

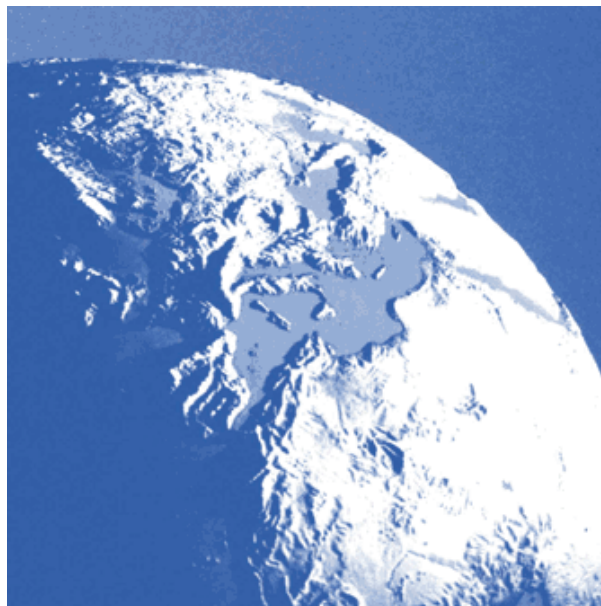


Mediterranean Commission on Sustainable Development

Mediterranean Strategy for Sustainable Development

Monitoring progress and promotion of water demand management policies

Terms of reference for the national reports



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Mediterranean Strategy for Sustainable Development

Monitoring progress and promotion of water demand management policies

Terms of reference for the national reports

1. Context

A splendid eco-region, the Mediterranean has more than others to take up the challenges of sustainable development.

After setting up a Mediterranean Commission on Sustainable Development (MCSD) in 1996, the Contracting Parties to the Barcelona Convention (the 21 rim countries and the European Community) adopted in November 2005 a proposal from this commission: the « Mediterranean Strategy for Sustainable Development » (MSSD) announced at the Johannesburg Summit. This was also endorsed by the Barcelona Euro-Mediterranean Summit in November 2005.

The first priority field of the Mediterranean Strategy for Sustainable Development is improving **integrated water resources and demand management**¹ with, for principal objectives:

- To stabilize water demand through the reduction of water losses and the wasteful use of water (a reduction in demand in the North and controlled increases in the South and the East) and increase the added value per cubic metre of water used.
- To promote the integrated management of watersheds, including surface and groundwater; and ecosystems, and foster depollution objectives.
- To achieve the Millennium Development Goals concerning access to safe drinking water and sanitation.
- To promote participation, partnership, active cooperation and solidarity for the sustainable management of water, at local and national level.

The MSSD is a «framework strategy». It can help to design the **National Strategies for Sustainable Development (NSSD)** that are underway as well as inspiring the strategies for the various sectors of activity or help to update them, as each country has to determine its own goals. The MSSD is an invitation to **strengthen regional cooperation with regard to targeted sustainable development objectives** as well as to strengthen the **monitoring of this progress and to share regional experiences**.

Plan Bleu was asked to help the Contracting Parties to build up information that would facilitate the implementing and monitoring of the MSSD and the NSSD. In 2006-2007, Plan Bleu has been mandated to gather together and distribute a set of indicators for monitoring the MSSD and to document these indicators, to carry out more in-depth analysis and to pinpoint good practices together with the volunteer countries, the EU authorities and the regional partners and initiatives concerned with the water demand management.

To follow up the mandate that it was given, Plan Bleu approached several partners². It was tasked with inviting volunteer countries to prepare national reports and with organising the **3rd MCSD regional workshop** in

¹ MSSD Extract in appendix 3

² The activity is conducted with the support and participation of: Secretariat of the GWP Med, MWI, ICAMAS, MedWet, MIO-ECSDE. Other partners as the European Commission, METAP/World Bank, FAO, World Water Council and GWP, French Development Agency, EMWIS, CEDARE, PS-Eau, Verseau, Medcities and other MAP Regional Activity Centres (PAP, PP and INFO) will also be invited to take part. To prepare the activity, Plan Bleu also benefited from the support of 4 volunteer countries: France, Turkey, Morocco and Tunisia.

early 2007 on the topic « water and sustainable development in the Mediterranean, monitoring progress and promotion of water demand management policies ».

This workshop is a follow up to those organised in Fréjus (France, 1997) and Fuggi (Italy, 2002), attended by a large number of water directors, experts, NGOs, businesses and local authorities.

The Fréjus workshop of 1997 established a first general report showing that :

« The increase in the offer that was the traditional response to demand increase has reached or is going to reach its limits and is confronted with growing social, economic and ecologic obstacles in nearly all the rim countries »³.

