

Countries and regions

## Mediterranean Sea region

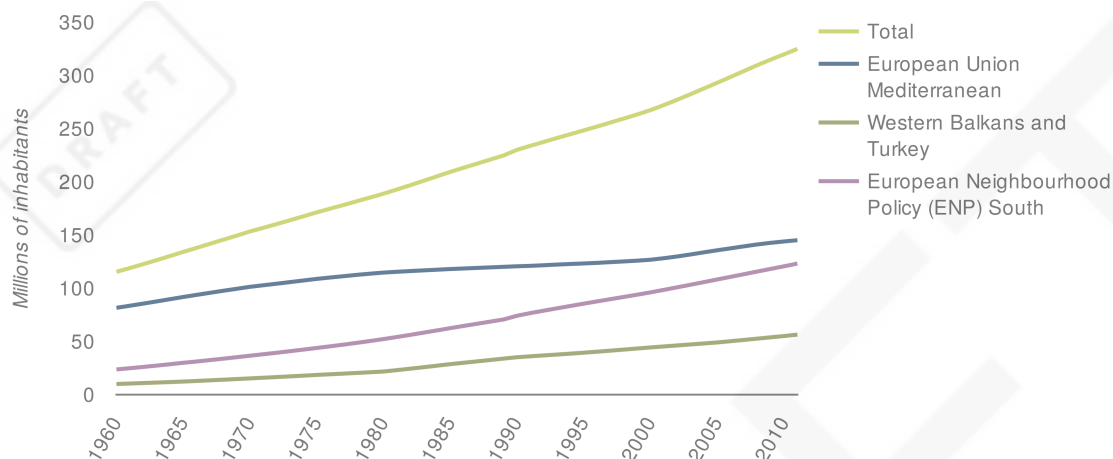


### Brief introduction

The Mediterranean Sea region — the largest of the semi-enclosed European seas — is surrounded by 22 countries, which together share a coastline of 46 000 km. It is also home to around 480 million people living across three continents: Africa, Asia and Europe. It is still one of the world's busiest shipping routes with about one-third of the world's total merchant shipping crossing the sea each year.<sup>[1]</sup>

Approximately one-third of the Mediterranean population is concentrated along its coastal regions. Meanwhile, about 250 million people (or 55% of the total population) resides in coastal hydrological basins. In the southern region of the Mediterranean,<sup>[2]</sup> 65% of the population (around 120 million inhabitants) is concentrated in coastal hydrological basins, where environmental pressures have increased.

Figure 1: Urban population growth of the Mediterranean countries

**Note:**

- Total Mediterranean Region: EU Mediterranean, Western Balkans and Turkey, European Neighbourhood Policy (ENP) South
- European Union Mediterranean Group: Cyprus, Spain, France, Greece, Croatia, Italy, Monaco, Malta, Slovenia
- Western Balkans and Turkey Group: Albania, Bosnia and Herzegovina, Montenegro, Turkey
- European Neighbourhood Policy (ENP) South Group: Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia

Data source: [Diz, Dju, Mediterranean strategy for sustainable development follow-up](#)

The need for cooperation and coordination amongst all the countries bordering the Mediterranean has long been recognised. This has resulted in almost 40 years of international efforts to protect this fragile and vulnerable ecosystem: the Mediterranean Action Plan (MAP);<sup>[3]</sup> the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols;<sup>[4]</sup> and the Euro-Mediterranean Partnership (EUROMED).<sup>[5]</sup> EUROMED is also referred to as the Barcelona Process and was re-launched in 2008 as the Union for the Mediterranean (UfM).<sup>[6]</sup> In 2005, the Euro-Mediterranean partners committed themselves to substantially reduce pollution in the Mediterranean region by 2020. This became known as the 'Horizon 2020 Initiative' (H2020)<sup>[7]</sup> endorsed in Cairo in 2006. It is now one of the key initiatives endorsed by UfM at its launch in Paris in 2008.<sup>[8]</sup>

H2020 builds on the work carried out by national and regional institutions. It operates within the framework of new and existing environmental policy instruments, and it supports the implementation of pollution-reduction commitments undertaken in the framework of the MAP and its Barcelona Convention. A number of concrete actions, as well as a timetable<sup>[9]</sup> on how to depollute the Mediterranean by 2020, were suggested during the 2006 ministerial conference. The corresponding roadmap<sup>[10]</sup> for the first phase of implementation (the period from 2007 to 2013) led to concrete developments within each of its different components (pollution reduction investments, capacity building, review monitoring and research).<sup>[11]</sup>

The mid-term review<sup>[12]</sup> of the H2020 initiative and the declaration<sup>[13]</sup> of the Union for the Mediterranean (UfM) ministerial meeting on Environment and Climate change on 13 May 2014 in Athens<sup>[13]</sup> confirmed significant progress in investments in critical infrastructures, in building human capital, and in mainstreaming environment into other policies. The review stressed the strategic focus provided by the UNEP/MAP hotspots list and National Action Plans (NAPs). This marked an important milestone for regional environmental cooperation and commitment.

