

Why are resource limits now undermining economic performance?

Global Footprint Network
Mediterranean Ecological Footprint Initiative



Are Mediterranean countries at risk?

Long ignored by decision-makers as irrelevant to economic planning and national prosperity, resource limitation is now a critical factor that determines a country's success in the 21st century.

Economic activities depend on access to ecological services and natural resources. However, the Mediterranean region's access to essential ecological assets has never been as precarious as it is today. According to Global Footprint Network's analysis, the region now uses approximately two and a half times more natural resources and ecological services than what its ecosystems can provide.

This ecological deficit is dangerous. It will erode Mediterranean countries' economic security and their capacity to guarantee the well-being of their citizens.

Reporting the implications of growing ecological deficits for the Mediterranean region's ecosystems and economies is at the heart of Global Footprint Network's Mediterranean Ecological Footprint Initiative.

For the complete analysis and country factsheets, please refer to the *Mediterranean Ecological Footprint Trends* report at www.footprintnetwork.org/med

How are ecological assets measured?

Supply of and demand for ecological assets can be measured through the Ecological Footprint, a resource accounting tool.

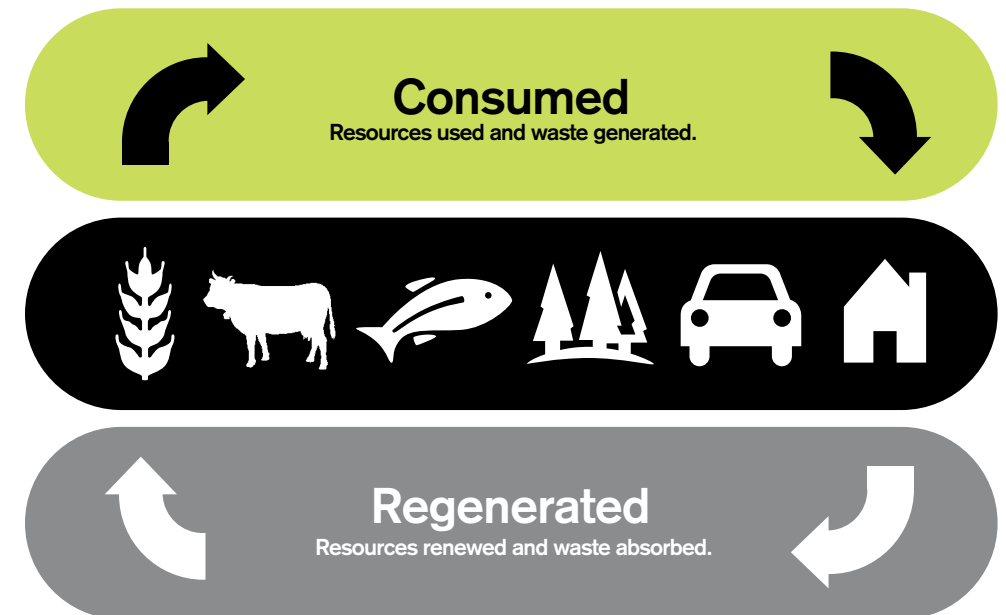
On the demand side, the Ecological Footprint measures the ecological assets (biologically productive land and sea area, or biocapacity) that a given population requires to produce the natural resources and services it consumes. This includes plant-based food and fiber products, livestock and fish products, timber and other forest products, sequestration of waste (CO₂ from fossil fuel burning), and space for urban infrastructure. On the supply side, biocapacity tracks the ecological assets available in each country and at the global level.

Both measures are expressed in global hectares (gha)—globally comparable, standardized hectares with world average productivity. Consumption values are derived by tracking production, imports and exports.

Each country's Ecological Footprint can be compared to its biocapacity. If a population's demand for ecological assets exceeds the country's supply, that country runs an ecological deficit. It is like comparing income and expenses.

