

The background of the cover is a photograph of a sunset or sunrise over a large body of water. The sky is a mix of orange, yellow, and blue, with some light clouds. The sun is low on the horizon, creating a bright, shimmering reflection that stretches across the water's surface. The overall mood is serene and hopeful.

The Mediterranean Water Institute

Vision and Prospects

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Vision and Prospects

Major stakeholder in the thought on the problems linked to the water management in a region of the world where difficulties of all types would seem to combine to attenuate the result of the enormous efforts made.

The aim of the Mediterranean Water Institute (IME), an international NGO, is to promote the development of cooperation between the countries which border the Mediterranean, in the field of water. It coordinates a Mediterranean network bringing together different capacities of expertise in this field.

After 25 years of existence, the Mediterranean Water Institute expressed the desire to redefine its place and its objectives in the Mediterranean water world. It started by reviewing its past and then by analysing its present. It studied its past actions and considered its current actions, which derive essentially from the diversity and the quality of its members.

Mediterranean water is a well known issue. It may be characterised in a number of countries, especially in the South and the East, by limited resources faced with strong demographic growth, which leads to competition between the uses and a tension on the resources; the prospect of the climate changes to come aggravates this situation through the risk of great strain on the mobilisation capacities of these resources.

Faced with this situation, the integrated management of water resources represents the best way to meet the three challenges, economic, social and environmental, with which a number of countries in the Mediterranean region have to contend.

The economic challenge aims at maximising the benefits drawn from the available water resources and enabling the water sector to assist the other socio-economic sectors to achieve their own objectives.

The social challenge aims at guaranteeing access to everyone of good quality water in sufficient quantity, thus improving the health of the populations.

The environmental challenge aims at reconciling the overall satisfaction of water needs with the maintenance in a good ecological state of the aquatic environment and protecting the population from the sometimes dramatic impacts of natural catastrophes.

In this context, and in the framework of the large international guidelines and initiatives, IME takes its place, in a perspective of sustainable development in the region, by working for the promotion of know-how, the sharing of experience and synergy between all the stakeholders.

It is in a position to take advantage of several different levers:

- to participate in the thought on the great challenges to be overcome in the Mediterranean (access to water, necessary reform of irrigated agriculture, prevention of water-linked risks, etc...) ;
- to supply services of expertise, training or documentation responding to the needs of its members, or all those who might like to call upon it;
- to promote better management of resources and demand, and support the efforts taken to improve the governance of the institutions in charge of this management;
- to support all relevant initiatives in terms of regional cooperation in the water field;
- to facilitate education and raise the awareness of the Mediterranean populations to the important issues of the sustainable management of water.

The comprehensive thought launched by IME can be found summarised in two documents drawn up by its Scientific and Technical Committee and presented below:

- “*Vision*”, sets out the way in which IME perceives the issue of water in the Mediterranean and attempts to respond to it with its own assets. It redefines the role which the Institute would like to play both in relation to its members and its partners and the great objectives that it has fixed for itself.
- “*Strategy*”, presents the programme of short and mid-term actions which will convert the overall guidelines defined in the “*Vision*” into action.

Acronym List

ACP: African, Caribbean and Pacific Group of States
AFD: French Development Agency
ADB: African Development Bank
CEDARE: Centre for Environment and Development for the Arab Region and Europe
CIHEAM: International Centre for Advanced Mediterranean Agronomic Studies
CSD: United Nations Commission on Sustainable Development
EIB: European Investment Bank
EIC: Euro-Mediterranean Irrigators Community
EMWIS: Euro-Mediterranean Information System on the know-how in Water Sector
EU: European Union
EUWI: European Water Initiative
FAO: Food and Agriculture Organization of the United Nations
GWP: Global Water Partnership
GWP-Med: Global Water Partnership Mediterranean
IME: Mediterranean Water Institute
INBO: International Network of Basin Organizations
MAP: Mediterranean Action Plan
MCSD: Mediterranean Commission on Sustainable Development
MDG: Millennium Development Goals
MEDTAC: Technical Assistance Committee for the Mediterranean
MEDWAN: Mediterranean Water Agencies Network
MENA: Middle East and North Africa
MENBO: Mediterranean Network of Basin Organizations
METAP: Mediterranean Environmental Technical Assistance Programme
MIO-ECSDE: Mediterranean Information Office for Environment, Culture and Sustainable Development
NEPAD: New Partnership for Africa's Development
OSS: Sahara and Sahel Observatory
RME: Mediterranean Water Network
UNCED: United Nations Conference on Environment and Development
UNEP: United Nations Environment Programme
WB: World Bank
WFD: Water Framework Directive
WHO: World Health Organization
WSSD: World Summit on Sustainable Development
WWC: World Water Council



Vision of IME for a water sustainable management in the Mediterranean



Vision of IME for a water sustainable management in the Mediterranean

1. A general consensus : the challenge of water in the Mediterranean region

The Mediterranean socio-economic context is firstly characterised by a highly contrasted demographic pressure, where the growth rates of the population, low in the northern countries, are very much higher in the South. They show an increasing trend in the longer term in the southern and eastern countries. As a result of the development imperatives and urbanisation there is increasingly unsupportable pressure on the water resources of the region.

The index of the exploitation of resources, that is to say the relationship between the extractions and the average annual flow of renewable natural water resources, already exceeds 50 % in countries such as Jordan, Malta or Tunisia, as well as in the western part of the basin, which is the sign of notable circumstantial shortages with highly damaging economic, social and environmental consequences for the countries in the region.

The exploitation indices are extreme for certain countries; others moreover share common resources or depend upon outside resources, which gives water an undeniable geopolitical dimension.

Added to the weakness of available resources, the strong pressure on water gives rise to a strong vulnerability in the face of circumstantial hazards (the illustration of which has been frequently made over the past three decades and is very current in the Mediterranean Basin as a whole) as well as climate changes.

The situation in the region shows an extreme diversity and strong disparities between the European North and the African South or the oriental Near East, as well as between countries within one and the same country.

1.1 • Shortfalls in access to drinking water and sanitation

While countries on the northern shores show indicators of satisfactory service, the countries on the southern and eastern shores register significant progress in the generalisation and improvement of the quality of service to the benefit of the populations, despite the persistence of certain insufficiencies :

- the supply of drinking water to rural populations necessitates still more sustained efforts;
- the lack of consistency and the differentiation of drinking water and sanitation programmes are obstacles to the accomplishment of the objectives of the sustainable management of water resources;
- while the European countries have a clear strategy ushered in by the new European directive on water, the weakness of the institutional context and the scarcity of the necessary financial resources for a development programme for the drinking water and sanitation sector is a handicap for the management of the operating organisations in the other countries of the region;
- a key problem which the countries of the southern and eastern Mediterranean come up against, is the need to bolster the human and financial capacities of organisations which operate in the water

domain so as to enable them to fulfil their role effectively. This observation is also as valid for the basin organisations as it is for the drinking water and sanitation operators or irrigation network managers;

- the improvement in the quality of water through an intensification of the treatment of industrial and domestic waste water, remains at differentiated degrees, a common objective to the whole of the region;
- the improvement in distribution yields should be a priority, particularly in areas where the share of non-conventional water is likely to become predominant

1.2 • Weight of irrigated agriculture

Irrigation consumes a major part of the total quantity of water used, in almost all the countries of the South and East and to a lesser extent in the Mediterranean fringe of the European countries. The extraction rates vary from country to country by around 65 to 80 % of the overall extractions per country.

