

Mediterranean Commission for Sustainable Development



Results of the Fiuggi Forum on "Advances of Water Demand Management in the Mediterranean" Findings and Recommendations

Document prepared for the next MCSD Meeting

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"ADVANCES OF WATER DEMAND MANAGEMENT IN THE MEDITERRANEAN"
FINDINGS AND RECOMMENDATIONS**

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BRIEF AIMS, ACTIVITIES AND MEMBERSHIP OF THE FORUM

In accordance with the brief given by the 12th meeting (Monaco, November 2001) of the Signatories to the Barcelona Convention, the PAM/Plan Bleu organised a "Regional Forum on advances in the Water Demand Management (WDM) in the Mediterranean" from 3 to 5 October 2002 in Fiuggi (Italy).

This forum was organised under the auspices of the Mediterranean Commission for Sustainable Development (M.C.S.D.) and with the support of the Italian and French governments and the Global Water Partnership (GWP). Representatives from Egypt, Tunisia and Morocco, the M.I.O.-ECSD¹, the IME² Marseilles and the Spanish CEDEX³ also took part in the work of the Steering committee. 79 people from 20 countries and 57 organisations (participants listed in the appendix) attended the forum. Apart from the participation of qualified representatives from Governments and NGOs and Mediterranean experts (hydrologists, economists, environmentalists, agronomists, political scientists, sociologists etc.) the forum had the benefit of active contributions from professionals from the water industry (water boards) and from farming, and from international organisations and financial institutions (World Bank, European Investment Bank, the French Development Agency, FAO, GWP).

The major aims of the Fiuggi Forum were:

- to measure the progress achieved in the implementation of the recommendations for WDM resulting from the earlier Fréjus forum (adopted by the M.C.S.D. then by the Signatories in November 1997 in Tunis),
- to discuss the difficulties encountered and conditions needed for success,
- to draw up new recommendations for the M.C.S.D. and the Signatories.

This gave rise to:

- the carrying out of 9 in-depth case studies, 8 of which have since been incorporated into the GWP "Tool Box" (the GWP website www.gwpforum.org to prepare for the World Forum in Kyoto in March 2003)
- sending out national questionnaires to evaluate advances in WDM within the countries concerned
- an overview of future water use in the Mediterranean, the economic and institutional tools, and those needed to rally organisational effort
- selecting 27 summaries⁴ of documents of which 21 have been published and 16 presented
- the organisation of a round table with the sponsors
- holding 3 specialist workshops based on the case studies and which looked at the economic and institutional tools, and the tools for mobilizing stakeholders effort.

¹ Mediterranean Information Office, Environment, Culture, Sustainable Development & Environment.

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³ Centre for Applied Technical Research at CEDEX Madrid.

⁴ Out of 66 submitted to Plan Bleu.

ANALYSIS

1. A MAJOR POLICY CHALLENGE

The findings presented at Fréjus in 1997 are still valid and widespread. The Mediterranean region is characterised by the low level and irregularity of water resources, both through time (summer drought, interannual droughts) and through space (dry in the South). The region includes 60% of the world population with renewable national natural resources of less than 1000 m³ water/inhabitant/year. The strong growth in urbanisation, tourism, irrigation and population can only increase tensions in many countries and regions where consumption has already reached the amount of available resources. As a complement to supply-sided policies, WDM (see definition in box 1) is aiming to optimise water use from an economic, social and environmental point of view.

Box 1: Definition of water use management (WDM)

It seemed appropriate to define the concept of "WDM" more fully for the Fiuggi Forum, so Plan Bleu has drawn up the following recommendation for a definition:

Given that water use comprises the total of end use and losses, WDM consists in the total of actions and organisational systems that societies and their governments might implement to increase technical, social, economic, institutional and environmental efficiency in water management. As a complement to supply-sided policies (dams, pumping, long distance transfer, water supply networks and desalination), WDM aims in addition to reduce physical and economic losses, and to satisfy more fully social, economic and environmental demand (in quantity and in quality) of current and future generations for the lowest external cost. It is implemented through a wide range of tools (economic and institutional tools, and the mobilization of stakeholders effort) that must be adapted to each situation. So, WDM policies aim at intensifying water use⁵, optimising water use, supplying more products or services, better value and finally more sustainable development for each m³ of water received (rain), extracted (pumping, damming) or produced from salt or brackish water (desalination). Reusing treated waste water is at the boundary of supply and demand means WDM taking on the specific costs for equipment or action.

In one Plan Bleu scenario⁶, WDM could enable 70,4 km³ of water to be saved (by reducing losses and improving efficiency) between now and 2025⁷; this amount to be compared with the 300 km³ of water currently used in 2000, so that this would partially **satisfy current and future demand** (quantity, quality, future generations), **and avoid aggravating the problems already experienced: deterioration in the systems for lack of appropriate management and cost recovery systems, insufficient supply** (quantity and quality), **local conflicts of use and likelihood of regional crises, deterioration of the natural capital** (resources and ecosystems), **increased vulnerability to risks** (drought etc.), **growing costs of mobilising resources and of enabling savings in investment**. Now, the findings drawn up in 1997 from national planning documents (box 2) show that WDM was not greatly taken into account at that time in policy making. This being the case, **WDM may still be considered to be the major route for progress for integrated water**

⁵ Increasing "water intensity" i.e. Using more water more intensively and more efficiently while taking less" .