The Mediterranean region groups together 60 % of the world population that is « poor » in water (countries where agriculture depends mainly on irrigation, with less than 1000 m³ water/inhabitant/year), the resources are already overexploited in many places and the growing water demand is going to remain very high with the rise in the demographic rate in the south and the east, the development of tourism, industry and irrigated land. Climate change, with its already significant impact and the expected impact over the medium term on resources and the irregularity of precipitations, represent a supplementary constraint that adds to the validity of this observation.

Taking into account the possible gains in efficiency, the MCSD had already concluded that **water demand management (WDM)** should be considered as: **« the way that will permit the most progress out of the Mediterranean water policies »** and had drawn up the propositions chosen in the form of recommendations by the Contracting Parties to the Barcelona Convention⁴.

The **Fiuggi workshop of 2002** permitted the making of a first progress report, the documenting of a series of **concrete WDM case studies** and the **debating of tools** to implement these policies. It demonstrated notably that the most significant progress obtained was a result of a combination of tools (strategies, fixing of tariffs and subsidies, institutional organisation) implemented progressively and continuously.

Currently, the stake is to accelerate the integration of WDM in the water, environment and development policies (notably in the urban and agricultural policies) and to help, if need be, the countries to design or improve their NSSD and **« efficiency plans »** the principle of which was decided on at the Johannesburg Summit. Better integration of the objectives of sustainability in the **cooperation and development assistance policies** is also both desired and essential.

Definitions

The « **water demand** » in terms of quantity is considered here as all the volumes of water mobilised (not including « green » water and « virtual » water) to meet the various uses , including the volumes « lost » in transport and usual practices. The demand is, therefore, the addition of the water withdrawals, the imported water and unconventional production (desalination, reuse, etc.).

Water demand management includes all the measures aimed at improving technical, social, economic, institutional and environmental efficiency in the various water uses. As a complement to the offer policies (dams, pumping, long distance transfers, desalination, etc.), water demand management is the main direction to help to reach two objectives at the heart of the concept of sustainable development: the **evolution in non viable consumer and production methods** on one hand, and the protection and **sustainable management of natural resources with a view to economic and social development** on the other hand.

Water demand management aims at:

- Reducing losses and bad use of water ;
- Optimising water uses by ensuring well thought out allocation of the resource to the different uses, while taking into account the ecosystem requirements, the objectives of preservation of the renewal and the quality of the resources as well as the development of *in situ water use* (without withdrawal) (recreational activities, aquaculture and fishing, energy) ;
- Creating more sustainable development for each unit of the resource mobilised ;

³ Spain, France, Italy, Malta, Slovenia, Croatia, Bosnia Herzegovina, Serbia-Montenegro, Albania, Greece, Turkey, Syria, Lebanon, Israel, Palestinian Territories, Cyprus, Egypt, Libya, Tunisia, Algeria, Morocco. Only Slovenia, Croatia, Bosnia Herzegovina and Albania have sufficient resources to be sheltered from situations involving high pressure or shortages.

⁴ The recommendations adopted in 1997 are in Appendix 4.

- Permitting substantial financial savings and economy of facilities for the countries, towns and industries ;
- Anticipating and avoiding the expected crises with baseline scenarios of the “*business as usual*” type.
- Contributing to reducing the pressure on resources, notably by reducing and stopping unsustainable uses (over-use, using of non renewable resources, groundwater mining)

WDM has, therefore, the vocation to become an **essential component of integrated water management** and of the **urban, rural, agricultural and industrial policies**. This involves putting in place a range of aids (strategies, policies and plans, economic, institutional and regulatory aids, information and awareness-raising campaigns, integration in training courses, and so on).

The Johannesburg Summit on sustainable development called for the designing of « **water efficiency plans** » and for integrated water resource management. Efficiency plans can be designed and implemented at various levels: country, catchment area, water tables, towns, irrigation perimeters, and so on. A growing number of towns throughout the world are currently setting up such plans.

An important question for the future is the evolution of the **relative place of offer and demand policies**. Given the limits of resources, the cost of offer policies and the pool of possible economies (between 20 and 25 % could be recuperated by merely reducing losses and bad use of water), WDM has a vocation to take a central position in Mediterranean water policies. If recourse to seawater desalination can be justified in the regions where water is very limited, despite the fact that the quantities remain limited, there is a risk of undermining the situation by recourse to desalination rather than thought out commitment to water demand management which is of course complex to implement and producing irreversible degradation. The growing foreseeable consequences in terms of environmental impact and cost, especially for the coastline, would be significant.

