benefits of ecosystems services
UNESCO/OAS/ISARM-Americas Program: transboundary aquifers of the Americas.	Difficulties to in generating an integrated plan of shared transboundary aquifers by different national States. Lack of information about water landscaping of the transboundary aquifers. Adaptation problems of the international regulations to propitiate integrated management of transboundary aquifers. Low importance of the transboundary aquifer problems among those responsible for water resources management.	To establish an expert network for the identification and definition of internationally shared aquifers. To generate learning throughs from study cases of transboundary aquifers to promote successful management of the internationally shared aquifer resources. To increase the commitment level of the decision makers with transboundary aquifer management.

Sustainable Management of the Water Resources of the La **Plata Basin** with Respect to the Effects of Climate Variability and Change.	Normative and procedure difficulties to generate integrated transboundary water resources management. Climate change has increased the desertification process in this region, which when combined with high poverty indexes, among others, exacerbate the impacts in the basin.	To provide technical assistance to the governments of Argentina, Bolivia, Brazil, Paraguay and Uruguay, to manage the shared water resources of the La Plata Basin, in an integrated manner. To formulate a detailed diagnosis of transboundary social and water dynamics, including a structured and exhaustive action program that would manage the local adaptation needs. To coordinate common interest projects for the countries of the La Plata Basin. To implement projects for water resources management and to select concrete actions. To highlight the importance of flood and draught phenomena in the Basin, among others. To promote regional initiatives identified as priorities for two or more countries, within the framework of the La Plata Basin Agreement.
Regional framework for Sustainable Use of the **Rio Bravo.**	Legal and institutional fragmentation of authority in water management in the basin. Lack of effective communication among the communities that use the water and other interested groups in using it. Endangered species –in spite of the extensive biodiversity- and under threat situation. More than 95% of the coverage in the Low Basin has been converted into agricultural and urban use since 1920 and there are few natural communities. Aquatic development projects have disturbed the natural current regimes have affected swamps and its aquatic fauna and degraded native communities of riparian plants.	To develop an exhaustive and participative frame for coordinated management of the Bravo River Basin by its primary users, particularly to facilitate the efficient use of the water in the entire basin. To contribute with the protection and sustainable use of the transboundary land and water resources of the Bravo River Basin within the context of IWRM approach, based on ecosystem care. To design a bi-national management plan dedicated to human and environmental problems, maximizing transboundary benefits for the two riparian countries inhabitants. To protect the basin biodiversity in a coordinated and coherent manner. To promote the Bravo River coordinated management by interested participating parts with respect to the preparation of a Strategic Action Plan (SAP) so that the transboundary water resources of the basin may be used in a sustainable manner.

Integrated Water Resources Management of the **São Francisco River Basin** and its coastal zone.	Socioeconomic and environmental inequalities and vulnerabilities in a strategic area for economic and social development. Difficulties to optimize and harmonize the use of water resources for electricity generation, irrigation, fishing, tourism, wastewater dilution, industrial and domestic water supply.	To promote a IWRM approach in the planning and management of the San Francisco River, based on: (i) specific strategies identified under the Strategic Action Plan (SAP), (II) preparation of a financial and investment strategy, identified under the SAP, and (iii) the diffusion of experiences and knowledge of the San Francisco River project. To incorporate environmental considerations into development policies, plans and programs. To promote strengthening of Basin Agency for the regulation of water resources and to ensure economic sustainability of the water resources. To implement programs, projects and actions to prevent environmental degradation.
Sustainable Development Program for the Honduras **Trifinio** Region (2014-2018)	Lack of Integrated Water Resources Management in the Tri-national Basin Non-sustainable water resources management and loss of biodiversity. Climate change Contamination.	To contribute with sustainable development in the Trifinio Region in Honduras. Capacity building in governmental and civil society institutions (academic, youth, NGOs) of the Trifinio Region in cross-cutting aspects of sustainable development. To design and implement local investments (pilot projects), to achieve high participation of stakeholders to promote integrated management of the basin. Poverty reduction through the increase of ecosystem benefits.

Source*:* Integrated Water Resources Management Section of the OAS Department of Sustainable Development. (http://www.oas.org/en/sedi/dsd/IWRM/default.asp).

Within the scenario of the projects promoted by the OAS, the IWRM constitutes a pragmatic and holistic approach as it takes basins as planning and management units. In fact, a perspective basin, multiple interests of the State sectors are articulated as well as the corporations, civil society and the citizenship, through actions that have as aim at the establishment of consensus and as well as high satisfaction levels among the actors involved in the water management and use. In this sense, and given the implicit complexity of transboundary aquifers management and of water in general, the IWRM is, from an organizational perspective, an effective tool for preventing and resolving conflicts I generated by the multiple perspectives, interests, use and management approaches about water resources. Because of this, the IWRM makes water fundamentally oriented to articulate peace and democracy, among diverse actors.

3.3. Water Resources Conflictivity

Water can be a conflictive element in the Americas. This tension is based on transnational, national, regional and local problems of normative mechanisms, dialogue processes, and establishment of agreements for the healthy use and administration of water resources. It constitutes a challenge for American democracies and governability, as well as for the development initiatives sustainability. Because of this, the OAS has been approaching social conflict management due to water issues as a reflexive line, and as part of a water diplomacy policy, whose purpose is to orient the Member States towards dialogue and cooperative paths. To this respect, equity has constituted a major concept and approach that guides towards the search for measures that would benefit all stakeholders, without negatively impacting the quality or availability of water resources wherever they are required

The IWRM intuitively includes a social conflict prevention approach. This has been incorporated through institutional efforts, reflections, and mechanisms directed towards the promotion and development of the dialogic capacity and consensus building amongst the Member States.

The DSD has integrated under its IWRM approach, considerations drawn from the *Special Program for Dialogue Promotion of the OAS' Unit for the Promotion of Democracy*[33]. It is because of this that the projects focused on water issues envisage plans to i) promote the institutionalization of the processes behind political dialogue, ii) systematization and exchange of peace construction and conflict resolution experiences and iii) to augment the capacity of any given Member State to resolve conflicts.

The reflexive line approach to social conflicts assumed by the DSD and its IWRM Section arises from experiences that occurred during project implementation and technical assistance processes within the Member States.

Within the experiences gathered by the OAS, two types of situations are highlighted: the transboundary basins contexts and the establishment of integrated management systems that articulate national, regional and local levels based on a basin approach.