BIOPRODUCTIVE AREAS

1. Cropland
2. Grazing land
3. Fisheries
4. Forests
5. Carbon (Footprint)
6. Settlements



HUMAN CONSUMPTION IS COMPARED TO NATURE'S PRODUCTION / The Ecological Footprint measures people's use of cropland, forests, grazing land, and fishing grounds for providing resources and absorbing waste (carbon from fossil fuel burning). Biocapacity measures how much biologically productive area is available to produce these resources and services.

Can the region's ecosystems meet the needs of its residents?

From 1961 to 2008, the Mediterranean's per capita Ecological Footprint increased by 52 percent, while per capita biocapacity in the region decreased 16 percent.

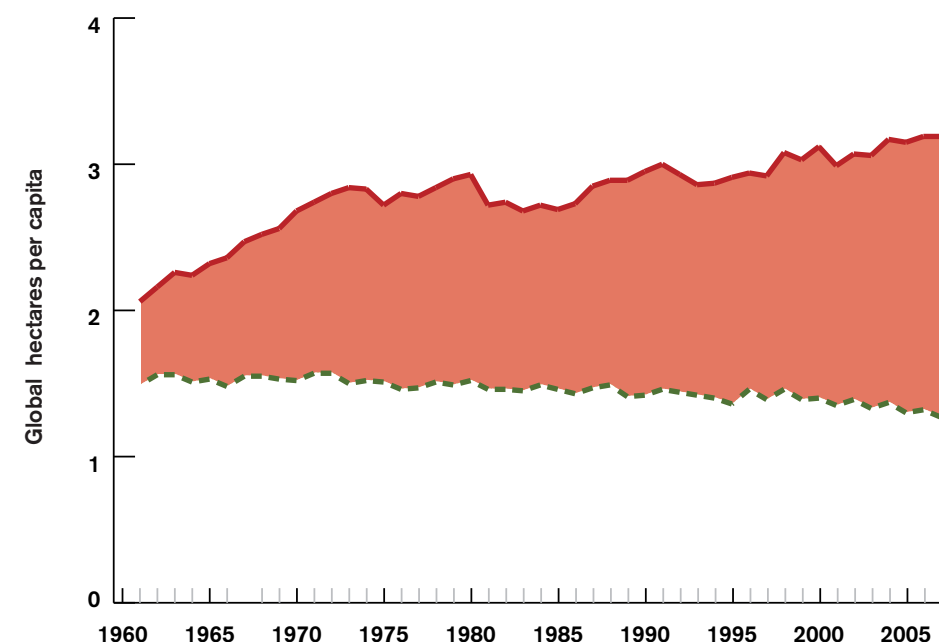
The average Mediterranean resident now has an Ecological Footprint of 3.1 global hectares (gha), but only 1.3 gha per person are available in the region. In less than 50 years, the growing gap in supply and demand created a 230 percent increase in the region's ecological deficit (represented by the shaded area in the right graph).

Already in 1961, the needs of the Mediterranean region as a whole exceeded its ecosystems' capacity to produce resources and services. By 2008, only 40 percent of the region's Ecological Footprint was met by local ecological assets. The deficit has been met by depleting local stocks and overloading global carbon sinks (34 percent of the Footprint), as well as importing resources such as food and energy from outside the region (26 percent of the Footprint).

The widening gap between demand and supply makes the stability of the region highly dependent on the availability of ecological assets outside the Mediterranean region, as well as its ability to pay for accessing the resources and services they produce.