The surface areas irrigated have widely increased over the past decades giving rise to exceptional growth in the volume of water allocated to irrigation. Although it is accepted that irrigation has played an essential role in the economic growth and the consolidation of food safety of the countries of the region (this point is still the subject of polemics), it nevertheless remains a fact that problems of efficiency in the use of water are posed to the whole of the region.

More recently, and within the perspective of the liberalisation of trade in agricultural products, an intense debate has taken place on the necessity for irrigation to be oriented towards high added-value crops with a view to better contribute to rural development and sustainable economic growth for the countries of the region.

The debate on irrigation also concerns the aspects for the sharing of water resources. In fact, in a context of growing water scarcity, search for economic efficiency and growing pressure from priority sectors such as drinking water or environmental preoccupations, pressure is being applied for the revision of the way water is allocated.

1.3 • Management insufficiencies

• Groundwater

Groundwater is an easily accessed source of supply, with good quality features and very reasonable economic operating conditions. It plays a very precious role in the supply of drinking water. Very often, the rural populations depend in their large majority on groundwater for their drinking water supply and for small scale irrigation. It also makes a significant contribution to the growth of agricultural production in the Mediterranean region.

Its easiness of access therefore makes it a vulnerable resource, threatened by over-exploitation and the risks of pollution linked to sewage and refuse.

Finally, resources in non-renewable groundwater are exploited using artesian wells without management perspective or strategy.

• Surface waters

Surface waters reach degrees of mobilisation which do not take account of the environmental demands. This situation is complicated today by the foreseeable impacts of climate change on surface water contributions. The frequency of severe droughts observed during the past decades is translated in certain countries by a reduction of available resources which, if it were to be confirmed in the longer term, would lead to a profound review of the water resource distribution and management plans.

• Water pollution

Despite being shared by all the countries in the region, the environmental preoccupations linked to water are better taken into account on the northern shore where the institutional context already more evolved is henceforth framed by the demands for results fixed by the European Water Framework Directive.

Less well-armed with the institutional and economic instruments necessary for the implementation of an effective policy for the improvement of water quality, the countries of the South and East of the Mediterranean have fallen behind in sanitation, more particularly in the treatment of waste water.

The repercussions on the health of the populations, especially the rural and poor, and on the coastal environment, are numerous and represent an obstacle to the sustainable development of the region.

• Management of water demand

The long term scenarios, provided by the Blue Plan, have confirmed the aggravation of the situation, in the short or long term, of the management of water in the countries of the South and East of the Mediterranean. Increasing the water supply becomes a problematic operation for a number of countries in the region, either because of the impossibility of mobilising new resources or because of obstacles linked especially to environmental protection.

Faced with the difficulty of increasing the water supply, a better control of demand, combined with the exploitation of non-conventional resources, would enable the pressure on the resources to be stabilised and favourable conditions for the sustainable management of water to be created. The regional awareness of the need for this strategic about-turn exists but it suffers from the non-existence of a real structured political determination to undertake concrete actions in the matter.

• Institutional aspects

The sectorial approaches remain dominant in the whole of the region. Few countries have succeeded in achieving really integrated approaches marked as they are by the urgent pressing need for a reasoned, economic and environmentally-friendly process for the development of water resources. Making the sectorial policies consistent with the town and country planning, environmental management and the development and management of water resource strategies is an objective which should appear prominently among the priorities of the countries of the region for decades to come.

The institutions of water management which exist, are often faced with problems of the effective application of the laws, of the control of the uses of water, of economic and financial constraints, which heavily handicap their capacity to implement real demand management strategies

The practice of partnership has on the contrary evolved dramatically. The institutions in the water domain have opened up to concerted action, to participation and co-operation. In their decision-making organs, representation has widened beyond the parties with a direct interest in the subjects discussed and the decisions to be taken. The notion of concerned party has widened and enabled the diverse sensitivities of the civil society to have their voices heard. This trend has enabled the debate about water, usually technical and economic; to evolve towards more social, environmental even political preoccupations.

The scarcity of financial resources is also one of the major handicaps that the countries south and east of the Mediterranean must face up. Developing capacities of financial engineering to mobilise new and additional resources is a fundamental challenge which needs to be addressed in this respect.

The implementation of the real integrated management of water resources, widely recommended, still remains rarely practiced however.

• Water management and hydrological risks

The Mediterranean region is faced with extremely acute hydrological phenomena (higher frequency of flooding and droughts) which would seem to become worse with time under human pressure and probably the effects of climate changes. In certain countries, the debate on the validity of the evaluation of the potentialities in water resources (drop in precipitations and surface run-off) is very current. This set of problems affects the whole of the Mediterranean region. In the countries south of the Mediterranean, it is the most deprived rural and urban populations which are the most affected both by floods and droughts.

Facing up to the consequences, today still uncertain, of climate change is a fundamental challenge which should also be tackled. Adequate strategies of adaptation, characterised by the necessary precautions to be recommended, should be part of the planning of the Mediterranean countries for decades to come.

2. Important international trends and initiatives in water management and associated services

2.1 • The resolutions, declarations and recommendations of the large international conferences

The framework of the action of IME is determined by a geopolitical reference system which is that of the political, economic and environmental co-operation in the Mediterranean region. Several large political initiatives have added their affirmation or provided a concrete content to the determination to co-operate the countries bordering the Mediterranean including namely:

- Barcelona Convention (1975) and the MAP/UNEP
- Euro - Mediterranean Barcelona Declaration (1995)
- Marseille Conference (1996) on the water management (for which - the Blue Plan prepared the introductory report)
- Helsinki Conference (1997) on the Environment
- Turin Ministerial Conference (1999) on local water management
- Works of the Mediterranean Commission on Sustainable Development

Large programmes of action with a wider environmental end purpose are very active in the region and contribute effectively to showing the way and the evolution of the reflection on the set of problems surrounding the sustainable management of water resources around the Mediterranean. They are mainly the MAP / BLUE PLAN and the METAP, as well as the CEDARE, the CIHEAM and the INBO/MENBO.

On the Northern shores, the recent adoption of the Water Framework Directive (WFD) has introduced a new dynamic process for the establishment of the sustainable management of water resources in the European Union. Although it further increases the gap with the countries of the South and East, it is also an opportunity to pull these same countries towards increased rigour and rationality in the management of water.

