Opportunities for International Water Governance: the Guadiana Basin Experience

Susana Neto(a,b,c)

(a) Centre of Geography and Regional Planning (e-GEO), Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, UNL, susana.neto@netcabo.pt

(b) Centre for Ecohydrology, Faculty of Engineering, Computing and Mathematics University of Western Australia

(c) UNESCO-IHP HELP Program Delegate in the Guadiana River Basin

ABSTRACT

The Albufeira Convention of 1998 signed between Portugal and Spain imposes on both States' Administration the need to produce, compile and organize data bases, ensuring a permanent cooperation which must also be open and participative for all stakeholders and populations, regarding all decision making on the Portuguese-Spanish water resources. This challenge is particularly difficult to address, due to lack of information in many situations, and also to the increased complexity of the planning process required by the implementation of the Water Framework Directive. In the context of the implementation of this Directive in Europe, there is an interesting space for comparison with the principles advocated in both the Helsinki Conventions (Helsinki 1992) and the UN Convention (New York, 1997), and the principles of the Water Framework Directive, in terms of international water governance. In particular, how does international water law and international legal frameworks promote water governance and support national decision-making? This paper will discuss how the principles of 'Good Water Governance' can be implemented in the Guadiana river basin, under the Albufeira Convention and the European Directive, and this process can also benefit from the ongoing UNESCO HELP Program, which has been in place in this basin since 2004.

KEY WORDS: *Guadiana river basin, International water governance, UNESCO-HELP, WFD.*

INTRODUCTION

The Guadiana river basin is an international river basin, shared between Portugal and Spain, with a total area of 66.800 km2 (17% of which inside Portugal), as shown in Figure 1. The morphology of the river basin divides the region into three zones: the High Guadiana, the Middle Guadiana and the Low Guadiana. Climate conditions are dry Mediterranean characteristics and almost homogeneous all over the basin, varying slightly from sub-humid to dry and semi-arid (Low Guadiana), with hot summers, an average annual temperature of 16º C, high levels of insulation and evapotranspiration, and average annual rainfall between 500 and 600 mm. The variability of precipitation in southern Portugal has always led to the need for water storage, which was achieved exclusively through the building of dams and water reservoirs along the rivers.

A great diversity of problems can be listed in this territory (water quality, water shortages, conflict of uses such as agriculture/ touristic / environmental protection and others, impacts of climate changes and social problems of desertification, socio-economic issues related to depopulation, unemployment and abandonment of land).

This river basin and region is one of the most vulnerable to drought, with a regional plan for implementation in preparation by the Portuguese national focal point of the United Nations Convention to Combat Desertification (UNCCD). Increased drought frequency is affecting livelihoods and over abstraction of groundwater leads to water shortages in summer. The soil erosion and loss process is also a major concern and serious environmental problem.

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However, broader understanding at the river basin, regional, country or even global level also constitutes a learning component in terms of universal and global dialogue (Neto *et al.*, 2011).

Conflict over different water uses is a major issue for local policies, as well as for central government agencies in the field, with irrigated agriculture representing more than 90%

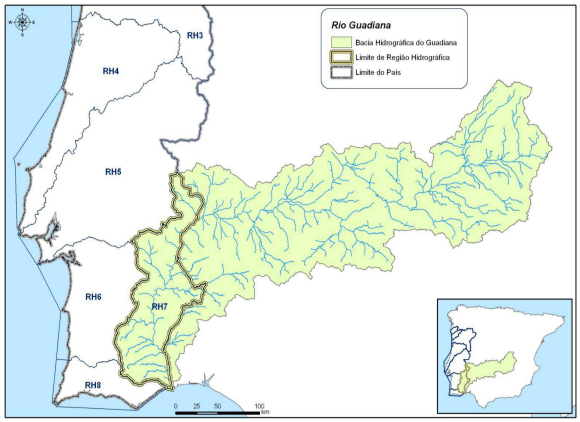

Figure 1. Guadiana River basin (Source: ARH Alentejo, 2009)

of global water use in the basin. The construction of a large infrastructure, the Alqueva dam, finished in 2002, raised various challenges at national, regional and local level in relation to land use planning (new riverside settlements, resettlement and relocating activities), economics (production costs and water pricing) and the environment (damage and disappearance of species and ecosystems, changes in the ecological value of water quality, changes in the water flows).

These challenges are overlapping, creating the need to implement a global management model of water use in the river basin, while dealing with all the constraints and effects of activities that must be managed at the international level in collaboration with the Spanish authorities.