In Latin America alone, 66 hydrographic basins cross the borders of at least two or more countries (UNEP, 2002). This spawns the challenge of establishing water management agreements that benefit bordering populations and countries without affecting sovereign interests or national normative rules. It is about a political and technically complex process, since transboundary basins tend to be territories that have been hotspots for local tensions among neighboring countries because of the territory's administration, its use of resources, and the border demarcation. This problem is due, in general terms, to the fact that usually water laws have a spectrum that reaches up to the border's edges, without necessarily taking into account international relations

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33. It is important to indicate that as part of the OAS efforts to generate a climate of peace and dialogue in the Americas, in 1948 the American Treaty on Pacific Settlement ("Pact of Bogota") was signed in compliance with the OAS Charter.

and the border dynamics with the neighbor countries. In summary, it is not considered the case that water transcends borders.

The Americas have a long history of border challenges that have generated tense bilateral and multilateral relations because of the territory and its resources management. An example of this situation is the divergence of opinion between Nicaragua and Costa Rica; a consequence of the different interpretations of the Navigation Limits Treaty of the San Juan River. In this scenario, the OAS fostered the development of a SAP for Integrated Water Resources Management and Sustainable Development of the San Juan River Basin and its Coastal Zone.

The project objective was to "guarantee the availability of goods and services that water resources provide for the natural ecosystem maintenance and socioeconomic development, in order to satisfy the present and future demands in agreement with all the stakeholders"[34]. In addition to satisfying population demands, to fight against poverty and to promote the care of the ecosystems, the OAS expected to reduce the amount of conflicts generated as a consequence of the use of water resources and ecosystems services within the San Juan River Basin. The generation of an action program conducted jointly by the two countries should foster an environment of dialogue, concertation, and peace. Notwithstanding, eventually the project was forced to succumb to international tensions, which made its execution far too burdensome for any of the involved parties.

But failures of conflict prevention and resolution in IWRM are not only due to the challenges generated by the integrated management of basins and transboundary aquifers. Within the Member States, the articulation amongst different intra-governmental levels, and between ruling governments and civil society; have reaffirmed the need to consider water conflicts as a priority reflection matter.

The IWRM problems in the Americas are partly due to the fragmentation and weakness of its articulation in different governmental institutions, and its citizenry. There is a tendency on the part of governments to manage the use and access of water resources in a fragmented manner, and without strong participation mechanisms of civil society and indigenous people.

Since hydrological legislation end at the rigid lines which constitute modern state borders of countries, the legislation may not take into account the broader water dynamics of their regions or, in general, of their respective local levels of government. Therefore, the problems reside in the fact that the decisions and the management models for water run the risk of not including the social actors. This is due, in part, to problems generated by the territorial planning policies, but it is also connected to normative processes and non-participatory decision making.

The political difficulties surrounding the promotion of dialogue and participation within the territories of the OAS Member States; receive a special tint when water management is implement-

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34. Source: http://www.oas.org/sanjuan/spanish/sobre/documentoproyecto/fundamento.html (Last visit: January 18, 2015).

ed in indigenous territories. In effect, given the supranational normative of the *International Labor Organization* (ILO), and the different legal-national provisions that recognize the right to prior consultation (as a result of the ILO Agreement 1969), the indigenous populations have the right to decide about the development processes that will be undertaken in their territories. Because of this, there are cases like the Pilcomayo River Basin Project that, after identifying the presence of indigenous communities, report how the OAS has been promoting participative processes in indigenous population decision making to foster indigenous self-determination and rights.

However, this consideration is not necessarily clear for governments. Consequently, legislative and administrative measures oriented towards the generation of social development and investment projects are questioned through social protests as they are considered to violate indigenous rights, water resources, and ecosystems. Cases such as the Peruvian, where more than 70% of the conflicts are socio-environmental (Public Defender Office, 2012), inform about democracy and sustainable development challenges. On this respect, we should indicate that out of the total number of social conflicts in Peru between 2006 and 2013, 44% of them involved indigenous communities and out of this last percentage, 75% of the cases are due to socio-environmental reasons[35].

The IWRM is in front of the need to think about efficient conflict prevention and resolution strategies on water issues in order to start appearing as a fully tangible reality in the Americas.

3.4 Water Governability and Governance

Water governability, like IWRM, does not constitute a perfect recipe. It is not about a problem about an ideal model or approach, which designs unique measures for all the water resources access and use. Consequently, the processes directed to water governability vary according to the socio-cultural, political, and economic contexts of each region, country, and community.

The Water Governability Center of the United Nations Development Program (UNDP), from the Stockholm International Water Institute (SIWI), defines water governability as "a group of political, social, economic, and administrative systems in charge of developing and managing water resources and their distribution; it also covers a set of issues intimately linked to water, from health and food security up to economic development, the use of the land and the preservation of the natural surroundings from which our water resources depend"[36].

This definition emphasizes a normative and procedural dimension of water management. Without both elements the minimum conditions to govern and to manage do not exist or instead, are precarious, since democratic governability may be defined as the minimum or necessary capacity to exert an effective and efficient governmental management from the state power in

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35. Information based on data analysis of the Office for Social Conflicts and Governability of the Public Defender of Peru.
36. Source: http://www.watergovernance.org/spanishwgf (Last visit: January 18, 2015).

front of other powers of the same geopolitically relevant region. In this sense governability, as an ample concept, is defined as: "a dynamic equilibrium state between the level of social demands and the political system capacity (state/government) to respond these in a legitimate and effective manner" (Camou, 2001). Within this framework, water governability is oriented towards the design and adoption of adequate laws and institutional policies to procure environmental sustainability through vital ecosystem care.

The OAS has been fostering initiatives to strengthen water governability, which problems in the region consist in water administration difficulties within the hydrological cycle unit from an integral management perspective, deficit of efficient services provision to make operational universalization initiatives of access to potable water and sanitation, and weakness in the formation and implementation of crosscutting policies and permanently coordinated in the territorial management units (Global Water Forum, 2012).

The support provided to Member States has focused on strengthening administrative procedures and legislative measures in support of the IWRM and environmental sustainability; trying to resolve water governability problems in the Americas. This has been possible thanks to projects covered by normative procedures and the organizational structure that the OAS' consolidated to approach water resources in a specialized manner (See Chapter 1), demonstrating that every agenda requires the interaction among reflexive processes and processes of normative production and organizational changes. In this manner, capacity building has been promoted in regional, national and local institutions, serving as regional forums for dialogue and hemispheric cooperation and the support in information exchange through specialized networks on the issue[37], as part of a water governability strengthening strategy.