The Rio de Janeiro and Johannesburg summits and the Millennium Development Goals (MDG)

Adopted in 1992, by the UNCED in Rio de Janeiro, Agenda 21, and in particular chapter 18 concerning water, continues to be of current interest especially since the Johannesburg WSSD recommended that its implementation be stimulated anew.

Previously, in 2000, the General Assembly of the United Nations adopted the Millennium Declaration which decided, namely:

“We resolve further (...) to halve the proportion of people who are unable to reach or afford safe drinking water by 2015.”

While inviting the acceleration of the implementation of Agenda 21, the Johannesburg WSSD more particularly put the accent on the following themes: the elimination of poverty, sanitation, energy, financing, integrated management of water resources, and priority aid to Africa. The treatment of waste water and its contribution to the fight against poverty was particularly highlighted :

“We resolve between now and the year 2015...to halve the proportion of people who are unable to reach or afford basic sanitation services, by taking action at all levels so as to :

- *Introduce efficient sanitation systems for households;*
- *Improve the sanitation facilities in public establishments, in particular schools;*
- *Encourage better hygiene practices;*
- *Encourage educative action and raise awareness among children, who are the agents of behavioural change in this respect;*
- *Encourage the use of inexpensive technology and socially and culturally acceptable practices;*
- *Develop modes of financing and partnerships»*

Agenda 21 and the Implementation Plan of the World Summit on Sustainable Development in Johannesburg therefore constitute henceforth the reference framework of the orientations in the reforms of water management to be conducted for the future.

The United Nations Commission for Sustainable Development (CSD)

Since its creation by the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992 and which resulted in Agenda 21, the CSD has been the centre of convergence for the examination of the progress accomplished and the

challenges to be met in terms of sustainable development.

The CSD13 adopted recommendations on drinking water, sanitation, human establishments and their interdependence in 2005.

The Mediterranean Commission on Sustainable Development (MCS D)

The MCS D is a forum for dialogue and proposals instituted as a consultative body by the MAP so as to provide content for the definition of a Mediterranean strategy of sustainable development. In this context, it has focused its work on seven interdependent domains for priority action where the Mediterranean region must absolutely make progress :

- **integrated management of water resources and demand ;**
- more rational management of energy, increased use of sources of renewable energy and **adaptation to the effects of climate change ;**
- sustainable mobility, thanks to the appropriate management of transport;
- sustainable tourism, an economically important sector;
- **agriculture and sustainable rural development ;**
- sustainable urban development;
- sustainable management of the sea, the coastline and marine resources.

The MCS D has made an essential contribution to the reflection on water demand management. It recommends a new "culture" for water breaking away from current management practices:

“The management of water demand provides the likelihood of the most significant progress of Mediterranean Basin water policies. For the Mediterranean Commission for Sustainable Development, the regulation of water demand constitutes a priority political objective.”

The MCS D recommends namely need to effectively integrate demand management into national water strategies, with quantified objectives for the regulation of demand and the setting of a time horizon.

Priority actions are proposed for:

- aware of users responsibilities, with a view to improve knowledge (quantity, quality...) and undertake concrete operations to regulate demand,
- adoption of environmental and social performance indicators,
- re-distribution of the roles between public and private sectors,
- decentralisation of management and a participation widened to new players, as well as recourse to economic tools

2.2 • The new European institutional context for water: the European Water Framework Directive

In force since October 2000, the European Union Water Framework Directive provides a precise and integrated legislative framework for the management of water together with a timetable for its implementation.

It more particularly defines the watersheds as the only unit of management and planning, fixes ambitious quality objectives for the



whole of the water resources, including those the coastal resources and gives the local authorities wide-ranging management responsibilities. The WFD affirms the principles below :

- the principle of integrated and sustainable management of water by watershed with the creation of hydrographic districts and the establishment of river basin management consistent with the other sectorial local planning policies;
- the principle of polluters-to-pay and the principle of transparency and recovery of the costs for services linked to the use of water;
- a combined anti-pollution control approach (agriculture, energy production, transport and zoning plans);
- the systematic surveillance of water resources and the environment.

It fixes the ambitious objectives to be accomplished within a precise timetable :

- transposition into the domestic laws of each country (2003);
- establishment of the initial report on water (December 2004);
- introduction of water quality surveillance networks (2006);
- production of management plans and programmes of measures to be taken (2009);
- restoration of the correct state of the aquatic environment in 2015 ;
- assessment of the results and progress made (2021).

Accompanying the WFD, a directive specific to ground water has also been adopted, (WFD 2000/60/EC). The aim of this supplementary directive is to provide protection to all the groundwater sites between now and 2015.

The WFD henceforth constitutes the absolute reference framework for the integrated management of water resources in Europe. Still more generally, and anxious to favour sustainable development in the Mediterranean region, the EU has launched a parallel process the aim of which is to encourage its partners, inside and outside of Europe to adopt comparable approaches inspired by the same principles as the WFD.

With a view to structure its participation in the development in the water domain, the EU has also adopted 2 reference documents:

“Guidelines for co-operation in the field of water resources”, 1998.
“Management of water in developing countries : EU policies and priorities for development cooperation”, 2002.

2.3 International initiatives favouring co-operation in the field of water

The European Water Initiative (EUWI)

The initiative concerns Africa as well as the countries of Eastern Europe, the Caucasus and Central Asia, the Mediterranean region and Latin America.

It falls within the framework of the realisation of the MDGs the aim of which is to reduce by half, between now and the year 2015, the number of people, around the world, who have no access to drinking water nor basic sanitation.

More generally, the aim of the EUWI is to help developing countries to implement strategies to improve the management and administration of water, while giving priority to the co-financing of

drinking water and sanitation infrastructures. The activities supported concern:

- the strengthening of institutions and support for the reform of the sector;
- the integrated management of water resources placing the accent at the national level and on that of the river basins in the ACP countries.
- the financing of projects and programmes concerned with water and sanitation, centred upon the poor populations and the socially deprived regions.

The EUWI puts a particular accent on the role that NGOs may play in the preparation and the implementation of projects the selection of which will be made on the basis of calls for proposals. The projects submitted should comply with the objectives of sustainable development and with European Union policy for the management of water in developing countries.

The World Bank Regional Water Initiative for the MENA Region

The Regional Water Initiative for the MENA Region is a platform which enables the sharing of experience acquired in the water management field in the region, and the promotion and facilitation of dialogue on the reforms in the water sector. Its intention is to become a “bank of knowledge for the conception and execution of these reforms».

The idea of the Regional Water Initiative was born at the Regional Economic Summit in Amman, in October 1995. Basing itself on the critical regional water management situation, it had been recognised that “much time had been lost in the introduction of incentive schemes and the institutional and regulatory systems necessary to optimise the added-value of the management of water resources for national economies”.

The World Bank MENA Initiative has carried out actions on the following themes :

- sustainable management of groundwater,
- re-use of waste water,
- financing of the development of the water sector and the appropriate pricing for consumption,
- institutional reform, including the role of the private sector,
- non-conventional water resources,
- drought management.

