

A thirsty future



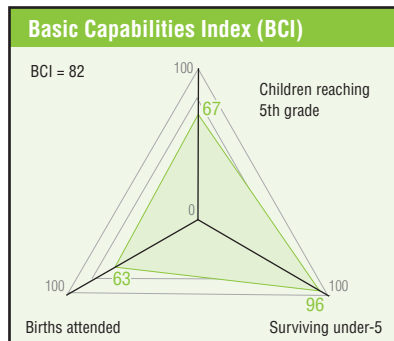
Although Morocco is rich in biodiversity, this is now threatened, in large part because water resources are poorly managed; 35% of piped water is lost, and water stocks are being polluted with industrial and urban waste. Cultivable land is also compromised because of water shortages and soil erosion. These factors are seriously aggravating rural poverty, and the gap between the richest and poorest population segments has widened.

Espace Associatif

Because of its strategic location and its historical and geographic context, Morocco has a great diversity of fauna, flora, climates, socio-cultural groups and landscapes. The climate zones, for example, include the Mediterranean area to the north of the Atlas Mountains, the temperate coastal land to the west and the desert to the east. This means there is a wide range of ecosystems including Mediterranean forests, coniferous forests, prairies and deserts,¹ and this wealth of fauna and flora makes Morocco the second richest country in the Mediterranean in terms of biodiversity. However, in spite of these natural advantages, the country has not been able to realize the kind of development that benefits the whole population. A new, integrated approach to development is needed, one that takes account of economic requirements, social equality, respect for the environment, cultural diversity, and which promotes the participation of local populations in development.

The Government's development model is built around economic growth and urbanization, but this has aggravated the environmental crisis the country is mired in. Moroccans today are facing a whole array of problems stemming from the exhaustion of resources and the deterioration of natural habitats, and these have an impact on the cost of living.² There is a serious imbalance between the increasing demand for fresh water and dwindling stocks of this resource, and to make matters worse forests and soils have been over-exploited, which means land that could have been used for agriculture is being lost. The economic cost of this environmental deterioration has been estimated at approximately USD 350 million.³

The loss of cultivable land due to water shortages and soil erosion has a direct impact on rural poverty. Three of the 4 million people who are below the poverty line live in rural areas. Some 75% of the



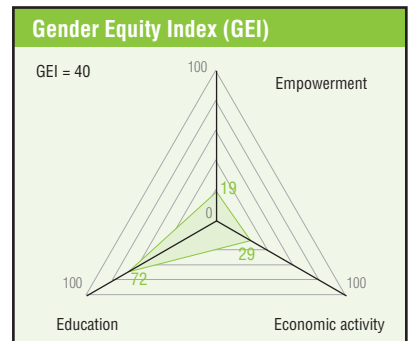
rural population depend on agriculture for a living, but the majority only have access to small, non-irrigated plots of land which have limited crop potential.⁴

Another of the country's pressing environmental problems is flooding. In recent years several regions have been hit by abnormally heavy rains and snow, and the resulting floods caused more than 30 deaths and brought suffering and poverty to thousands.⁵

A land of thirst

Morocco's renewable water resources are limited for technical and economic reasons, and the amount that can actually be used has been estimated at not more than 22,000 million m³/year, or a little over 730 m³ per inhabitant per year.⁶ The activity that consumes the most water is agriculture, which accounts for 80% of the country's total consumption. Together, the industrial sector and households use only 20%.

However, the water supply is compromised by extreme variations in the climate. There are cycles of severe drought that have serious consequences, both for the economy as a whole and especially for agriculture, the worst effect being a fall in the production of cereals.



These pressures on water resources go hand in hand with the increasing deterioration in water quality. The connection rate for potable water in urban areas is 83% (1998), but in rural areas access to water improved from 14% in 1994 to around 40% in 2001 thanks to the PAGER programme to supply water to rural communities, which was implemented in 1996.⁷

Water resources are not being used or managed in a rational way, which has made for even greater scarcity. For example, the potable water pipes in cities are in such bad repair that 35% of the water in the system is simply lost.

