

WATER MANAGEMENT AS A CHALLENGE TO SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN SEA BASIN

Katarzyna Stachurska-Szczesiak

Maria Curie-Skłodowska University in Lublin,
Faculty of Political Science, Department of International Relations
e-mail: katarzyna.stachurska-szczesiak@poczta.umcs.lublin.pl

Abstract. The Mediterranean region has a particular place in geopolitics at the edge of three continents, Europe, Asia, and Africa, and between the Straits of Gibraltar and the Bosphorus. This makes it a constant subject of political competition between several European countries and the European Union (EU) as a whole. This area is faced with political, economic, environmental, and social challenges. To meet them the EU requires a common vision and to act in concert. A particular challenge in the context of the Mediterranean region is a drastic drop in water resources combined with environmental degradation. As water is an integral part of human life and habitats, it lays the foundations for complicated hydrologic cycle and interdependencies in all form of life on earth. The most challenging thing is to resolve the problem of “competition for water” between humans and habitats. The idea of self-sustaining development addresses this challenge. Its effective implementation and harmonization requires the inclusion of environmental issues (with water management) in state policies at national and international levels. The article aims at presenting water management as a key challenge to sustainable development with a deductive approach, from the global situation and patterns of conduct to regional practices in the Mediterranean countries.

Key words: water management, Mediterranean Sea basin, sustainable development

INTRODUCTION

The Mediterranean region has a particular place in geopolitics at the edge of three continents, Europe, Asia, and Africa and between the Straits of Gibraltar and the Bosphorous. This makes it a constant subject of political competition between several European countries and the European Union (EU) as a whole. Prosperity, democracy, and stability in this area serves the interests of the EU as well as states on its southern and eastern flank (The Middle East and North Africa Region, MENA). Conversely, the region faces compound political, economic, environ-

mental, and social challenges. They can be only dealt with through cooperation, common vision, sensitiveness and mutual respect.

One challenge is distinct as the region suffers from rampant decline of water resources, combined with environmental degradation. As water is an essential link for all mankind and habitats, it lays the foundations for complicated hydrologic cycle and interdependencies of all form of life on earth. A quantitative and qualitative scarcity of water could have a negative impact on human development and overall equilibrium of the ecosystem. The most challenging thing is to resolve a problem of “competition for water” between humans and habitats. This quest was addressed with the idea of sustainable development. Its effective implementation and harmonization requires the inclusion of environmental issues (with water management) in state policies at the national and international level.

A core concept of sustainable development was formulated in 1987 in the Brundtland report, defined as development designed for the needs of present that meets with the next generations’ freedom of choice.¹ Accordingly, such development will meet present-day needs and will not limit the next generations’ chances to meet its own needs. It emerged as a response to different environmental crises and a new symptom of ecology. To achieve this goal, one must incorporate three elements: social equality, environmental protection, and economic efficiency in the short and long run.

Such development is not stagnant nor is it a general rule but instead stands for a process of transformation and iteration² that combines social, economic, physical, and climate conditions. The latter will determine a level of water resource, especially in the Mediterranean regions.³ This approach implies that exploration and consumption of natural resources, investment procedures, and technological advance have to factor in the needs of present and future generations. While sustainable development is primarily defined by the quality of environment where people live, previous patterns of consumption, production, economic growth in developing states have been called into question and developmental change is a priority.⁴

In particular, the significance of sustainable development is noticeable in the Mediterranean region due to the constant eradication of its natural resources (both non-renewable and renewable), arable land, mineral, water, and fish stocks. Services stemming from these resources are worth billions and states find it difficult

¹ Cf. CMED, *Commission Mondiale sur l’Environnement et le Développement*, „Notre avenir à tous”. Rapport G. H. Brundtland, ONU, avril 1987.

² The term derives from latin *iteratio* – repetition, replication; “iteration” is also a method in mathematical analysis and programming that stands for a multiple application of the same operation or procedure (or such subsequent operation or procedure). See more: S. Lutter, D. Schnepf, *Water Management Indicators – State of the Art for the Mediterranean Regions*, „Options Méditerranéennes” 2011, nr 98, pp. 37–53.

³ *Ibidem*.

⁴ Source: URL <<http://www.euromediterranee.fr/fileadmin/multimedia/DD-28pages-bas-sedef.pdf>> (access: 23.10.2014).

to replace them. Therefore, the challenges for sustainable development should first of all analysed through the prism of resource durability and the quality of the natural environment. In view of this, the resolute water resource management is a focal point.

This article aims to examine water management as a key challenge to sustainable development with a deductive approach, from the global situation and patterns of conduct to regional practices in the Mediterranean countries. The analysis is based on documents which reflect the evolution of international (global and regional) cooperation in the realm of water management. This requires starting start a depiction of the global and Mediterranean water situation.

1. GLOBAL WATER RESOURCES

The water situation in the world varies from place to place and depends on the specificity and composition of regions (i.e. prevalence of deserts or tropical rain forests). Moreover, by nature this kind of resource could change in time as the result of seasonal or inter-year volatility (Figure 1).

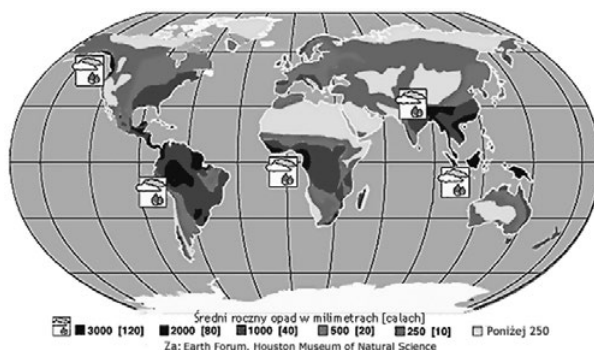


Fig. 1. Irregular distribution of rainfall in time and space (average precipitation by year, deserts colored light grey)

Source: URL <<http://water.usgs.gov/edu/watercyclepolish.html>>.

The level of fluctuation and intensity of precipitation is unpredictable and results from irregularities that pose a big challenge to those managing water resources as well as to the societies in which they emerge. The majority of developed states have already succeeded in overcoming these barriers through non-natural infrastructure of water supply (e.g. construction of dams) to reassure its crucial reserves. While doing this, they limit the risk of water scarcity.⁵ However, these

⁵ There are many classifications of water deficit. The most common is one of M. Falkenmark's (1989) which measured water resources possessed by states that are then divided by their

instruments are costly in economic terms and impact the natural environment as well as life and public health. Many developed and developing countries have realized that a solution to the water supply alone cannot face complex challenges generated from a population bomb, economic growth, and climate change. Challenges to states facing water shortages refer especially to water purification, rain water recycling, and supply management.⁶ It is estimated that by 2030 almost half of global population will live in areas of so-called “water stress” – mainly from developing countries (including MENA region).⁷ See figure 2.

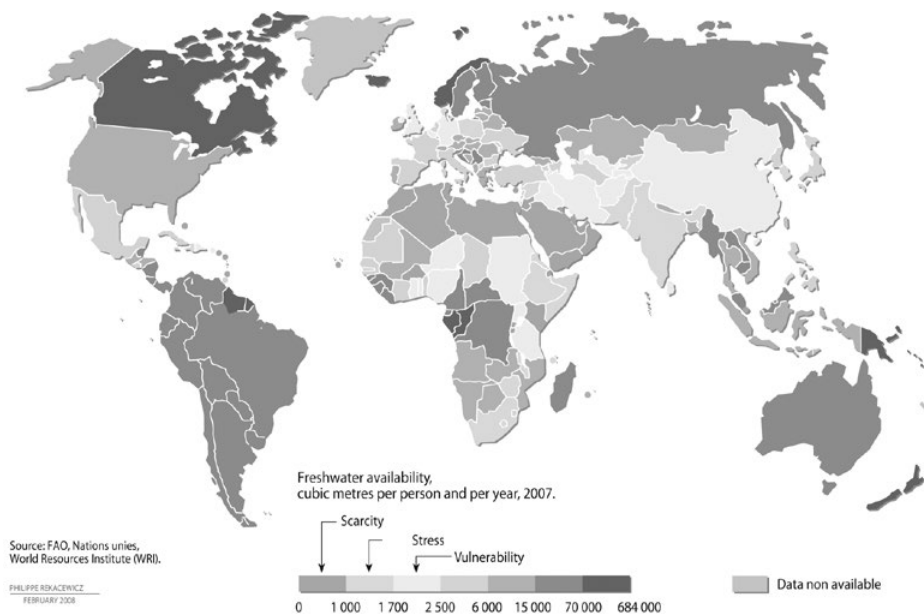


Fig. 2. Global water stress and scarcity

Source: Global waterstress and scarcity, 2009,

URL <http://www.grida.no/graphicslib/detail/global-waterstress-and-scarcity_14bc>.