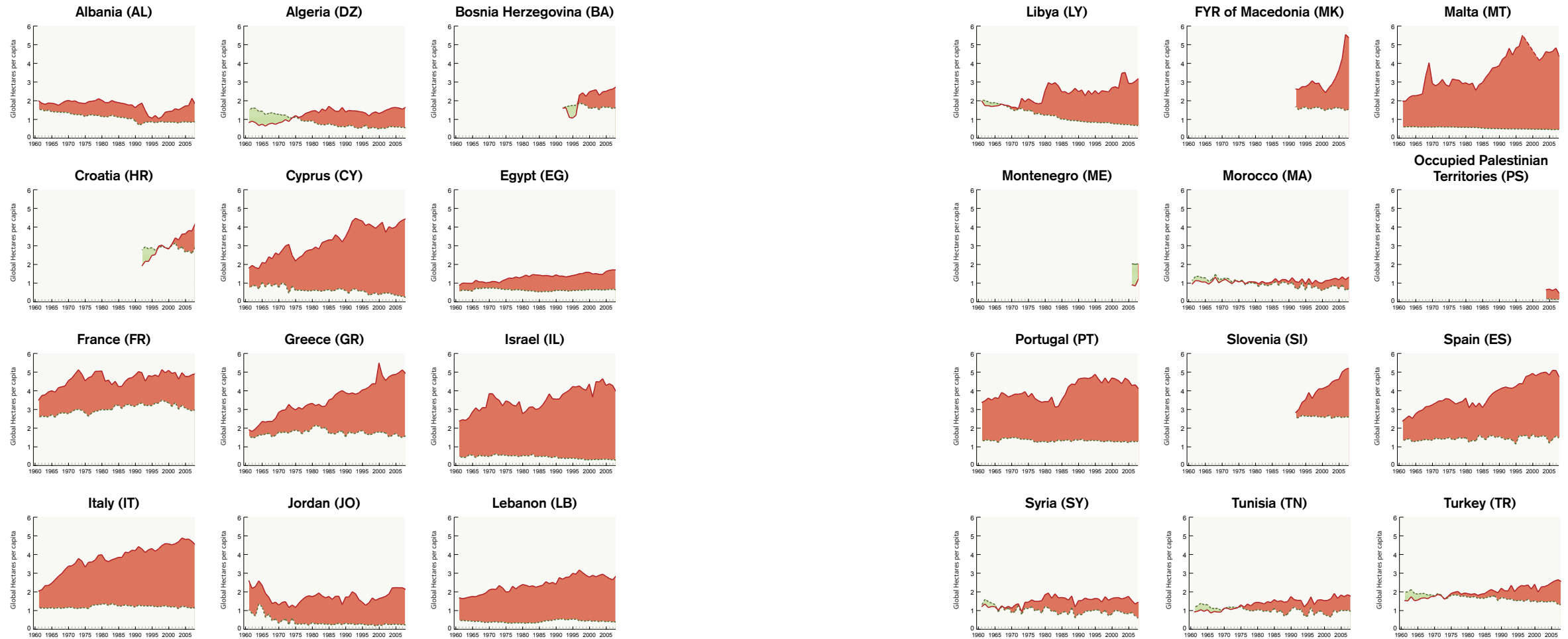
— Ecological Footprint
- - - Biocapacity

Mediterranean Region



A WIDENING GAP BETWEEN SUPPLY AND DEMAND / The Mediterranean region's per person Ecological Footprint (red line) increased, while the biocapacity (green line) per resident decreased. As a result, the ecological deficit (red shaded area) expanded 230 percent from 1961 to 2008.

— Ecological Footprint
 - - - Biocapacity



TRENDS FOR MEDITERRANEAN COUNTRIES / Ecological Footprint (red line) and biocapacity (green line) are expressed in global hectares per person. Ecological deficits are shaded red, reserves are shaded green. Factsheets for each of the 24 countries are included in the *Mediterranean Ecological Footprint Trends* report (www.footprintnetwork.org/med).

The 24 countries studied in this report include all countries with populations greater than 500,000 directly bordering the Mediterranean Sea plus Jordan, Macedonia and Portugal, which are ecologically characterized by Mediterranean biomes.