The Initiative is also centred on the promotion of regional co-operation that the World Bank would like to extend :

“...In the context of the triennial work programme, it is planned to reinforce and extend the existing group of partners so as to welcome international regional organisations working on questions linked to water as well as NGOs which intervene in the region...”

This Initiative also falls within a more global strategy adopted by the World Bank to serve as reference guidelines for support programmes for the Member States.

This strategy also determines the new position of the Bank in terms of hydraulic infrastructure, following the final report of the World Commission on Dams. The strong points of this new strategy are to be found in Box 1 below.

Box 1

(extract of the World Bank strategy document)

Message 1 : The management and development of water resources are central aspects of sustainable growth and the reduction of poverty and are therefore of central importance for the World Bank mission.

Message 2 : The majority of developing countries need to be active both in the management and in the development of the water infrastructure.

Message 3 : The main challenge is not to establish an integrated vision of the management of water resources but implement a pragmatic approach founded on principles.

Message 4 : Providing security against climatic variability is one of the main reasons which has led industrialised countries to invest in major hydraulic infrastructures such as dams, canals, pipelines and inter-basin transfer schemes. The World Bank would like to assist countries to undertake and maintain these hydraulic infrastructures functioning correctly and permanently and to

mobilise public and private financial means while ensuring respect for environmental and social standards.

Message 5 : There is increasing demand from the borrowing countries for services, alongside requests for loans or not, concerning the development and the management of water resources. The World Bank will make a renewed commitment to this kind of project by paying great attention to hydraulic infrastructure projects, which have great positive impact but which also involve large risks, by using more efficient analysis models.

Message 6 : The Bank is widely seen as having a major comparative advantage in the water sectors and in consequence there is a strong demand for Bank services and a great expectation for commitment from the Bank.

Message 7 : The assistance of the Bank in terms of water should be adapted to the specificities of the countries and be consistent with the strategies of assistance to these countries and with the strategic documents for the reduction of poverty.”

The African Development Bank (ADB) water initiatives

The ADB co-ordinates two major initiatives in the water sector in Africa:

The African Water Facility: created at the initiative of the Conference of African Water Ministers, this facility is to finance both the introduction of the institutional environment and the capacities necessary for the effective and efficient management of water resources, and the small-scale innovatory infrastructures, in rural areas.

The Rural Water Supply and Sanitation Initiative (RWSSI): co-ordinated with the NEPAD Water Resources Management Programme, the aim of this initiative is to contribute to the Millennium Development Goals in terms of water.

The International Decade for Action “Water for Life”, 2005

In 2003, the General Assembly of the United Nations adopted a draft resolution proclaiming a «International Decade for Action, “Water for Life” », for the period 2005 – 2015.

The aim of this decade, which started on 22 March 2005, is the mobilisation of the world community to call for more attention to the water questions and a mobilisation for the accomplishment of the water objectives contained in Agenda 21, the Millennium Declaration and its implementation Plan from Johannesburg.

3 . Synopsis for IME action

Water scarcity is not a fatality. Numerous countries in the region and in the world give the example of a prosperous and sustainable economic development in the context of controlled water shortage. It is useful to recall below the highly relevant conclusion, made by J. Margat in the regional analysis carried out within the framework of the MAP - BLUE PLAN studies.

Box 2

“The threat of a water crises and the need to forecast them, does not, a priori, represent an obstacle or hindrance to development. It is much more the economic development of the countries of the South and East , supported by many other factors than the availability of water, which will provide the means to face up to the problems of water, than, on the other hand, the scarcity of water which is likely to handicap development ; the Mediterranean examples testify to it : the level of development has no link with the quantity of water used in the country. The economic charges imposed by the scarcity of water will only be a handicap for a development which is not likely to be transformed. “

The decisions concerning the management of water resources should be economically efficient, environmentally friendly, politically feasible, equitable on the regional and national development level, and socially acceptable.”

The action of IME should fall resolutely within the line of the currents of modern thinking which henceforth govern the management of water and were determined by Agenda 21, the Millennium Declaration, the Millennium Development Goals and the implementation plan of the World Summit of Johannesburg. The principles and the objectives for action concerning water are resumed in the tables below.

The action of IME should necessarily be consistent with the call launched by the United Nations so as, during the decade 2005 – 2015, to encourage a new dynamic process for the implementation of Agenda 21 and to realise the WFD in terms of the provision of drinking water and sanitation and thereby contribute to the reduction in poverty.

IME has thus been called upon for the regional mobilisation with a view to contributing to the success of the decade 2005 – 2015 and promoting the modern management of water in the region :

The major principles spelt out below should guide its action :

- *Water and regional planning are intimately linked. Dealing with one of the subjects without touching upon the other, is not consistent with an approach in compliance with the demands of sustainable development;*
- *The sectorial plans for water in the context of the economic and social policy have fundamental importance for the action. They should result from a global economic, social and coherent vision based upon the participation and the concerted efforts of the players and the citizens concerned;*
- *The management of water may only be relevant if it takes account of the imperatives of the preservation of the natural environment. For this reason, it would be better integrated into the management of the environment. In this respect, the aspects linked to the impacts on the health of the populations, the preservation of the integrity of the aquatic ecosystems and coastal sea areas should be subjects not to be overlooked in the conception of plans and projects for the development of water resources;*
- *The governance of water is an essential question. It necessitates an effective framework with its economic, financial, legal, institutional and regulatory dimensions. This framework should privilege the partnership between all the components, players and parties concerned within society.*

Despite the considerable efforts made within the region, the management of water is still largely inefficient and should for a long time to come be found on the timetable of priorities for action of the countries of the Mediterranean region.

The management problems and the insufficiencies concern the countries of the northern shore as much as the southern shore of the Mediterranean :

Box 3

The Dublin Principles

- *Fresh water is a limited and vulnerable resource, essential to sustain life, development and the environment.*
- *The development and the management of water should be founded upon a participatory approach involving users, planners and decision-makers at all levels*
- *Women have an essential role in the procurement, the management and the conservation of water*
- *Water has an economic value in all its competing uses and should be recognised as an economic asset.*

Agenda 21 (ch. 18)

- *Development and integrated management of water resources*
- *Evaluation of water resources*
- *Protection of water resources, the quality of water and aquatic ecosystems*
- *Procurement of drinking water and sanitation*
- *Water and sustainable urban development*
- *Water and the sustainability of food production and rural development*
- *Impact of climate changes on water resources*

CSD 13 (13th meeting, 2005)

Governments, in partnership with the municipal and local administrations, are firstly responsible for the management of water resources and the supply of drinking water for their population