CHALLENGES IN INTERNATIONAL WATER GOVERNANCE AND ADAPTIVE CAPACITY

International agreements in place for this shared river basin establish the minimum requirements of water quantity and quality crossing the border. The shared waters were ruled by the initial 1864 Treaty of Limits, subsequently by the Conventions of 1927, 1964 and 1968, and later, by the Albufeira Convention of 1998 which followed the Helsinki rules.

The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki 1992) requires that "*the Parties shall, in particular, take all appropriate measures* (...) *To ensure that Transboundary waters are used in a reasonable and equitable way, taking into particular account their Transboundary character, in the case of activities which cause or are likely to cause Transboundary impact*" (Article 2-2.c). This principle is later reinforced in the Convention on the Law of the Non-Navigational Uses of International Watercourses (New York, 1997, Articles 5 and 6).

To achieve the key objectives of sustainable development and equitable outcomes, any regulatory framework for water management should address the triple concerns of appropriate implementation, enforcement and conflict resolution mechanisms. Customary legal systems are also important in water management. Both frameworks are important in the context of water resources management internationally (CDRI, 2008).

In Portugal, the historical background and origins of the water legal framework come from the traditional approach based on neighbourhood relationships and 'user rights': (i) priority by antiquity; (ii) upstream users priority; and (iii) obligation of non-harming third users ("*sic utere tuo ut alienam non laedas*") (Henriques, nd).

This framework evolution has been driven by a greater complexity of diverse interests and expectations and the need to administer resources. This framework changed since the beginning of the 20th century, in order to regulate the water uses according to: (i) relationship among interested groups of users and share of water resources; (ii) pollution control in water use and environmental protection; (iii) relationships among regions and states (Ibid).

Regarding the Conventions of 1927, 1964 and 1968, the fundaments for the agreements were the sharing of hydroelectric potentialities of the border stretches. With the Helsinki and New York Conventions, this concept was enlarged and applied to the whole basin of the international river, including the economic aspects and the criteria for sharing, accordingly with the Helsinki rules, where it is accepted that downstream regions are more vulnerable than upstream ones inside the same river basin (UN, 1997, UNESCO ECE 1992, 2002).

The new Convention of 1998 (Albufeira), is a modern one and the approach aligned with the international water laws and with the WFD of 2000. The Convention enhances a legal and technical framework for the previous issues, without impeding the application of the previous Conventions. The main objectives of this agreement between Portugal and Spain are to promote the good status of the waters in the Luso-Spanish river basins, to promote the sustainable use of those waters, and to mitigate effects from floods, droughts and water scarcity.

Although the approach is more aligned with the international water laws and with the Water Framework Directive (WFD) of 2000, the Convention imposes on both States' Administration the need to produce, compile and organize data bases, and to ensure a permanent cooperation which must also be open and participative for all stakeholders and populations, regarding all decision making on the Portuguese-Spanish water resources. This challenge is particularly complex, due to lack of information in many situations, and also to the increased complexity demanded of the planning process by the implementation of the WFD (Neto, 2010).

In Portugal a deep institutional reform took place between the periods 2000-2001 (WFD approval in Europe and the first 15 river basin plans approved in Portugal) and 2005-2008 (New National Framework Water Law and the establishment of the Administration of the Hydrologic Regions (ARH). This reform called for a better alignment of territorial planning instruments with the water planning instruments. That did not happen in an effective way, and many linking operational processes and instruments should have been created to accomplish such an integrative process (Neto, 2010, 2012).

Water management increasingly requires a change from sectoral to cross cutting approaches that also needs improved governance and institutional capacity to adequately face the complexity of challenges to be addressed by water management (Neto *et al.*, 2011).

IWRM and Water Governance in the Guadiana basin implies also a better understanding of the main issues that affect social dimensions of water access and consequences of water stress. It includes managing the impacts and expectations created by external interventions (for example the Alqueva dam), that will favour some specific water uses (e.g. irrigation). The management of these issues is increasingly becoming a global water concern that must be handled at local and regional level. There is also a clear need for *capacity building of planners*, both from water and spatial planning side, aiming at achieving a deeper understanding of contemporaneous complexity of integrated processes, as well as understanding that planning is a dynamic process (Neto, 2010).