In the face of such a trend the solution to the water problem requires as a necessary condition addressing the world's other problems like epidemics (poor quality of drinking water or lack of sanitation), food safety, poverty reduction or an overall stability of economies based on the agriculture.

respective population. The “water stress” stands for a situation where water distribution is between 1600–1000 cubic metres/per capita/year; a chronic water deficit affects a country when it is within 1000–500 cubic metres/per capita a year; a situation below 500 cubic metres is named a “water barrier”.

⁶ Source: URL <<http://www.un.org/fr/waterforlifedecade/themes/management.shtml>> oraz *Actions de la gestion intégrée des ressources en eau, Programme mondial pour l'évaluation des ressources en eau (WWAP)*, PNUE 2009 (access: 23.10.2014).

⁷ *Ibidem*.

2. MEDITERRANEAN WATER RESOURCES

In the Mediterranean region drinking water resources are restricted and disproportionately distributed in space as well as time. This picture is highly differentiated between its southern and northern flank. Northern states' freshwater resources amounted to circa 3500 cubic metres per capita. Conversely, in the MENA region it is about 1000 cubic metres per capita.⁸ Hence, many MENA countries are in a structural water stress situation. According to some estimations, by 2030 freshwater resources will shrink below a manageable level, i.e. 500 cubic metres per capita/year in all Maghreb states but Morocco.⁹ Similarly, in the Blue Plan (*Plan Bleu*) in 2025 some 250 million people from the MENA region will be affected by "water poverty" and another 80 million by "water scarcity". The World Bank estimates that the scope of access to water per capita will halve by 2050 in MENA region when compared to base year 2007.¹⁰

The situation is even worse due to a rising water demand in MENA countries that is a result of demographic growth¹¹, rapid urbanization¹², and the development of agricultural production¹³. The volume of water demand in the Mediterranean basin accounts for some 300 cubic km per year and tends to rise (up to 20% by 2025). In MENA countries this increase will amount to 353 cubic km/a year¹⁴. The biggest share of water is consumed by agriculture (irrigation¹⁵) with an average regional input of 60% of resources (up to 72% of this figure comes from MENA). Secondly, there is industry, including the energy sector (22% of input) and a household sector (14%¹⁶). Generally, the way in which water is consumed is far from high performance – especially in agriculture.

This picture is even more complex with the MENA populations' lack of adequate access to fresh water or sanitation. Even though the overall situation has improved and in 2010 the percentage of people with access to improved sanitation

⁸ C. Objebin-Yousfaoui, *Financer l'accès à l'eau et à l'assainissement en Méditerranée. Les financements innovants: solutions ou illusion?*, „Construire la Méditerranée IPAMED" Juin 2014, p. 16.

⁹ See P. Kowalczyk, *Konflikty o wodę*, Poznań 2007.

¹⁰ *Ibidem*, p. 18.

¹¹ It is estimated that this growth will be significant: from 280 million today to 360 million by 2030.

¹² According to estimations the number of people living in cities will rise from two-thirds to ¾ by 2030.

¹³ See N. I. Faruqui, *Introduction*, [in:] *La gestion de l'eau selon l'Islam*, ed. N. I. Faruqui, A. K. Biswas, M. J. Bino, Paris 2001, pp. 13–14.

¹⁴ *L'eau en Méditerranée*, source: URL <<http://www.ipemed.coop/fr/nos-projets-r16/eau-c137/focus-sc148/leau-en-mediterranee-a1670.html>> (access: 23.10.2014).

¹⁵ In the Mediterranean region sector of agriculture is a main recipient of water. According to FAO between 1998–2002 the irrigation for food production consumed some 67% of water resources, and up to 85% in MENA southern countries.

¹⁶ *PNUE/PAM – Plan Bleu: État de l'environnement et du développement en Méditerranée*, Athènes 2009, p. 38.

services has reached 90%, up to 29 million inhabitants still fall short. This can be illustrated in Morocco, where up to 30% of the population does not have access to sanitation and almost half of them come from rural areas.¹⁷ The water stress indicator (Falkenmark) shows that in 2025 five of 21 MENA countries (Egypt, Lebanon, Morocco, Syria and Turkey) will be affected by a decrease below a level of 1000 cubic metres per capita/year affecting their economic prospects, and another five (Algeria, Israel, Libya, Malta and Tunisia) this will experience drop below 500 cubic metres per capita/year which endangers human beings.¹⁸ It could be stated that in the Mediterranean region the water amount is in inverse proportion to the number of people living in the region (see table 1.).

Tab. 1. The evolution of the availability of water in the MENA countries

Country name	Population 1995	Water /Per Capita	Population 2025	Water /Per Capita
Israel/Palestine	5.5	389	8.0	270
Jordan	5.4	318	11.9	144
Egypt, Arab.Rep.	62.1	936	95.8	607
Libya	5.4	111	12.9	47
Tunisia	9.0	434	13.5	288
Algeria	28.1	527	47.3	313
Morocco	26.5	1 131	39.9	751

(people in mln, the water in cubic metres per person)

Source: Own study based on: M. de Villiers, *L'eau*, Paris 2000.

Given this, a key challenge to global south countries is to deliver adequate amounts of water to meet their needs with increasing populations, especially in urban areas. An intense exploitation of the water resources in MENA region for household, agricultural, and industrial purposes has not only caused the degradation of surface and deepwater but also the degradation of the natural environment. The exploitation of surface water results in seawater intrusion into coastal areas. Moreover, human waste contributes to the detriment of interior water resources' quality as well as the common area of the Mediterranean Sea (it is estimated that by year 2025 such waste could rise by 30%¹⁹).

In the face of increasing numbers of people and the already mentioned urbanization, sanitation issues and wastewater treatment systems are among the biggest challenges to MENA countries. Today, about 31 percent of MENA cities comprising 2000 inhabitants and 44% of cities with more than 10,000 people still have no sewage plants. When combined with the intensive economic growth, their public

¹⁷ C. Objebin-Yousfaoui, *op. cit.*, p. 15.

¹⁸ *L'eau en Méditerranée*, source: URL <<http://www.ipemed.coop/fr/nos-projets-r16/eau-c137/focus-sc148/leau-en-mediterranee-a1670.html>> (access: 23.10.2014).

¹⁹ C. Objebin-Yousfaoui, *op. cit.*, p. 19.

health and the environment protection systems are severely threatened and this indirectly affects all Mediterranean population.²⁰ According to the Blue Plan, 80% of Mediterranean Sea contamination comes from the continent and 70% of is dropped without cleaning. Therefore, the problem of development of sewerage is crucial to managing the quality of available water and reduce the risk of dirty water. The World Health Organization estimated in 2010 that nearly 120,000 children under the age of five died due to complications (diarrhoea) caused by a limited access to fresh water and sanitation, and that 11% of those deaths occurred in the Mediterranean.²¹ Given predictions about the impact of climate change in the 21st century, the problem of water is emerging as the urgent challenge. Compared to the 1970s, the temperature level today is two degrees Celsius higher in both Europe and North Africa. It is predicted that by 2050 average temperatures will increase by 2 to 4 degrees Celsius, while precipitation in the region will decrease by 4–30%. This would intensify the land drying and cause a loss of productivity.²² The volume of rainwater and its distribution in 2100 will only amplify today's differences in socioeconomic development of the northern Mediterranean countries (a growth of precipitation by 20% by 2100) and their southern counterparts (a decline by 20%).²³ Given this fact, the Mediterranean region will have to deal with consequences of global warming and its effects on industry, tourism, maritime environments, and forest areas. Thus, access to drinking water and improvement of sanitation are among the key challenges to the health and survival of societies in the region.²⁴

3. FROM GLOBAL WATER MANAGEMENT TO ITS MEDITERRANEAN SUBSYSTEM

In the face of numerous and alarming data on the global water situation at the beginning of the 21st century, many documents, resolutions and international conventions have been focused on the issue and the human right to water and sanitation.²⁵ The world's water management is segmented into different actors, including nations,

²⁰ F. Roignant, *L'eau en Méditerranée: usages et enjeux, Synthèse technique*, Février 2007, p. 4.