2. Objectives and uses of national reports

National reports should be useful documents for the countries and for the region. They have three objectives:

1. To inform about the water situation in the country, about current evolution and the likely consequences of the evolution.
2. To demonstrate that progress is possible and essential in terms of efficiency subject to the implementing of management techniques for WDM. To carry out awareness-raising about the necessity and the expected benefits of water demand management. To help, if need be, the countries to design the “efficiency plans” announced at the Johannesburg Summit and the « water » section of their national sustainable development strategies by accompanying them with sets of indicators and objectives.
3. To contribute to the Mediterranean reflection on the problem and to regional sharing of experiences about water demand management in relation to the territorial specificities. To mutually benefit from the others experience. To help the rim countries and the Mediterranean region to improve their monitoring and progress assessment systems (follow up of indicators, drawing up of environmental and sustainable development reports) and to become an international reference. To contribute to progressing with and strengthening regional cooperation policies as well as development aid ones. To discover any « pilot measures » whose achievement could demonstrate the soundness of these new approaches and act as a leverage..

The national reports will be used especially for:

- Preparing the 3rd MCSD regional workshop on water demand management⁵ planned for March 2007;
- Preparing the regional overview report that will be submitted to the Mediterranean Commission on sustainable Development scheduled for May or June 2007;
- Helping the countries to decide on the follow up to be carried out nationally, taking into account the results of the regional workshop and the MCSD proposals.

⁵ Call for papers for this regional workshop appears in appendix I

The national reports or extracts from them could be published and distributed throughout the country (for example as chapter of the national reports on the environment and sustainable development).

3. Method for drawing up the national reports and the timetable

The national reports will be drawn up by the **volunteer countries**, with the support of Plan Bleu.

The institution in charge could be the national environment/development observatory, an assessment and advisory authority, another comparable body or a designated university. An **expert**, in charge of the preparation of the report should be chosen by the country in collaboration with Plan Bleu. He will be invited to take part in the 2007 workshop.

To supervise, nourish, facilitate and back up the work of the institution and of the expert in charge of the report, it is proposed that the countries form a **pilot group** that could be made up of between 5 and 10 qualified specialists: public service experts (environment and sustainable development, water, agriculture, economics, strategic development, local communities, industry, statistics) and organisations that are especially concerned, such as professional organisations, NGOs, independent experts, and so on.

Plan Bleu will back up the drawing up of the national reports by contributing funding, if need be, for the designing of the reports and by assignments in the volunteer countries (one assignment per country from 1 to 3 days between May and November 2006). **The final report should be handed in to Plan Bleu between November 2006 and January 2007 at the latest.**

After the organisation of the regional workshop (March 2007) and of the MCS D (May/June 2007), during which it would be desirable to debate in more detail about the results of the report and the activity, it would be especially important to associate the ministries in charge of finance, economic affairs and of the development plan.

4. Contents of the national reports

When the national reports are finished, they should be **short summarized documents** (20 to 30 pages + attachments) that can be read by the decision-makers.

The report will concern all the country, except for a few countries in the north (Spain, France, Slovenia, Croatia, Bosnia-Herzegovina, Serbia-Montenegro) for which it could focus on only a part of the territory (the Mediterranean catchment area of the country)⁶. The choice made should be justified.

Analyses will be backed up by the available statistics and **indicators, case studies**, the results of studies and **assessment of policies** that have been carried out, existing **documents for development plans** and **experts' opinions**.

Data and indicators

The data used in the report will be that available from national sources and care will be taken to use definitions that will be compatible with those used in international data bases (FAO, WRI, WDI)

Appendix 2 specifies the main definitions for the basic data and includes a description for each **indicator** selected internationally or considered as the most important ones for the Mediterranean region (priority or complementary indicators for the Mediterranean Strategy). These indicators are underscoped in the rest of the text. For this data and these indicators, the definitions in the descriptions should be taken into account or, if the case should arise, the definitions used in the country should be stipulated, giving details of these definitions.

⁶ In the rest of these terms of reference, the term "country" will be used.

A dynamics analysis could cover the period 1980-2000/2005 in retrospect and target the period 2015/2025. If need be, longer or shorter retrospective or prospective periods could be used.

The report will include **6 parts** and attachments, the contents of which are proposed below. This framework and the contents proposed are only for guidance. The writers of each national report should be able to have a certain amount of freedom to take into account the specificities of the country and the available documentation. The most important thing is to produce an interesting and useful report for the debate and for the decisions.

① The introduction will be the opportunity to present the country's main specificities.

② It will be followed by a 2nd part summarising, on the basis of an analysis of the indicators, the **main evolution of the situation in the country concerning water**: supply, pressure on the resource and main degradation recorded, efforts underway to increase mobilisation of resources or reduce excesses in order to meet the Millennium Development Objectives.

The next three parts will be devoted to the **progress made or the possible progress in terms of efficiency** and to the **tools used for the management of water demand**, and :

③ In the various sectors of use (agriculture, industry, urban water),

④ In the general water policies by taking into account the requirements of the ecosystem and of the necessity to conserve resources⁷ and by searching for optimal attribution of water among the uses taking these requirements into account,

⑤ In the policies for cooperation and development

Concrete examples of good practices will be presented in the form of **boxes**.