Within this line of efforts, one of the ways that the OAS has used to consolidate water governability in the Americas consisted in contributing technically with one of the most important initiatives of the Member States: is in the establishment of multinational commissions to manage transboundary aquifer systems. These commissions, throughout their history, have played a central role in the construction of an environment of social peace and solidarity in the continent, in the strengthening of sustainable development approaches and in the consolidation of transnational governability.

However, the OAS commitment is not restricted to water governability. Field work experience generated since 1964 has also created a commitment helped to strengthening of water governance, which is defined as a "processes system and interaction mechanisms among the governmental and non-governmental actors "(Global Water Forum, 2012).

Water governability and governance comprise an indissoluble binomial. While the former presupposes processes started from the state, the latter centers its attention on the decision-mak-

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37. OAS/Ser. WCIDI/Doc. 84/1423 January 2013. Document available at: scm.oas.org/doc_public/SPANISH/HIST_14/CIDRP00588S02.doc (Last visit, January 18, 2015).

ing capacity and influence of non-governmental actors in the formulation, reformulation and implementation of public policies and water services provided to the citizenship in the field of water.

Governance implies democratic participation processes of multiple actors that are not part of the state. This further implies that, to a certain extent, governance in action constitutes governability.

The IWRM requires both the water governability and water governance. While the former one provides a State institutional frame, the latter constitutes the forms and strategies through which society interacts with the State and operates in the territories it occupies.

Water governance constitutes another of the operational concepts of the water agenda. It guides capacity building proposals of civil society and the citizenship in general, as well as empowering processes in front of public management and sensitiveness for vital ecosystems care.

The DSD, has to considerable extent, supported efforts that have been made to promote capacity building of the indigenous and non-indigenous branches of civil society, in order to set up dialogue bridges with the states and its different sectors, thus reducing the likelihood of water resources management becoming fragmented, non-participative and non-consensual. In addition, through water governance, it is aimed at helping indigenous populations themselves to design and implement plans and practices of development and water resources sustainability. It is in this context that water culture, was conceived of as a tool for governance within the water agenda.

3.5 Environmental Management and Water Culture

Environmental Management is not only a state responsibility, even when a democratic and representative entity leads its environmental development efforts, the civil society and the citizenry also play a crucial role.

Water governance values and promotes popular participation in decision making and the actions of sustainable use of water resources and ecosystems care. For this purposes, one of its methodological and most effective tools is water culture.

Water culture is a concept used by the OAS, as well as by other organizations, to refer to political and social organizational forms, beliefs, ritual practices, and daily actions; which promote care of the water quality, quantity, and accessibility.

Environmental and sustainability problems regarding the use of water resources often times depend on multiple forms of interaction between the populace and their natural and social surroundings. Water waste, lack of water harvesting initiatives; garbage and toxic waste dis-

charges into ravines, rivers, and irrigation channels constitute part of the non-sustainable water culture systems. But the water culture problems are not only present at population levels.

Political practices and attitudes also contribute to the consolidation of a non-sustainable water culture in terms of ecosystem care. Political inaction has major water costs because it affects the population and the ecosystems services that water resources offer.

As consequence of these considerations, part of the OAS' project objective is to transform non-sustainable water cultures into sustainable water cultures (also called new water cultures).

Water culture fostered a reflexive process about how to raise awareness among the local population and the authorities in issues such as the care for water quantity, quality, and opportunity. It was expected to promote changes at the level of knowledge and practices about water resources, because situations were identified in which different social actors assumed that water is an infinite resource and that the quality and quantity alterations were consequence of industrial practices and interests. Pedagogical and communication initiatives arose to newly found the political commitment with water care that the OAS assumed under its IWRM approach. In this regard, it is important to indicate that educational benefits should be promoted from initiatives such as the Strategic Action Program of the Bermejo Bi-national River Basin; are record about the production of inter-generational commitments and the formation of a society that, in the future, will have more resources to optimize water management. We should highlight that the mention above was the main discussion issue at the Inter-American Dialogue on Water Management which took place in Medellin, Colombia (D7-2010), where a wide inter-generational discussion was held with the main water actors in the Americas.

3.6. Reflections

This list of reflection-action matters shows a significant part of the OAS concerns to identify and define central points that comprise a democratic, dialogical, inclusive and sustainable water agenda. Notwithstanding, it is important to indicate that it does not constitute a final or closed list to the extent that the IWRM constantly finds new challenges and, consequently new reflection and action cornerstones.

From the above it can be appreciated that the water agenda, within the OAS framework, is and always will be a dynamic matter; determined by environmental, economic, and social variables with all of their scales and dimensions. Therefore, water management will also be a fundamental indicator of sustainable development in the Americas.

Iguazu Falls
Photo: Eliza Jiménez

IWRM Challenges in the Americas:

Water Opportunities From the OAS Towards The Future

Water reflexivity is fundamental to promoting new learning. Fifty years of experience in water re- sources management of the OAS Department of Sustainable Development constitutes a reflection model in the Americas.

The Americas constitute a propitious scenario to continue promoting Integrated Water Resources Management. The political will of the OAS Member States, the experience they have accumulated throughout over time, the reflexivity drawn through dialogues, forums, assemblies, and seminars; and the visibility that the water problems have gained in the agendas of national State governments, give faith to this. However, there are still challenges to be addressed.

The water wealth of the Americas represents a major opportunity to reach economic, social, political, and human development in the Member States, but its non-sustainable and fragmented management could have serious consequences during this process, jeopardizing multiple agendas such as the governance and governability strengthening, social inclusion and poverty reduction, environmental management and sustainable development, among others.

Even when today, one would be safe in assuming that access to water of optimal quality and in sufficient quantity, when such is required, is a human right; that the us of water should be based on standards that do not put at risk the ecosystems and that every water management

plan should be based on consensus among the multiple actors that interact based on the use and access to the water resource (without establishing discriminating distinctions of any type); water reality still has a series of problems that should be promptly managed. Therefore, it is necessary to:

i) Increase the access to water in the rural world and in the peri-urban areas.

ii) Promote water governance and governability based on citizens' participation and on the generation of institutional-democratic mechanisms between the State and the civil society.

iii) Engage the population in processes of water culture change so that they may participate in the care of ecosystems and the services they provide.

iv) Foster technological innovations in favor of the environment and efficient utilization of the water resources, harmonizing industrialization and urbanization with the environmental sustainability thresholds.

v) Make of water an instrument of peace, sustainable development and cooperation element, among countries within them, when the water resources are transboundary and have multiple uses.