⁶ Mediterranean Vision for water, people and environment, 2000.

⁷ estimate made in December 2002 by Plan Bleu.

resources management (I.W.R.M.) policies and a priority policy objective for sustainable development in the Mediterranean.

Box 2: planning documents from Mediterranean countries (1990s): the supply-sided approach still too dominant

An examination of planning documents from countries with a Mediterranean coastline (1990s) revealed a demand-sided approach that was still insufficient:

- forecasts of demand often cursory and overestimated
- demand management undeveloped
- environmental aims taken into account only secondarily
- trend to overestimate water needs: increased re-evaluation of the estimated available resources, resources excessively and increasingly used
- increased water transfers between regions

2. INDISPUTABLE BUT INSUFFICIENT PROGRESS

WDM has recorded **indisputable progress** in recent years in the Mediterranean. It has become a clear priority for Mediterranean co-operation and a concern promoted by some of the major organisations involved (sponsors, some Governments, some water boards etc.) Some **concrete recent noteworthy examples** can be pointed out in some Mediterranean countries, both nationally (for example the strategy of irrigation water saving in Tunisia – box 3) and locally (box 4). These examples show the **considerable benefits** that WDM can produce. These benefits are both financial (savings in very costly heavy infrastructures), economic and social (WDM, if it is well managed, may for example allow agricultural incomes to be improved and give better access to water for the least well-off) and environmental (reducing pressure on, and even restoring, ecosystems and resources).

Box 3: the strategy of saving irrigation water in Tunisia.

Tunisia undertook a water saving policy at an early stage for both urban and agricultural needs. In this way it met the problem of scarce physical resources caused by the lack of large catchment areas.

The essential result of this nationally has been the stabilisation of water used for irrigation for more than six years in spite of the size and development of its irrigated agricultural sector, of seasonal peaks and an unfavourable climate (droughts). This has enabled the needs of both the tourism sector, that brings in foreign exchange, and towns, to ensure social stability, to be met.

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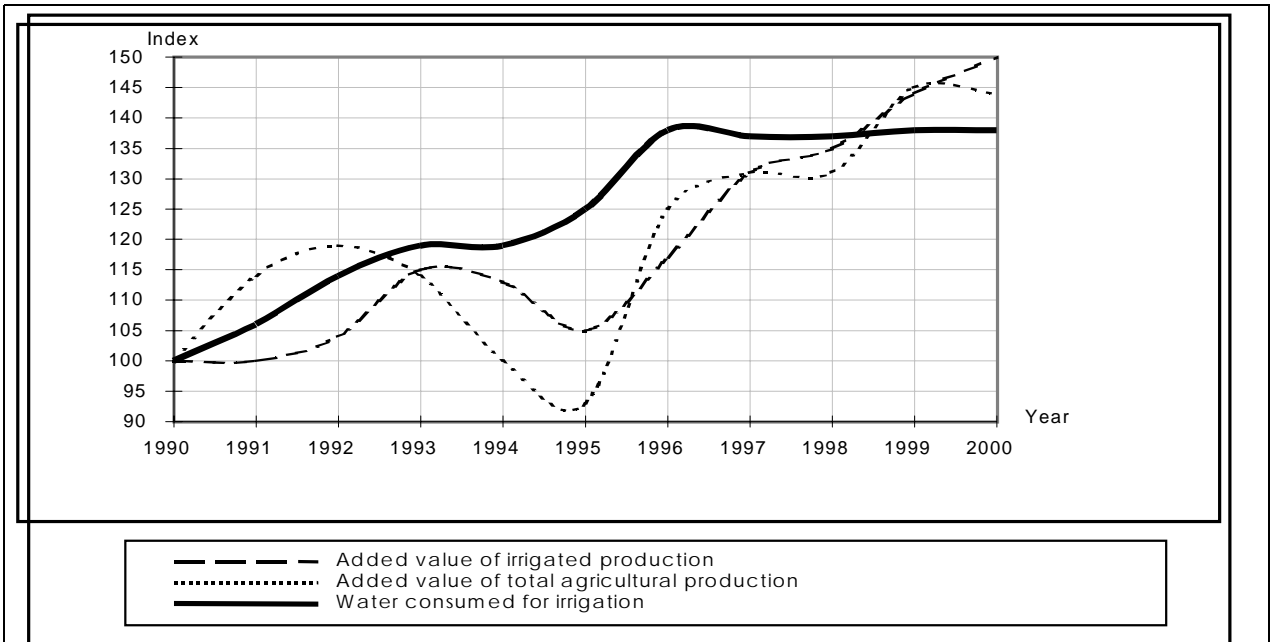


Figure 1: Change in water consumption and added value in the irrigated sector.

The underlying principles of the Tunisian WDM strategy are:

- to move from isolated technical measures to an integrated approach
- an approach that encourages users to participate and take responsibility (960 GICs⁸ created in 60% of the public irrigated area)
- gradual introduction of reform, adapted to the local context, involvement of users and encouraging them to organise themselves
- introduction of systems for financial incentives to promote setting up equipment and technologies which save water (60% grant when purchasing equipment)
- income support for farmers to allow forward planning and to give confidence for investment and agricultural work
- a pricing system combining transparency and flexibility, structured with the national aims of food safety and which has allowed costs to be gradually recovered.