Good practices

Good practices can be local or national examples of cooperation projects, of policy measures. Some traditional good practices deserve to be emphasised.

Documentation on good practices helps to demonstrate that responses can be given to continue to improve a given situation. Local and national good practices often demonstrate that success depends on the ability to mobilise combinations of tools and to advance the decision-making and implementing process.

To document good practices it is useful when possible to calculate the answers given and the results obtained. Illustrations with graphs, for instance, often help to point out the interest and the scope of the activities. The best examples of good practices will be included in the regional overview report that will be drawn up in 2007.

⑥ The conclusion will sum up the major objectives that the country has or will have, the indicators connected with them and the principal measures that could be proposed to clear the hurdles.

1. Introduction (1 page)

The introduction will announce the aims of the report in connection with the resolutions made at regional level for the Mediterranean and internationally for sustainable development (OMD, Johannesburg Plan, MCSD-MSSD) and present an overview of the national situation (or sub-national if the report only concerns part of the country). The natural, demographic and socio-economic specificities (the current situation as well as the major expected changes by 2015/2025) and the institutional framework (administrative organisation for water) will be presented briefly. Reference will be made, if it is the case, to the changes due to the international context (for example the role of the European directives for the member states or candidates for the EU).

⁷ This involves conserving the renewing and the quality of the water resources (but not restraining its use).

2. Major changes in the water situation in the country (5 pages)

An analysis of the indicators will help to demonstrate the major changes noticed since 1980 and those that will be possible by 2015/2025, taking into account the existing **development plan documents**. The analysis should be brief and adapted to the specificities and the stakes of the countries: all of the indicators mentioned above are not relevant or accessible for all the countries.

The analysis will look at 4 points successively.

2.1. Resources, their mobilization and unconventional water production

The report will include a concise table of the water available, mobilised and « produced » and any changes made or possible⁸.

Data and indicators

Natural resources : Average renewable natural resources (in km³/year) ; Renewable natural resources per capita (in m³/hab/year). Non-renewable natural resources.

Regular resource (surface and ground water), annual supply in a dry decennial year (guaranteed 9 years in 10) as well as any natural water resources considered exploitable could also be indicated. Any impact on water and the water system already noticed or possible due to climate change.

Mobilisation of natural resources : (regulation index of water (WAT_C01) : storing capacity of dams and volume transferred in km³/year for the artificial refilling of water tables. This is a solution for the future in several arid countries since it will help to regulate changes in water level by using the ground storage capacity and by limiting losses due to evaporation. The main facilities planned and the objectives set by the countries could be indicated, with the indicators used and the planned schedules: number of dams planned over the period, extra storage capacity expected and the budget set aside.

Production of unconventional water : (desalination and reuse) : volume of water (km³/year) represented by agricultural draining water reuse, wastewater reuse and the industrial production of fresh water by desalination of sea water or brackish water and any possible importation of water.

N.B. : for all the data and indicators related to water resources and their mobilisation, it is suggested to add some regional data (per regional district, for instance) to the national data. Besides this, reference could be made to « green » water, i.e. storm water).

2.2. Water demand and pressure on resources

The current situation will be mentioned as well as any changes since 1980. Possible changes that will be the main objective of the report will be discussed further in § 3 and 4.

Data and indicators

Withdrawals and demands: Total withdrawals in renewable natural resources;

Auto-supply (industry and agriculture) ; Total water demand (MSSD-WAT_P02) stipulating the total (km³) and the relative share (%) of each sector of activity (agriculture, industry, domestic water, water for ecosystems). Portion (%) of abstraction from surface water and ground water, respectively;

Pressures exerted on the resources: Exploitation index of renewable natural resources (MSSD-WAT_P03) ; Non-sustainable water production index (WAT_C03) ; Emissions of organic water pollutants (WAT_C09) in kg per day.

N.B. : for the data and indicators concerning water demand and pressure on resources, it is suggested to add some regional data to the national data.

⁸ On this point, it is suggested to refer to the data from the technical report « L'eau des Méditerranéens : situations et perspective » (Mediterranean waters: situation and prospects) by MARGAT Jean, with the collaboration of Sébastien TREYER UNEP/MAP, *Plan Bleu, 2004*, consultable on the Plan Bleu web site : www.planbleu.org (« water » section).

2.3. Degradations and threats affecting water resources, facilities, ecosystems and populations

The report will summarise the **main degradation and threats** affecting water resources, the facilities (mud pile up in reserves, ageing of drill holes), the aquatic ecosystems and their population with indication of the main changes noticed since 1980. The degradation and threats will be placed in order of importance and illustrated with **concrete example**. Graphs indicating, for instance, the decline noticed in the level of ground water⁹, graphs showing decreases over several years in source output, or mention cases of pollution with their respective repercussions. The objectives that the country might have set or intends to set for 2015/2025 (for instance, in terms of reduction of the mud pile up in dam reserves) will be noted.