All of this will be possible not only through investments, projects and technical assistance. It is necessary above all to return to the water human dimension and to the Integrated Water Resources Management.

The water diplomacy spread out by efforts of the OAS throughout the last fifty years has fundamentally appealed to the incorporation of humanistic, democratic, and environmental principles, into the Member States agendas. In this manner, it has been recognized gradually that water, environment, and society, constitute a unity. In addition to efficiently treating the matters presented before, still remains the need to continue producing and applying an inter-disciplinary knowledge applied to the water realities of the Americas to build better normative frameworks, to promote sustainable social processes and to promote peace. In this sense, it is necessary to recognize that water not only goes beyond borders, but also private interests. The “common good,” which constitutes a principle of the IWRM, demands a process of articulation, a dialogue, agreement, values and know-how. After all, how do you manage what you do not know? How do you dialogue with someone that does not value himself? How do you agree with someone that does not dialogue?

Within this scenario, on one part there are the challenges of monitoring achievements in order to guarantee their sustainability and to promote their replication in other areas. Additionally, the task of promoting new initiatives and to continue providing advice to the countries that require and request it will always constitute a challenge, since experiences can be similar but never equal; a fact that will always require continuing commitment from the OAS on this matter.

Pantanal, Paraguay

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http://www.isarm.org/publications/303

Programa Marco para la Gestión Sostenible de los Recursos Hídricos de la Cuenca del Plata, en Relación con los Efectos de la Variabilidad y el Cambio Climático
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http://www.watergovernance.org/spanishwgf

Annex

Annex I

Technical cooperation activities, experience and good practices exchange for political processes[38] in relation to Water and sustainable development in the Americas.

Year	Basin	Publication Name (in its original language)	Beneficiary Country
1964	Guayas	Survey for the Development of the Guayas River Basin of Ecuador	Ecuador
1969	Plata	Cuenca del Rio de la Plata: Estudio para su Planificación y Desarrollo. Inventario de Datos Hidrológicos y Climatológicos	Argentina /Bolivia /Brasil/Paraguay/ Uruguay
1971	Plata	Cuenca del Río de la Plata - Estudio para su Planificación y Desarrollo - República Oriental de Uruguay- Cuenca del Río Santa Lucía - Desarrollo de los Recursos Hídricos	Uruguay
1971	Plata	Cuenca del Rio de la Plata: Estudio para su Planificación y Desarrollo. Inventario y Análisis de la Información Básica sobre Recursos Naturales	Argentina / Bolivia / Brasil / Paraguay / Uruguay
1972	Plata	Relatório do Estudo para o Controle da Erosão no Noroeste do Estado do Paraná	Brasil
1972	Bermejo / Tarija / Pilcomayo	Reconnaissance of Sedimentation in the Upper Rio Bermejo Basin	Argentina
1973	Plata	Bacia do Rio da Prata. Estudo para sua planificação e desenvolvimento. República Federativa do Brasil. Noroeste do Estado do Paraná. I- Estudo para o controle da erosão	Brasil
1974	Plata	Programa de la Cuenca del Plata. Departamento de Desarrollo Regional	Argentina / Bolivia/ Brasil/ Paraguay/ Uruguay

38. Programa Interamericano Desarrollo Sostenible (PIDS), DDS/SEDI/OEA.

1974	Plata: Cuenca del Río Bermejo / Tarija / Pilcomayo	Cuenca del Rio de la Plata: Estudio para su Planificación y Desarrollo - República Argentina - República de Bolivia - Cuenca del Río Bermejo I - Alta Cuenca	Argentina / Bolivia
1974	Amazonas	Marajó Um Estudo para o seu Desenvolvimento	Brasil
1975	Plata.	Cuenca del Plata. Estudio para su planificación y desarrollo. República del Paraguay. Región nororiental	Paraguay
1975	Zuliana	Región Zuliana - Estudio para el Aprovechamiento Racional de los Recursos Naturales	Venezuela / Bolivia
1975	Plata	Bacia do Rio da Prata. Estudo para sua planificação e desenvolvimento. República Federativa do Brasil. Noroeste do Estado do Paraná. II- Estudo para o Desenvolvimento regional	Brasil
1977	Santiago / Mira	Estudio de las Cuencas Noroccidentales Proyecto Santiago-Mira Pre-diagnóstico y propuesta de estudio para el desarrollo regional	Ecuador
1977	Plata / Cuenca del Río Pilcomayo	Cuenca del Plata. Estudio para su planificación y desarrollo. Aprovechamiento múltiple de la Cuenca del Río Pilcomayo. Volumen III Recursos de la tierra	Argentina / Bolivia / Paraguay
1977	Bermejo II - Cuenca Inferior	Cuenca del Plata - Estudio para su Planificación y Desarrollo - República Argentina - Cuenca del Río Bermejo II - Cuenca Inferior	Argentina
1977	Plata: Cuenca del Río Bermejo / Tarija / Pilcomayo	Cuenca del Plata - Estudios para su Planificación y Desarrollo - República de Bolivia - Cuenca del Río Bermejo III - Zona Boliviana	Argentina/Bolivia
1977	Plata/ Cuenca del Río Pilcomayo	Cuenca del Plata. Estudio para su planificación y desarrollo. IV Perfiles de proyectos y Socio-economía	Argentina, Bolivia y Paraguay
1977	Plata/ Cuenca del Río Pilcomayo	Cuenca del Plata. Estudio para su planificación y desarrollo. Aprovechamiento Múltiple de la Cuenca del Río Pilcomayo. Informe general	Argentina, Bolivia y Paraguay
1978	Bermejo / Tarija / Pilcomayo	Environmental Quality and River Basin Development: A Model for Integrated Analysis and Planning	Argentina
1978	Bermejo / Tarija / Pilcomayo	Desarrollo Regional del área paraguaya del Proyecto Pilcomayo	Paraguay
1978	Bermejo / Tarija / Pilcomayo	Desarrollo Regional del área paraguaya del Proyecto Pilcomayo. Programa de Desarrollo del Recurso del Agua	Paraguay
1979	Santiago / Mira	Bases para el Desarrollo de la Región I - República del Ecuador	Ecuador
1979	Pantanal	Reservoir Regulation Study Headwater Sub-Basins and Pantanal Basin	Brazil
1980	San Miguel	Diagnóstico de las Cuencas de los Ríos San Napo y San Miguel	Ecuador
1982	Araguaia / Tocantins	Diagnóstico da Bacia do Araguaia-Tocantins 1° Volume 2° Volume 3° Volume	Brasil
1982	Araguaia / Tocantins	Pré-Diagnóstico da Bacia do Araguaia-Tocantins	Brasil
1983	Araguaia / Tocantins	Projeto de Desenvolvimento Integrado da Bacia do Araguaia-Tocantins. Descrição da área e caracterização do projeto	Brasil
1984	Jubones	Plan Hidráulico de Jubones	Ecuador
1984	Reporte	Integrated Regional Development Planning: Guidelines and Case Studies from OAS Experience	Dominican Republic, Panama, Argentina, Bolivia, Paraguay, Ecuador y Mexico

