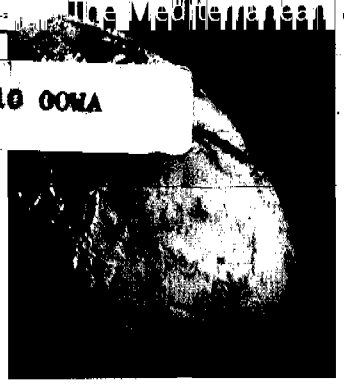


Mediterranean Action Plan

UNEP

Water, Population and the Environment in the Mediterranean for the 21st Century

Climate constraints have led the Mediterranean people to develop and husband their water resources from ancient times. The landscape all over bears witness to this, arousing a legitimate admiration. However demographic growth and economic and social change have created a new situation during the 20th century. In a degraded environment, water, an already scarce resource, is under threat and has become a major factor in hindering development.

To meet the mounting water problems that appear to be inescapable, the Mediterranean people must learn to anticipate and innovate in order to reverse unsustainable and disastrous long-term trends. The work carried out by the Blue Plan in the framework of the Mediterranean Commission on Sustainable Development (MCSD) and of MEDTAC ("Mediterranean Vision") is showing the way. What is at stake—more than turning increasingly to non-conventional resources or interbasin transfers, which is unavoidable here and there but very costly—is a new water culture that gives priority to demand-management.

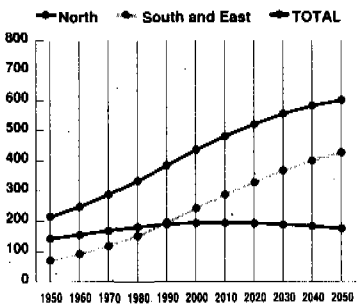
Michel Batisse, President,
Blue Plan for Environment and Development in the Mediterranean

The Mediterranean region: North-South economic gaps typical of the world disparities and a critical situation for water resources

The population

Despite the recent drop in the fertility rate, the Mediterranean population will nearly triple in a century because of demographic growth in the South and East.

Population of the riparian countries (in millions).

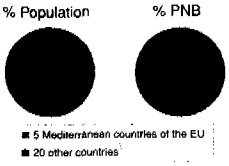


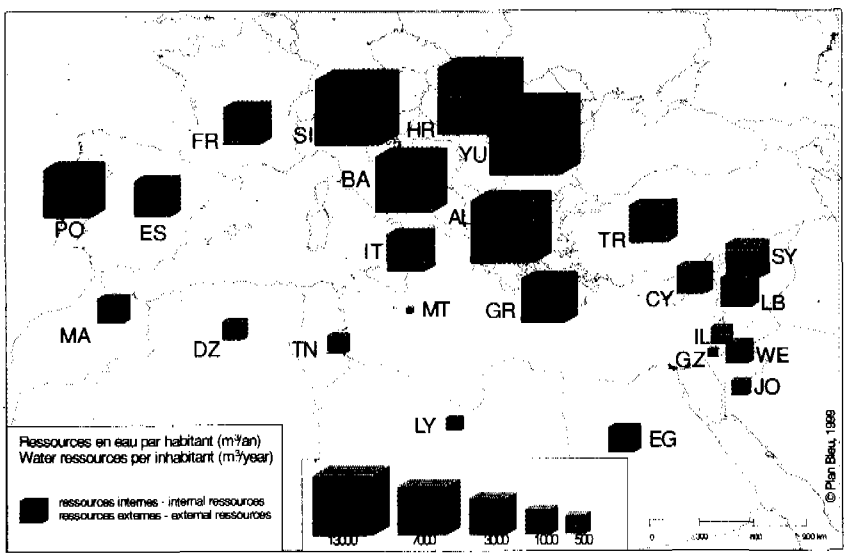
Town and country

Many of the nations in the South and East are still very rural. 26 per cent of the Tunisian working population lives from agriculture; 35 per cent in Egypt and 48 per cent in Turkey. For them, water is a vital economic resource. The drift from the land generates costs that can be very high in the present context (urban growth not linked to economic development).

The level of economic development

Share of the 5 European Union countries on the whole Mediterranean countries *(Source : World Bank)*.