Data and indicators

Overexploitation of aquifers, especially coastal ones : % aquifers identified to manage ground water, decreases in water noticed.

Alteration in the quality of the water and the ecosystems: Water general quality index (WAT_C08) : % of control points affected by the presence of pollution (organic, nutritive substances, heavy metals, pesticides, etc.) : Examples of pollution observed ; average level of salinity recorded ; Wetlands areas (WAT_C06).

Silting up of dam reserves: Silting up rate of dam reserves (WAT_C02) ; Losses in original volume and probable future life span of the dam reserves in case of continuation of current silting up rate.

Degradation cost (separating repercussion costs and repair costs) and of the rise in vulnerability to these risks : Degradation cost of water resources as a % GDP (if recent studies have permitted the calculation of such costs); Human and economic impacts of the floods (WAT_C06) ; Portion (%) of constructions built in floodable areas in the last 30/40 years.

2.4. Access to drinking water and to sanitation and collection and treatment of waste water

The MSSD takes up the Millennium Development Objectives concerning access to drinking water and water treatment. It would be suitable to point out the progress made and expected by 2015 compared to 1990. The progress made for the collection and treatment of waste water and, if it is the case, the objectives set by the country for 2015/2025.

Data and indicators

Proportion of the population having a durable access to an improved water source (total, urban, rural) (MSSD-WAT_P04) ; Proportion of the population having an access to an improved sanitation system (total, urban, rural) (MSSD-WAT_P05) ; Share of collected and treated wastewater by the public sewerage system (WAT_C10) ; Share of industrial wastewater treated on site (WAT_C11).

3. Improve efficiency in the sectors of activity using the water demand management policies (4 to 10 pages)

Progress in terms of efficiency has been made and is possible in each of the large sectors of activity using water (agriculture, industry, domestic water). The MCSD has placed special emphasis on the necessity for better awareness concerning:

- ⇒ Volume of water lost or wasted and a range of possible savings,
- ⇒ Profits that could permit water demand management policies,
- ⇒ The importance of setting progress objectives per sector.

⁹ Drop in levels does not necessarily indicate degradation; it is the usual and unavoidable consequence of any exploitation of ground water, however moderate. Only excessive decrease (by its internal or external consequences) that is continuous, even if exploitation is stable, is an **overexploitation** symptom.

The **balance sheet** will concentrate on showing the progress made since 1980 and on analysing the management **tools** implemented for the water demand and the obstacles identified. Examples of **good practices** will be presented in the form of boxes. The **prospects section** will emphasise the planned and/or possible progress for 2015/2025 and the main measures taken or proposed to surpass the identified obstacles.

The points mentioned below should be presented for each of the user sectors :

- **Water for agriculture (irrigated water),**
- **Domestic water, including for tourism,**
- **Water for industry, including energy (industries not served separately).**

The table on pages 14 – 15 sums up the elements to be mentioned in the report distinguishing, on one hand, the common points for the various user sectors and, on the other hand, the specific points for each of them.

3.1. *Data and indicators*

The analysis will, with the help of indicators, attempt to present the current situation and the main changes observed and expected by 2015/2025).

Data and indicators

1) Water for agriculture :

Irrigated area ; Main crops concerned and % of different types of irrigation (gravitating, sprinkling, etc.) ; Water demand for irrigated agriculture (MSSD-WAT_P02) ; total and on average by irrigated hectare Agricultural auto-supply (km³) ; Water demand for agriculture, compared to the agricultural GDP (MSSD-WAT_P02) and value added of the irrigated agricultural production compared to the water needed for irrigation (to demonstrate if there is a decoupling between economic growth and water demand); Efficiency index of irrigation water use (MSSD-WAT_P01) ; Surface equipped with modern irrigation systems (WAT_C04) : Price of m³ of marketable agricultural water and Marketable agricultural water cost recovery rate (WAT_C12).

It is preferable to stipulate as far as possible the % of the different origins of the irrigated water: surface water (regular or regulated by dams), ground water, waste water, etc.

2) Domestic water (including for tourism) :

Total domestic water demand and per capita and tourism water demand (total and by tourist) (MSSD-WAT_P02) ; Efficiency index of drinking water use (MSSD-WAT_P01) ; Price of m³ of domestic water (and of water for tourism) ; and domestic water cost recovery (and for tourism) (WAT_C12) ; Number of rural towns and territory equipped with a water efficiency plan ; number of tourist establishments equipped with water-saving systems.

3) Water for industry (including energy) :

Industrial water demand (including energy) (MSSD-WAT_P02) ; Efficiency index of industrial water use (MSSD-WAT_P01) ; Price of m³ of marketable industrial water (industries served) and Marketable industrial water cost recovery rate (WAT_C12) ; cost of m³ of non marketable industrial water (industries not served).

