

THE POLITICAL CONTEXT OF IWRM IN THE EURO-MEDITERRANEAN AREA AND THE LONG-TERM STRATEGY. MOBILISING NON-CONVENTIONAL WATER RESOURCES

Prof. Rafael Rodríguez-Clemente¹ and Dr. Ana Hidalgo López²

Foro de la Biodiversidad, Estación Biológica de Doñana, CSIC. Patio de Banderas 16, 41004 Sevilla, Spain

e-mails: ¹raro@orgc.csic.es, ²ana.hidalgo@ebd.csic.es

ABSTRACT

The Mediterranean is among the world's most vulnerable regions to the effects of climate change, including droughts, also contributing to desertification, and floods; thus there is urgent need for and mitigation and adaptation measures to be further implemented and integrated within the overall National Integrated Water Resources Management (IWRM) Strategies and Plans.

The long-term objectives in the Mediterranean area are; to conserve water quality and to balance quantity of used and available water to achieve regional sustainable economic growth, social prosperity, access to water for all and environmental protection and rehabilitation. This strategy aims at stimulating the development of policy, cooperation and technological tools, promoting the exchange of knowledge and contributing to peace and stability.

INTRODUCTION

This paper will attempt a review of the key Euro Mediterranean Policy and the discussion base for a common framework, adaptable for integrated and participatory water management in the Mediterranean region. The objective is to highlight the main issues for a long-term rational use of water, and to give a set of recommendations to facilitate the implementation of Integrated Water Resource Management (IWRM) principles, offering some ideas for strengthening institutional capabilities and for modifications in their role to address concerns in the water sector, such as the re-use of wastewaters.

AN APPROACH TO THE EUROPEAN JOINT POLICY TOWARDS THE MEDITERRANEAN

The European Union began actively to devise a structured joint policy towards the Mediterranean region in the 1990s by launching the Euro-Mediterranean partnership, also known as the "Barcelona Process" (Euro-Mediterranean Ministerial Conference Barcelona Declaration, 1995). In 2003, on the eve of its enlargement, the European Union developed a European Neighborhood policy including east European and Mediterranean countries (Wider Europe - Neighborhood: A New Framework for Relations with our Eastern and Southern Neighbors, 2003). In 2008 it was launched the initiative Union for the Mediterranean (UfM) including the 27 EU member states and 16 partner countries from the southern and eastern Mediterranean, aiming to give fresh impetus to the Euro-Mediterranean Partnership (Communication from the Commission to the Parliament and the Council, 2008). The Union

for the Mediterranean aims to preserve the achievements of the Barcelona Process while offering more balanced governance and public accountability, together with a commitment to carry out tangible regional and transnational projects. Six priority projects were identified, including the de-pollution of the Mediterranean Sea, the management of the water resources and the promotion of common initiatives in the region facilitating the exchange of knowledge. However, despite the ambitious nature of these projects, the Union for the Mediterranean has still not produced tangible political achievements.

THE INTEGRATED WATER RESOURCES MANAGEMENT IN THE MEDITERANEAN COUNTRIES

In all Mediterranean countries the water management has always been a major matter of political and social concerns; however, the actual situation of demographic growth, the increasing of the large-scale use of water for agriculture ($\pm 80\%$ of water use in the MED countries), the unsustainable economic growth, the low water use efficiency, the discharges of domestic, industrial and agriculture wastewater what has led to deterioration of water quality and the climate change, make this debate most acute than ever and has forced the definition of a new conceptual frame for water management, i.e., the Integrated Water Resources Management (IWRM) as the most promising perspective to cope with this intricate problem. This new concept supersedes the previous management process applied in the area.

The IWRM approach co-ordinates long term water resources management across sectors and interest groups, and at different scales, from local to international. It emphasizes involvement in national policy and law making processes, establishing good governance and creating effective consensual institutional and regulatory arrangements as routes to more equitable and sustainable decisions. A range of tools, such as social and environmental assessments, economic instruments, and information and monitoring systems, support this process, Scoullos & Tomasini (2003).

The four key principles of IWRM can be summarized as follows (Project "NOSTRUM-DSS", 2004):

Principle No. 1 - Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.

Principle No. 2 - Water development and management should be based on a participator approach, involving users, planners and policy-makers at all levels.

Principle No. 3 - Women play a central part in the provision, management and safeguarding of water.

Principle No. 4 - Water has an economic value in all its competing uses and should be recognized as an economic good.

Key IWRM strategies need to consider:

- (i) the need to improve the economic efficiency of water use, as an attempt to regulate demand and reduce the pressure of increasing water scarcity;
- (ii) at the same time, there is a need to ensure a balance between efficiency and equity, guaranteeing to all access to safe water in adequate quantities, and that water allocation is not biased in favor of some consumers;
- (iii) the ecological and environmental sustainability of water use strategies must also be ensured, with the aim of preserving equal development opportunities for future generations.