The five countries of the European Union (Greece, France, Italy, Portugal, Spain) account for about 90 per cent of the overall Mediterranean GNP of roughly 4,000 billion dollars. The gap in the GNP-per capita ranges from 1 to 30 from the richest to the poorest country in the region.

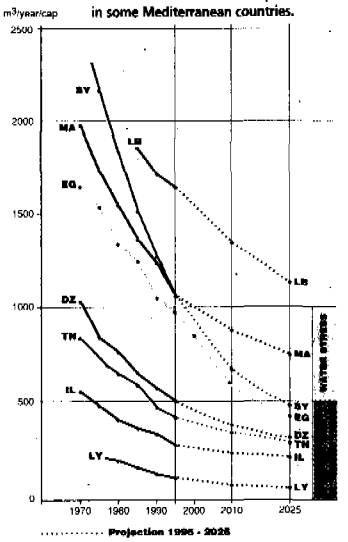
Water resources

Natural supplies are very unequally divided between the countries (72 per cent in the North, 23 per cent in the East and only 5 per cent in the South) and among the various population segments, notably farmers.

Some nations or territories (Syria, Israel, the Palestinian territories, Egypt) are in highly dependent situations in relation to other countries located farther upstream (shared watersheds).

Over 162 million Mediterranean people (of 450 million) today suffer from a lack of or are poor in water.

Decrease of water resources per inhabitant in some Mediterranean countries.

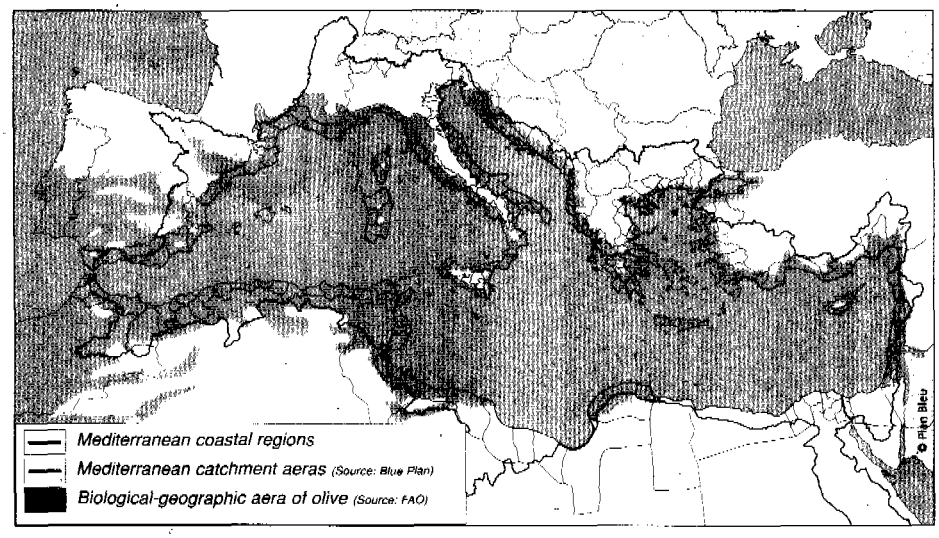


The Mediterranean area: common problems and stakes, a regional co-operation effort

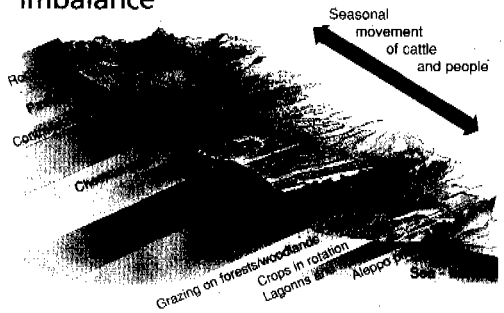
A restraining climate, a developed landscape

The Mediterranean is a bioclimatic region typified by strong summer droughts. Rain is irregular and often violent. In the 20th century there have been at least fifteen floods that have each cost the lives of 100 to 1,000 people. Rain is also a major cause of soil erosion.