²¹ *Ibidem*, s. 20.

²² *PNUE/PAM – Plan Bleu: État de l'environnement...*,

²³ *Groupe intergouvernemental d'experts sur l'évolution du climat*, source: URL <<http://www.ipcc.ch/index.htm>>; *Rapport IPEMED, Anticiper le changement climatique autour de la Méditerranée*, „Notes et documents „2008, nr 1, p. 76 (access: 23.10.2014).

²⁴ According to WHO and UNICEF about 780 million people have no access to the safe drinking water and over 2,5 million was deprived of a basic sanitary infrastructure (these numbers are growing year by year).

²⁵ See also texts of the following the UN General Assembly resolutions: number 54/175 of 17 December 1999 referring to the right to development); 55/196 of 20 December 2000 with a proclamation (2003) of International Year of Freshwater; 58/217 of 23 December 2003 with International Decade for Action Water for Life proclaimed for the period 2005–2015; 59/228 of 22 December

intergovernmental organizations to tens of thousands private businesses and NGOs. The problems in this area provoked actions at the international level (see table 2). These activities stem from and are complementary to sustainable development.

Tab. 2. The evolution of development activity in the field of water and the sustainable development – global dimension

Date	Event	Postulates/Results
1972	The first United Nations Conference on the Human Environment – UNCED (Stockholm)	Stockholm Declaration introduced to the global level issues related to the protection of the Earth
1977	UN Conference on the water. Mar del Plata (Argentina). The conference was the first and only intergovernmental conference devoted exclusively to water	The conference approved the Mar del Plata Action Plan which was the first internationally coordinated approach to IWRM.
1980–1990	The International Drinking Water Supply and Sanitation Decade.	
1992	The International Conference on Water and the Environment (ICWE) in Dublin (Ireland)	<p>Conference adopted the Dublin Statement on Water and Sustainable Development. This document introduces four guiding principles:</p> <ul style="list-style-type: none"> • Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment; • Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels; • Women play a central part in the provision, management and safeguarding of water; • Water has an economic value in all its competing uses and should be recognized as an economic good <p>With these principles established water tariff, aimed at protecting water, need to increase prices for its use and reuse of waste water, the privatization of the water market, and community water management.</p>
1992	Earth Summit/ II UN Conference on Environment and Development (UNCED)	Rio Declaration on Environment and Development. The adoption of the implementing document of sustainable development in the heart of the water management has become one of the central issues. Integrated sectoral plans and programs relating to the water with national economic and social policies.
1994	Ministerial Conference on Drinking Water and Environmental Sanitation Noordwijk (Netherlands)	Drinking water supply and sanitation basis for action programs.

2004; 61/192 of 20 December 2006 that launched the 2008 International Year of Sanitation; 64/198 of 21 December 2009 invoking the in-depth analysis of the Decade for Action Water for Life.

November 1994	On the occasion of the Eighth World Water Congress in Cairo (Egypt), the International Water Resources Association organized an emergency session on the water. This resulted to take a resolution to establish the framework of the World Water Council and the appointment of the Committee responsible for the preparation of the whole process of creation.	The aim of this initiative was to build a consensus on the establishment of a common umbrella organization to which specific for harmonizing divergent and ineffective efforts in the field of water management in the world
1995	The World Bank has organized conferences - "Ethics and Spiritual Values: Promoting the Sustainable Development.	The conference took place in consultation with the 9 leaders of different religions of the world. Objective – to better understand the actions against poverty in the world.
1995	World Summit for Social Development in Copenhagen (Denmark);	Copenhagen Declaration commitments included 10 m. In: 7 related to the commitment to accelerate economic and social development and the promotion of human resource development in Africa and other least developed countries in the world
September 1995	IV UN Conference on Women, Beijing (China)	The conference focused on cross-cutting issues (equality, development and peace), from a gender perspective. Stressed the importance of the relationship between women's advancement and progress of societies as a whole. Clearly confirmed that social issues should be addressed from a gender perspective in order to ensure the sustainable development.
November 1996	World Food Summit in Rome (Italy)	The Rome Declaration calls upon us to reduce by half the number of chronically undernourished people on the Earth by the year 2015. Declaration identifies seven commitments that are the foundation of action for sustainable food security for all and an action plan that includes specific objectives and means to achieve the commitments set out in the Declaration.
1996	The establishment of the World Water Council (World Water Council – WWC), based in Marseille (France)	The aim is to raise awareness of the officials on key issues at all levels, including at the highest levels of decision-making; promote the protection, development, planning, management and use of water in all its dimensions in the context of the sustainable development. WWC identified so. Water Vision, whose intention is to achieve broad consensus on the necessary measures to solve water problems at global and regional levels in 25 years
March 1997	First World Water Forum, Marrakech (Morocco)	The Marrakesh Declaration gave the World Water Council (WWC) authorization for the management of water resources, and to ensure the continuity of the World Water Vision – World Water vision, life and the environment at the twenty-first century; recognize the basic access to drinking water and sanitation for people management objective efficient use of water.

March 1998	Conference on Water and Sustainable Development (Paris). Conference prepared in close collaboration with the WWC and the government of France.	During the conference has set the goal to actively contribute to the development of strategies needed to improve the protection and management of freshwater resources, in rural and / or urban (provision of drinking water supply, sewerage and irrigation, better control, and the fight against desertification). Set 3 priority areas for action: <ul style="list-style-type: none"> • improve the knowledge about the resources and methods of use; • development of legal instruments and institutional capacities; • promoting a more economic approach
March 2000	Second World Water Forum in The Hague (Netherlands)	World Water Vision – the water issue all; <ul style="list-style-type: none"> • establish a price for all water services, based on cost; • an increase in public funding for research and innovation in the interest of all; • resumption of cooperation in international river basins; • increase in investment in the water sector
September 2000	Millennium Summit – Challenges arise at the beginning of the twenty-first century, New York (USA)	The Millennium Declaration set a goal: to reduce by half by 2015 number of people who do not have access to drinking water and do not have the means to do so.
December 2000	20.12.2000 The UN General Assembly declared the year 2003 is the International Year of Freshwater (resolution 55/196)	Goal: to draw attention to the importance of water to meet basic human needs, and the world in which we live. Water is essential for health and food production, for the preservation of the ecosystem and social and economic development
December 2001	International Drinking Water Conference, Bonn (Germany)	Water is considered as the key to the sustainable development. Water is also essential for the life of people, you need to economic growth and conservation of ecosystems. Conference calls for action in three areas: <ul style="list-style-type: none"> • management; • mobilization of financial resources; • capacity building and knowledge sharing
2002	III World Summit on the Sustainable Development in Johannesburg (South Africa)	Goal: the elimination of poverty, including through the provision of sanitation (sewerage) and access to water.
2003	International Year of Freshwater	
2003	III World Water Forum in Kyoto, Shiga and Osaka (Japan); Number of participants (24,000) made this forum was the largest conference in the history of water in the world.	Goal: management and development of knowledge