1985	Plata	El Transporte en la Cuenca del Plata	Argentina, Bolivia, Brasil, Paraguay, Uruguay
1985	Plata	Infraestructura y Potencial Energético en la Cuenca del Plata	Argentina, Bolivia, Brasil, Paraguay, Uruguay
1985	Seminario-Taller	Tratado de Cooperación Amazónica. Primer Seminario Internacional de Hidrología y Climatología de la Amazonía	Brasil
1986	Manual	Modelos de Simulación de la Operación de un Embalse de Usos Múltiples	Venezuela
1987	Manual	Estimación del Potencial Hidroeléctrico	Venezuela
1987	Río San Miguel	Comisión Mixta de Cooperación Amazónica - Ecuatoriano - Colombiana - Plan de Ordenamiento y Manejo de las Cuencas de los Ríos San Miguel y Putumayo	Colombia. Ecuador
1988	Región Trifinio	Plan de Desarrollo Regional Fronterizo Trinacional Trifinio	Guatemala / El Salvador / Honduras
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Proposta para desenvolver a capacidade de armazenagem no vale do São Francisco	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Programa para o Desenvolvimento da pesca	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Programa setorial de energia	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Programa setorial de transporte	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Analise dos recursos naturais para a atividade agropecuária	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Valor agregado da agricultura, da pecuária e do extrativismo vegetal, 1970 e serie 1975 a 1985	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Proposta para o desenvolvimento da exploração do camarão de agua doce no vale do São Francisco	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Programa para o Desenvolvimento da irrigação	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. A industrialização da soja na região do vale do São Francisco	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco.	Brasil
1989	San Francisco	Plano Diretor para o Desenvolvimento do Vale do São Francisco. Plano Diretor - Síntese	Brasil
1989	Eje Tabatinga-Apaporis	Diagnóstico de la Zona Colombiana - Plan Modelo Colombo-Brasileño para el Desarrollo Integrado de las Comunidades Vecinas del Eje Tabatinga-Araporis	Brasil, Colombia
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Erosión y sedimentos	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Balances hidráulicos	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Análisis del régimen administrativo e institucional de las aguas	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Aguas servidas	Ecuador

1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Eutrofización del embalse poza honda	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Drenaje superficial	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Hidrología	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Evaluación preliminar de los sistemas de riego de Poza Honda y La Estancilla	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Sequía y desertización	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Recurso suelo	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí – Socio-economía	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Demandas de agua potable	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Demandas de agua para riego	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Bases para análisis multi objetivo y propuestas preliminares de alternativas TOMO I	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Bases para análisis multi objetivo y propuestas preliminares de alternativas TOMO II Modelo matemático de optimización	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Demandas de agua para el control de la contaminación	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Calidad de agua en los usuarios de los ríos Chone y Portoviejo	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Sistemas hidráulicos	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Manual de costos para estudios de proyectos a nivel preliminar	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Calidad de aguas superficiales	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Control de inundaciones	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Embalses	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Operación de embalses	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Disponibilidad de agua subterránea	Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - La agroindustria camaronera y sus demandas de agua	Ecuador
1989	San Miguel	Diagnostico Regional - Plan de Ordenamiento y Manejo de las Cuencas de los Ríos San Miguel y Putumayo	Colombia, Ecuador
1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Fase I	Ecuador
1989	Tabatinga-Apaporis	Plan Modelo de Desarrollo Integrado del Eje Tabatinga-Apaporis	Colombia / Brasil

1989	Provincia de Manabí	Plan Integral de Desarrollo de los Recursos Hídricos de la Provincia de Manabí - Fase I	Ecuador
1991	Provincia de Manabí	Integrated Devolpment Plan for Water Resources in the Province of Manabi. Executive Summary	Ecuador
1991	Acuífero Artibonito	Republic of Haiti: Agroforestry and Watershed Management Project. Artibonite River	Haiti
1991	Pastaza	Proyecto de Manejo y Conservación Cuenca Alta del Rio Pastaza	Ecuador
1991	Chixoy	República de Guatemala - Proyecto de Manejo y Conservación de los Recursos Naturales Renovables de la Cuenca del Río Chixoy	Guatemala
1992	Seminario-Taller	Cuencas Multinacionales y Regiones Fronterizas	América Latina -Guatemala-Honduras
1992	El Cajón	Honduras: Proyecto de Manejo de los Recursos Naturales Renovables de la Cuenca del Embalse "El Cajón"	Honduras
1992	Amazonas	Programa de Desarrollo Integrado de las Comunidades Fronterizas Peruano-Brasileñas	Perú / Brasil
1993	Seminario-Taller	Seminario Taller Interamericano Manejo Integrado de Cuencas Hidrográficas	Chile
1993	San Miguel y Putumayo	Plan de Ordenamiento y Manejo de las Cuencas de los Ríos San Miguel y Putumayo	Ecuador / Colombia
1993	Putumayo	Plan Colombo-Peruano para el Desarrollo Integral de la Cuenca del Río Putumayo	Colombia / Peru
1993	Amazonas	Binational Programs for Border Cooperation - A Model for the Development of the Amazon Region	Bolivia / Brazil / Colombia / Ecuador / Peru
1993	Región Trifinio	Plan Trifinio - El Salvador - Guatemala - Honduras	Guatemala / El Salvador / Honduras
1994	Provincia de Loja	Plan Integral de Desarrollo de los Recursos Hídricos. Provincia de Loja-Ecuador	Ecuador
1994	Seminario-Taller	Análisis de Metodologías para el Manejo Integrado de Cuencas Hidrográficas Internacionales	Colombia / Venezuela /Peru
1994	Reporte de Seminario-Taller	Proceedings of Interamerican Dialogue on Water Management	América Latina
1995	Reporte de Seminario-Taller	Reducción de la Vulnerabilidad a Inundaciones en Cuencas Hidrográficas	Brasil
1995	San Miguel y Putumayo	Plan de Ordenamiento y Manejo de las Cuencas de los Ríos San Miguel y Putumayo	Ecuador / Colombia
1996	Titicaca-Desaguadero-Poopo-Salar de Coipasa	Diagnóstico Ambiental del Sistema Titicaca-Desaguadero-Poopo-Salar de Coipasa (Sistema TDPS) Bolivia-Perú	Bolivia / Peru
1997	Manual	Source Book of Alternative Technologies for Freshwater Augmentation in Latin America and the Caribbean	America Latina
1997	San Juan	Manejo Ambiental y Desarrollo Sostenible de la Cuenca del Río San Juan. Estudio de Diagnóstico de la Cuenca del Río San Juan y Lineamientos del Plan de Acción	Costa Rica / Nicaragua
1997	Reporte de Seminario-Taller	Gestión Integrada de Recursos Hídricos en Mesoamérica	Mesoamérica
1997	Chamelecón	Proyecto de desarrollo silvo agropecuario de la cuenca media y alta del rio Chamelecón, Honduras	Honduras
1997	Bermejo	Primer taller regional para la formulación del programa estratégico de acción para la Cuenca del Río Bermejo. Síntesis, conclusiones y recomendaciones	Argentina / Bolivia