3.2. *Retrospective analysis*

A retrospective analysis will attempt to explain the main factors observed and the impact of the policies on these changes.

Mention will be made of any strategies (national, local or professional), policies, efficiency plans, and/or national or local projects that have been implemented or initiated to manage water demand in each of the 3 sectors (domestic water, water for industry and for agriculture) and/or increase the value added created by unit of the mobilised resource. An overview and the objectives set and obtained will be explained, together with schedules and documentation will be included if possible concerning **concrete examples** (concrete examples of progress in agriculture, in communities, in enterprises, in industries, etc.) by explaining which tools were used

(boxes). Concerning industrial water, how the management of water demand can contribute to the decrease in industrial effluents that degrade water quality can be explained.

If there has been considerable change to transfer to water management strategies and policies (agriculture, domestic, tourism and industry) and to implement efficiency plans, the **main determinants of this change** will be mentioned.

If a water management strategy has been adopted, it should be noted whether or not the results obtained corresponded to the objectives set and the main reasons for any gaps observed. Reference will also be made as far as possible to the **cost effective balance sheet** of the measures undertaken and to the **cost/profit studies** that were made.

The **main political instruments** implemented to reach the goal. Reference could be made, for instance, to :

Water for agriculture: i) the subsidies for agriculture, notably for equipment in modern irrigation systems (% of the cost of the equipment) ; ii) agro-environmental aid ; iii) the conditions for agricultural aid ; iv) changes in tariffs for agricultural water ; v) imposing of quotas in the context of the water policies ; vi) the creation of agricultural organisations and associations with the aim of managing water demand; vii) awareness-raising campaigns; viii) investment in research and development, technical progress and popularising this; ix) progress in the training of engineers and farmers (with modules on water demand management) X) making of rules, obligation to have equipment with water meters xi) the adopting and implementing of water strategies and instruments when creating new irrigation perimeters.

For domestic water, including for tourism: i) laws and other devices to promote water efficiency plans to be made by the local authorities or by those involved in tourism, ii) inclusion of efficiency objectives in the terms of reference of the public and private partners, iii) auditing systems, iv) mobilisation of technologies and investments for the improvement of networks v) targeted subsidies/tax benefits for water-saving equipment, vi) progressive tariffs for urban water and for water for tourism, vii) awareness-raising campaigns, viii) strengthening of the capacities of the cities, training of managers, ix) contracts between the states and towns and contracts between states and tour operators, x) conditions of state aids to communities and tourist operators xi) making of rules, fixing of quotas for water policies, widespread use of water meters, xii) specific instruments implemented for the managing of water for tourism.

For industrial water and energy : i) auditing systems, ii) voluntary measures, iii) public/private partnerships, iv) targeted subsidies/tax benefits for water-saving systems, depollution funds, v) tariffs for water, vi) awareness-raising campaigns, vii) training of managers, ix) making of rules, fixing of quotas for water policies, widespread use of water meters.

Documentation can be included about **examples of good practices**.

The main **obstacles** currently encountered for better efficiency in water management (irrigation, domestic, industries) should be pointed out. It can be explained how the policies (agricultural, urban, energy, industries) policies or insufficient water policies have encouraged a rise in water demand and contributed to maintaining some waste of resources (e.g. in the agricultural sector: increase in the overall demand for irrigated water and per hectare irrigated by promoting the expansion of some crops that consume a lot of water, by the existence of some agricultural subsidies or sub-tariffs on water).

3.3. *Prospective analysis*

The prospective analysis will be backed up by the proposed indicators and could refer to Plan Bleu's baseline and alternative scenarios as well as to the countries' development plan documents and experts' observations.

The report will measure the **pool of savings possible** based on current water requirements km³) by better water demand management (irrigation, domestic water, including tourism, industrial water) thanks to a reduction in losses and bad use of resources and to improvement in practices (choice of crops and technical itineraries, improvement in consumer trends, etc.).

Plan Bleu's alternative scenario (see appendix 5) demonstrates :

For agricultural water : possible savings of around 25% of current demand in the Mediterranean catchment area (scenario built on the sole hypothesis of transport losses brought to 10% and of efficiency of irrigation brought to 80%) ;

For domestic water and for tourism : savings of up to 25% of the demand in the Mediterranean catchment area (scenario built on the sole hypothesis of losses brought to 15% and leakage by users brought to 10%) ;

For industrial water and energy : possible theoretical savings of 23% of the total industrial demand in the Mediterranean catchment area (scenario based on the sole hypothesis of overall recycling of 50% ; hypothesis to see the losses evoked earlier progressively reduced and eliminated by 2025).