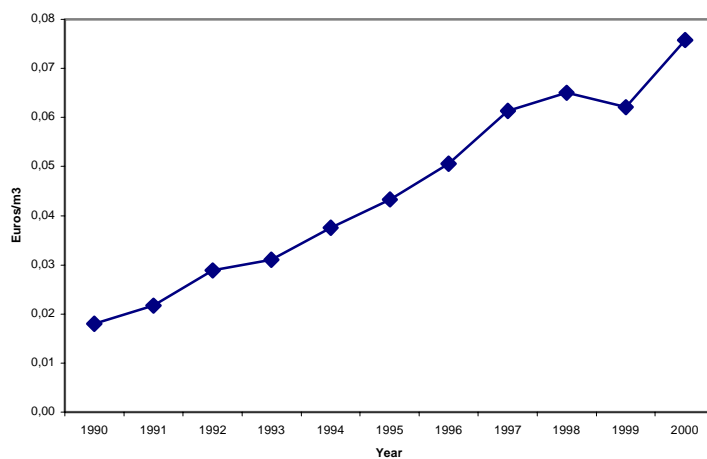


Figure 2. Change in the pricing of irrigation water in Tunisia.

(in Euros / m³, 0.07 Euros = 100 millimes = 0.1 Tunisian Dinar)

Box 4: local examples of progress (Rabat-Casablanca, Guadiana, Egypt)

Some local examples of progress in water use management have been noted in various regions or Mediterranean countries:

- the conurbation of Rabat-Casablanca in Morocco has experienced a substantial drop in the rate of growth in water use for 12 years, in spite of high and growing urbanisation, by using measures to repair and find leaks in the system, setting up a banded pricing system to make consumers - including public users - more responsible, and with welfare provision for the poor, but with the supply of water routinely metered, and an intense public awareness campaign for water saving. These actions have been made possible by an appropriate administrative framework that combines private business with government agencies and local authorities to give “delegated management of the water services” but supported by a binding inter-authority charter. This has allowed costly investments (dams, water movement channels) to be deferred as these are difficult to finance without extra debts and in the end often prove not to be necessary.

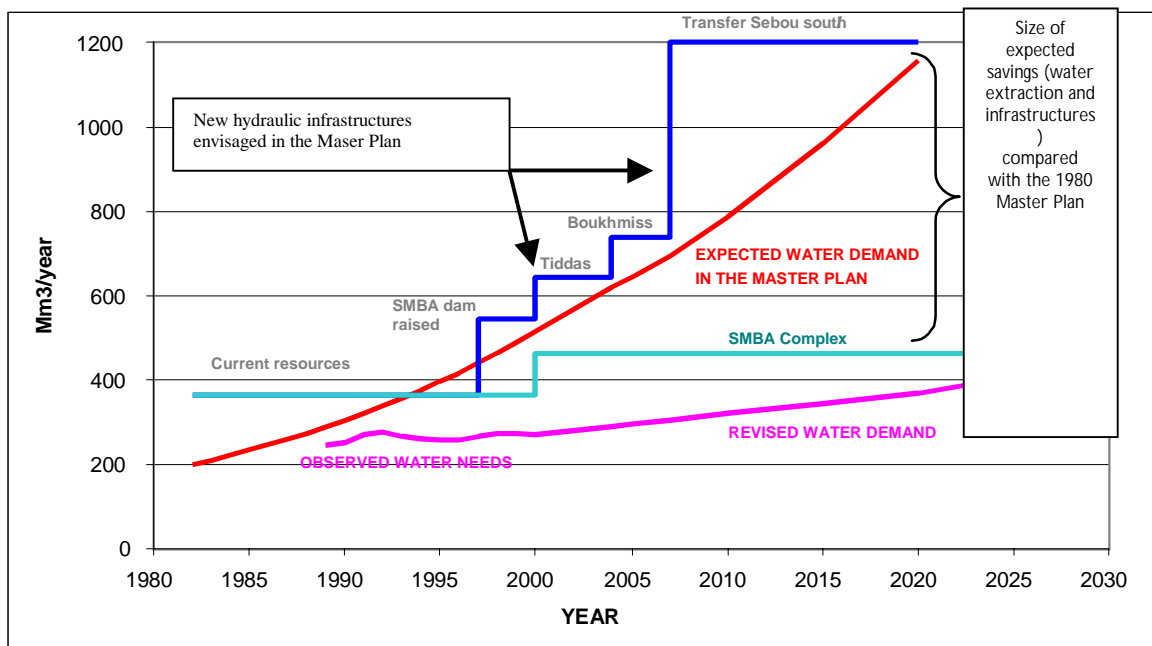


Figure 3: Forecasts in the 1980 Master Plan for the Rabat-Casablanca conurbation (Morocco) (water use and infrastructures) and revised water use following improvements in water management.

(Source: DGH Rabat, 2002)

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⁸ GIC Groupements d'intérêts collectif (associations of water users).

.../...

- the High-basin region of the river Guadiana in Spain has seen a rise in alluvial ground-water and springs running again in spite of high growth in irrigation since new regulations were introduced for pumping from bore holes including various measures for protection, warning, effective sanctions, permits etc, This was combined with compensation for loss of income for those using irrigation and financial incentives for using water saving technologies or planting crops that need less water. These agri-environmental measures have played a part in making the plan to restore ground-water levels feasible and also to protect natural countryside which is the region's major tourist attraction.