1998	Putumayo	Plan Colombo-Peruano para el Desarrollo Integral de la Cuenca del Río Putumayo - Diagnóstico Regional Integrado	Colombia / Peru
1998	San Francisco	Contribuição para a Preparação da Proposta para o Programa de Gerenciamento Integrado de Bacia do Rio São Francisco e da sua Zona Costeira	Brasil
1998	Alto Paraguay y Pantanal	Contribuição para a preparação da Proposta para o Programa de Implementação de Práticas de Gerenciamento Integrado de Bacia Hidrográfica para o Pantanal e Bacia do Alto Rio Paraguai	Brasil
1998	Bermejo	Fortalecimiento de la diversidad productiva bajo condiciones de sustentabilidad. Informe final. Volumen II (Cuenca Alta del Rio Bermejo)	Argentina / Bolivia
1998	Bermejo	Regionalización ecológica y zonificación ambiental en la Cuenca Binacional del Río Bermejo. Documento final	Argentina / Bolivia
1998	Bermejo	Relevamiento socioeconómico ambiental de las comunidades del tramo medio e inferior de la Cuenca del Río Bermejo. Informe Final	Argentina / Bolivia
1998	Bermejo	Relevamiento socioeconómico ambiental de las comunidades del tramo medio e inferior de la Cuenca del Río Bermejo. Informe Final. Anexos	Argentina / Bolivia
1998	Bermejo	Relevamiento socioeconómico ambiental de las comunidades del tramo medio e inferior de la Cuenca del Río Bermejo. Documento preliminar	Argentina / Bolivia
1998	Bermejo	Segundo taller regional para la formulación del programa estratégico de acción para la Cuenca del Río Bermejo. Síntesis, conclusiones y recomendaciones	Argentina / Bolivia
1998	Bermejo	Tercer taller regional para la formulación del programa estratégico de acción para la Cuenca del Río Bermejo. Síntesis, conclusiones y recomendaciones	Argentina / Bolivia
1998	Bermejo	Diagnóstico legal ambiental de la Cuenca del Río Bermejo en territorio argentino. Informe final	Argentina / Bolivia
1998	Bermejo	Migraciones transfronterizas en la Cuenca del Río Bermejo	Argentina
1998	Putumayo	Plan Colombo-Peruano para el Desarrollo Integral de la Cuenca Río Putumayo	Colombia / Peru
1999	Amazonas	Programa de ações estratégicas para a Amazônia brasileira - Relatório de ações estratégicas para a Amazônia brasileira	Brasil
1999	Amazonas	Programa de ações estratégicas para a Amazônia brasileira - Rede de pesca e aquicultura da Amazônia - Repaq - Projeto executivo	Brasil
1999	Amazonas	Programa de ações estratégicas para a Amazônia brasileira - Diagnóstico e análise do polo de ecoturismo do Estado do Amazonas	Brasil
1999	Amazonas	Programa de ações estratégicas para a Amazônia brasileira - Relatório de Progresso - 01/07/99 - 31-12/99	Brasil
1999	Bermejo	La Cuenca del Río Bermejo en el contexto regional. Informe final	Argentina / Bolivia
1999	Bermejo	Identificación de alternativas de uso sustentable de tipo ecoturístico e implementación de ensayos piloto (Alta cuenca rio Bermejo)	Argentina / Bolivia
1999	Bermejo	Fortalecimiento y armonización del marco jurídico e institucional para la gestión ambiental de la Cuenca del Río Bermejo. Documento final	Argentina / Bolivia
1999	Bermejo	Diagnóstico ambiental transfronterizo de la Cuenca del Río Bermejo. Anexocartográfico	Argentina / Bolivia
1999	Bermejo	Propuesta del componente hidro meteorológico e hidro sedimentológico del sistema de información ambiental en la Cuenca del Río Bermejo	Argentina / Bolivia
1999	Bermejo	Análisis del impacto de posibles cambios climáticos en la hidrología superficial de la Cuenca del Río Bermejo. Informe final	Argentina / Bolivia