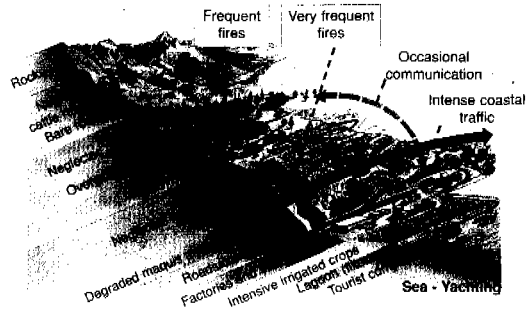
Confronted with such constraints , local societies and governments have, from immemorial time, worked to develop and manage water and soil like the Carthaginian people who built a 123-kilometre aqueduct to supply their city. Major drainage and irrigation works in the 20th century have turned numerous wetlands into high-yield land.



20th century territorial imbalance



THE TRADITIONAL MEDITERRANEAN SLOPE



THE MEDITERRANEAN SLOPE OF TODAY

Populations and economic activity tend to concentrate on the coasts. Accelerated and uncontrolled urbanisation and an increased competition among activities for soil and water have led to a degradation of especially precious and fragile coastal landscapes and ecosystems. The abandonment or poor management of hinterlands is another, often concomitant, cause of degradation.

The Mediterranean Sea is a joint asset of Mediterranean peoples and a co-operation domain for sustainable development

The Mediterranean Sea brings its people closer together more than separating them. It has always been and still is a natural place for encounter and exchange.

The sea is also seen as a common asset. The 20 bordering states and the European Community have co-operated for the past 25 years within the framework of the Mediterranean Action Plan (MAP) and the Barcelona Convention for protecting it from pollution and for encouraging steps towards sustainable development.

For the Blue Plan, as a MAP regional activity centre, and for the new Mediterranean Commission on Sustainable Development (MCSD), water is seen as a priority, which has resulted in the Mediterranean countries' adopting strategic recommendations (Tunis, November, 1997).

The Euro-Mediterranean partnership and water

Water also figures among the priority themes of the Euro-Mediterranean partnership launched in 1995 in Barcelona. The principles and an action plan inviting countries to notably develop middle-term visions and strategies on national and local scales were adopted at the Euro-Mediterranean water conferences held in Marseilles in 1996 and Turin in 1999.

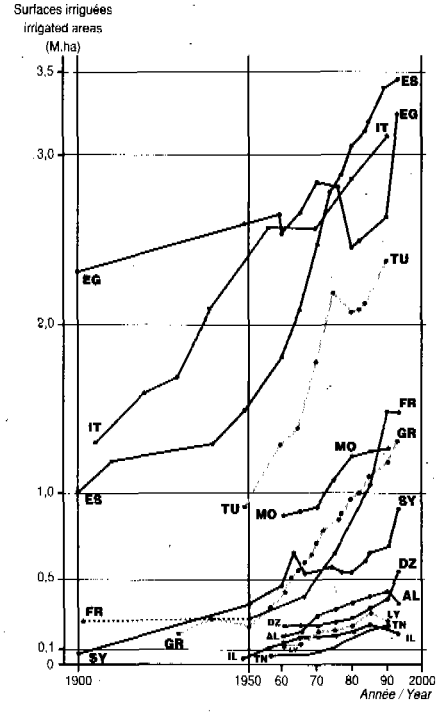
Networks of expertise

Water is the subject of numerous bilateral and regional co-operation agreements in the Mediterranean region. The Global Water Partnership's Technical Advisory Committee for the Mediterranean region (MEDTAC) is composed of seven networks or institutions, among which is the Mediterranean Water Institute (IME), providing leadership and secretarial services, and the Blue Plan, entrusted with the preparation of the "Mediterranean Vision for water in the 21st century". MEDTAC complements this vision with a "Framework for Action".