February 2004	At the 58 session of the UN General Assembly by resolution A / RES / 58/217 was announced 2005–2015 International Decade “Water for Life “.	The resolution of the UN General Assembly recognized that access to clean water is one of the most pressing challenges facing humanity. Access to water is a matter of great importance for the prosperity and human development
2005–2015	International Decade – Water for Life	
March 2006	IV World Water Forum, Mexico City (Mexico)	The motto „Local actions, global challenges”
December 2006	20.12.2006. The UN General Assembly declared 2008 – the International Year of Sanitation.	Goal: to mobilize governments, local government, financial institutions, all social groups for all activities that result would be to allow access to sanitation, as many of the world population
2008	International Year of Sanitation	
March 2009	V World Water Forum, Istanbul (Turkey); more than 30 thousand participants from 182 countries	The motto „By creating platforms for water”
July-September 2010	The UN General Assembly (Resolution A / RES / 64/292, July 2010) and the Human Rights Council (Resolution A / HRC / 15 / L.14 of September 2010)	The United Nations recognized the right of access to fresh water and sanitation as a human right, on a par with other social rights, ie. the right to food and the right to health
March 2012	VI World Water Forum in Marseille (France)	Under the slogan „Time Solutions” presented solutions as a result of an interdisciplinary platform solutionsforwater.org
June 2012	United Nations Conference on Sustainable Development Rio + 20	Under the slogan „The future we want” where water is a key point in the discussion. Emphasis was placed on two issues: the green economy and international management sustainable development
April 2015	Planned VII World Water Forum, Daegu Gyeongbuk (Republic of Korea)	Under the theme “Water for our future.” The aim of this conference is to focus on implementing solutions that were determined during the 6th edition Water Forum in 2012. Objectives: <ul style="list-style-type: none"> • transition from theory to practice; • acquisition of science and technology of water-related issues; • realization of sustainable development objectives: water security for all; water for the development and prosperity; water for the sustainable development: harmonization of people and nature as well as the construction of effective implementation mechanisms

Author’s elaboration based on sources²⁶

²⁶ URL <<http://www.worldwatercouncil.org/fr/forum/daegu-et-gyeongbuk-2015/>>; source: URL <<http://www.worldwatercouncil.org/fr/presentation/histoire/>>; World Summit for Social Development, Copenhagen 1995, source: URL <<http://www.un.org/esa/socdev/wssd/text-version/>>; Fourth Conference on Woman, source: URL <<http://www.un.org/geninfo/bp/women.html>>; World

Because water is just one necessary resource for life, it could not be treated as a topic of debate without a broader context. The emergence of the idea of sustainable development as a new approach to global governance has created a chance to analyse the water issue in a global and integrated way. This perception on development became a new paradigm for ecologists and eventually a sort of universal mean or solution that, according to some scholars, is in doubt as too broad to face today's challenges successfully. Both theorists and practitioners indicate that one of the main causes of poverty is natural resource degradation (both globally and locally) that empowers an economic crisis. Obviously the next issue refers to the scale of this degradation. However, does the declaration of an environmental crisis that justifies this new concept really contribute to the improving water situation in developing states? In the Mediterranean context environmental problems are manifest and implementation of the principles of sustainable development seems to be highly legitimate.

In the face of many real and potential threats water scarcity is the most urgent challenge. A distribution of water on the sustainable development basis implies the emergence of a global model constructed on general rules and theory and practical knowledge sharing able to adapt to specific situations. Yet these models often vary from one another. Such water resource management requires political will, a long-term perspective, capacity, and funding. Therefore, public and private policymakers decided to include water allocation on the international agenda. It has raised the overall awareness of the necessity to replace earlier traditional and atomized approaches to water management with an integrated global approach. In so doing, the Integrated Water Resources Management (IWRM²⁷) system has been promoted since 2000 by the Global Water Partnership and acknowledged as the best and the most effective approach to equitable and sustainable distribution of limited global water resources.²⁸ An integrated model of water resource management makes it possible to better respond to the challenges and pave the way towards a sustainable development model in the Mediterranean (fig. 3).²⁹ However, the IWRM's work mostly depends on local legislation to implement rules resulting from signing multilateral agreements on water resources. Therefore it is important that international actors' activities improve the policies of respective states, as for instance MENA.

Water Council (WWC), source: URL <<http://www.worldwatercouncil.org/fr/>>; <<http://cms.unige.ch/isdd/spip.php?article253>>; Millennium Summit, source: URL <<http://www.un.org/pl/milennium2000/>>; International Conference on Freshwater, Bonn, source: URL <http://arp83.free.fr/Ministerial_Declaration_fr.pdf>; <<http://www.davidblanchon.fr/wp-content/uploads/2012/05/publi13.pdf>> (access: 23.10.2014).

²⁷ IWRM is a process that supports coordinated development and management of water, land and its resources to maximize economic and social profits in a fair way and with no violation of ecosystems' character.

²⁸ <<http://www.un.org/fr/waterforlifedecade/themes/management.shtml>>.

²⁹ *Integrated Water Resources Management (IWRM) – International training courses*, źródło: URL <<http://www.oieau.fr/iowater/publications-121/catalogs-for-professional-training/article/integrated-water-resource?lang=en>> (access: 23.10.2014).

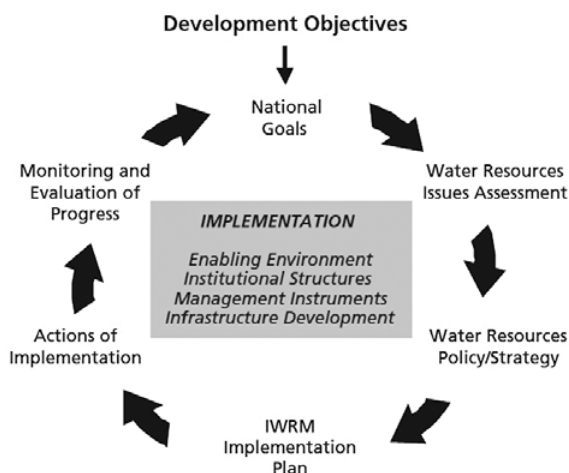


Fig. 3. Stages in IWRM planning and implementation

Source: <<http://www.un.org/waterforlifedecade/iwrm.shtml>>.

Before the IWRM was created at a UN conference on the water issue (Mar del Plata, 1977) a groundwork of water management model had been proposed. It was also stated that all people, regardless of development stage, have the right to water in quantity and quality equal to their basic needs.³⁰ The conference inaugurated the „Decade of Freshwater and Sanitation” (1980–1990) which achievements are – despite a scope of available instruments – unsatisfactory.³¹ Lessons from this failure were learned by the International Conference on Water and the Environment held in Dublin (1992) that provided for a general framework for global water management in a form of four simple principles organizing states’ water policies. The first principle introduces water resources management that requires a holistic approach combining socioeconomic development with environmental protection. The second calls for a participatory approach³² with contributions from end users, planners, and decision makers at all levels. The third principle refers to a central role played by women in distribution, management, and protection of water resources. Its promotion and realization entail strategies that concern specific women’s needs while empowering them to participate in water projects at all

³⁰ *United Nations Conference on water* (Mar del Plata, 1977), source: URL <http://www.who.int/water_sanitation_health/unconfwater.pdf> (access: 23.10.2014).

³¹ During this decade, over \$100 billion was invested in public property that gives some 1.3 million an access to freshwater but the quality of services has not been changed and the network is inadequate to local needs.

³² This approach enables to raise awareness about the significance of water among policy makers and society as a whole; that means that decisions are made at the lowest appropriate level after public consultations with an engagement of end users in the water supply planning and implementation projects.

levels, including their influence on the decision-making process. The fourth principle emphasizes that water, besides its life-giving value, also plays an important economic role and should be perceived as such. This firstly implies the basic human right to clean water and sanitation at affordable prices. The Dublin statement on water and sustainable development – which incorporates the above-mentioned principles – partially granted water the status of economic good.³³

Ignoring this value in the past led to the ineffective and environmentally harmful exploitation of water. Conversely, viewing water in economic terms is an effective way to achieve rationality, equitable use, and the capacity to preserve and protect water resources.³⁴ Dublin principles were approved by all African states on the conference of Addis Ababa (March 1995).³⁵ Mediterranean countries did the same at the Second Mediterranean Conference on Water in Rome between 28 and 30 of October 1992 with the signing of The Mediterranean Water Charter.³⁶ The water issue was also central in the implementing document on sustainable development, i.e. Agenda 21, adopted at the Earth Summit in Rio de Janeiro in the same year (see chapter 18 entitled: „Protection Of The Quality And Supply Of Freshwater Resources”³⁷) as well as in the Millennium Development Goals set out at the Millennium Summit in 2000 (goal 7C which projects to halve the number of people without a permanent access to freshwater by 2015³⁸). Finally, a water section allows governments to experiment in participatory management, creation of public-private partnerships, and fighting corruption. The scope of targets indicated that sovereignty over natural resources is limited and this refers not only to transboundary river basins but to global circulation system as a whole and all possible water uses.