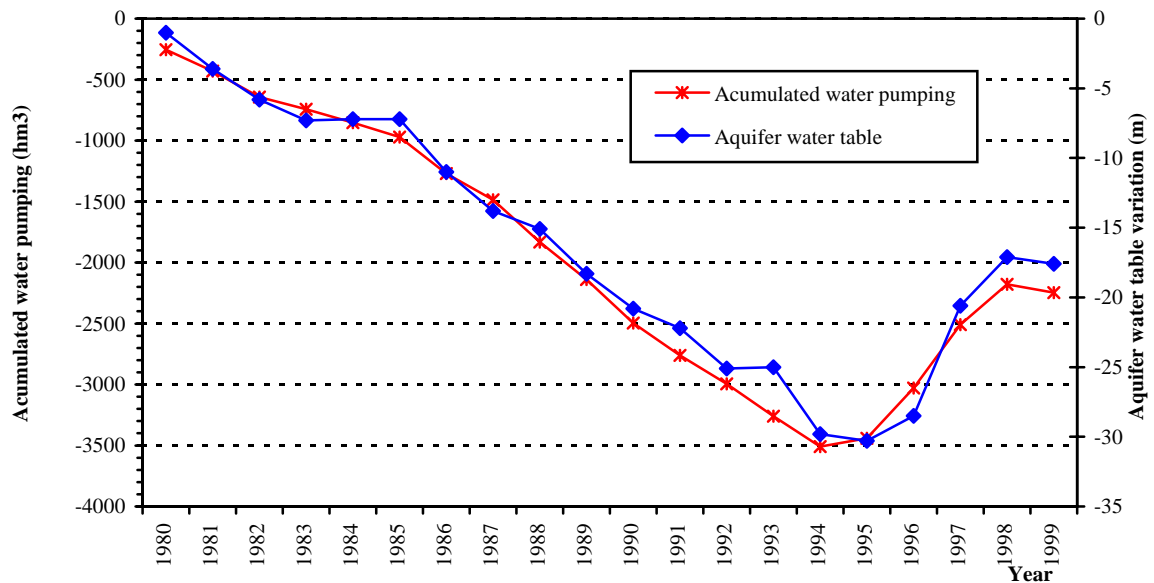


Figure 4. Change in water extraction and the water table in western La Mancha. Source: European Commission (2000) (Information by CEDEX).

- In the coastal region of the Languedoc, the ground-water in the Astien sands is today seen by the twenty local authorities which make up the area as natural wealth that has to be protected after 100 years of intensive exploitation (700 bore holes) which has led to a lowering in ground-water levels and deep penetration by sea water. As it is in a tourist area, the deterioration was made apparent with the development of camp sites and holiday homes after 1960. SMETA, a joint federation of local authorities for research and public works, was set up in association with the Agency for the RMC basin⁹, and undertook a series of measures to quantify and describe resources, to give information (rights and duties of owners of bore holes, public awareness campaigns), technical requirements for creating and maintaining bore holes, standardising public drinking water, saving water by gating artesian wells etc. by drawing up a ground-water management plan. Using a technical team and links between local authorities and users, and a system of aid to restore bore holes and to meter extraction, ground-water has been restored **as measured piezometrically** (lower seasonal variations and raising the average level) The deterioration in quality stabilised in 10 years with a saving in water extracted of 1 million m3 per year (or a drop of 25%).

(Source: case study by SMETA and RMC Water Agency)

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⁹ Rhône-Méditerranéenne-Corse

.../...

- Egypt has developed a participative approach for the management of irrigation and modernisation of technology in the irrigated areas of the Nile valley which have enabled it to gradually deal with the pressure on the resource. The technology uses modern equipment and bottom-up irrigation management with centralised control, simplification of the system, and above all the involvement of user organisations in decision-making, management, upkeep and maintenance through intensive training.

(source: MWRI, Nile Water Sector, 2002)

However, few Governments have yet implemented relevant strategies and there are still not enough administrative systems (see box 5) or regional (Euro-Mediterranean) partnerships operating at the national and local levels. In the Mediterranean context where the hoped-for benefits will need substantial forward-planning, it would be appropriate **to speed-up and implement WDM more widely in the region.**

Box 5: summary of responses to country questionnaires¹⁰ (12 responses mainly from countries in the South and East Mediterranean)

The question of WDM is always topical for all the countries with the Balkan countries putting emphasis on the quality of the resource rather than on quantity. Although there is shared concern, only a few countries (5/12) take it into account in their forecasting, its stated general aims are rarely quantified (3/12) and it is seldom now integrated into policies for the sector (4/12). Its increasingly important place in documents is nevertheless disrupted by continual confusion over its definition and the lack of evaluation tools even though some countries are initiating interesting changes.

Administrative reform is dominated by de-concentration on the catchment areas, increased user participation, taking into account the needs of the environment, the separation of the roles of Government and the place of the European Commission's framework directive on water¹¹. It is rare for special organisations to be in charge of WDM except in France and Tunisia.

The tools most often mentioned are: repair of systems, promotion of techniques of irrigation that use water sparingly, banded pricing systems, strengthening water policy, public awareness campaigns. Feasibility studies on alternatives to the strategy of increasing supply are rarely mentioned. Audits and evaluation are still rare. This is doubtless linked to the difficulty of creating relevant indicators on which it is easy to get information.

The difficulties mentioned are linked to a lack of political will, to the fact that some categories are unacceptable in social terms and to the complexity of a welfare or consultative approach.