Another complication is that the country's dams are silting up, which is seriously affecting the water supply. At the Al Wahda dam and reservoir, for example, more than 60 million m³ of supply capacity per year is lost. But in addition to problems of quantity there are also problems of deteriorating quality caused by various kinds of pollution including the dumping of untreated industrial and household waste into water courses and the sea. Another kind of pollution stems from the intensive use of phytosanitary products and fertilizers, which have a negative impact on underground water stocks. So too does mineralization as sea water comes in, due to the over-exploitation of fresh water resources.⁸

The pollution caused by the concentration of activities in some areas is exceeding the water system's capacity to purify and renew itself. Water resources have already been severely damaged by repeated

1 See: Wikipedia, *List of ecoregions in Morocco*, <en.wikipedia.org/wiki/List_of_ecoregions_in_Morocco>; *Morocco - Climate*, <en.wikipedia.org/wiki/Morocco#Climate>.

2 IndexMundi, *Morocco Environment - Current issues*, <www.indexmundi.com/morocco/environment_current_issues.html>.

3 Global Mechanism, *Increasing finance for sustainable land management: Morocco*, (2008), <global-mechanism.org/dynamic/documents/document_file/morocco_e-1.pdf>.

4 Rural Poverty Portal, *Rural poverty in the Kingdom of Morocco*, <www.ruralpovertyportal.org/web/guest/country/home/tags/morocco>.

5 See: <af.reuters.com/article/topNews/idAFJ0E6AT01820101130>.

6 Wikipedia, *Water supply and sanitation in Morocco*, <wikipedia.org/wiki/Water_supply_and_sanitation_in_Morocco#Conventional_water_resources>.

7 Ibid.

8 Wikipedia, *Al Wahda Dam (Morocco)*, <en.wikipedia.org/wiki/Al_Wahda_Dam_(Morocco)>.

droughts and by modifications to natural water systems.⁹ In fact, water stocks are being consumed faster than they are being replaced, but demand from agriculture, industry and the population is increasing. A serious crisis is expected by 2020.¹⁰

Environmental problems

Throughout the country the land is becoming less fertile, arable layers are being lost due to water and wind erosion, dams and reservoirs are silting up because of erosion, there is salinization and desertification, urban areas are being developed to the detriment of agricultural land, there are great accumulations of sand in arid areas and the oases, and mining and quarrying are causing the natural environment to deteriorate.

Air pollution is also getting worse, due largely to the use of bad quality fuels, to very old vehicles continuing in use and to the emission of untreated industrial gases.

As ecosystems are degraded the country's biodiversity has come under threat, and the excessive exploitation of flora has put the very existence of several species at risk.¹¹ The coastal environment especially has suffered owing to the concentration of human activity in these areas. Untreated industrial and household waste is simply dumped, greatly depleting fishing resources. In the desert the oases are under threat and may disappear. In all parts of the country salinity levels are rising and land erosion is increasing, aggravated by the over-exploitation of resources, the natural and artificial desiccation of wetlands and a lack of infrastructure in mountain regions.¹²

Cities have been growing with little or no urban planning, resulting in the spread of huge uncontrolled rubbish tips. Forests are also in danger, as trees are cut indiscriminately to obtain wood for fuel. This situation is aggravated by the fact that household waste collection services provide inadequate coverage, special waste (toxic, hospital, pesticides) is not treated, and urban sewage systems are getting old.

The Garb-Chrada Beni Hsen region

In terms of natural resources the Garb-Chrada Beni Hsen region is among the richest in the country. It has considerable water stocks, an extensive plain of 4,200 km² and some 124,614 hectares of

forest land. However, all these resources are under threat and ecosystems are deteriorating due to inefficient government management of development projects.

One of the main environmental problems in this region is pollution from industrial activities. The worst culprits are the sugar mills (Dar Gueddari, Mechraa BI Kseri and Sidi Allal Tazi), oil drilling, the Sidi Kacem oil refinery, and the Sidi Yahya pulp mill, which is responsible for 50% of the organic industrial pollution in the region. Another serious problem is how to manage the 80 million m³ of domestic liquid waste that is generated in the region each year.