- *To make access to water a fundamental right written into national legislation*
- *To integrate the procurement of water into national strategies and programmes for the reduction of poverty*
- *To devote increased resources to investments in the water domain*
- *To obtain long term inexpensive financing for the water sector, especially by favouring partnerships between the public and private sectors*
- *To improve the local administration of water resources*
- *To reinforce the capacities of local organisations in terms of supervision and in the technical domain*
- *To make sure that locally there are adequate capacities to mobilise resources*
- *To incite, thanks to a reform of regulations where appropriate, the private service providers, including the small suppliers, to participate more actively in the local procurement of water*
- *To guarantee people deprived of a reachable access by regulating the tariff structures or by granting subsidies*
- *To grant local associations and small private service providers financing under preferential conditions to enable them to invest in relatively inexpensive infrastructures*
- *To grant a priority place to the financing of the procurement of water in rural areas.*
- *To support the initiatives undertaken by local associations, with the participation of women*
- *To found a rapid warning system in case of a natural catastrophe of water origin, including the prevention, and the attenuation of the effects of such catastrophes*
- *To develop policies concerning agriculture*
- *To reform the subsidies which may encourage the waste of water, particularly those for irrigation, fuel and electricity used for pumping, for inputs which are complements of water and for certain agricultural products*
- *To improve the water run-off infrastructure*
- *To propose relatively inexpensive loans to farmers in order that they may exploit small-scale economic irrigation technology; extend technical assistance to farmers in order that they may adopt more effective water management practices*
- *To study the development of vegetal/plant species which require less water and are more resistant to drought*
- *To supervise the strict application of the principles “users pay” and “polluters pay” so as to encourage the conservation of water as well as the re-use and the treatment of waste water*
- *To promote partnerships between the public and private sectors so as to reinforce the management of water distribution companies and release new sources of financing for the water sector*

Role of United Nations organisations and multilateral institutions :

- To aid developing countries to achieve their sanitation objectives
- To mobilise the necessary financial resources
- To reinforce the capacities of decision-makers and administrators at both national and local levels
- Define well-targeted programmes to educate and raise awareness in sanitation and hygiene and supervise their implementation
- Encourage the transfer and the diffusion of technology for sanitation and for the treatment and recycling of sewage at low cost
- Aid in strengthening capacities building through education and capacity building in domains such as institutional development, programmes of pricing and subsidies, the management of waste water, the reform of regulations and financial management
- Provide training to decision-makers and project administrators in the evaluation of the profitability and the usefulness of the various choices as well as participatory capacity building in the community management of sanitation systems
- Favour the access of small entrepreneurs to loans and encourage them to participate in partnerships between the public and private sectors, as well as providing incentives to households to build on-site installations while ensuring that women participate actively in the search for solutions in matters of sanitation
- Establish research partnerships between research and development institutions from developed countries and developing countries on the technologies for the treatment and recycling of waste water at a low cost
- Aid developing countries to achieve their objectives in matters of sanitation
- Mobilise the necessary financial resources
- Strengthen the capacities of the decision-makers and administrators at national and local level, define well-targeted programmes of education and raising awareness in sanitation and hygiene.

CDD

Challenges :

- To manage the demand for water
- To reduce losses and incorrect uses
- To create supplementary added-value thanks to a more effective use of water
- To satisfy economic and social needs at a reduced cost
- To manage integrally catchment areas and wet ecosystems
- To realise the MDGs in terms of access to drinking water and sanitation
- To strengthen the partnership between users and local water management organisations as well as the awareness campaigns in water saving ...

Objectives :

- To stabilise water demand
- To promote the integrated management of watersheds
- To achieve the Millennium Development Goals
- To promote the participation, partnership and active and joint co-operation for the sustainable management of water at the local and national level
- To include the measures of adaptation to climate change among the major objectives of the national development plans

Orientations et actions :

Regional co-operation

- Promote the Mediterranean component of the EU water initiative as a means of accomplishing the MDGs and the implementation of the Johannesburg Plan

Management of water demand

- Fix in the national strategies precise objectives of efficiency at the global level and by sector
- Re-orient water policies in such a way as to integrate water demand management into the agricultural policies and other sectorial policies
- Introduce a fiscal system and a pricing policy adapted ...to demand management
- Develop financial mechanisms so as to internalise external costs and anticipate the benefits of savings in water

Management of water resources

- Encourage the creation of appropriate organisations and entities for the quantitative and qualitative integrated water resources management of surface and groundwater
- Strengthen the commitments made at the international level for transboundary water
- Conserve and increase water resources through measures for the conservation of water and soils, agricultural and forestry practices, more scale irrigation, the management of run-off water, sewage irrigation, the mobilisation of non-conventional water as well as the re-use of urban, industrial and drainage water by taking account of the quality parameters
- Strengthen regulations and other instruments aimed at limiting the over-exploitation of aquifers and non-renewable water resources, while encouraging, where justified, the artificial recharging of aquifers
- Protect the aquatic ecosystems and restore their regulatory role
- Generalise the inclusion of the concept of adaptation to climate change in national policies. Draw up plans so as to anticipate and forecast risks in the most highly exposed Mediterranean areas, especially the islands, the deltas and dry agricultural areas

Access to water and sanitation

- Support investments which aim to reduce by half between now and 2015 (compared with 1990), the percentage of populations with no access to drinking water and sanitation with reference to the MDGs

- *Strengthen, where appropriate, the regulations and promote investments in systems for treating waste water so as to prevent and reduce pollution from urban and industrial sources*

Governance of the management of water

- *Promote systems for the integrated and participatory management of water resources, including partnerships with local authorities, the private sector and NGOs.*
- *Take initiatives to raise awareness among users as to the necessity to save water and protect its quality*

4. Analysis of the current situation of IME

4.1 Achievements

The Institute is above all an **association**, created in 1982, with members of various origins, but with one point in common, that of being a player in the water problem set in the Mediterranean. It incorporates all the intervening parties in this problem: local and territorial authorities, ministerial bodies, professionals (public or private), individual competences.

Its aims and activities should respond to the determination of its members, who in return, should provide it with the means.

The first vocation of IME is twofold:

- to provide its members the aid that they expect, especially in terms of co-operation, sharing know-how, capacity building, access to financial institutions..., while taking into account their priority; the role of IME is therefore that of facilitator
- to represent its members (non-exclusively) with the various national or international bodies.

With the strength of this diversity and the competence of its members, IME very quickly expressed the desire to become a player in its own right in the evolution of knowledge and behaviour in water matters in the Mediterranean, as were a number of its members already.

In this respect and as an international Non-Governmental Organisation, IME :

- has collective status with the United Nations Economic and Social Council;
- is Governor at the World Water Council
- is a member of the GWP (Global Water Partnership) and GWP – Med;
- participates on the Mediterranean Commission on Sustainable Development

IME therefore works for the development of co-operation and exchange of experience and know-how in the field of water in the Mediterranean.

This determination to be a player, outside the circle of its members, is certainly appreciated by the latter and in this respect it could be said that here is where it finds its prime vocation.