Water in the Mediterranean: the main observed trends

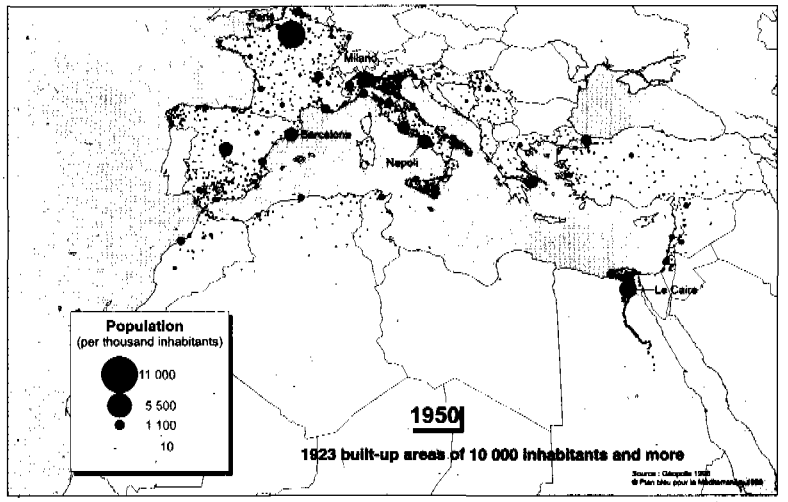
Uneven but generally high and growing demands for water

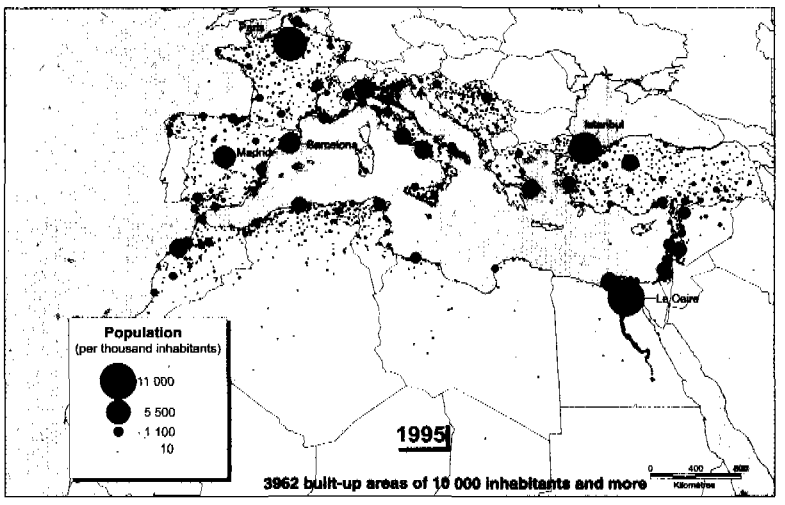
Today, 300 billion cubic metres of water are being used in the whole area. This demand for water (consumption + transmission and distribution losses) has doubled in a century and increased by 60 per cent over the past 25 years. It remains unevenly spread (from 100 to over 1,000 m³/capita /year) depending on the country.



Irrigation is the main cause of a large and increasing demand; it represents 82 per cent of the total in the South.

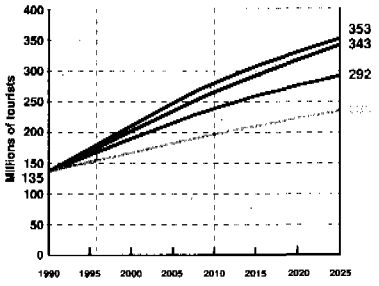
(Source: ICID, OECD, FAO)

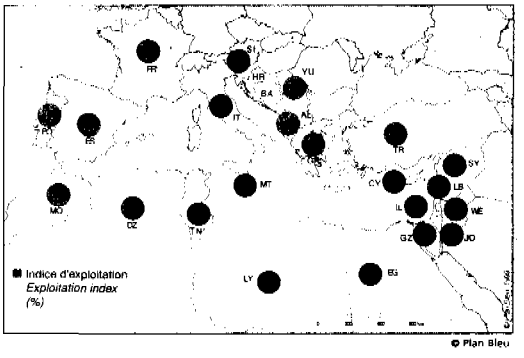




Demographic growth and urbanisation are the 2nd growing factor of water demand.

Number of tourists in the Mediterranean's coastal regions (Blue Plan scenarios).





The very fast development of tourism (the Mediterranean is the world's primary tourist destination) increases the summer demand for drinking water in the coastal areas.