These issues were in the basis of the European Water Framework Directive (Directive 2000/60/EC) resulted after a very long debate (more than 10 years) where all the needs, previous experiences and interests, were considered. The directive is being implemented in all the EU countries with variable success. Nevertheless, it has become an uncontested world reference for IWRM, and the point here is to evaluate how these principles can be used for a Mediterranean wide common water policy.

THE POLITICAL FRAME AND THE LONG-TERM STRATEGY IN THE MEDITERRANEAN AREA

The Marseilles Declaration (4) of the UfM considers Water and Environment as two of the Fields of Cooperation to be pursued during 2009. The Program Horizon 2020 of De-pollution of the Mediterranean, previously approved in the Barcelona Euro-Med Summit of 2005, being a key element of political and technical cooperation covering both water and environment issues. However, the way forward to obtain visible results in water and environment management and a real public perception of improvement needs a consistent long term political frame, the adoption of a realistic technological approach, and a public action of information on the real threads related to water and environmental issues, as well as a recovery of the best elements of the traditional Mediterranean Water Culture.

The IIIth Euro-Mediterranean Ministerial Conference on Water (Jordan, 22 December 2008) makes a realistic analysis of the situation by acknowledging, among others:

- The necessity to design and implement strategies and plans to achieve sustainable water resources management through integrated approaches comprising all kinds of water and all its uses;
- The imbalances in access to water supply and sanitation, bearing in mind that equal access contributes to poverty eradication, the improvement of health, economic development, hygiene, sustainable land use development, education, protection of the environment and of ecosystems;
- The necessity to promote the development of science-based technologies that will provide inter alia for efficiency in water use and supply measures;

On April 13th, 2010, the IVth Euro-Mediterranean Ministerial Conference on Water was held in Barcelona. The conference aimed at adopting a "Long-Term Strategy for Water in the Mediterranean", which would promote a common political, methodological, and financing framework to facilitate the implementation of regional policies in the water field, among which to develop the joint ambitions of lowering the consumption of water between now and the year 2025, to levels 25 % below those of 2005. This conference was a failure due to the disagreement of Israel over a reference to the Palestinian territories; Israel disagreed with the wording "occupied territories", while Arab nations opposed to the alternative formulation of "territories under occupation" proposed by European participants. However, it worth mention that the Long Term Strategy for Water in the Mediterranean deals with:

- i. Tackling problems that go beyond the means of any single country, such as impact of climate change and environmental needs, that call for a coordinated approach and increased cooperation;
- ii. Building on integrated approaches: all kind of water, the needs of different users, niches of wastewater use, integrated management at basin level.
- iii. Including two main goals: conservation of water quality and the prevention of further deterioration, and the balance between the quantity of water used and the quantity of water available including mitigating and preventing the consequences of droughts and water scarcity;
- iv. Including both measurable qualitative and quantitative objectives as part of a voluntary commitment to achieve these goals;
- v. Improving efficiency of all water uses, appropriate governance arrangements, legislation and institutional arrangements, effective national and local planning, innovative financial mechanisms, tariff policies, standards, labels, alternative solutions, keeping in mind the differences in national situations and the need to increase the citizen's awareness by promoting the wide participation of civil society aiming at building the culture of water.

PROMOTING WATER DEMAND MANAGEMENT, EFFICIENCY AND NON-CONVENTIONAL RESOURCES AND PROTECTING QUALITY OF WATER AND BIODIVERSITY

In the framework of the Barcelona Convention, the regional objective for water saving of 25% by 2025 was adopted, taking 2005 as reference. Progress achieved in some countries revealed that this is a feasible target.

Mobilising non-conventional water resources can provide adequate options where projected levels of water savings prove hard to achieve. In many countries, the use of non-conventional waters is already applied. However, an unofficial and uncontrolled use of insufficiently treated or even totally untreated wastewater is taking place in many countries, resulting in unknown risks to users and the environment

and public reluctance toward the use of treated waters. Legal and policy frameworks are often missing to stimulate projects development and private sector investments to catch up with rapidly growing demand and emerging needs.

The access to adequate sanitation and wastewater treatment has a double benefit: it improves the life conditions of the affected population (poverty, hygiene, healthiness, etc), and it is a conservation strategy of the good ecological status of water resources. In many Southern Mediterranean countries, sanitation tends to receive less attention and fewer financial resources than water supply. This leads to a lack of maintenance even for existing wastewater treatment plants (WWTP), as is the case for example in Morocco and Algeria where more than half of the WWTP are not functioning properly (Project MELIA, 2006). In many small-to-medium-sized communities, wastewater treatment requirements are met using conventional on-site septic tanks, with effluent being disposed into the groundwater. In Cyprus, the total number of main WWTP currently in operation is 25, however, more than 175 small WWTP are located in hotels, hospitals, on military bases and in small villages. In Jordan there are currently 19 WWTP that all serve big cities. In Morocco on the other hand, the number of WWTP operating in small communities or rural areas amounts to 23 out of the 31 that are in full operation. However, these plants serve only about 7% of the total population of Morocco. About 68 WWTP out of 129 are located in small-to-medium-sized communities in Turkey, and other countries in the region that practice wastewater treatment and reuse include Kuwait, Saudi Arabia, Oman, UAE, Egypt, Jordan, Israel, Tunisia and partially Palestine. From these examples it is evident that many small-to-medium-sized communities are lacking sufficient and appropriate wastewater treatment.