IME has provided the secretariat of a large number of regional programmes such as :

- **MEDWAN** (Mediterranean Water Agencies Network) entrusted by the World Bank in 1992;
- **RME** (Mediterranean Water Network) for which IME has been in charge of the co-ordination and the secretariat of the technical committee from 1993 to 2002 to draw up programmes of action to be submitted to the different ministries represented.
- **GWP** (Global Water Partnership) entrusted IME with the animation, the co-ordination and technical assistance of the **GWP-Med** (new denomination of the **MedTac**, Technical Assistance Committee (for the Mediterranean) constituted of different Mediterranean networks (CEDARE, CIHEAM, IME, METAP, MIO-ESCDE, MAP/ Blue Plan, RME) to contribute to the drawing up of the Mediterranean Water Vision for 2025.

In the course of the past twenty years, IME has participated in and organised events with regional and international coverage in its domain of activity, from the mobilisation of water resources to urban water themes:

- Management of water demand (1992)
- Eutrophication of Mediterranean reservoirs (1994)
- Institutional practices for the management of waste water (1994)
- Water management: tariff, savings, costs (1995)
- Transport of water / desalination (1996)
- Water: economic approach and consequences on public law (1997)
- Mediterranean Day at the WWF2 (2000)
- The City and Water, tomorrow in the Mediterranean (2002)
- The risks linked to water in the large towns and cities at the WWF3 (2003)
- Water and agriculture (2004)

IME has participated in world water forums:

- by organising the Mediterranean Day at the Hague in 2000. The results of the "Mediterranean Vision on water, population and environment" – prepared in collaboration with the Blue Plan – were able to be presented, as was the Plan of Action aimed at achieving the sustainable objectives of this Vision;
- by animating a session on the theme "Forecasting and managing risks linked to water in large Mediterranean cities: sharing solutions" at Kyoto in 2003;
- by animating a session on the theme "Risk management related to water" at Mexico in 2006.

In the context of the GWP-Med, IME contributed to the introduction of networks of players from the water domain including the Mediterranean Network of Basin Organisations (MENBO 2002) and the Euro-Mediterranean Irrigators Community (EIC 2002).

The Institute therefore has at disposal an expertise in the water domain on which it may capitalise so as to build a plan of action and create the conditions for its development.

4.2 Assets

- A clear mission: facilitate and initiate actions for regional co-operation in the domain of water management and associated services between the institutions and public and private operators in the Mediterranean region ;

A clear international positioning, wide open to all the players involved in the management of water in the region;

A wide network of partners :

- water and sanitation managers;
- territorial authorities;
- specialist organisations;
- funding institutions
- engineers, technicians and research workers, teachers;
- Know-how in project management and partnership development practice between members to their benefit.

- A professional co-ordination unit

4.3 Aspects to be strengthened

- Involvement of the members (who do not always take part in its activities) in the definition of programmes and priorities for action;
- Financial support received from its members; these resources are rarely in accordance with the needs of the survival of IME, especially in its policy of radiating influence outside the circle of its members. IME has complemented its resources by carrying out certain services for various entities (MEDWAN, GWP-Med, ...)
- Efforts for a better geographical spread of its members, very poor in the eastern Mediterranean;
- Appreciation of the heterogeneity of the “population” of its members, inestimable source of wealth, but which does not favour a common strategy.

4.4 Opportunities

- Importance of the mission: militating for the promotion of a sustainable management of water in a region reputed to be among the most disfavoured and where the pressure on water is one of the highest in the world;
- Capitalisation and in-depth knowledge of the problem of the management of water in the Mediterranean region;
- A very favourable context of co-operation supported by large international initiatives:
 - desire to co-operate expressed by all the countries of the Mediterranean region where the differences between the North and South shores should be grasped as an opportunity and not an handicap ;
 - Barcelona process and the new neighbour process of an extended Europe and the Horizon 2020 initiative;
 - programmes of the United Nations concerning the safeguard and the preservation of the Mediterranean Sea;
 - European Water Framework Directive and the European Water Initiative;
 - initiatives of the World Bank and those of the African Development Bank;
 - establishment of the Mediterranean Strategy for Sustainable Development by the MAP/UNEP

The principles and the objectives of the Plan of Action of the Johannesburg Summit and the Millennium Development Goals. IME should actively associate itself and use its experience and its

resources to contribute to the International Decade of Action “Water for life” to mobilise and aid the Mediterranean community to realise the objectives decided by the international community.

5 . What future for IME?

IME has established certain strengths and has made a name for itself in the region. It should today dynamise its action at the service of its members and contribute to the progress of Mediterranean expertise in the water domain and promote better access to drinking water and sanitation.

Mission : contribute to the good management and governance of water in the Mediterranean region.

The purpose of good governance of water in the region should be to give everybody access to drinking water and sanitation, to operate water in the optimal way so as to improve economic growth, and to fulfil the requirements of the sustainable management of water resources.

Vision : IME aims in the short term to become a regional organisation in the management of water at the service of the Mediterranean community in general, and local authorities and water operators in particular.

- IME recognises the fundamental role that water plays in the sustainable economic and social development of the countries of the region;
- IME is a regional organisation of co-operation in the domain of water recognised in the Mediterranean Basin. Its major objective is to promote exchanges and co-operation between the water professionals and the civil and territorial authorities of the two shores of the Mediterranean;
- IME as such contributes effectively to the world debate on water, in all its dimensions: social, economic, environmental, institutional and technological;
- IME co-ordinates a network of partners who are working to promote knowledge in the water domain to the profit of its members in the Mediterranean region. It is working particularly for the adoption of good water management practices which play their part in a perspective of sustainable development;
- IME capitalises the know-how of the region and exploits it for the benefit of its members and the regional community;
- IME supports the specific activities of its members: it is working to assist them, within the limit of its means, to implement policies and strategies concerning water and to develop tools adapted to the needs of the different operators;
- IME should provide strategic and technological supervision over the evolution of the management of water in the region and in the rest of the world;
- Thanks to the diversity of the expertise of its members, IME should be a regional force of proposal to promote sustainable management anxious to safeguard the environment.

5.1 IME objectives for action

General objective

IME should be an operational regional organisation and a dynamic player in the co-operation in the water domain in the Mediterranean Basin.

IME is a network working for the promotion of know-how, sharing experience and synergies at the service of the optimal management of water resolutely dedicated to the sustainable development of the region.

Specific objectives

1. To provide the services and expertise, capacity building and documentation in response to the specific needs of its members (in compliance with its prime vocation). The action of IME would consist in :

- Exploiting its competence and technical expertise in water management in the region;
- Identifying the needs of the operators to develop the water management capacities in the region;
- Selecting the directives of good practice likely to assist operators to better assume their obligations of the integrated management of water;
- Capitalising the statistical information on the management of water in the Mediterranean Basin;
- Contributing to the better understanding of the legislative and economic aspects of the management of water;
- Organising ad hoc training sessions for decision-makers from the territorial authorities.