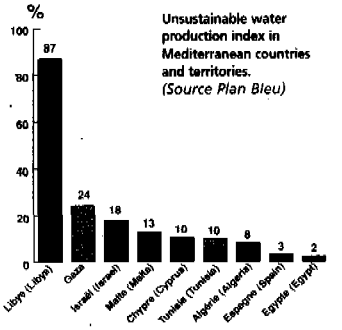
An already overexploited water supply

Withdrawal is already past the 50 per cent mark for renewable natural water resources (which are far from all being "exploitable") in countries like Jordan, Malta, Tunisia and the Mediterranean side of Spain and past 90 per cent in Egypt and Israel. The exploitation index is over 400 per cent in Libya, a country that has only non-renewable fossil resources. And these country averages in fact hide extremely tense local situations.

An unsustainable situation

Groundwater overdraft by multiple, disunited and short-visionned users, and dependence on fossil resources explain the scale of the non-sustainable water production index in some Mediterranean countries.

The sedimentation of reservoirs is another cause of unsustainability, with an annual loss of usable capacity reaching as much as 2 per cent in Morocco and 2 to 3 per cent in Algeria. Many dams in the Mediterranean will become obsolete within a few decades.



Unsustainable water production index in Mediterranean countries and territories. *(Source Plan Bleu)*

Multiple impacts on the environment, society and the economy

The overexploitation of coastal aquifers has already caused numerous salt-water intrusions which are almost irreversible.

More than half (90 per cent in some areas) of Mediterranean wetlands have disappeared with an enormous impact on biodiversity. Pollution degrades numerous ecosystems and creates increasing costs to ensure the production of drinking water. Conflicts of interest between upstream and down-stream uses, cities and rural areas, or short and long-term concerns tend to get worse. Costs of water-resource management are increasing.

Water resources are no longer sufficient to ensure food security in the region despite a sustained growth in grain production. The South and East thus depend up to 33 per cent on imports from the international market, and the virtual annual transfer of water, linked to these import can be estimated at 40 km³.

Policies with a too-preponderant supply-driven approach

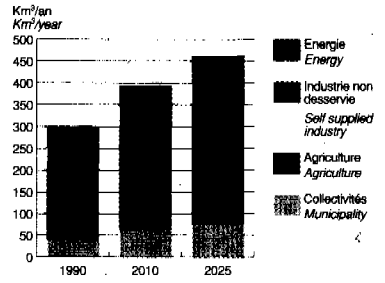
The supply-driven approach still predominates in most national planning documents, featuring:

- generally cursory and over-estimated demand forecasts;
- underdeveloped demand management;
- only accessory or totally lacking consideration of environmental goals;
- upwards re-assessment of the share of water resources considered to be exploitable;
- eagerness to keep increasing mobilisation of renewable and non-renewable resources.
- expansion of inter-regional transfers of water.

Despite high production costs, use of non-conventional resources is already extensive in certain countries, Egypt, for example, where the re-use of drainage water would already be greater than 12 km³ per year, or Israel, where 65 per cent of urban waste water is being treated and re-used, or Malta, where more than half of the supply is provided by desalinating sea water.

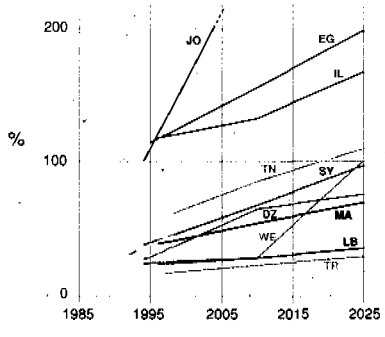
Mediterranean scenarios: in search of sustainable development strategies

The trend scenario of "conventional Mediterranean water" and its pessimistic version "Mediterranean of water in crisis"



The conventional scenario: future water demands

The predominant supply-side approach (continuation of present trends) results in an increase in demand of more than 55 per cent between now and 2025. In this scenario the relative share of irrigation falls despite an expansion of irrigated areas, and the use of non-conventional water production (desalination, re-use) meets from 5 to 10 per cent of the demand in 2025. Efforts to manage the demand are priorities only in critical situations.



Anticipated rise of exploitation indexes

In this trend scenario, water demands in 2025 surpass the renewable natural resources (index >100 per cent) in 8 countries and 50 per cent of these resources in 3 others. Impacts on the environment and society are important (risk of increase in the drift from rural areas and in the inequality of access to water).