Agriculture too is quite intensive, particularly on the plain of Garb, and is another big source of pollution, particularly of under soil water stocks. The most serious consequence is that water nitrate levels are rising, creating a health risk for the people who consume it.

This region is one of the worst hit by water erosion, above all in the Uarga valley where, because of its rugged topography, average deterioration is 2,070 t/km²/year. In contrast, the loss in the Sebú valley is 600 t/km²/year. Severe soil erosion has also left the region particularly vulnerable to flooding, a threat made more serious by the fact that the Al Wahda dam is functioning badly. Inaugurated in 1997, the dam is the biggest in the country and the second biggest in Africa, but because of sedimentation the reservoir is losing around 60 million m³ of storage capacity per year.¹³

Conditions in Morocco's towns and cities are also rapidly deteriorating. In most cases the systems to handle liquid waste are inadequate, and urban centres either have no sanitary systems or have ancient systems that lack the necessary capacity, resulting in flooding, pollution and nauseating smells. Most of the waste is simply fed into surface water courses.

The collection and dumping of solid waste is another serious challenge. There are no guidelines for managing such operations, which are selective as well as inadequate, and the current practice of mixing medical and industrial waste with household waste involves serious health risks.

Degradation of the wetlands of the littoral zone

The wetlands of the littoral zone stretch for 140 km. Presently, this region is facing pressing environmental issues as a result of tourism, population growth

and lack of long-term planning and viable development strategies.¹⁴

The wetlands, which are extremely sensitive to changes from outside, are being polluted with industrial, urban and agricultural waste, thereby raising air, water and soil toxicity levels. The region's lakes are also being polluted. One, Sidi Boughaba lake, is protected thanks to its status as a forest area, but there are no clear regulations about how other lakes should be managed or preserved. Tourism in the wetlands is also being developed, which is yet another negative factor.

The Millennium Development Goals

The Millennium Development Goals (MDGs) are still the main reference framework for the country's concerned citizens and civil society organizations. The High Commissioner for Planning claims that with only four years until the 2015 deadline, Morocco's performance makes it one of the countries that can reach its goals in time.¹⁵ Unfortunately there is little justification for this optimism. The main obstacles are as follows:

- The passage and implementation of environmental protection laws is very slow.
- The impacts of climate change are likely to be serious, and are as yet unpredictable.
- The great pressure on the country's natural resources.
- Lack of public awareness of these problems and lack of political will to solve them.

Conclusions

Morocco has been very lax about managing its resources, a situation which must change. The country is heading for an ecological crisis and nobody knows how severe it will be.

The development models implemented by the Government, and the lack of long-term planning, has led to increased inequality among segments of the population. Morocco's GINI index rating, which measures differences in the distribution of wealth, has risen in the last 20 years: at the start of the 1990s it stood at 39 points but the estimate for 2011 is just under 41 points.¹⁶ The gap between rich and poor is shocking, especially when we bear in mind the extremely tough conditions that the most deprived sectors have to cope with. ■

9 See: Index Mundi, *Morocco – Water pollution*, <www.indexmundi.com/facts/morocco/water-pollution>.

10 See: <www.socialwatch.org/es/node/13110>.

11 See: <www.earthsendangered.com/search-regions3.asp?se arch=1&sgroup=allgroups&ID=227>.

12 See the video ¿Están los oasis marroquíes en vías de extinción?, on YouTube, <www.youtube.com/watch?v=WEALD7CXps>.

13 Wikipedia, *Al Wahda Dam (Morocco)*, <[en.wikipedia.org/wiki/Al_Wahda_Dam_\(Morocco\)](http://en.wikipedia.org/wiki/Al_Wahda_Dam_(Morocco))>.

14 See: <www.estrechando.es/?p=794>.

15 Morocco Business News, *Morocco to achieve MDGs by 2015, HCP*, (April 14 2010), <www.moroccobusinessnews.com/Content/Article.asp?idr=18&id=1479>.

16 Trading Economics, *GINI index in Morocco*, (2011), <www.tradingeconomics.com/morocco/gini-index-wb-data.html>.