2. To be a dynamic player in regional co-operation in the water domain. So as to promote the synergy between the different players and support their initiatives, the actions of IME should consist in :

- Increasing its visibility among the professionals and the civil society of the region by participating in all the initiatives concerning water in the region;
- Grasping all the opportunities of co-operation with specialist international organisations and with programme-financing institutions in the water domain;
- Adopting a resolute approach of support and monitoring of the implementation of Agenda 21, the MDGs, the recommendations of the Johannesburg Summit and the Mediterranean Strategy on Sustainable Development;
- Encouraging the actions of partnership between members of the IME and other water management players as well as those initiated in the context of decentralised co-operation between territorial authorities;
- Organising meetings of high authorities and meetings of experts on subjects of particular common interest for a more rational management of water in the region;

3. To contribute to the reduction of poverty through the extension of drinking water and sanitation services to urban and rural populations

In the context of the decision of the United Nations considering access to clean water and basic sanitation as a fundamental right, the action of IME will consist essentially in:

- Helping its members to take into consideration the requirement of access to drinking water and sanitation of the populations with low incomes;
- Reinforcing the capacities of the operators from the public and private sectors and the territorial authorities to realise this specific objective through the appropriate management of the capacities of the low income populations;
- Supporting the emergence of new and appropriate management modes involving the intervention of local private companies operating in the rural environment;
- Assisting in the capacity building necessary for the management of public – private partnerships;
- Promoting the integration and the coherence of programmes of investment in drinking water and sanitation.

4. To contribute to the reflection on the reform of irrigated agriculture.

In a perspective of economic growth and food safety, the action of IME should consist in:

- Aiding the emergence of the technical, economic and social conditions for an economic use of water in irrigated agriculture and promoting its economic efficiency;
- Encouraging the comparative analysis of the policies and strategies adopted for the re-conversion of irrigation in the countries of the region;
- Pursuing the efforts which aim at favouring exchanges of experience in the context of the initiative already launched in the community of irrigators;
- Favouring the responsible practices which take account of the obligations of the sustainable management of irrigation water;
- Providing the supervision of the new initiatives for the management of the irrigation networks by the private sector and the institutional and economic tools used for this purpose;

5. To promote a better management of resources and demands in water

So as to avoid, in the countries concerned, any social tension linked to the context of structural shortages, the action of IME should consist in:

- Raising awareness in the need for the countries to conduct programmes for the evaluation of their water resources (quality and quantity)
- Promoting the sustainable management of groundwater resources by reinforcing the regulations to limit circumstantial over-exploitation of aquifers and by rationalising that of the non-renewable resources;

- Integrating the environmental preoccupations into the management of water by widening the reflection to all the wetland areas;
- Improving the efficiency of the use of water in all its technical, economic, social and environmental dimensions;
- Listing the policies of demand management in the different sectorial strategies: agriculture, industry, tourism, drinking water, ... ;
- Facilitating the use of non-conventional water (re-use of waste water, desalination...);
- Supporting the programmes for the operation and upkeep of hydraulic infrastructures;
- Popularising the technical, economic and financial tools, in such a way as to facilitate the integrated management of water resources;
- Encouraging the practice of the environmental evaluation of hydraulic projects;
- Promoting the appreciation of hydrological risks in particular, through the establishment and the implementation of drought and flood risk prevention plans as well as plans for the adaptation of the management of water to climate change;

6. To accompany the actions undertaken in the region to reform and consolidate the public and private water management institutions

The institutional, economic and financial aspects are often considered as the weak point of developing countries around the Mediterranean. The adoption by the EU of the WFD may make the institutional context in the region evolve.

The action of IME should consist in :

- Monitoring the application of the WFD and the institutional evolutions in the region;
- Promoting the dispositions of the Millennium Declaration insofar as the development of global policies and strategies of the integrated management of water resources are concerned;
- Aiding the clarification of the economic dimensions of water management;
- Favouring partnerships between the public and private sectors so as to promote a management of water, socially acceptable, environmentally sustainable and economically efficient
- Encouraging the creation of basin authorities so as to guarantee the integrated management of water resources and co-ordinate the planning and interventions between the different operators; favouring exchanges of experience;
- Promoting management by hydrological catchment area and encouraging the establishment of integrated water management plans on a national, regional and local scale;
- Anticipating the evolution of climate change and contributing to the preparation of strategies of adaptation to likely risks
- Strengthening co-operation between countries sharing water resources so as to facilitate the implementation of joint and concerted management strategies.

7. To promote education and raise the awareness of the Mediterranean populations to the regional water management questions

So as to preserve water resources against all detrimental degradation, the action of IME should consist in :

- Encouraging information campaigns and raising awareness of the importance of water so as to arouse a Mediterranean water saving culture;
- Arousing the membership and the support of local, national and international decision-makers, to the urgency for policies and strategies for the integrated management of water resources in the Mediterranean;
- Enhancing the hydraulic heritage and the historical know-how of the Mediterranean region by targeting economic mastery and efficient use of water;
- Contributing to pedagogical and audio-visual productions aimed at young people and concerning the fight against water pollution.

5. 2 Roles of IME

- So as to enhance its assets and better respond to the demand of its members, IME would gain by :
- Developing its role as a “club for encounters” at the service of the local authorities and public and private enterprises, since the importance of each in the management of water can but grow;
- explaining its capacity to identify the real problems of the governance of water in the region;
- mobilising its influence among the institutional and technical operators in the water domain;
- becoming more credible by quickly implementing a development programme taking duly into consideration the stakes and the challenges of the specific context of the region.

IME could do this by:

- better positioning itself through a clearer visibility of its structure;
- widening its base so as to increase its representativity;
- re-centring its activities on the domains where its added value is most obvious: the development of regional and international co-operation, the observation of the evolution of water problems, the transfer of technology through the exchange of experience





Strategy of IME for a water sustainable management in the Mediterranean



Strategy of IME for a water sustainable management in the Mediterranean

The environment of the Mediterranean region was severely degraded during the 20th century as a result of demographic growth and socio-economic changes. Water has become a limiting factor in this region where precipitations are irregular, often violent and represent the major cause of ground erosion.

Natural water resources are significantly unequal between countries (72% in the North, 23% in the East and only 5% in the South), and this impacts populations, especially in the agricultural sector. Some catchment basins and watersheds are shared by two countries or more.

Of the 450 million inhabitants of the Mediterranean basin, 162 million face water scarcity or shortage.

Global water demand (consumption plus adduction/distribution losses) reaches 300 billion m³ and is experiencing strong growth (60% in the last 25 years). Its distribution is uneven between countries (from 100m³ to more than 1,000m³/inhabitant).

Irrigation is the main factor for demand growth with 82% of the total value in the South. Population and urban growth represent the second factor, whereas tourism amplifies summer demand in drinking water in the coastal areas.

Water collection already exceeds 50% of the renewable natural resources all of which are not exploitable. In certain areas, local situations are extremely tense. The overexploitation of underground tables, the use of fossil resources, and the annual capacity losses in hydraulic reservoirs are serious indicators of unsustainability. Environmental, societal and economic impacts are all too obvious: quasi-irreversible salty water resurgences, degradation of ecosystems, loss of wetlands, upstream/downstream and urban/agriculture conflicts of usages and interests, short and long term objectives, increasing production costs.