On the other hand, the critical issues faced by this river basin, relate to broad range of dimensions like (i) vulnerability of water-soil systems (desertification); (ii) hydrological, ecological, social and economic aspects; (iii) different scales and levels of management (water and land); and (iv) institutional reforms. This situation induces a complexity where Integrated Water Resources Management

(IWRM) conceptual framework needs to extend its broadness to include policy integration, institutional change and adaptive capacity (Neto, 2010, 2011).

WATER FRAMEWORK DIRECTIVE: OPPORTUNITIES AND INSTITUTIONAL GAPS

The Guadiana basin was appointed in 2002 to be a 'Pilot-basin' for the implementation of the WFD, but this objective was never fulfilled, and the process of implementation followed the same steps as other hydrologic regions with the review of the first generation of the river basin plan that was approved in 2001.

The latest phases of the river basin management plan were developed aligning with the Spanish side, particularly the public discussion process. The main objective for the water management of this territory, under the WFD, and taking into consideration the principles of IWRM, envisage building a better knowledge base for policies and decision-making processes, at local and regional (river basin scale) levels, including the institutional framework and necessary changes.

The WFD constituted the main instrument for a new Water Policy in the European Union. Unlike the previous legislation, it strives to establish a structure for protection and sustainable use of surface and ground waters, using a common approach and a common base of coordinated objectives, principles and measures.

The WFD has led to a great change in the current European paradigm on water management. This Directive gives policies a more comprehensive orientation, striving to approach the available water as a good of high environmental and ecological value, and recognising that all users are responsible for its preservation.

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Under the WFD international river basin plans must also share common visions and planning calendars. This challenge has proven to be more difficult than expected for European countries. In the context of the implementation of the WFD in Europe, there is an interesting space for comparison with the principles advocated in both the Helsinki Conventions and the UN Convention, and the principles of the WFD, in terms of international water governance (Neto, 2012).

The WFD imposes States sharing waters (surface or groundwater) to address jointly the critical issues that will be object of respective river basin plans. The Directive also considers that the participatory process must be organized jointly, which promotes a common ownership 'feeling' across borders. These circumstances may not respond fully to all problems, or solve automatically all conflicts, but can provide a potential very positive and operational way to overcome one very relevant issue in the UN and UN-ECE Conventions, which is the non-existence of an international regulatory body to monitor and assess the application of the rules *in situ*.

In the Guadiana case, the planning process, if taken seriously under this WFD framework, can be a source of common knowledge and continuous feeding of the requirements of the Albufeira Convention, that is to "*produce, compile and organize data bases, ensuring a permanent cooperation which must also be open and participative for all stakeholders and populations, regarding all decision making on the Portuguese-Spanish water resources".*

THE HELP PROGRAM IN THE GUADIANA. NEW FRAMEWORKS FOR COOPERATION

The Guadiana river basin was proposed in October 2003, and accepted in June 2004, as an Evolving Basin for case study under the UNESCO-IHP Hydrology for the Environment, Life and Policy (HELP) Program. I

UNESCO HELP is a cross-cutting programme aiming to improve the links between hydrology and the water needs for society, through better communication between science, policy making level and social awareness and participation.

In 2009 the Guadiana basin was again accepted as a UNESCO HELP Basin for the period to 2013. The approach proposed by the HELP programme, connecting hydrological, environmental, social and cultural issues, supports a better understanding of how to promote the development and sharing of techniques and scientific knowledge, concerning IWRM.

Being the most important 'water border' between the two countries, the HELP framework provides the Guadiana with a double opportunity, not only of sharing its experience with 92 other river basins around the world, but also to position this basin within a more productive dialogue with the Spanish territory of the basin. Furthermore, growing demand, loss of water quality, increasing regional scarcity and global climate uncertainty, call for more integrated approaches to water planning, with greater attention to cross-cutting synergetic cooperation between hydrologists and other disciplines.

In the Guadiana Basin, HELP initiative is aimed at implementing an effective IWRM framework and a 'Good' Water Governance as discussed by Allan and Rieuclarke (2008), through better communication with the planning actors in the basin (ARH), the regional and local associations and the local decision makers (Mayors), in the context of the following policy action areas:

- **Water and Climate;**
- **Water and Environment;**
- **Institutional Change and Capacity Building for IWRM.**

The anticipated outcomes to be achieved under these three areas include better coordination and dialogue among different water and land use management administration entities in the territory of the basin, based on an enlarged social understanding and cooperation towards IWRM aims (Unesco 2010).