For agriculture, it is suggested to allude to « green » water and to analyse the possible contributions for improving the efficiency of « storm water » agriculture (adapting of land works, for instance) and to the moderating of water demand for irrigation.

For all three uses (agricultural water, domestic water, industrial water) the impact should be analysed (possible savings) that a rigorous quality management policy could have on the quantitative demand (e.g. the use of drinking water for activities that do not require this quality level constitutes « qualitative waste » that uselessly exacerbates the quantitative drinking water demand).

The objective in terms of efficiency is also an economic one. We could try to estimate a possible range of **gains in value added/m³ of water (as a %)** based on experts' opinions that better management would permit.

The report would also try to analyse the changes in water demand in the future (agricultural, domestic, industrial) by 2015/2025 by referring to Plan Bleu's baseline and alternative scenarios and to the country's development plan documents¹⁰. If need be, the expert could propose possible **objectives** to be reached by each of the user sectors, in terms of total water demand (and by hectare for irrigation) and as a water efficiency index, if a strategy or efficiency plan is worked out and adopted, as well as the gains that could result from this.

Finally, the **major measures** implemented or planned or to be proposed to reach them could be discussed.

4. Towards integrated policies for water resource and demand management. Take into account the environmental objectives, integrate WDM in water policies (5 to 10 pages)

To ensure well thought out, sustainable water management for renewable water and exploitable water, integrated water policies giving high and growing importance to water demand management should be implemented nationally, at the hydrographical basins and aquifers. This implies:

- Ensuring better allocation to the various uses with a view to sustainable development taking into account the social, economic and environmental stakes,
- Ensuring the sustainable conservation (term to be clarified, cf. previously) of resources and ecosystems to answer the social and economic *in situ* water requirements (without abstraction): recreational activities, fishing and aquaculture, that could in some cases represent considerable stakes in terms of development),
- Avoiding going towards high cost policies, including massive recourse to industrial desalination (with its foreseeable consequences in terms of energy costs, pollution and an artificial coastline).

The **balance sheet** part will attempt to demonstrate the taking into account of environmental stakes and of WDM with the instruments implemented. **Examples of good practices** can be documented.

The **prospective** part will emphasise the major risks of baseline scenarios on the overall pool of possible savings and on the set and/or proposed objectives, as well as on the main obstacles to overcome and the measures to promote.

The analysis will present the current situation and the main changes observed since 1980 and that are possible by 2015/2025, by using the indicators as a support.

¹⁰ See Appendix 5

Data and indicators:

Total water demand (MSSD WAT_P02) ; Water requirements for the ecosystems (WAT_C07) ; Water cost recovery rate (WAT_C12) ; Rate of public investments and expenditure allocated to water and Water Demand Management (WDM) (WAT_C13).

4.1. Taking into account of the environmental objectives in the water policies

The report will show how the environmental preoccupations (preservation of resources), the keeping up or restoring of the good ecological state of the environment are taken into account in the **water policies** and development plan documents. It will show if the **ecosystems' water requirements** have been measured (existence of studies) and are integrated or not in the policies. It could, if need be, give **concrete examples** of having taken these requirements into account or on the contrary of difficulties that have arisen because of not taking into account earlier.

If there has been an important policy change to strengthen the taking into account of environmental objectives in the water policies, the report will explain what the **main determinants were for this change**.

The report will mention the main **instruments** implemented in the water policies to ensure the safekeeping of the resources as well as the good ecological state of the ecosystems.

It will highlight the main **obstacles** to having better protection of the resources and of the aquatic ecosystems and the objectives and measures that could be proposed for progress in the medium long term in the policies.

4.2. Taking into account of water demand management (WDM) in the water policies

Based on the previous §, a **synthesis of past changes** in **water demand** (total and distribution among the main areas: irrigation water, domestic water, including for tourism, industrial water and water for the ecosystems) will be drawn up. It will demonstrate the socio-economic importance of the different uses, including *in situ* uses (without abstraction) (recreational activities, fishing and aquaculture, and so on) and its evolution in time. It will lead to discussion about the main **trends possible for water demand** by 2015/2025 with the **consequences** (possible risks).

Concrete examples (national, catchment area, water tables) will be supported by documentation.

The report will indicate the evolution in water efficiency indexes¹¹ (total and by sector) and the **overall range of savings** possible on current demand by reference to the hypotheses proposed by Plan Bleu and to the previous analyses by sector. It will present the **objectives** until 2015/2025 (in terms of efficiency, of overall water demand and per sector, of preservation of resources and in a good ecological state) that have been set or could be set to avoid the anticipated crises.

The report will mention the evolution in **water policies**. It will indicate the place given to water demand management in the integrated management of resources and water policies. If recent evolution has occurred, the main determinants will be explained.