The results of the activities of the M.C.S.D./Plan Bleu on WDM deserve to be made more widely known in the countries concerned.

Margins for progress exist and could be achieved with a greater involvement of user representatives in the creation of water policies and better awareness of decision makers on the challenges and benefits of WDM.

WDM is a "project for society" and cultural change is under way in several Mediterranean countries to negotiate the move away from supply-sided policies to integrated supply/demand policies. This demands time, effort to formulate strategies and a system of continuous monitoring.

¹⁰ From a survey by questionnaire among bodies responsible for water carried out by the Plan Bleu in preparation for the WDM Forum and whose major results are shown here.

¹¹ For member-countries of the European Union or those expecting to join.

3. ARE THERE ANY ALTERNATIVES BETWEEN WDM AND SUPPLY?

WDM, water movement and using non-conventional water (reuse and desalination) are three important recent changes in water policy in the Mediterranean. These changes may be carried out together in some countries but whether they are complementary or conflicting in terms of allocation of investment and changes of user behaviour must be carefully analysed.

Desalination has become an essential technical solution in some circumstances (where there are budget deficits that do not allow some needs for industry, tourism or urban areas to be met, and where sea or brackish water is available along with cheap energy sources), especially when production costs have become lower¹². However costs remain relatively high and do not include environmental costs (energy consumption, waste etc.). In addition desalination in itself does not allow for good management of the natural capital and especially for avoiding the risk of irreversible over-consumption of water. This means of producing water is not a "catch-all" answer to the problems encountered in the Mediterranean.

The **reuse of treated waste water** is already carried out to varying degrees¹³, and this method should be subjected to comparative analysis to establish advantages and costs. This practice poses questions for quality and health standards.

4. THE PLACE OF WDM IN WATER POLICY AND ECONOMIC AND SOCIAL DEVELOPMENT.

WDM encourages structural progress to achieve much wider aims (sustainable management of the natural capital, improvement of behaviour etc.) and taking the long view.

Because of this, using the progress of desalination as a pretext for not giving WDM all the attention and the increasing consideration necessary for water policy would be imprudent and erroneous. There is a parallel with the energy sector: efforts made in policies to control energy implemented after the oil crises during the 1970s were then dropped in spite of the early benefits obtained and the major savings that such policies can produce. **It would be dangerous if, in the Mediterranean context, efforts made in WDM, which have scarcely begun to become significant, were not always consolidated and broadened**, to help prevent the forecast shocks and crises.

To this end, WDM asks to be taken into account in all **economic and social development policies**, and not only in water and environmental policies.

In the Mediterranean, it is also necessary to try to:

- **improve the efficiency¹⁴ of the agricultural sector which represents nearly 80% of the total water use**. Progress is necessary in management **of irrigation**, but also in the entire

¹² US \$ 0.5 per m³ of water produced

¹³ from reusing drainage water in alluvial ground-water and in the major canals in Egypt for major crops to using urban waste water, whether treated or not, from belts of market gardens to the production of biomass or the upkeep of open space.

agricultural sector that depends on rain. This has been largely ignored until recently and it is the irrigated farming sector which has had priority for public and private money but it deserves greater attention because it includes the most numerous and poorest farmers in the Mediterranean. Improvements are possible and necessary to make the best use of rain water.

- **higher satisfaction of demand** (access to drinking water and sewage systems) **from the poor, urban** (unofficial neighbourhoods) **and rural populations** ¹⁵.
- implementing strategies, partnerships and management tools **to enable progress in the efficiency in water movement and in all sectors of use along with an optimal allocation of resources.**

The Johannesburg summit undertook a number of commitments for water (box 6). By fully integrating WDM into its economic and social development policies, the Mediterranean has become empowered to apply these recommendations.

Box 6: the commitments of the Johannesburg World summit for Sustainable development relating to water

At the Johannesburg summit, Governments gave themselves these aims:

- implementing between now and 2005 plans for water efficiency and integrated management
- the reduction by half between now and 2015 of the population with no access to drinking water and sewage systems
- better integration of sustainable farming and better methods of consumption and production.

¹⁴ the rate may vary at the various levels in the water distribution chain, and may satisfy ecological objectives (regenerating alluvial ground-water, preventing salt-water wedges)

¹⁵ this may increase the total demand but by acceptable amounts.

5. APPROACHES, DIFFICULTIES AND CONDITIONS FOR PROGRESS FOR WDM

A policy of "demand" management must first include better methods of evaluating the total social, economic and environmental demands, and must examine relevance and priorities and the possible and necessary gains. It needs to set short, medium and long term objectives by taking into account what changes are possible, and, finally, should implement a complete range of tools that allow a consistent improvement of the various efficiency measures.

Demand management necessitates a profound change in policies and practices (methods of management, consumption and production). The challenge is to succeed in combining standard or new "hard" approaches that place the accent on technology and infrastructures (hydraulics, desalination), with "soft" approaches (the art of acting with all the organisations involved to find the best use for each m³ of water, without forgetting the needs of nature). The objective is to put today's and tomorrow's people at the heart of the argument by considering them not merely as users or customers but also as citizens who are expected to take responsibility, and to manage water as a heritage (whether natural, economic, or as expertise) to be treated carefully and passed on to future generations.

The **difficulties** of implementing WDM should not be under-estimated. There are many different organisations involved who, on the whole, have little awareness or training, and do not expect to take responsibility. Without experience of WDM, the first step is not easy to take and the tools needed for its implementation are not necessarily well known or understood.

