

Science for Environment Policy

Mediterranean countries use more natural resources than their ecosystems provide

In the Mediterranean region the demand for natural resources and ecological services is two and half times greater than ecosystems' capacity to provide them, recent research has found. To meet this demand, countries rely on imports, exposing themselves to price volatility and potential resource shortages. According to the authors, a 10% increase in global prices would particularly impact vulnerable countries such as Jordan, which would see its trade balance worsening by 2.4% of its gross domestic product.

In the years between 1961 and 2010, the Mediterranean region experienced an [economic growth](#) and a doubling of its population leading to an increasing demand for [natural resources](#) and ecological services. To satisfy this demand, the region had to import natural resources, such as agricultural products, fibres and fossil fuels. Similar worldwide trends fostered global consumption levels and competition for access to ecological assets, impacting on resource availability and prices in international markets.

A recent study investigated consumption needs for natural resources and ecological services in the Mediterranean countries and their ability to satisfy such needs with domestic ecological assets. The methodology is based on Ecological Footprint accounting, which is a simple accounting tool used to summarise ecological resources and services contained in products made in, traded internationally, and consumed by a country. Resources include food and wood, while services include carbon dioxide locked in forests, which removes the gas from the atmosphere and helps to regulate climate.

By comparing a country's Ecological Footprint with its bio-capacity, i.e. its ecosystems' capacity to provide goods and services, the authors assessed whether 24 countries in the Mediterranean region — defined in this study as those directly bordering the Mediterranean Sea plus Jordan, Macedonia, and Portugal, which share analogous ecosystems — are in ecological deficit. In other words, they analysed whether, in the considered region, the domestic ecological assets can satisfy the domestic demand for such assets.

The Mediterranean region was already in ecological deficit in 1961, but since then the situation has much deteriorated. Results showed that in 2010 each country was in ecological deficit and the 24 countries as a whole were using around two and half times more ecological assets than their ecosystems could supply. Since 1961, the region imported 139% more resources than in 1961, reaching about the 50% of the total demand (21% in 1961). Imports came mainly from the USA, China, Germany, Belgium and the Netherlands.

The researchers also assessed what would happen to each country trade balance, i.e. to the difference between exports and imports, if the natural resource prices in the international market increased by 10%. They found that with the exception of Libya and Algeria, whose economies largely depend on oil export, Mediterranean countries would see their trade balance deteriorating by up to 2.4% of their GDP. The country mostly affected would be Jordan (-2.4%), followed by Macedonia (-2%), Lebanon and Montenegro (both -1.6%).

Furthermore, in Italy, the cost of importing natural resources would increase by approximately US\$ 9.2 billion (€8.3 billion), corresponding to 0.5% of its GDP. In France and Greece, import bills would increase by around US\$ 8.4 billion (€7.6 billion, 0.3% of GDP) and US\$ 1 billion (€905 million, 0.4% of GDP), respectively. In the short term, the researchers found that reliance on imports poses the greatest economic risk to the countries in the region, especially for countries badly affected by the recent economic crisis. In the longer term, however, climate change and overuse of productive land and water will be a greater risk to Mediterranean countries.

The evidence provided by the study shows the need for policymakers to recognise, measure and understand the interactions between ecological assets and economic performance in the Mediterranean area. The coexistence of limited bio-capacity and high footprint in the region, especially due to the carbon component (45%), might induce people in the countries to consider more sustainable consumption patterns. The researchers highlight the need to better manage natural resources and innovate for future wellbeing by, for example, encouraging new farming technology and coupling resource efficiency measures with considerations of the overall consumption levels.



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