An exceptionally crucial document for a process of integrated management of water resources is the UN Convention on the Law of the Non-Navigational Uses of International Watercourses³⁹ (May 27 1997) that has just entered into force on August 17, 2014 after 35 ratifications.⁴⁰ This Convention is especially significant

³³ *The Dublin Statement on Water and Sustainable Development*, source: URL <<http://www.un-documents.net/h2o-dub.htm>> (access: 23.10.2014).

³⁴ *The Dublin Statement on Water and Sustainable Development*, source: URL <<http://www.wmo.int/pages/prog/hwrp/documents/english/icwedece.html>> (access: 23.10.2014).

³⁵ *The Conference Statement on Water Resources Monitoring and assessment in Africa*, source: URL <<http://www.wmo.int/pages/prog/hwrp/documents/english/declengl.html>>.

³⁶ Source: URL <http://www.emwis.org/overview/fo1101997/fo1590538/Roma_19921030_ChME_fr.pdf> (access: 23.10.2014).

³⁷ See *Agenda 21: Earth Summit: The United Nations Programme of Action from Rio*, United Nations 2013, pp. 194–223.

³⁸ Source: URL <<http://www.un.org/millenniumgoals/envIRON.shtml>> (access: 23.10.2014).

³⁹ *Entrée en vigueur Convention des Nations unies sur le droit relatif aux utilisations des cours d'eau internationaux à des fins autres que la navigation*, New York, 21 mai 1997, source: URL <<https://treaties.un.org/doc/Publication/CN/2008/CN.353.2008-Frn.pdf>> (access: 23.10.2014).

⁴⁰ Source: URL <<http://www.diplomatie.gouv.fr/fr/politique-etrangetere-de-la-france/environnement-et-developpement/actualites-et-evenements/2014-22850/article/entree-en-vigueur-convention-des#>> (access: 23.10.2014).

for countries which share areas of transboundary river basins. It is estimated that over 40 percent of the world's population live in such areas which account for roughly 60 percent of global fresh water resources. This implies that 40% of these resources are covered by collective management under agreements made by involved states. Meanwhile, such a situation could create tensions which may become intense in certain areas.⁴¹ The most controversial article of the Convention points out the obligation „not to cause significant harm”. It forced its signatories to take all possible measures to prevent other states with whom they share watercourse from doing harm and to potentially pay damages. Unsurprisingly, many countries have blocked the signature of this document. States such as Jordan, Syria, and Lebanon which have small water resources are accusing Israel of fresh-water waste. In fact, geopolitically the latter wants to achieve its food security that needs a lot of water from the Jordan River to irrigate rice and corn fields.⁴² At the time when the Convention was entering into force such a policy could qualify as a cause of “significant harm”. The situation in Turkey and the People's Republic of China is quite similar, because they are situated in upper positions of important regional rivers and since August 2014 have had to consider the interests of states lying downstream.⁴³ Although the Convention cannot deal with all problems, it provides for a unified legal Framework (rules, standards, dispute resolution mechanisms) in the management of transboundary water resources. Thus, from the Mediterranean perspective, this document is especially important. Its implementation should promote effective and stable exploitation of watercourses by present as well as future generations, i.e., the very nature of water management based on the principles of sustainable development.⁴⁴

Despite many documents shaping the evolution of water management in the world, the adoption of General Assembly resolution of 28 July 2010 (A/RES/64/292) was a historical milestone.⁴⁵ It stresses the importance of equal access to clean water and sanitation as an integral element of human rights protection and urges states' responsibility to promote and protect all of these rights as universal, undivided, interdependent, and mutually connected – perceived as a whole and on equal and fair terms and priorities. Accordingly, the resolution has recognized:⁴⁶ 1) the right to fresh water and sanitation as the basic human

⁴¹ *Ibidem*.

⁴² See more: B. Rękawek, *Rozgrywki o wodę w dorzeczu Jordanu*, 10.09.2011, source: URL <<http://www.stosunki.pl/?q=content/rozgrywki-o-wod%C4%99-w-dorzeczu-jordanu>>; P. Jokieli, „Mokre” konflikty, source: URL <<http://hydro.geo.uni.lodz.pl/index.php?page=mokre-konflikty>> (access: 23.10.2014).

⁴³ J. Ziemińska, *Konwencja (nie)cierpiąca zwłoki*, „Polityka globalna.pl” 27 kwietnia 2009, source: URL <<http://www.politykaglobalna.pl/2009/04/konwencja-niecierpiaca-zwloki/>> (access: 23.10.2014).

⁴⁴ More on sustainable development principles see also: *Ekorozwój i Agenda 21. Interdyscyplinarny model kształcenia*, ed. P. Pieczyński, Szczecin 2007, pp. 208–303.

⁴⁵ Zob. *Résolution adoptée par l'Assemblée générale 64/292, A/RES/64/292*.

⁴⁶ *Ibidem*.

right that is essential to life; 2) that countries and IGOs are obliged to cooperatively ensure financial resources for capacity-building and technological transfer in chiefly developing states which aims an intensification of fresh water supply efforts and projects on sanitary facilities; 3) to establish an independent group of experts to investigate linkages between human rights and access to fresh water and report them to reach Millennium Development Goals.⁴⁷ Two months later, on 24 September 2010, the Council of Human Rights adopted the second resolution (A/HRC/15/L.14)⁴⁸ confirming that the right to safe drinking water and sanitation is “inextricably linked to the right to life and human dignity and to the need for an adequate standard of living”.⁴⁹ This profound change in rhetoric has been accepted by the majority as a step in the right direction to eliminate disparities in access to water in the world.⁵⁰ These historical documents have given a chance for groups, societies and aboriginal peoples that suffer from water scarcity and poor quality or the lack of sanitation. Hence, the right to safe drinking water and sanitation, that has already been acclaimed by the aforesaid documents, is central to the process of worldwide transformation.⁵¹

4. THE MEDEITERRANEAN COOPERATION IN THE REALM OF WATER MANAGEMENT

Initiatives that refer to multilateral cooperation by countries in the Mediterranean region are old and compound. Their main component – “water” – is seen through the prism of actions with regard to the natural environment and sustainable development. Of course this study cannot focus on every cooperation in the realm of water management in the Mediterranean basin, given their great number and the range of actors that address water as a natural resource (a broader picture of cooperation is presented in table 3). These projects are realized in varied configurations, i.e.: decentralized cooperation of regions and a bilateral (state/state) format, the European Union/state format as well as the EU/regional coalitions one. Finally, the scope of the Mediterranean countries’ cooperation

⁴⁷ Source: URL <<http://www.un.org/millenniumgoals/>> (access: 26.10.2014).

⁴⁸ See *Human rights and Access to safe drinking water and sanitation*, A/HRC/15/L.14, 24.09.2010, pp. 1–4.

⁴⁹ This text was very influential. A civic initiative of 17 February 2014 resulted in communication of the European Commission: EUROPEAN COMMISSION Brussels, 19.3.2014 COM(2014) 177 final COMMUNICATION FROM THE COMMISSION on the European Citizens’ Initiative “Water and sanitation are a human right! Water is a public good, not a commodity!”. Citizens urged the Commission to make law implementing the human right to drinking water and sanitation and to exclude water management from the rules of an internal market and to keep water services out of a market economy.

⁵⁰ F. Sultana, A. Loftus, *Perspektywy i możliwości*, [in:] *Prawo do wody. W perspektywie politycznej, gospodarczej i społecznej*, ed. F. Sultan, A. Loftus, Warszawa 2012, p. 28.