The report will mention **overall or local cost-effective studies**, that have been carried out and that permit comparison between several options (increase in offer/water demand management) as well as their results : comparison of the cost of m³ of water saved by WDM and the cost of the m³ mobilised by offer policies (dams, transfer, desalination, etc.). If necessary, the **benefits** that could result from a reorientation of the policies aimed at strengthening the relative weight of water demand management compared to offer policies could be highlighted.

The report will analyse the main **instruments** implemented or to be promoted to surmount the obstacles identified, organise the **arbitrating between the various uses** and make demand evolve in a direction that is compatible with sustainable development.

¹¹ Refer to Appendix 2, indicator WAT_P01.

Mention will be made especially of i) cost-effective studies, of various options for allocating that have been carried out, stipulating if these studies integrate the costs and the benefits of environmental and social out-placements, ii) prospective studies and management designs, iii) quota systems, iv) mechanisms for anticipating water shortages in summer v) economic aids, vi) awareness-raising campaigns.

The report will indicate if possible the past evolution and that anticipated or proposed for 2015/2025, main economic and financial indicators related to water demand management, i.e. the amount of public expenditure and investment devoted to water demand management (and the portion represented out of the total amount devoted to water) and collection on costs.

The report could also mention the efforts engaged or to be developed in order to better integrate water demand management in the programmes of the **higher level training and research establishments** (training of agronomist, rural, public works engineers and administrators).

It will try to put the possible actions in an order of priority to reach the objectives set or proposed in terms of water demand management.

5. Taking into account of water demand management in the cooperation and development aid policies (1 to 3 pages)

Cooperation and development aid policies, whether those of bilateral or multilateral money lenders active in the region or in the framework of regional or sub-regional cooperation have an important role to play to help to develop ideas and policies and to finance strategies and concrete examples of water demand management.

The report will try to produce a short analysis of the main development noticed, the factors of success, the obstacles encountered and could work out proposals for strengthening the contribution of the cooperation and development aid policies for water demand management.

Pilot actions that could act as a leverage could be proposed.

Data and indicators:

Public development assistance devoted to water and proportion of this aid dedicated to programs of WDM (WAT_C14).

The report will make a short analysis of the evolution of the proposed indicator. One or several **examples of good practices** in the cooperation and development aid policies will be documented (boxes). It could refer to remarkable projects, to the contribution of the country to Mediterranean cooperation and reflection with regard to water and management of water demand, of the development of sub-regional cooperation.¹²

The report could also take into account the development of the **European Union's role** for the country and its contribution to the setting up of strategies, policies, development plans and projects for water demand management, by referring to the texts (directives, negotiations for community assets, association agreements), as well as the using of regional and national programmes for the partner countries and structural, cohesion and agricultural funds for the member states and candidates.

The report could suggest directions to take to strengthen the role of cooperation and development aid policies in the area of water demand management.

To accelerate the implementing of water demand management in the countries, **pilot actions** that deserve specific international support could be proposed.

¹² The recommendations adopted in 1997 on the proposals of the MCSD encouraged especially the reinforcing of cooperation between groups of countries with similar challenges in terms of management of water demand and economies (cf. Appendix 4).

6. Overview and conclusion (1 to 3 pages)

The designing and implementing of a sustainable development strategy and of efficiency plans supposes that objectives to be reached and a restricted choice of priority indicators that permit the monitoring of the progress have been agreed on. The Mediterranean countries and region can only be winners if they have « **dashboards** » for their sustainable development policies.

The report will attach importance to drawing up a short **recapitulative summary** for the conclusion:

- Main **challenges** to be taken up in the medium to long term concerning the issue of water and sustainable development in the country as identified in the previous sections and **objectives** that the countries have set or could fix for 2015/2025, with corresponding control **indicators** (priority indicators).
- The **strong and weak points of the national situation**, main **obstacles** that they have to surpass to reach the objectives set or proposed, and later the main **measures** to implement, propose or deepen.

7. Appendices to be joined to the report

The attachments to join to the report would include :

- Appendix containing statistics (main data)
- List of the main references used
- Note taking into account the difficulties encountered to gather together the information needed to draw up the report, together with, if necessary, proposals to improve the monitoring system for progress over the short and medium terms and suggestions about questions that could justify deeper thought on the matter both nationally and throughout the Mediterranean region.

5. Documents attached to the Terms of reference

- Appendix 1 Call for papers for the 3rd Regional workshop on water and sustainable development in the Mediterranean (scheduled for March 2007)
- Appendix 2 Indicators files
- Appendix 3 Extract of Mediterranean Strategy for Sustainable Development
- Appendix 4 Recommendations on water demand management adopted in 1997 by the Contracting Parties to the Barcelona Convention on proposal of the MCSD
- Appendix 5 Chapter "Water" of the Plan Bleu environment and development report :
this document can be download from the Plan bleu website :
http://www.planbleu.org/actualite/uk/atelier_regional_eau_uk.htm