

**National report on
Monitoring progress and promotion of water demand management policies
MOROCCO**

Overview and conclusion

As far as we can estimate with current information and knowledge, Morocco has a potential of natural water resources estimated at about 20.7 billion m³ in an average year, i.e. an average allocation of almost 691m³/year per inhabitant.

The development of these potential resources has always been one of the main concerns of the country's economic policies because of their strategic role in the development of irrigated agriculture and the safeguard of the quality of the country's water and food supply. Extensive hydraulic facilities have been set up, resulting in the mobilising of almost all of the economically exploitable water resources.

Over the last four decades this effort at mobilising has led to:

- A sufficient safe drinking water supply in most of the kingdom's towns, even during periods of drought ;
- The development of large-scale irrigation on almost 1.6 million hectares ;
- The development of the farm and food industry (13 sugar refineries, 13 dairy plants, hundreds of farm product and food packaging and processing plants).

This development is currently faced with new challenges including:

- The scarcity and the overexploitation of water resources: the scarcity and limits of water resources, together with the development of modern methods of exploiting groundwater and poor administrative supervision due to the absence of a global policy have been at the root of the strong pressures on this resource since the end of the 1970s, bringing about overexploitation of groundwater and the severance of the balance between traditional water withdrawal and natural refilling opportunities. This has caused a lowering of the piezometric levels, a decrease in flow rates, even complete depletion, as well as disruption of the water supply for the traditional irrigation sectors and the deterioration and decline of traditional irrigation methods and of oases. There could be greater scarcity in the future due to the expected decrease in water resources because of climate change ;
- The poor efficiency of water use : the irrigation systems and the drinking water distributing networks are far from efficient and are responsible for the loss of considerable quantities of water, evaluated at around 4790 million m³ per year, of which 2300 million m³ are considered as salvageable in technically and economically acceptable conditions.
- The alarming deterioration of water quality due to the accumulated delay in waste water collection and treatment ;
- The increase in the loss of damming capacity due to silting.

An assessment of the water resources in the basins demonstrates that the supply policy for conventional water will not alone guarantee the country's water supply in the medium and long term. The deficits observed in several of the southern, eastern and central basins will gradually become more widespread, and will affect the other basins too.

The country also has several different types of wetlands (lakes, lagoons, waterways, river mouths, swamps, marshes, artificial lakes, etc.), some of which are classified in the RAMSAR sites.

Rational management of the aquatic ecosystems is also affected by human activities and the damage that results from this, by the inadequate sharing out of responsibility leading to a lack of integrated

management that would take into account all the aspects, and by poor knowledge of aquatic ecosystems and their natural functioning.

Vast programmes for structural changes in the water sector have been initiated to manage water demand. Improvement in the efficient use of water resources is at the heart of these programmes.

Despite efforts made by the various ministries (agriculture, water, home affairs) and by public and private operators, the results in terms of integrated management of water supply and demand remain below expectations, mainly because of institutional constraints connected especially with poor coordination and integration of the programmes.

Indeed, the government has announced its desire to design and implement a number of national priority programmes including water economy programmes. This declaration, however, is not sufficient because the State's budget has its limits and no doubt the problem of the coherence of these programmes with one another and with other water programmes will arise. Hierarchical organisation of the priorities and the arbitration of the programmes should be carried out. Without established, institutionalised control mechanisms, the implementing of these programmes will be subject to political hazards and to power wielding that is not necessarily in the interests of the national priorities.

The prospects for water saving and efficiency look good. The national programme for the development of localised irrigation that is at present underway has set its objective at bringing the total surface area equipped with localised irrigation systems to about 500,000 hectares. In 2006 a number of incentive measures were put in place to accelerate the programme and to eliminate the administrative constraints. The investment necessary for this programme is estimated at 8 billion DH.

In the framework of the loan project for the water development policy with the support of the World Bank, the government has also undertaken to prepare a national programme for irrigation water economy and a national programme for drinking water economy.

However, the implementing and more especially the continuing of these programmes, depend on the State making available the share of funding due to the programmes. This can only be done if the State's annual budget allocation to the whole of the water sector is carried out in a planned way and in conformity with the priority requirements of the sector.