With economic growth and considerable public investment (400 billion euros for drinking water and sanitation alone), this scenario delays the crisis (breaks between supply and demand) but maintains and increases processes of non-sustainable development, leading to growing environmental and social instability and involving larger costs for future generations. The pessimistic version (growing gap between North and South, weak economic growth and the lack of regional co-operation) results in crisis.

Mediterranean Commission on Sustainable Development (MCSD) recommendations

To prevent such developments, the MCSD has tried to quantify the amount of water that a more careful management of use would be able to achieve. Reducing by half the amount of water withdrawn and being lost or wasted, would represent about 75 km³, i.e. 4/5 of the resources to be mobilised to meet the anticipated additional demands for water by 2010 (in the trend scenario).

What the MCSD recommends is that water-demand management be effectively integrated into national water strategies, developmental policies and environmental policies, which would require, among other things, the setting of quantified goals for regulating the demand by definite time horizons.
Four kinds of priority actions have been suggested:

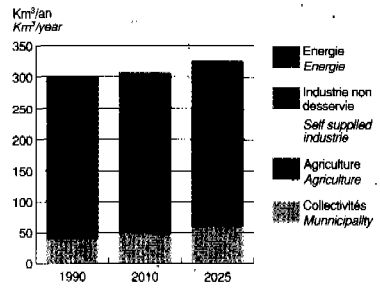
- develop among all stakeholders an awareness of the importance of water loss and a sense of responsibility among users;
- improve knowledge and assessment of uses;
- undertake real operations for regulating demand;
- promote co-operation between groups of countries.

The "Mediterranean of sustainable water" scenario

The point of such a scenario is to avoid the risks of a break in the water supply-and-demand balance while stabilising pressures on the natural environment at an acceptable level and taking social and economic factors fully into account.
This means providing a careful balance between resource and water demand management in order to stabilise the latter, especially through reducing losses, arriving at more efficient uses and re-allocating resources (reducing allocations to irrigation).

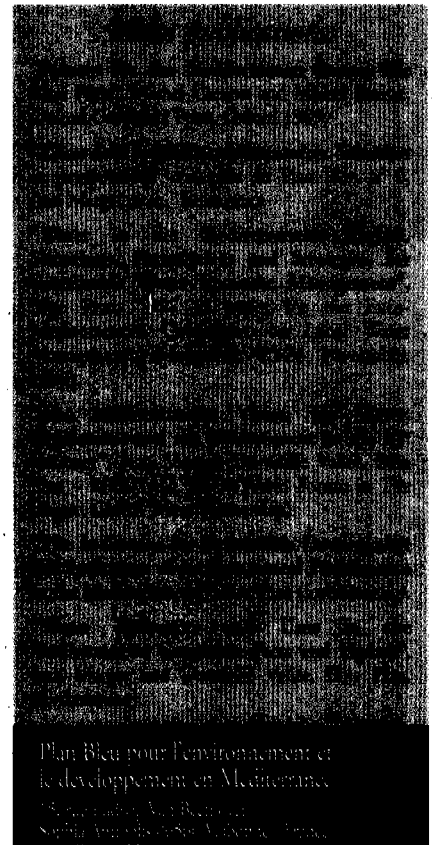
In this steadfastly optimistic anticipation-scenario, water demand in 2025 would be 327 km³ as opposed to 463 in the trend scenario. It is a trend-breaking scenario that supposes a strong political will, a new water "culture" and new policies. It means adopting indicators for environmental and social performances and conditions together with the formulation of quantified goals, a new distribution of roles between the public and private sectors, a change in behaviour with a certain decentralisation of management and increased participation by stakeholders in management, and the use of economic tools (integrating certain externalities in the price of water, for example).

Short-term investment costs are probably higher than in the trend scenario, but this scenario avoids crisis and much higher costs in the long-term.



Future water demands in the sustainable development scenario.

In this scenario, only two countries (Libya and Jordan) and the Palestinian territories would surpass an exploitation index of 100 per cent in 2025, as opposed to 8 countries in the trend scenario.
With the principle being to limit pressure on natural surface and groundwaters to an acceptable maximum level for the environment, this scenario implies (besides demand management policies) an increased use of non-conventional resources where necessary. Mostly it calls for the structural adaptation of agricultural and rural development policies in the Mediterranean region, which, while seeking better irrigation efficiency, must learn to take better into account environmental and social issues.



In partnership with:

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