From this point of view, the Fiuggi Forum has enabled some progress to be made. The case studies and discussions have enabled obstacles and potentials for progress to be identified. The three favoured approaches have been **rallying organisational effort, economic tools and administrative tools**. These are the major imponderables for WDM, because they are essential in the decision-making and consultation processes and because they can mediate between the use of water and its users; these are aspects for which the expected advances are greater but also more uncertain and more difficult to implement. Technological aspects have not been examined specifically because they have been fully discussed in many other meetings on water and they are relatively well known.

Three workshops were devoted to each of these approaches and a range of relevant views and recommendations have been drawn up from them. (see boxes 7, 8 and 9).

Box 7: The "rallying organisational effort" workshop examined some of the difficulties and conditions for progress in WDM for the nine major groups of organisations involved:

Encouraging the organisations involved to be in favour of WDM can only be achieved if there is a pay-off for everyone. This can be achieved through consultation and publicity that show that everyone can expect to benefit from these provisions. Central and local government, privately owned companies and user groups make up this triangle where compromise is achieved by steering policies and operational measures.

- **International organisations and sponsors.** Some of the limiting factors found were: the poor use of available funds, cumbersome procedures, their inappropriateness for local conditions and the lack of consistency between international organisations. It will be necessary to develop common language and concepts and to make procedures more appropriate to the aims of WDM and to the different conditions experienced in the countries concerned.
- **National Governments.** The major limiting factors found were: the lack of a "WDM culture" within Governments, priorities poorly perceived and failure to mediate, diffuse responsibilities and working in isolation, difficulties in releasing appropriate financing, fear of "losing control". The conditions for success are: capitalising on experience, stimulating political will at the highest level, reducing direct management and strengthening incentives and regulation, setting up strategies and partnerships, clarifying relationships between public authorities and service managers (charter for public water services), increasing capacity, monitoring and evaluation procedures (indicators), quantified definition of aims etc.
- **Local Authorities.** Poor local government (lack of skills in the local areas), lack of knowledge about their powers and administrative boundaries are the obstacles often mentioned. For progress to be made, local authority responsibilities and local communities must be strengthened with greater financial autonomy, and the exchange of experiences between local authorities in the Mediterranean (within and between countries and decentralised co-operation), more accurate evaluation of user demand, and strengthening the ability to negotiate.
- **Water professionals.** The lack of professionals at a high level in the South and East, and the lack of reliable data for action and analysing the reasons for successes and failures are the obstacles mentioned. Progress occurs when there is a commitment to use the best techniques, there is a clear framework to show how they fit in with the other organisations involved, contracts that clearly set out their objectives and responsibilities, the need to be transparent, taking into account diverse demands, contacts clearly identified etc.
- **Industry.** The weakness of statutory provisions remains an obstacle. Progress will involve a greater awareness of the financial benefits of WDM (gains caused by an improvement in production processes), setting up reference systems, standards and regulations, monitoring systems, economic incentives and sanctions etc.
- **Tourist sector.** Since tourists are only passing through, they often do not have an adequate awareness of constraints in the area. However, the tourist sector must show an example in WDM: its buildings must comply and it must totally recover its water cost. Passive and active public awareness campaigns and economic tools (taxes) should be developed.

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- **Farmers**. Progress in WDM is too slow. There are many limiting factors: lack of access to information, poverty and illiteracy (in some developing countries), no appropriate legislative framework, low integration of WDM into policies, lack of involvement in decision-making etc. There are many conditions for success: incentives for WDM by targeted grants and progressive cost recovery, creation of professional associations, strengthening capabilities, technical support, training, information campaigns, improved structuring of traditional expertise and practices, strategies for water catchment areas etc. These strategies must combine WDM with agricultural progress. Progress is not possible without consolidating or improving incomes.
- **Users of drinking water services**. The difficulty is the great diversity of practices and poor awareness. Progress is achieved by public awareness campaigns, education (including the principles of WDM in teaching programmes), improved awareness of categories of users, practical guides for different types of user, combined campaigns for water saving and improved hygiene, etc.
- **NGOs (environmental, consumer etc)**. The difficulties for these new organisations are under-funding and the lack of awareness of their role. Creating better links with the grass-roots, improving capabilities, capitalising on successful experience etc. are ways to achieve progress.
- **All the organisations involved**. A difficulty generally found is the lack of dialogue and of work undertaken jointly. It is important to pool acquired information. The various levels of government need to make a contribution by giving incentives for "partnerships" and monitoring and evaluation systems.

Box 8: results of the “economic tools” workshop

Mixed findings on implementation

Although experiences of effective demand management can be found in the Mediterranean, with indirect positive effects on, for example, improved agricultural productivity, the role of economic measures still appears to be weak for both its objectives and for the tools implemented and the results achieved.

The objectives of economic measures are in general seen in terms of **cost recovery** and only rarely as including preservation of the environment.

For *economic instruments*, various types of **pricing system** (lump sum, based on consumption etc.) for irrigation water and in bands for drinking water are by far the most used, although examples of the use of other tools such as **grants for investments** in water saving and **quotas** were observed in some countries.

In terms of *results*, the objective of cost recovery is rarely achieved.