1999		Promoción de la conciencia forestal a través de escuelas y municipios. Informe final	Argentina / Bolivia
1999	Bermejo	Diagnóstico socioeconómico del sector argentino de la Cuenca del Río Bermejo. Documento final	Argentina / Bolivia
1999	Bermejo	Generación y transporte de sedimentos en la Alta Cuenca del Río Bermejo. Impacto en la hidro vía, delta del Paraná	Argentina / Bolivia
2000	Bermejo / Tarija / Pilcomayo	In-depth Evaluation of the UNEP/GEF Project GF/1100-97-07: A Strategic Action Program for the Binational Basin of the Bermejo River	Argentina / Bolivia
2000	Bermejo	Manejo del estrato forrajero mediante el uso del agua en esteros, bañados y cañadas y recuperación de tierras invadidas por VINAL. Informe final	Argentina/Bolivia
2000	Bermejo	Diagnóstico socioeconómico del sector argentino de la Cuenca del Río Bermejo. Informe final	Argentina / Bolivia
2000	Bermejo	Programa estratégico de acción para la cuenca binacional del río Bermejo	Argentina / Bolivia
2000	Bermejo	Public Participation in the Strategic Action Program for the Binational Basin of Bermejo River	Argentina / Bolivia
2001	Reporte de Seminario-Taller	IV Diálogo Interamericano de Gerenciamiento de Agua	America Latina / Brasil
2001	Manual	Manual para el Diseño e Implementación de un Sistema de Alerta Temprana de Inundaciones en Cuencas Menores	Costa Rica / El Salvador/ Guatemala / Panama / Nicaragua
2002	Pastaza	Plan Peruano - Ecuatoriano para el Desarrollo Integral de las Cuencas de los Ríos Napo - Tigre - Pastaza	Ecuador / Peru
2004	Bermejo	La Cuenca del Río Bermejo Un aporte para su tratamiento en la Educación General Básica (Orientaciones para el formador)	Argentina / Bolivia
2004	Alto Paraguay y Pantanal	Strategic Action Program (SAP) for the Integrated Management of the Pantanal and the Upper Paraguay River Basin	Brazil
2004	Alto Paraguay	Programa de ações estratégicas para o Gerenciamento Integrado do Pantanal e Bacia do Alto Paraguai	Brasil
2004	San Juan	Diagnóstico Ambiental Transfronterizo. Formulación de un Programa de Acciones Estratégicas para la Gestión Integrada de los Recursos Hídricos y el Desarrollo Sostenible de la Cuenca del Río San Juan y su zona Costera	Costa Rica / Nicaragua
2004	San Juan	Formulación de un Programa de Acciones Estratégicas (PAE) para la Gestión Integrada de los Recursos Hídricos y el Desarrollo Sostenible de la Cuenca del Río San Juan y su Zona Costera (Pro cuenca San Juan)	Costa Rica / Nicaragua
2004	San Juan	Programa de Acciones Estratégicas (PAE) para la Gestión Integrada de los Recursos Hídricos y el Desarrollo Sostenible de la Cuenca del Río San Juan y su Zona Costera (Pro cuenca San Juan	Costa Rica / Nicaragua
2004	San Juan	Cuenca del Río San Juan y su Zona Costera (Pro cuenca San Juan Demonstration Projects .(Summary)	Costa Rica / Nicaragua
2004	San Francisco	Programa de ações Estratégicas para o Gerenciamento Integrado da Bacia do Rio São Francisco e da sua Zona Costeira	Brasil
2005	Bermejo / Tarija / Pilcomayo	Plan de Manejo. Reserva Biológica Cordillera de Sama 2005 - 2009. Programa Estratégico de Acción para la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2005	Bermejo / Tarija / Pilcomayo	Programa estratégico de acción (PEA) para la cuenca binacional del río Bermejo	Argentina / Bolivia

2005	Manual	Guía para la Elaboración de Informes Parciales y Finales de Consultoría	Brasil
2006	Amazonas	Sistemazão e consolidação dos produtos gerados pelo Prodeam e Provam	Brasil
2006	Reporte	ISARM Americas: Preliminary Inventory of Transboundary Aquifer Systems (TAS) in the Americas	Americas
2007	Manual	Sistemas Acuíferos Transfronterizos en las Américas	América Latina
2007	Acuífero Guaraní	Proyecto para la Protección Ambiental y Desarrollo Sostenible del Sistema Acuífero Guaraní. Análisis de Diagnóstico Transfronterizo (ADT)	Argentina/ Brasil/ Paraguay/ Uruguay
2008	Reporte	ISARM Americas: Legal and Institutional Framework for the Management of Transboundary Aquifer Systems (TAS) in the Americas	Americas
2009	Acuífero Guaraní	Proyecto para la Protección Ambiental y Desarrollo Sostenible del Sistema Acuífero Guaraní. (Avances en el Conocimiento del Sistema Acuífero Guaraní)	Argentina / Brasil / Paraguay / Uruguay
2009	Acuífero Guaraní	Acuífero Guaraní. Programa estratégico de Acción	Argentina / Brasil / Paraguay / Uruguay
2010	Reporte	ISARM Americas: Socioeconomic, Environmental and Climatic Aspects of the Transboundary Aquifer Systems (TAS) in the Americas	Americas
2010	Bermejo / Tarija / Pilcomayo	Comisión Binacional para el Desarrollo de la Alta Cuenca del Río Bermejo y el Río Grande de Tarija	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Participación Pública en la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Desarrollo y Fortalecimiento Institucional en la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Programa de Gestión Integral de la Cuenca Binacional del Río Bermejo (PROBER)	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Programa estratégico de acción para la cuenca binacional del río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Sistema Integral de Información Ambiental de la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Educación Ambiental en la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Protección y Rehabilitación Ambiental en la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Generación y Transporte de Sedimentos en la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Modelos Productivos para la Gestión Integrada de los Recursos Naturales en la Cuenca Binacional del Río Bermejo	Argentina / Bolivia
2010	Bermejo / Tarija / Pilcomayo	Comisión Binacional para el Desarrollo de la Alta Cuenca de Río Bermejo y el Río Grande de Tarija	Argentina / Bolivia
sf	Amazonas	Programa de Acción Integrado Peruano Boliviano - PAIPB - Diagnóstico Regional Integrado	Bolivia / Perú
sf	Amazonas	Proyectos Binacionales - Colombia - Perú - Brasil - Perú	Colombia / Brasil / Perú

Annex II
Inter-American Dialogues on Water Management

- **First Dialogue (D1)**: held in Miami in 1993; during this activity the creation of the Inter-American Water Resources Network (IWRN) was agreed.

- **Second Dialogue (D2)**: took place in the city of Buenos Aires, Argentina, in 1996. Its results were key inputs for the preparation of the Summit of Sustainable Development of the Americas, held in December 1996 in Santa Cruz de la Sierra, Bolivia, and of the Sustainable Development Action Plan approved at that time by the Presidents and Chiefs of State of the Americas. In this Plan, the concern for access to water and sustainable use of water and coastal resources gained a special space.