⁵¹ M. Barłow, *Przedmowa*, [in:] *Prawo do wody...*, p. 25.

cannot be weighted up out of many non-European initiatives, e.g. the United Nations, regional unions (Arab or African) and international financial institutions, i.e. development banks or nonstate organizations.⁵² So the logical purpose of this section is to focus on the main axis of cooperation in the realm of water management in the Mediterranean region at different levels: the EU, the UN and the MENA countries alone.

The problems of water scarcity and pollution in the Mediterranean have become noticeable at EU level. By pointing out the Treaty on the European Union, especially its article 175 (1), the EU decided to establish a framework for common policy in the field of water. It reaffirmed that water is not a community but rather a legacy which must be protected. As a result of ministerial meeting on groundwater that was held in the Hague in 1991 the EU acknowledged the need to avoid the deterioration of fresh water quality and quantity in the long run and urged member states to elaborate a programme of actions to 2000 in favour of reasonable management and protection of water resources. On 18 December 1995, acting on the basis of the previous report prepared by the European Environmental EEA and emphasizing the need for EU water protection, the Council adopted conclusions requiring, i.a. the adoption of new directive on the basic principles of EU water policy based on sustainable development. On 21 February 1996 the Commission presented the objectives of common water policy. A central element of European water legislation aiming to protect water resources at the source is the directive 2000/60/CE establishing a framework for the common water policy – the EU Water Framework Directive, WFD of 23 October 2000.⁵³ The WFD's main goal is to prevent and control water pollution and to promote the balanced exploitation of water resources as well as environmental protection, improving water ecosystems, and minimizing the impact of floods and droughts. The final outcome of the directive is to achieve by the end of 2015 “good ecological and chemical status” for all waters.⁵⁴

The Mediterranean Sea – as the 6th ecoregion of EU transitional and coastal waters – is the biggest European sea that connects EU and non-EU states. Their well-being depends on the marine and natural environment of the all countries located around the Mediterranean Sea. Unsurprisingly, the Community and its members are parties to many different international agreements that obligate them not only to protect fresh water resources but also seawaters. Among the most important is the Barcelona Convention for the protection of the Mediterranean,

⁵² Cf. source: URL <<http://www.minenv.gr/medeuwi/download/Rapport%20final%20FR.pdf>> (access: 26.10.2014).

⁵³ *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.*

⁵⁴ The EU established a framework for protection of: surface water, groundwater, transitional and coastal water.

of 16 February 1976, concluded by the Council's decision 77/585/EEC⁵⁵, and the Protocol for the protection of the Mediterranean Sea against pollution from land-based sources, signed in Athens on 17 May 1980 and concluded by the Council's decision 83/101/EEC.⁵⁶ The scope of the Barcelona convention was expanded on 10 June 1995 to include integrated planning and management in the coastal area.⁵⁷ Its 22 parties were obliged to make all necessary efforts to protect and improve the Mediterranean marine environment in an individual or concerted way in favor of sustainable development. To meet this goal, all states committed to reduce pollution in this area as much as possible. The Protocol on Integrated Coastal Zone Management (ICZM) was also added to the Convention and entered into force on 24 March 2011. It aims to promote the sustainable development of coastal areas through rational planning, coastal zone and ecosystems protection, reasonable exploitation of natural resources, prevention and minimization of environmental disasters and climate change as well as to enhance the further cooperation.⁵⁸

This shows that the physical location of the Mediterranean coastal countries creates high interdependencies among them. Yet, this environment is fragile and steadily deteriorating and initiatives and strategies prepared during the last dozen or so years are either insufficient or empty (i.a. Environment Strategy for the Mediterranean, ESM, of 5 September 2006⁵⁹). The primary reason for this is not only a lack of financial resources but the remaining relatively low position of environmental issues and policies on MENA countries' political agenda. Therefore, the improvement of actions for the environment in the Mediterranean Sea basin is vital in the form of coordinated strategy between the EU and interested states. The ESM mainly concentrates on the Mediterranean countries participating in the European Neighbourhood Policy – ENP – (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia) which should implement Community legislation in the field of natural environment.

Apart from security threats emanating from water supply, degradation of habitat and negative consequences of climate change, there are also issues of

⁵⁵ Council Decision 77/585/EEC of 25 July 1977 concluding the Convention for the protection of the Mediterranean Sea against pollution and the Protocol for the prevention of the pollution of the Mediterranean Sea by dumping from ships and aircraft.

⁵⁶ Council Decision 83/101/EEC of 28 February 1983 concluding the Protocol for the protection of the Mediterranean Sea against pollution from land-based sources.

⁵⁷ Convention pour la protection de la Mer Méditerranée contre la pollution, source: URL <http://195.97.36.231/dbases/webdocs/BCP/bc76_fre.pdf> (access: 26.10.2014).

⁵⁸ Source: URL <http://europa.eu/legislation_summaries/environment/water_protection_management/128084_fr.htm> (access: 26.10.2014).

⁵⁹ See more: *Communication from the Commission to the Council and the European Parliament establishing an Environment Strategy for the Mediterranean*, COM(2006) 475 final of 5.9.2006, source: URL <<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006DC0475>>; *Stratégie de l'environnement pour la Méditerranée*, source: URL <http://europa.eu/legislation_summaries/environment/water_protection_management/128182_fr.htm> (access: 26.10.2014).

maritime security. These common, current as well as future problems, require the promotion of management of the maritime economy. This management should enhance the realization of sustainable development. To face the common challenges decision-makers have to consider the linkages between different sorts of maritime activity which recall the Integrated Maritime Policy (IMP), formulated in October 2007. This new concept of maritime policy urges abandonment of sector policies in favor of a holistic approach.⁶⁰ The strategy to improve maritime governance in the Mediterranean – accepted by the European Commission on 11 November 2009 – has outlined a new framework for such management.⁶¹ This approach focuses on the enhancement of cooperation between all interested parties in all aspects of maritime sector in the Mediterranean, i.a. through exchange of best practices supported financially by the EU. Technical assistance for the implementation of these objectives was provided by the ENP's financial instrument, i.e. European Neighbourhood and Partnership Instrument (ENPI⁶²) for other Mediterranean countries. This strategy is an additional activity of the EU promoting the ratification and implementation of the United Nations Convention on Law of The Sea – UNCLOS (1982).⁶³

Activities related to the IMP induced participants of the Euro-Mediterranean Ministerial Conference on Water, was held on 22 December 2008 in Jordan, to prepare a common longterm strategy (Strategy for Water in the Mediterranean, SWM). This task was handed over to a group of water experts⁶⁴ who initiated preparations with the strong support of governments, local authorities and regional actors. SWM's main objective was to pave the way for the effective implementation of IWRM in Mediterranean countries. It encompasses five primary areas: effective management, adaptation to climate change, demand management, performance of unconventional resources, and assessment and optimization of funding.⁶⁵ Consequently, it stimulates development based on sustainable development by introducing “new water culture” that gives present and future generations a chance for economic development, prosperity, and reasonable water

⁶⁰ *Strategy to improve maritime governance in the Mediterranean*, source: URL <http://europa.eu/legislation_summaries/environment/water_protection_management/pe0009_en.htm>.

⁶¹ *Communication de la Commission du 11 novembre 2009. Pour une meilleure gouvernance dans la Méditerranée grâce à une politique maritime intégrée*, COM (2009) 466 final.

⁶² Source: URL <http://eeas.europa.eu/enp/index_en.htm>.

⁶³ UNCLOS is a central act of the law of the sea, signed on 10 December 1982 by 165 countries and the EU, podstawowy dokument prawny w dziedzinie prawa morza, podpisany 10 grudnia 1982 r. przez 165 państw i UE. It is worth noting that Turkey still has not signed this document.

⁶⁴ See more: URL <http://www.enpi-info.eu/main.php?id=19356&id_type=1> (access: 26.10.2014).