The Horizon 2020 Initiative to De-pollute the Mediterranean aims at tackling the most significant related challenges. Scattered pollution sources which derive from diffuse, unregulated sources that typically include agriculture, urban and construction runoff over large areas, are affecting streams, groundwater, coastal areas and the marine environment representing a growing threat for ecosystems and public health.

Analyzing the situation under a global overview, it can be said that the problem is more or less addressed in large and medium cities and in those areas with adequate social, economic and technological development. On the contrary, the population most affected in terms of lack of basic services (drinking water and sanitation) is concentrated on rural and scattered areas, as well as in the marginal zones of the large cities in underprivileged countries. It is in this context where the main economic and technical limitations occur, where it is necessary to have solid and adjusted solutions that guarantee the adequate treatment of wastewater with minimum implementation costs and affordable service costs for the benefited population. The decentralized systems at a small scale, as well as the non-conventional or extensive wastewater treatments, are a solution to this situation, given their resemblance with natural purification processes and the fact that their simplicity regarding their management and exploitation considerably reduce infrastructure and service costs.

Domestic WWTR is one tool to address the food and water insecurity facing many countries in the East and South Mediterranean region. In coming years, most vegetables in arid countries will have to be grown increasingly according to the objective of saving water, i.e. avoiding the export of “virtual water”, and, eventually, using the most of treated wastewater. To help the gradual and coherent introduction of such a policy, governments shall have to adapt an Integrated Water Management approach, facilitate public participation and awareness, disseminate existing knowledge, and generate new knowledge, and monitor and enforce standards. On the technology side, small-scale decentralized sanitation technology, such as lagoons, sand filters, constructed wetland, and even septic tanks combined with small-bore sewers, offer great potential in small rural areas.

CONCLUSIONS AND RECOMMENDATIONS

Integrated Water Resources Management (IWRM) has been recognized as a practical concept for water resources management for sustainable development. Its implementation needs to raise awareness of policy/decision makers and to facilitate the appropriation of its principles by the large public. Main recommendations are:

- Establishment of an effective and consensual National regulatory framework, to facilitate the implementation of the IWRM.
- Participation of the public and private partnerships. Promote the effective participation of the final beneficiaries.
- Development of a cheap and user friendly wastewater treatment infrastructure, which guarantees its sustainability, is adapted to the context, to the financial local capacity and to the educational level.
- The law needs to implement control, vigilance and follow-up mechanisms creating penalty regulations, for it to be effectively carried out.
- Civic education and awareness about the risks related to a bad planning of the water use, and the necessity of the water re-use in guaranteed conditions.
- Water resources are overexploited, and some changes in the agricultural model have to be introduced: produce products that consume less water and the use treated wastewaters for agricultural purposes.

REFERENCES

Barcelona Convention, <http://www.unepmap.org/index.php?module=content2&catid=001001004>

COMMISSION OF THE EUROPEAN COMMUNITIES, Barcelona Process: Union for the Mediterranean, COM(2008),319(Final),Brussels,20/05/08,http://ec.europa.eu/external_relations/euromed/docs/com08_319_en.pdf

COMMISSION OF THE EUROPEAN COMMUNITIES, Wider Europe – Neighborhood: A New Framework for Relations with our Eastern and Southern Neighbours, COM(2003), 104 (Final), Brussels, 11/3/2003.
http://ec.europa.eu/world/enp/pdf/com03_104_en.pdf

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

Euro-Mediterranean Ministerial Conference Barcelona Declaration – 28/11/1995,
<http://europa.eu/scadplus/leg/en/lvb/r15001.htm>

Project NOSTRUM-DSS, INCO-CT-2004-509158 Deliverable D6-5 “Thematic Report on Governance for IWRM”.

Project MELIA, INCO-CT-2006-517612 (<http://www.meliaproject.eu>) “Conceptual frame on Water Technological perspectives for rational use for water resources in the Mediterranean region”

Scoullos, M & Tomasini, B. “HANDBOOK ON FRESHWATER IN THE MEDITERRANEAN”. GWP-Med&MIO-ECSDE, Athens 2003.

Acknowledgements

The authors are grateful to FP6 EU Project INCO-CT-2006-517612-MELIA which financed this work.