### What are the main problems/threats related to the Mediterranean Sea region?

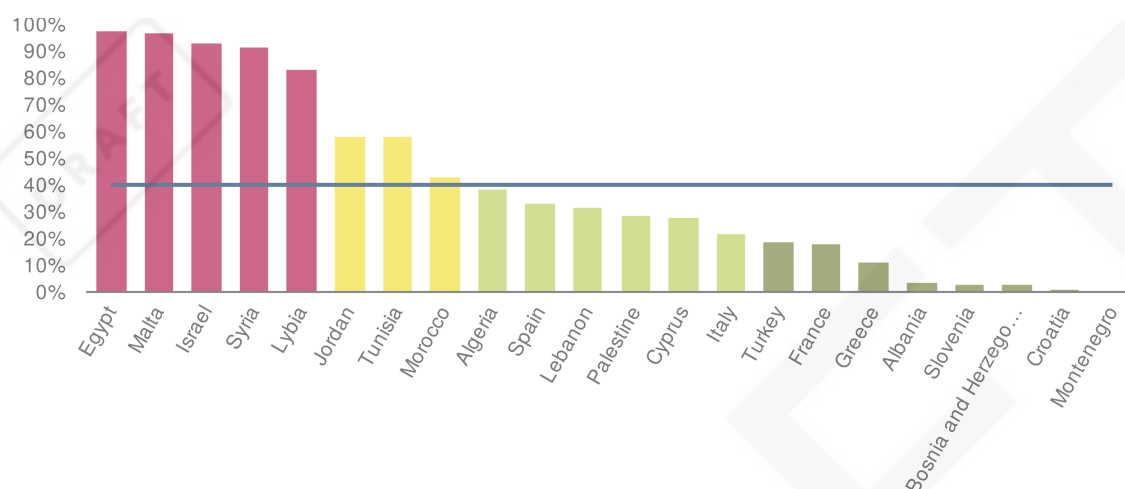
The Mediterranean Sea region has been identified as one of the main climate change hotspots (i.e. one of the areas

most responsive to climate change) due to water scarcity, concentration of economic activities in coastal areas, and reliance on climate-sensitive agriculture.<sup>[14]</sup> However, the region itself emits low levels of greenhouse gases (GHGs) as compared to other areas in the world. Carbon dioxide (CO<sub>2</sub>) emissions data show that in 2009, the Mediterranean countries together emitted 6.7% of the world's emissions, equivalent to more than 2 billion tonnes of CO<sub>2</sub>. However, this amount has increased by a factor of 4 in the last 50 years, with an increase in the contribution from countries from the southern region of the Mediterranean from 9% to 30%. Meanwhile, the contribution from all European Union (EU) Mediterranean countries has decreased over the same period from 88% to 54%.<sup>[15]</sup>

Since 1970, an increase in air temperature of almost 2 °C has been recorded in south-western Europe (the Iberian peninsula and the south of France). The same increase has also been noted in northern Africa, although the paucity of data makes it more difficult to estimate. The range of the diurnal cycle<sup>[16]</sup> is shrinking. As for rainfall, precipitation has increased in the northern Alps, yet decreased in southern Europe, where a 20% drop in rainfall has been recorded. The Water Exploitation Index (WEI) (defined as the mean annual total demand for fresh water, divided by the long-term average freshwater resources) shows that southern countries are amongst the most water-stressed Mediterranean countries, with many having a WEI higher than 40%. Four southern Mediterranean countries (Egypt, Israel, Syria and Libya), together with Malta, have WEIs exceeding 80%. According to existing projections, the Mediterranean population classified as 'water-poor', (i.e. below 1 000 m<sup>3</sup> per resident per year) is forecast to increase from 180 million people today to over 250 million within 20 years.<sup>[17]</sup>

Sea-level rise is also of concern, with some parts of the region showing increases of more than 6 mm per year, and others showing decreases of more than 4 mm per year. The global mean of sea-level rise was around 3 mm per year over the last two decades. The Intergovernmental Panel on Climate change (IPCC) predicts a sea-level rise of 0.1–0.3 m by 2050 and of 0.1–0.9 m by 2100, with significant (and possibly higher) impacts on the southern Mediterranean region.<sup>[18]</sup>

**Figure 2: Water Exploitation Index for renewable freshwater resources in Mediterranean countries (2005–2010)**



**Note:** Blue line represents the "water stress threshold"

**Data sources:** Plan Bleu. [Mediterranean strategy for sustainable development follow-up](#)

European Environment Agency 

The Mediterranean region is characterised by a unique, rich, yet fragile biodiversity, hosted by many diverse ecosystems across the region, which together form an invaluable natural capital on which populations and economies depend. It is estimated that between 10 000 and 12 000 marine species thrive in the Mediterranean Sea. Around 20–30% of these species are endemic. Many of these species are threatened by a range of human activities. Pollution from land-based sources, such as discharges of excess nutrients and hazardous substances, marine litter, over-fishing, and degradation of critical habitats, are responsible for this biodiversity loss. The introduction of invasive alien species presents a threat to the biodiversity, structure, functioning, and stability of the invaded ecosystem. The number of invasive alien species has increased significantly since 1970, and currently stands at around 1 000.<sup>[19]</sup>

The recent EEA report on the Mediterranean<sup>[20]</sup> provided a number of key findings related to pollution of the sea. Over the last decade, sanitation has improved. Between 2003 and 2011, the proportion of the Mediterranean region population with access to sanitation increased from 87.5% to 92%. There are still 17.6 million people in the region without sanitation, a third of them living in urban areas.