⁶⁵ *Union pour la Méditerranée. Stratégie pour l'eau en Méditerranée, projet final (Mars 2010), Annexe 1 à la Déclaration de la 4^{ème} Conférence ministérielle euro-méditerranéenne sur l'eau (Barcelone, 13 avril 2010)*, source: URL <http://www.ipemed.coop/adminIpemed/media/fich_article/1365757908_Strat%C3%A9gie%20pour%20l'eau%20en%20M%C3%A9diterran%C3%A9e_UpM_Mars10.pdf> (access: 26.10.2014).

management.⁶⁶ This document was also presented during the Euro-Mediterranean Ministerial Conference on Water of 13 April 2010 as a SWM draft.⁶⁷ Unfortunately, the geopolitical context and opposition of Turkey and Israel obstructed the consensus needed to finally adopt the strategy.⁶⁸ Nevertheless, this document is a benchmark defining the general criteria for projects' evaluation used by the General Secretariat of the Union for the Mediterranean since it was established in Barcelona in 2010. Secondly, it allows financial institutions to use a coordinated approach to about 120 projects that have been already qualified.⁶⁹ Finally, this strategy is also based on the "Horizon 2020" initiative and a plan for action for the Mediterranean which aims to reduce pollution in the Mediterranean Sea.⁷⁰

The Algerian-Spanish project constitutes an interesting proposal of water management institutionalization in the Mediterranean. These states understand problems linked to management of water as an extremely rare resource and have initiated a process of water strategy formulation in a framework of the 5+5 Water Strategy for the Western Mediterranean (WSWM).⁷¹ This proposal was accepted by the chiefs of state and heads of government of the Dialogue 5+5 at the Malta summit (October 2012) and later approved by the entire European Union and finally declared officially during the UN's 68th General Assembly session on 24 September 2013.⁷² The last instance of action within this initiative was a meeting of WSWM Ministers of Foreign Affairs that was held on 22 May 2014 in Lisbon.⁷³ Due to the limited volume of financial resources raised both by interested countries and in a form of Official Development Assistance, the strategy requires additional funding.⁷⁴

⁶⁶ See: *The Union for the Mediterranean Water Strategy. Preparatory process and orientations*, source: URL <<http://www.inbo-news.org/IMG/pdf/Segura.pdf>> (access: 26.10.2014).

⁶⁷ REX -379, Managing water-related challenges in the Euro-Mediterranean region (information report) – 2nd meeting of the SGR 10/06/2013.

⁶⁸ See the final declaration of the 4th ministerial conference on water, Barcelona, 13 April 2010, source: URL <<http://www.ambafrance-uk.org/Conference-ministerielle-Processus.html>>; *L'eau en Méditerranée, Offre et demande en eau dans le bassin Méditerranéen*, źródło: URL <<http://www.ipemed.coop/fr/nos-projets-r16/eau-c137/focus-sc148/leau-en-mediterranee-a1670.html>> (access: 20.10.2014).

⁶⁹ Source: URL <<http://www.eesc.europa.eu/?i=portal.en.register-of-documents>> (access: 26.10.2014).

⁷⁰ See more: URL <<http://ufmsecretariat.org/towards-the-depollution-of-the-mediterranean-sea-and-sustainable-consumption-and-production/>> (access: 26.10.2014).

⁷¹ The "5+5" group consists of: Spain, France, Italy, Malta, Portugal from the North and Algeria, Libya, Morocco and Tunisia (the South).

⁷² Cf. *Euro-Mediterranean Information System on know-how in the Water sector*, źródło: URL <<http://www.emwis.org/thematicdirs/events/2014/02/5-5-water-strategy-western-mediterranean.-1sr-workshop>> (access: 26.10.2014).

⁷³ Source: URL <<http://www.diplomatie.gouv.fr/en/country-files/north-africa-and-middle-east/events-7473/article/5-5-dialogue-11th-meeting-of-the>> (access: 26.10.2014).

⁷⁴ According to UN data (2010) some 7 percent of ODA allocated to water sector was transferred to Maghreb countries and 12 percent went to the Middle East (respectively: \$ 581 million and \$ 996 million, in sum over \$ 1,5 billion).

Tab. 3. The evolution of action to manage water resources in the Mediterranean

Date	Event/ Conference/ Document	Postulates/Results
February 16, 1976; Revised June 10, 1995 r.	Barcelona Convention	The implementation of regional and national plans for the sustainable development (including integrated coastal zone management)
May 1990	Algerian Declaration	Confirmed the importance of a common strategy for management of water resources.
28–30 October 1992 in Rome (Italy)	Mediterranean Water Charter	It introduces the principle of regional and international cooperation in the field of water
27–28 November 1995 in Barcelona (Spain)	The Barcelona Declaration	The water was considered as a priority to achieve the main objective of the Declaration that is: the establishment of a zone of shared prosperity
25–26 November 1996 in Marseille (France)	First Euro-Mediterranean Ministerial Conference on the Water	
November 28, 1997 in Helsinki (Finland)	First Euro-Mediterranean Conference on the Environment	The adoption of the Programme of Action in the field of Environmental Protection (Short and Medium-Term Priority Environmental Action Programme- SMAP), in which one of the key objectives was to launch actions for the integrated management of water resources.
18–19 October 1999 in Turin (Italy)	Euro-Mediterranean Ministerial Conference on Local Water Management	The Action Plan focuses on six priority areas: 1) the integrated management of local drinking water distribution, sewerage and wastewater treatment; 2) local resource management and demand for water (quantity and quality); 3) prevent and mitigate the negative effects of drought and equitable management of water scarcity; 4) management of irrigation water; 5) the use of non-conventional water resources; 6) the development of national and local scenarios for 2025. As to establish the precise objectives for the implementation of sustainable management of water resources.
Directive 2000/60 / EC of 23 October 2000	The Water Framework Directive	Provides a framework for cooperation for the protection and management of water, including for third countries of the Mediterranean Basin
June 22, 2005, approved by the Mediterranean Commission on Sustainable Development of Athens (Greece)	Mediterranean Strategy for Sustainable Development developed by the Mediterranean Action Plan	Goal: to ensure the safety and stability and prosperity in the Mediterranean region. One of the priorities is the integrated management of resources and demand for water. 2025 deadline established and desirable goals: for drinking water: to bring the level of distribution losses to 15%; for irrigation: reduce the level of losses in the transport and distribution of water to 10% and maintain farm irrigation efficiency to 80%; Industry: spread recycling to 50%. However, very few countries signatories of designated national efficiency targets and deadlines to achieve these objectives.

Communication from the Commission of 5 September 2006. COM (2006) 475	Environment Strategy for the Mediterranean	Goal: to protect the marine and coastal environment in the Euro-med. and the reduction of pollution by 2020.
Communication from the Commission of 11 November 2009; COM (2009) 466	EU Strategy improve maritime governance in the Mediterranean Sea	Goal: to improve the management of the seas, which should combine economic growth with environmental protection; strengthen cooperation with third countries of the Mediterranean basin.
April 2010	Strategy Water for Mediterranean SWM	It has not been adopted (Turkey's objections and Israel)

Source: author

The implementation of IWRM in the Mediterranean means the upgrade of water to the global level of management and consequently application of the complete models and methods of operation. Such a way of management should be a function of linkages between local Mediterranean experiences and the global theoretical model. In fact, many southern states have incorporated or are realizing the French model of water area management, e.g. river basins with the creation of water agencies.⁷⁵ Their mission is to develop long-lasting relations between those interested in complex management of water resources in big river basins and to enhance the exchange of experience and knowledge. The indicators of water management evaluation have also generated a lot of attention.⁷⁶ The IWRM implementation in the Mediterranean is assisted by the International Maritime Bureau.⁷⁷ The most important projects in the Mediterranean to date are: 1) a programme for 2008–2010 – water quality management in Egypt with the Ministry of Water Resources and Irrigation a main beneficiary; 2) the realization of the National Water Plan in Algeria, a study visit and a training course in France (2008–2010); 3) a project for the water quality improvement with the Ministry of Environment and Forestry (2010).⁷⁸

During the last few decades two key problems have emerged in the field of water management. The first refers to the imposition of a concept of sustainable development in a water sector that is somewhat against the right of local societies (water is not a commodity). The second relates to linkages between environmental

⁷⁵ See: URL <<http://www.riob.org/>> (access: 26.10.2014).

⁷⁶ Among these indicators are, i.a.: SWAP, Aquastress Water Stress Index (AWSI) – water monitoring – relating to their in the Mediterranean.