Water policies still reflect an offer-based approach the domination of which nears "hydraulic stubbornness".

Some countries must already use non-conventional resources (reuse of treated or drainage water, sea water desalination). If the offer-based approach is to continue - and the current trends seem to evidence its predominance - a crisis will break out between now and 2025: the demand growth will reach 55% thus exceeding the renewable natural resources in every third country.

A demand management and structural adaptation policy implemented in the irrigation sector would enable a reduction by half of the quantities of water collected, lost or wasted to be achieved (75km³). This saving would prevent the risk of offer/demand imbalance while stabilizing to an acceptable level the stresses imposed on the natural environment.

1 . Main issues

- Increase in demand, pollution, degradation of quality, overexploitation (of tables, especially underground ones), wastage, destruction of wet zones, increase of collection costs, shortages.

- Insufficient investment, limited access for poor populations to drinking water and sanitation services, water supply duty imposed on women in rural areas, North/South and urban/rural differences in access to the resources.
- Insufficient innovation in water saving and in the valorisation of the m³ of water in the domain of unconventional resources.
- Loss of ancestral water saving customs and practices.
- Over centralized management, insufficient participation of local players.

2 . Challenges

- Improvement of the offer, preservation of water quality, protection of water tables and aquatic ecosystems, demand and cost control, improved planning.
- Financing of indispensable infrastructures, implementation of water and sanitation services, national solidarity through a fair tariff policy towards the disadvantaged populations, improvement of drinking water and sanitation services in rural areas, promotion of Mediterranean water co-operation.
- Commercialization of water saving equipment at the lowest acceptable cost, launching of a reform policy aiming at the highest added value for water, enabling adequate waste water treatment for reuse, control of sea water desalination technologies and costs.
- Raising the water saving awareness and culture among the youth.
- Dynamization of the public/private/civil society partnership in the water domain, appropriation of the sustainable development principles by the professional and local players.

3 . Objectives

- Rational management of water resources.
- Reduction of unequal access to drinking water and sanitation services.
- Promotion of innovative water treatment, desalination, saving and valorisation techniques.
- Awareness raising of stakeholders and consumers to water issues.
- Participation, partnership and contract management in the water field.

4 . Action programmes

4.1 Water resource rational management

- Promotion of inter-annual regulation of water resources through integrated management of surface water-underground water in order to improve the availability (transfer of rain cycle surplus to water tables to establish reserves for drought cycles) in southern countries.

- Generalization of small hydraulic systems to improve water and soil conservation.
- Efficient treatment of effluents and protection of vulnerable zones to fight against urban and industrial sources of water pollution.
- Periodical monitoring of aquifers to prevent overexploitations that affect the renewal of the resource.
- Protection of aquatic ecosystems that present major or unique scientific or ecological interests and promotion of the ecological demand concept.
- Fight against losses in transfer and distribution networks and against quantitative and qualitative wastages through a rational assignment of the resource to the various categories of utilizations.
- Optimization of the cost per utilized cubic meter through precise assessment of the technical options and sensible choice and planning of the investments required.
- Fostering of a voluntarist water policy based on water demand management in order to i) prevent structural shortage, ii) improve the planning to prevent any projected shortage, iii) reinforce capacity building to manage conjunctural shortages.
- Promotion of transborder basin common management.

4.2 Reduction of unequal access to drinking water and sanitation

- Undertaking all technical, economic, financial feasibility studies and impact assessment studies on water resource and sanitation infrastructures in poorly equipped hinterlands in order to facilitate the funding process.
- Elaboration of an appropriate drinking water and sanitation tariff policy towards disadvantaged populations, that would express the national solidarity.
- Promotion of an ambitious village-based hydraulic policy intended to narrow the existing gap between urban and rural areas and to alleviate the burden of the water duty that is inflicted on women in rural areas.
- Reinforcement of the Euromediterranean cooperation and of the partnership between water supply and sanitation professionals.
- Promotion of innovative techniques of water treatment, desalination, saving and valorisation
- Generalization of drinking water saving equipment/hardware, drop irrigation, and recycling of industrial waste water through attractive tariffs (subsidized if necessary).
- Objective reassessment of the cost of water that internalizes both the environmental impacts of its pumping and the State's investments in infrastructures; definition of the sectors of activity that guarantee the maximum added value per m³ of mobilized water.
- Promotion of the treatment of urban waste water at a level that enables it to be reused risk-free by the agriculture (additional treatment to the biological treatment), of the specific treatment of industrial - especially chemical – effluents, and brackish and sea water desalination techniques that use renewable energies in order to minimize production costs.

4.3 Awareness raising of stakeholders and of the public to water issues

- Evaluation of the conditions for an efficient and concerted mobilization of the national and local players for the promotion of water demand management as well as technical, technological, scientific improvements.
- Listing and rehabilitation for the public of good practices for domestic and agricultural water management.

4.4 Participation, partnership and contract management

- Organization of the diffusion of information and analyses on water demand management within the countries, and of communication between the institutions concerned.
- Promotion of the participation and coordination of all players, boosting public-private partnerships in order to ensure the indispensable structural changes and appropriation of the demand management concept.
- Reinforcement of the human and institutional capacity building to guarantee the sustainable management of water resources at the local level.

5 . Players – Partners – Decision makers

5.1 Rational management of water resources

- Institutions in charge of water resources
- Institutions in charge of water and soil preservation (FAO, CIHEAM, ...)
- Institutions in charge of environmental protection (METAP, ...)
- Institutions in charge of water resources and environmental protection
- Institutions in charge of environmental protection, water resources, universities (UICN, UNESCO, MEDWET, ...)
- Industrial institutions in charge of water management
- Institutions in charge of planning
- Institutions in charge of water management
- Ministry departments in charge of water

5.2 Mitigation of unequal access to drinking water and sanitation services

- Institutions in charge of water management, environmental protection
- Institutions in charge of drinking water and sanitation management
- Institutions in charge of drinking water management
- Ministry departments in charge of water and environment, Euromediterranean partnership, IME, CMDD, SEMIDE, Euro-Med Water and Poverty Facility (WPF), GWP-MEDTAC, practitioners

5.3 Promotion of innovative water treatment, desalination, economy and valorization techniques

- Specialized companies – Research centers – Water Management Institutions
- Institutions in charge of water management – Research centers
- Institutions in charge of environmental protection, of public health – Research Centers, Universities

5.4 Awareness raising of players and of the public to water issues

- Institutions in charge of water management – Research Centers - Players in civil society UNESCO - GWP-MEDTAC - MAP – ACSAD - – NGOs, MIO-ECSDE
- Institutions in charge of water management – Research Centers - UNESCO - GWP-MEDTAC - MAP – ACSAD

5.5 Participation, partnership and contract management

- Institutions in charge of water management – Research centers – PAM - IME -EMWIS – FAO
- Institutions in charge of water management - Players in the private sector - NGOs – WB
- Universities

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