Progress in urban wastewater management is difficult to assess as the data available do not provide sound evidence on regional trends. However, there is great potential to reuse wastewater in the region as currently only around 1% of wastewater is reused.

Solid waste generated in the region is approximately half that of the EU. Waste generation in the southern Mediterranean region has grown approximately 15% over the last decade, mostly due to a growing population and increased consumption. Waste management needs significant improvement. Around three-quarters of waste is collected, but most of this is still disposed in open dumps, which can have health impacts and lead to environmental problems. Although the EU is targeting a 70% recycling rate of household waste by 2030, less than 10% of the waste collected in the Mediterranean region is currently recycled.

Industrial emissions have a heavy impact on the Mediterranean. While pollution from heavy metals in seawater has decreased in recent years, local marine pollution from cities, industry and tourist resorts is still leading to widespread pollution of seas and beaches.

## What are the main policy responses to key challenges?

Considering the systemic nature of the issues faced by the Mediterranean region, the Parties to the Barcelona Convention adopted an Ecosystem Approach<sup>[21]</sup> as an overarching principle of its policies and actions. This was with the view to achieve good environmental status according to an ambitious roadmap and cycle-based timetable, the first of which extends until 2019–2020. This focuses on a renewed emphasis on implementation and integration that will strengthen the ability to understand and address cumulative risks and effects, and will also better focus actions on priority targets. The Ecosystem Approach brings many sectoral analyses and management measures into a single integrated framework, which will result in an adaptive management strategy that will be periodically monitored, evaluated and revised. The implementation of the Ecosystem Approach process is developed in line with the EU Marine Strategy Framework Directive<sup>[22]</sup>. Moreover, other EU policies, such as the Water Framework Directive<sup>[23]</sup>, the Habitats<sup>[24]</sup> and Birds<sup>[25]</sup> Directives, the Urban Waste Water Treatment Directive<sup>[26]</sup>, and the Bathing Water Directive<sup>[27]</sup>, also take an ecosystems approach. They aim to ensure the integration of environmental concerns into the different policies, agreements and legislative measures that have an impact on the marine environment.

## What are the main challenges ahead?

The Mediterranean region is undergoing intensive demographic, social, cultural, economic and environmental changes. As Mediterranean countries are already facing important issues of water stress and extreme climate events (such as floods and droughts) climate change will most probably exacerbate issues, resulting in significant human and economic losses. According to the IPCC, a temperature rise of 2–3 °C is expected in the Mediterranean region by 2050, and a rise of 3–5 °C is expected by 2100.<sup>[18]</sup> Coordinated adaptation strategies and measures, across societies and economic sectors, will be key to respond to the changes.<sup>[28]</sup>

Population growth, combined with the growth of coastal urban hubs, generates multiple environmental pressures. These stem from increased demand for water and energy resources, generation of air and water pollution in relation to wastewater discharge or sewage overflows, waste generation, land consumption, and degradation of habitats, landscapes, and coastlines. These pressures are further amplified by the development of tourism, often concentrated in Mediterranean coastal areas, and rapidly evolving changes in consumption patterns as a result of increasing development. Since 1995, tourism has grown by almost 75% and projections show that the number of arrivals could reach around 640 million by 2025.<sup>[20]</sup>

Conversely, many infrastructures designed today for dealing with environmental and pollution problems will not be fully relevant to the needs of 2025. The UfM Secretariat has estimated a 'Depollution Gap'<sup>[29]</sup> based on the difference between the pollution that will be produced in 2025 and the pollution and flows that will be treated by the facilities that are already in place or are planned with secured funding. Existing depollution targets can only be achieved if the current 'end-of-pipe' solutions are complemented by other policies dedicated to pollution reduction and control at source or recycling. Maintenance and operational costs will rise significantly following recent investments, and countries will have to put in place adequate economic instruments to deal with operating costs separately from investment costs. In addition to the existing tariffs to be paid for the delivery of pollution abatement services, pollution charges are also needed.<sup>[29]</sup>

SOER 2015 regional briefings provide an overview of state of the environment across three regions, identified as priority areas in the EU's 7th Environmental Action Programme. They are part of the EEA's report SOER 2015, addressing the state of, trends in and prospects for the environment in Europe. The EEA's task is to provide timely, targeted, relevant and reliable information on Europe's environment.

For **references**, see [www.eea.europa.eu/soer](http://www.eea.europa.eu/soer) or scan the QR code.

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