⁷⁷ *Office International de l'Eau*, source: URL <<http://www.oieau.fr/oieau/qui-sommes-nous/?lang=fr>> (access: 26.10.2014).

⁷⁸ *Catalogue 2011. Formations international es Gestion Intégrée des ressources en Eau*, OIE, pp. 4, source: URL <<http://www.oieau.org/cnfm/catalogues/GIRE-2011/>> (access: 26.10.2014).

protection and the “right to development” for countries of the South. Preservation of natural heritage and protection of the human “commons” is contradicted. The rich North countries have adequate financial resources to put in place regulations referring to the IWRM implementation. At this point, both financially and geopolitically, the situation is very appealing but still shows differences in realization in the Mediterranean which depends on a level of local economies. Undoubtedly, EU countries are dominant in promoting the new model of management. In case of water it is evident that questions such as access to water funding for the poorest should be addressed as a high priority at a local level. Up to date results of the implementation of sustainable water management are quite scarce. At the current stage this requires mobilization of new financial resources. Economic instruments are used more in the fresh water sector than in agriculture. To improve the water situation in developing states (including MENA countries) international donors set goals and propose how to operate: to decentralize public services, to engage end-users (so-called participatory management) and to develop public-private partnerships.

In practice, there is still hardly any integrated mechanism of water management. The Mediterranean countries should be more decisive in setting their water management agenda as well as in fund-raising.⁷⁹ Mobilization of additional funding is a necessary condition to make the Mediterranean water strategy possible. According to WHO estimations, about \$17 billion per year would be needed to meet the demand for water and sanitation in MENA.⁸⁰ In the indebted countries whose economies are unable to cover all needs, Official Development Assistance (ODA) is a main source of money for the water sector but still insufficient to meet needs. To fill this gap in funding the participants should follow two instructions: realization of durable reimbursement policy and concentration on resilient, predictable and additional funding. Apart from revenues from international fees, it is important to change the way business actors operate through application of the “polluter pays principle” or tariff relief for consumers. Such an approach needs the strong political engagement of the Mediterranean states, regional (Union for the Mediterranean) and international (the U.N.) institutions which have been active in the following years.⁸¹ The guarantee of success in the water sector is to find justice between different sectors and balance local, national and regional needs. This aim requires the creation of a partnership of Mediterranean coasts that optimizes financial flows and allocates them to improve access to the high quality water for everyone, employs them and secures space for social development. Finally it necessitates political will to confirm all these declarations by special law. Definition of WSWM could be a foundation for such a partnership.

⁷⁹ F. Roignant, *L'eau en Méditerranée: usages et enjeux, Synthèse technique*, Février 2007

⁸⁰ C. Objebin-Yousfaoui, *op. cit.*, p. 11.

⁸¹ *Ibidem*, p. 12.

CONCLUSIONS

Water is essential to life and there is nothing which can substitute for it. For millions of people living in MENA countries drinking water is still out of reach. Meanwhile, water is frequently perceived as the main strategic resource of the 21st century. A policy of sustainable development that addresses the water issue has to be formulated within a context of the efficient management in which the civilian population can participate. Many MENA countries have experienced a rise in awareness due to the knowledge, training courses, and information campaigns. Yet, the way to IWRM is blocked by the insufficient scope of common actions and the lack of adequate financial support which have to be rejuvenated. Given the above, despite many achievements of the last decades water is the challenge to sustainable development. The latter was invented as the vision of new quality in the world that incorporates environmental protection which connects global water management with local ones. The most demanding thing is to stabilize water consumption at a natural level below which it could be regenerated.⁸² According to some research, a water management scenario that is in line with the vision of sustainable development, could decrease the demand for water by 30% to avoid a water consumption crisis (a level above 100%) for all Mediterranean countries except Libya and Palestine which exceeded this limit long ago.

This scenario is based on the withdrawal of recent trends and unification of economic, political, legal instruments with technology. The evolution requires a strategy based on “the new culture of water management”⁸³, which denotes a radical change of behaviour, increased responsibility for resources by both consumers and policy makers.⁸⁴ Hence, this “new culture” also needs to build consensus among public and private sectors as well as between national interests and transnational cooperation with respect to present and future generations.⁸⁵ The SWM project proposed in April 2010 is an incarnation of this change and stands for a big step towards the new model of management. Unfortunately, it has not been accepted by all Mediterranean countries and this won’t change without multiple initiatives at different levels. Summing up, in the face of the water situation in this part of the world one can enumerate a few challenges for Mediterranean

⁸² Cf. E. Giry, E. Kikudji, N. Touache, P. Burger, *Gestion de la demande en eau en Méditerranée: réflexions sur la dimension communication*, „Éthique de l’eau et éducation des populations” décembre 2003, source: URL <<http://vertigo.revues.org/1953>>, p. 7 (access: 26.10.2014).

⁸³ *Ibidem*, p. 3.

⁸⁴ See more: B. Poskrobko, T. Poskrobko, *Zarządzanie środowiskiem w Polsce*, Warszawa 2012, pp. 11–32.

⁸⁵ It is worth mentioning that throughout history the Mediterranean tradition respected the water issue. A change of social behaviour is the result of urbanization, population growth and general development connected to technological revolution in MENA countries. Paradoxically, the recent phenomena are perceived by the society of MENA countries as a positive step forward and the reduction of disparities between the developed North and the poor South.

countries, regardless of their level of cooperation: improvement of access to high quality of fresh water; sewage and water treatment (both household and industrial); fight with dispersed pollution and finally the adaptation of water resources management in light of climate change. If these challenges are to be dealt with by MENA countries, they will get a big chance and hope (in the long run) to build rich societies which harmonize with nature. However, a test for governments and intergovernmental institutions is to find out ample mechanisms and tools to achieve this equilibrium. Secondly, it is also challenging to enhance states' capabilities to overcome historical barriers that emanate in their legislation with regard to fresh water management for women and development, but also biodiversity and ecosystems. The use of these instruments is worthwhile.⁸⁶

ZARZĄDZANIE WODĄ JAKO WYZWANIE ROZWOJU SAMOPODTRZYMUJĄCEGO SIĘ W BASENIE MORZA ŚRÓDZIEMNEGO

Streszczenie. Region śródziemnomorski zajmuje szczególną pozycję na arenie międzynarodowej. Leży na styku trzech kontynentów, co sprawia, że jest przedmiotem stałego zainteresowania zarówno poszczególnych państw zachodnich, jak i całej Unii Europejskiej. Obszar ten stoi wobec wyzwań politycznych, gospodarczych, ekologicznych i społecznych. Sprostanie różnorodnym wyzwaniom wymaga od UE i partnerów śródziemnomorskich wspólnej pracy i wizji. Szczególnym wyzwaniem w kontekście regionu śródziemnomorskiego jest drastyczny spadek zasobów wodnych połączony z degradacją środowiska naturalnego. Woda jest nieodłącznym elementem życia ludzkiego i przyrodniczego. Tworzy relacje w oparciu o skomplikowany cykl hydrologiczny i współzależności wszystkich form życia na Ziemi. Obniżenie zasobów wodnych pod względem ilościowym i jakościowym może mieć negatywny wpływ na każdą formę życia. Wyzwaniem jest rozwiązanie problemu „konkurencji o wodę” między człowiekiem a przyrodą. Odpowiedzią na to jest idea rozwoju samopodtrzymującego się, zaś skutecznym sposobem jej realizacji oraz osiągnięcia harmonizacji we wszystkich obszarach działalności człowieka jest włączenie kwestii środowiskowych (w tym wody) do przepisów krajowych i międzynarodowych. Celem artykułu jest analiza zarządzania wodą stanowiąca kluczowe wyzwanie dla rozwoju samopodtrzymującego się, uwzględniająca podejście dedukcyjne do globalnych sposobów gospodarowania wodą oraz do regionalnej praktyki państw śródziemnomorskich.

Słowa kluczowe: zarządzanie wodą, basen Morza Śródziemnego, rozwój samopodtrzymujący się

⁸⁶ Source: URL<http://www.unep.org/delc/Portals/119/UNEP_Greening_water_law_french.pdf#page=21&zoom=auto,-226,698>, pp. 117–118 (access: 26.10.2014).