Greater recourse to economic instruments is considered to be necessary for better water use management since they can make a considerable contribution to the more efficient allocation of resources within and between economic sectors, to the improvement of access to water by the less affluent layers of society and to taking into account environmental concerns. However, some conditions are necessary for these instruments to be effective.

Conditions of success

In the first instance political will is necessary to **define clear and understandable objectives** (cost recovery and/or water saving; financial and/or social and environmental concerns; taking sewage systems into account). Once objectives have been stated, instruments and appropriate pricing levels, grants, compensation and quotas can be chosen.

The effectiveness of economic tools also depends on the **economic and administrative framework** within which they are placed. An effective system of regulations and laws, consistency of the tools used with other national and international policies may also have an effect on water use and how these tools fit in with other non-economic instruments are all essential conditions to a good outcome.

Economic and technical feasibility must be established in order to avoid **transaction costs that are too high** and technical and of financing difficulties when implementing the chosen tool.

Whether users accept WDM measures remains linked to their perception of it (which may be stronger in extreme situations such as drought). Acceptance can be made longer-lasting by using **dialogue, consultation, public awareness**, creating trust in the proposed tools (**transparency, simplicity**) and in the **WDM bodies**, using a **gradual approach** and by **decentralising decision-making**.

The relevance of the tools to the objectives. Not all economic tools are necessarily effective in achieving every aim. Pricing, for example, seems particularly appropriate for the consumption of drinking water or irrigation water. But other types of incentive like grants may be more appropriate when it is required to bring water-saving equipment up to standard. Quotas seem to be a better answer for regulating demand where there is strong pressure on the resource.

Good awareness of the conditions of supply and demand of water also enables appropriate economic tools to be chosen. Thus, knowledge of how users react to prices and incomes, of the availability of alternative water resources that may lead to economic measures being avoided, amounts consumed, pricing systems that users find more acceptable etc., all this will facilitate the implementation of pricing measures and systems. Implementing quotas leads to the problem of controlling the amount used (water policing) and consultation with other users (planning for low water levels). The implementation of systems of compensation for environmental and social purposes requires it to be feasible and with guaranteed financing over time.

The implementation of economic measures must be accompanied by **a system of monitoring and evaluation based on audits and performance indicators**.

Box 9: results of the "administrative tools" workshop

Administrative tools and regulations are **essential** for implementing economic tools and encouraging the organisations involved to move towards WDM. They must be **combined** in an appropriate framework which requires **transparency, fairness and social cohesion, subsidiarity, user participation, trust, monitoring the reliability of data, strengthening the legitimacy of the authorities and continuity of public service** in order to strengthen the administrative capability of the organisations involved.

This framework needs to be constructed on 3 levels: regional (Euro-Mediterranean), national and local.

Regional (Euro-Mediterranean) level:

- Develop **meetings of Ministers with responsibility for water or agriculture** within the Environmental Programme for the Mediterranean to discuss **water use management** and its **integration in to policies for economic sectors**, to ensure regular monitoring. It will be necessary to make water use management a **major** concern of existing regional institutions and **to encourage the inclusion of WDM in national legislation** by increasing the awareness of Members of Parliament.
- Develop a **regional system of catchment area organisations**
- Support the development of a **system of national information centres on water**
- Develop **regional systems for economic sectors** (management, agricultural users, consumer associations, water companies etc.)
- Develop **twinning for co-operation** between organisations at the same level, to encourage, among other things, exchanging **experiences** of WDM.

National level:

- Set up place an **inter-ministerial committee on water** to co-ordinate Government action and mediate on allocations
- Set up a **National Water Council** with a consultative role for users and private operators.

These bodies will be responsible for the development of efficiency standards for water use and the improvement of legislation on water, the launching **national campaigns of public awareness and education** on water saving, the improvement of awareness of **water use** and improving **procedures** for the collection and approval of national data, creating conditions that encourage **public-private partnerships** for the services to provide drinking water, and the creation of a Department to audit water **quality**.

Local level: (Catchment area, aquifers etc.)

- Encourage the creation of decentralised **catchment area organisations** wherever possible and relevant, to encourage participation and encourage devolved administration to implement WDM.
- Support the creation **of user associations** (irrigators, consumers, local economic fabric etc.) to share the responsibility for WDM.
- Conduct **local consultation** meetings to define how rules can be applied to encourage WDM.

From these workshops several strong ideas have emerged on the conditions for WDM to succeed. The main ones are:

- The importance of **political will**, which is demonstrated by setting up **strategies, partnerships and appropriate administrative provisions**.
- **training** (and especially skills training for physical operations) for all involved, in particular those who have, or will play a role in encouraging action (members of parliament and local councillors, civil servants and local authority employees, water and financial professionals, farmers etc.) as well as **education and public awareness programmes**, as the general public does not willingly take responsibility for WDM. The objective must be that WDM is gradually accepted by the whole of society.
- The capability of WDM to build itself up and bring into play a range **of tools** (administrative, financial and economic, technological, organisational and consultative) that take account of the **historical, institutional, socio-economic and cultural context of each country or region**. Complete success implies both an **appropriate mix of tools** and **gradual implementation**. Gradually **recovering costs** while taking account of social and environmental aspects is a necessary objective. However, to pay too much attention to this tool alone does not necessarily favour WDM. Other economic tools such as **incentives** (for example to help farmers set up water-saving irrigation systems) or a quota system (sharing available water between nature and the various players after negotiation) are equally relevant and should be promoted. The skill consists in combining approaches and making WDM a vehicle for economic and social progress, especially in farming, the priority sector.