The shift in the national water policy towards the efficient use of water which is at present on the point of starting is an important achievement that needs consolidating. Yet, integrated management of water supply and demand that should be both systematic and automatic is still far away. Obviously this requires institutional, regulatory and financial reforms to set up consensus-seeking, coordination, integration and control mechanisms that are able to bring about efficiency in water use. These mechanisms will probably be put in place at least partially in the framework of the projects that have either been initiated or which are underway with the EU, DAB and the World Bank.

Taking into account what has been mentioned above, the promotion of the integrated management of water supply and demand is dependent on the implementing of control mechanisms that are regulatory, financial and institutional, on the strengthening of consensus-seeking, on the integration of the programmes and on the availability of relevant information for those concerned in the water sector.

The measures recommended are:

– **Strengthening of consensus-seeking and integrating of the programmes :**

Only the setting up of mechanisms for consensus-seeking, coordination, integration and control of the water sector will guarantee the compatibility of the programmes and the allocating of the budgets, especially the State's, with the priority requirements of this sector which include the promotion of the efficient use of water.

– **Applying of adequate tariffs to foster the promotion of water efficiency and integrated management of water supply and demand :**

The efficiency of investments in the water sector requires integrated management of water supply and demand, necessitating the application of the real prices at least partially and relatively. The tariffs should reflect the real cost differences between the various alternatives, while at the same time integrating environmental costs, so as to be able to guarantee that the best solutions are selected and to guarantee planned investments in this sector.

– **Making the operators responsible by their contribution to the investments for increasing the supply as well as to action concerning demand** will make them pay attention to the planning of investments and to water use efficiency. We should not forget either the local and regional players who should be made responsible too (local and regional administrations) nor should we forget their contribution to bearing part of the investment in this sector, including water mobilisation, without which the decentralisation of decision-making in water management would have no sense.

– **Setting up of a water information system:**

To control the water sector and direct the decision-making to efficient water use, relevant, reliable technical, economic and environmental data and information should at all times be readily available for those involved in the water sector. This is only possible if there is a reliable information system, the way of working of which is clear and acceptable to everyone concerned. This measure is perhaps the most difficult one to implement in a developing country. The setting up of a water institute could be the solution and would also make the creation and the publication of water data independent of the interests of operators, administrators and managers.

– **Strengthening of international cooperation:**

As in the past, international cooperation is called upon to play an important role in the promotion of water demand management and in the taking into account of the environmental aspects in the development of water resources. International cooperation, especially multilateral cooperation, (World Bank, European Union, UNDP, FAO, DAB, etc.), besides contributing financial incentives directed at reform, also contributes to distributing know-how and to informing about successful experience and errors committed throughout the world.

– **Communicating in order to share the inventory and the reforms planned with those involved in the water sector :**

The success of the promotion of the efficient use of water resources requires the support of all those involved in the water sector. This success can only be assured if the problems, the directions and the reforms planned are understood and shared by everyone, which implies continuous communication and consensus-seeking efforts.

– **Educating, awareness-raising about the preservation of resources and informing by a demonstration of efficient techniques for water use.**

With regard to the taking into account of environmental objectives, integrated water management both as an environment and as a resource is not yet considered as one of the problems to be dealt with. The multitude of government departments involved and the inadequate sharing out of responsibility in this sector complicate the task. To make up for this insufficiency, it is highly recommended to:

– **Clarify and adequately share out responsibilities for the management of water resources and aquatic ecosystems:**

Separation of the responsibility for the management and the preservation of water resources, on the one hand, from the responsibility for management and preservation of the aquatic ecosystems, on the other hand, should no doubt be avoided.

– **Set up a system for systematic monitoring of the state and quality of the environment and the aquatic ecosystems :**

The first step in the preservation and the management of aquatic ecosystems consists in knowledge of these ecosystems, which implies urgently setting up a monitoring system to be integrated in the national water network.

– **Implement the provisions of the law concerned with environmental impact studies :**

Projects, especially land use projects undertaken by the State, should follow the statutory procedures to be considered as environmentally acceptable in order to guarantee a minimum number of negative effects as well as the implementing of impact-reduction measures recommended by impact studies.