In July 2009 an international HELP forum brought to the Guadiana experts from all continents to discuss with the planning team and local community, experiences from other international river basins around the world. The International Seminar on Water Governance was held in Évora, Alentejo, and involved the main sectors working in the field for the River Basin Management Plan , bringing into the planning process and to its actors the experience of five continents (Europe, Africa, Asia, Australia and the Americas), through the HELP Basins representatives.

For each of the envisaged areas and levels of intervention, a clear potential for the HELP Program has been recognized, that has provided guidance and inspired

the ARH to play an intermediary role in communication between the Central Administration, the Local Authorities, and the local communities and other actors, thereby promoting change towards an effective IWRM in the Guadiana river basin.

In conclusion, the UNESCO HELP Program can be a driver in facilitation and dialogue, providing cross cutting approaches, with reference to other regions and similar issues, advocating governance oriented knowledge and action, and targeting policy integration of scientific knowledge. Programs such as HELP can effectively support the planning process by improving dialogue between different disciplines, sectors and perspectives on water, resulting in a much richer consideration of the issues and possible solutions.

International agencies such as UNESCO are promoters of this dialogue, and this particular synergy can be beneficial to the international water governance framework in the Guadiana river basin. The presence of UNESCO water programs and institutions in the Guadiana basin, together with others in the region where the Guadiana is a field site (including UNESCO World Heritage and UNESCO Man and Biosphere), creates numerous potential synergies. These include the opportunity for more coordinated and effective investment in research, teaching, community consultation and information management (Neto et al, 2011).

CONCLUSIONS AND WAY(S) FORWARD

It is widely accepted that the global water crisis is essentially a crisis of governance. Developing a new paradigm for water governance will call for transdisciplinary approaches (through epistemological discussion and integration), for new analytical frameworks (for territorial integration), and for better integration of science and policy – informing not only policy makers but all stakeholders and society as a whole (Neto, 2010).

Water systems are permanently changing and exposed to human pressures, and regulation mechanisms may fail at local or regional levels leading to a crisis affecting the environment and/or the social systems of larger regions. The incapacity to control water pressures may uncover institutional inadequacies in the management of water systems and insufficient public participation in decision making (Roxo *et al.*, 2008).

The dynamics of change for IWRM implies also a strong capacity from the state level to evolve across the processes of planning and implementation, enabling the institutional structure to improve towards the national goals, as illustrated in Figure 2.

In order that policy changes can be put into place to support the achievement of national goals, the stages involved in improving water management through an IWRM approach need to be considered. These include both planning and implementation, with this latter requiring more attention (GWP, 2007).

"*IWRM needs to be more than just a planning mechanism. Increased attention needs to be given to the mainstreaming of water issues in national political economies, in order to ensure broader political, economic and social sustainability*" (Ibid).

The Guadiana river basin is an international river basin in an area particularly vulnerable to climate change and already suffering a wide range of challenges, including water scarcity, declining water quality, and desertification. In this context, cooperation among governmental agencies and stakeholders at international, national regional or local levels will determine the success or failure of implementing a 'Good' Water Governance approach, aligning with IWRM principles.

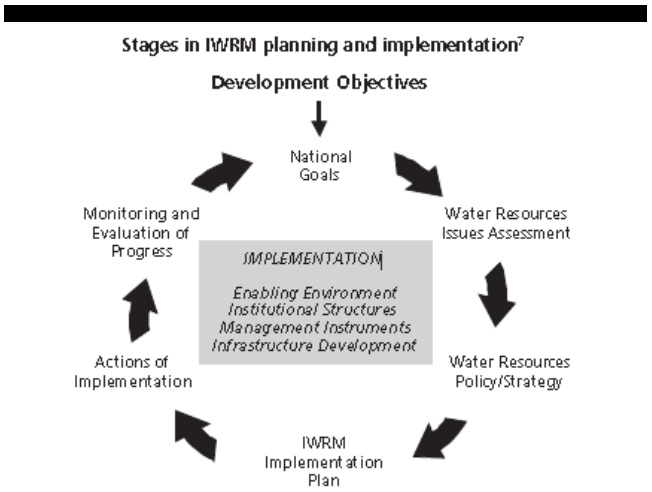

Figure 2. Stages in IWRM planning and implementation (GWP, 2007)

Implementation of the WFD can successfully support cooperation between Portugal and Spain, and fulfil important gaps that still exist in either the bi-lateral Convention of Albufeira or in the International UN and UN-ECE Conventions.

Finally, the background and presence of UNESCO and the HELP Program can provide for this basin a unique opportunity to develop the Guadiana as an institutional testing laboratory for water governance.

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