PROPOSED RECOMMENDATIONS

1. NATIONAL GOVERNMENTS, ESSENTIAL PARTICIPANTS IN WDM

National Governments, as the guarantors of public interest, have a fundamental role to play in promoting WDM strategies to make the Mediterranean an exemplary model for the application of the recommendations of the Johannesburg summit. To do this, they must ensure that WDM is fully integrated into the strategies and policies of economic and social development (and, it follows, into policies for the various economic sectors that stem from them, especially in agricultural policy).

RECOMMENDATION 1:

Mediterranean countries are invited to define, adopt and implement national strategies and administrative provisions for water use management. These strategies should be made up of principles and methods, i.e.:

- setting ambitious but realistic objectives for the medium and long term,
- involving all the partners within the appropriate geographical areas,
- action plans accompanied by monitoring and evaluation procedures.

These strategies must involve all the participants and promote public – private – community partnerships to ensure that the necessary structural changes, to guarantee the process of continuous progress in the shared community projects.

2. STRENGTHENING REGIONAL PARTNERSHIPS

The implementation of WDM within countries is difficult. It is the duty of the regional participants to help to make this region a good example of the post-Johannesburg period. This implies strengthening the regional partnerships that were initiated as part of the Euro-Mediterranean process while co-ordinating with the other regional participants (sponsors, organisations involved in Mediterranean co-operation, large water boards). The Initiative for Water in the Mediterranean launched by the European Union and the setting up of a Mediterranean strategy of sustainable development (M.C.S.D.), which followed the 2nd World Summit in Johannesburg, give an opportunity to do this.

RECOMMENDATIONS

RECOMMENDATION 2

The European Commission, as secretary to the Euro-Mediterranean Partnership, is invited to approach other intergovernmental bodies with responsibility for regional co-operation (Mediterranean Action Plan, Centre International de Hautes Etudes Agronomiques Méditerranéennes) and other regional participants to evaluate the conditions for encouraging more efficient and better structured ways to promote WDM in the region. The objective of this strengthening of regional partnership is to encourage technical, technological and scientific progress and raise money, strengthening capabilities in the countries, and the implementation of an appropriate system to monitor and evaluate progress.

RECOMMENDATION 3

The sponsors are invited to develop methods of financing that are more suitable for WDM and the diversity of the situations encountered. In particular, it would be appropriate to encourage the setting up of pilot studies, including grant-aided ones, and to strengthen administrative procedures to encourage the co-ordinated launching of WDM approaches and in this way to demonstrate that they are interested in countries that still have to undertake this approach.

RECOMMENDATION 4

The PAM/Plan Bleu, in consultation with the national authorities with responsibility for water, national research bodies on sustainable development and the regional partners, should facilitate the setting up of a range of indicators and reporting systems for the monitoring of progress in this sphere in the Mediterranean. In 2007 it will organise the third regional forum on advances in WDM for Directors and other organisations involved in water. It will be devoted to the evaluation of progress. The PAM / Programme of Priority Action will support the implementation of these recommendations in its programmes of coastal improvement (PAC).

3. SUPPORT THE ADOPTION OF WDM BY LOCAL ORGANISATIONS

In the long term, the success of WDM depends on the emergence of **water citizenship**. The adoption of WDM by local organisations is therefore an essential condition of progress.

RECOMMENDATION 5

The Signatories must work to create or develop political and administrative conditions so that all professional and local organisations – local authorities and catchment area or ground-water committees, associations of irrigators, tourist and industrial companies and their groupings, consumer associations, etc. - adopt and implement WDM strategies and procedures.

4. PUBLISHING AND IMPLEMENTING THE RECOMMENDATIONS

The M.C.S.D.'s work on WDM needs to be made more widely known both regionally and within the countries concerned.

RECOMMENDATION 6

The Signatories (Mediterranean countries, European Community) will make every effort to give close consideration to the results of the work of the M.C.S.D. on water (findings and recommendations resulting from the forums in Fréjus and Fiuggi, including the opinions and recommendations of the three Fiuggi workshops on rallying organisational effort, economic tools and administrative tools contained in boxes 7, 8 and 9). National governments could organise inter-ministerial meetings and the European Commission could organise meetings between its Directorates to examine the results of implementing the recommendations and to lay down specific follow-up action. The Signatories will ensure that the results are made known to the major organisations involved and, where necessary, will be responsible for the translation of the summary documents drawn up by PAM/Plan Bleu into the individual languages. They will help to prepare the 2007 workshop by coming together and making relevant information (national, local and Euro-Mediterranean progress, etc.) available to the PAM/Plan Bleu.

RECOMMENDATION 7

With the support of the Signatories, the PAM/Plan Bleu will help to make information and analysis on WDM better known in countries and institutions by

preparing illustrated documents and, where necessary, by organising visits and meetings in sub-regions or individual countries. With the support of the GWP, the World Water Council, the FAO, etc., it will make every effort to bring the work being done in the Mediterranean for WDM to the attention of international bodies so that the Mediterranean region will have the benefit of information on international progress in this sphere.

RECOMMENDATION 8

The CIHEAM is invited to make known and discuss the results of M.C.S.D.-Plan Bleu activities on WDM at Board level and in meetings of Ministers of Agriculture in its member countries. It will strengthen the place of WDM in its training programmes.

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