- **Third Dialogue (D3)**: took place in Central America, in Panama City, Panama, in 1999. It was an Instrumental Dialogue to follow up on the Sustainable Development Action Plan of the Americas of Santa Cruz de la Sierra.

- **Fourth Dialogue (D4)**: took place in 2002 in Brazil, in the city of Foz de Iguazú. It had a very important participation of different sectors related to water resources management. In these years new actors and organized networks appeared that participated in the Dialogue, such as the case of "Global Water Partnership (GWP)" of South America and Central America. This dialogue set the bases for the first hemispheric water project, the DELTAmerica Project prepared by the Government of Brazil and financed by the Global Environmental Facility (GEF), implemented by the United Nations Environmental Programme and executed by OAS. It had, as one of its objectives the strengthening of the IWRN:

- **Fifth Dialogue (D5)**: took place in the Caribbean. It was organized by Jamaica in Montego Bay, in 2005 and constituted a preparatory event of the IV World Water Forum that would take place in Mexico in the following year, making progress in priority issues for the Americas.

- **Sixth Dialogue (D6)**: it was organized by Guatemala, in August 2007, which gives opportunity for the First Meeting of Water Focal Points of the Governments of the Americas within the framework of the OAS Department of Sustainable Development.

Seventh Dialogue (D7): was the most prominent event related to water in the Americas in 2011. It was organized by the Government of Colombia and the Inter-American Water Resources Network (IWRN) with the collaboration of numerous international agencies, civil society organizations, academic institutions and the private sector. The D7 discussed the need to evolve towards an inter-generational dialogue to address water management challenges beyond sectorial barriers that the current generation has imposed.

Annex III

TRANSBOUNDARY AQUIFER SYSTEMS OF THE AMERICA IDENTIFIED AS OF 20/11/2006

AMÉRICA DEL NORTE/NORTH AMERICA					
1N	Abbotsford-Sumas	Canadá-EUA	9N	Cuenca Baja del Río Colorado	México-EUA
2N	Okanagan-Osoyoos	Canadá- EUA	10N	Sonoyta-Pápagos	México-EUA
3N	Grand Forks	Canadá- EUA	11N	Nogales	México-EUA
4N	Poplar	Canadá- EUA	12N	Santa Cruz	México-EUA
5N	Estevan	Canadá- EUA	13N	San Pedro	México-EUA
6N	Northern Great Plains	Canadá- EUA	14N	Conejos Médanos-Bolsón de la Mesilla	México-EUA
7N	Châteauguay	Canadá- EUA	15N	Bolsón del Hueco-Valle de Juárez	México-EUA
8N	San Diego-Tijuana	México- EUA	16N	Edwards -Trinity-El Burro	México-EUA
			17N	Cuenca Baja del Río Bravo/Grande	México-EUA
CARIBE/CARIBBEAN					
1CB	Masacre	Haití-Rep. Dominicana	3CB	Los Lagos	Haití-Rep.Dominicana
2CB	Artibonito	Haití-Rep. Dominicana	4CB	Pedernales	Haití-Rep. Dominicana
AMÉRICA CENTRAL/CENTRAL AMERICA					
1C	Soconusco-Suchiate/Coatán	Guatemala-México	10C	Sarstún	Guatemala-Belice
2C	Chicomuselo-Cuilco/Selegua	Guatemala-México	11C	Temash	Guatemala-Belice
3C	Ocosingo-Usumacinta-Pocóm-Ixcán	Guatemala-México	12C	Motagua	Guatemala-Honduras
4C	Márquez de Comillas-Chixoy/Xaclbal	Guatemala-México	13C	Chiquimula-Copán Ruinas	Guatemala-Honduras
5C	Boca del Cerro-San Pedro	Guatemala-México	14C	Esquipulas-Ocotepeque-Citalá	Guatemala-Honduras-El Salvador
6C	Trinitaria-Nentón	Guatemala-México	15C	Ostúa-Metapán	El Salvador-Guatemala
7C	Península de Yucatán-Candelaria-Hondo	Guatemala-México-Belice	16C	Río Paz	El Salvador-Guatemala
8C	Mopán-Belice	Guatemala-Belice	17C	Estero Real-Río Negro	Honduras-Nicaragua
9C	Pusila-Moho	Guatemala-Belice	18C	Sixaola	Costa Rica-Panamá
AMÉRICA DEL SUR/SOUTH AMERICA					
1S	Choco-Darién	Colombia-Panamá	16S	Agua Dulce	Bolivia-Paraguay
2S	Táchira-Pamplonita	Colombia-Venezuela	17S	Ollagüe-Pastos Grandes	Bolivia-Chile
3S	La Guajira	Colombia-Venezuela	18S	Concordia/Escritos-Caplina	Chile-Perú
4S	Grupo Roraima	Brasil-Guyana-Venezuela	19S	Aquidauana-Aquidabán	Brasil-Paraguay
5S	Boa Vista-Serra do Tucano-North Savanna	Brasil-Guyana	20S	Caiuá/Bauru-Acaray	Brasil-Paraguay
6S	Zanderij	Guyana-Suriname	21S	Guaraní	Argentina-Brasil-Paraguay-Uruguay
7S	Coesewijne	Guyana-Suriname	22S	Serra Geral	Argentina-Brasil-Paraguay-Uruguay
8S	A-Sand/B-Sand	Guyana-Suriname	23S	Litoráneo-Chuy	Brasil-Uruguay
9S	Costeiro	Brasil-Guayana Francesa	24S	Permo-Carbonífero	Brasil-Uruguay
10S	Tulcán-Ipiales	Colombia-Ecuador	25S	Litoral Cretácico	Argentina-Uruguay
11S	Zarumilla	Ecuador-Perú	26S	Salto-Salto Chico	Argentina-Uruguay
12S	Puyango-Tumbes-Catamayo - Chira	Ecuador-Perú	27S	Puneños	Argentina-Bolivia
13S	Amazonas	Bolivia-Brasil-Colombia-Ecuador-Perú-Venezuela	28S	Yrendá-Toba -Tarijeño	Argentina-Bolivia-Paraguay
14S	Titicaca	Bolivia-Perú	29S	El Cóndor-Cañadón del Cóndor	Argentina-Chile
15S	Pantanal	Bolivia-Brasil-Paraguay			

Source: Transboundary Aquifer Systems in the Americas (Preliminary Evaluation), OAS-UNESCO/PHI 2007.

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