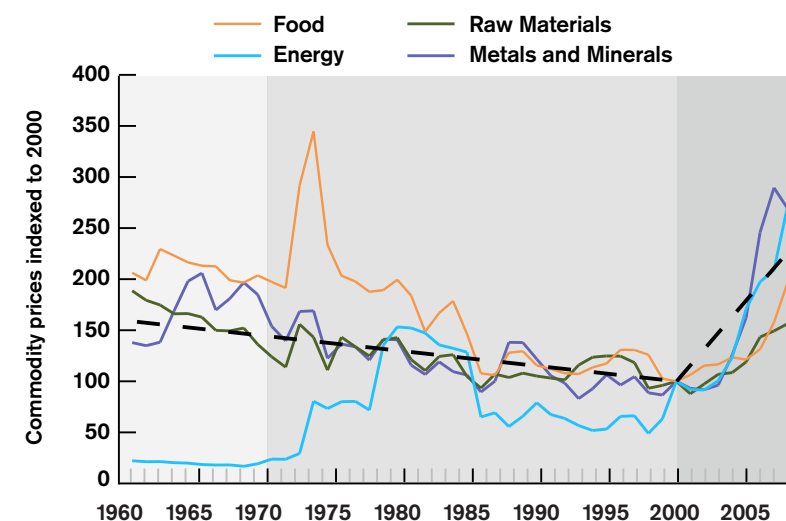
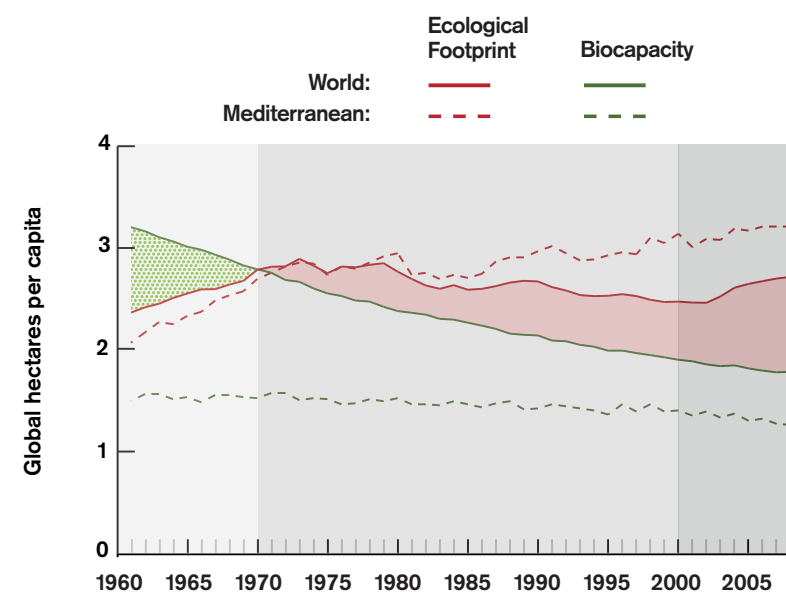
Why is it getting harder to obtain resources?

Regional and global resource trends during the last five decades, as distinguished by three phases in the right graphs, have placed the Mediterranean in an ever more precarious state.

In the first phase (1961-1970), when the region was already in an ecological deficit, its residents were consuming more resources and ecological services than local ecosystems were able to produce. But because the planet had an ecological reserve, and was able to provide more resources and services than humanity required, the region could rely on foreign ecosystems to satisfy its needs.

In the second phase (1971-2000), the Mediterranean's gap between supply of and demand for ecological assets continued to grow while, globally, humanity's demand for natural resources and services overtook the planet's ability to produce them. The world went into ecological overshoot, and the global competition for resources started to increase. But prices were slow to react.

As of 2000, this gap between supply and demand has grown both regionally and globally. The international commodity markets have also tightened, contributing to the rising prices of the world's diminishing resources.



SUPPLY GOES DOWN, RESOURCE PRICES GO UP / Consumption in the Mediterranean region is exceeding the local ecological budget. This forces Mediterranean countries to rely on global ecological assets as the world's diminishing resources have become more expensive.

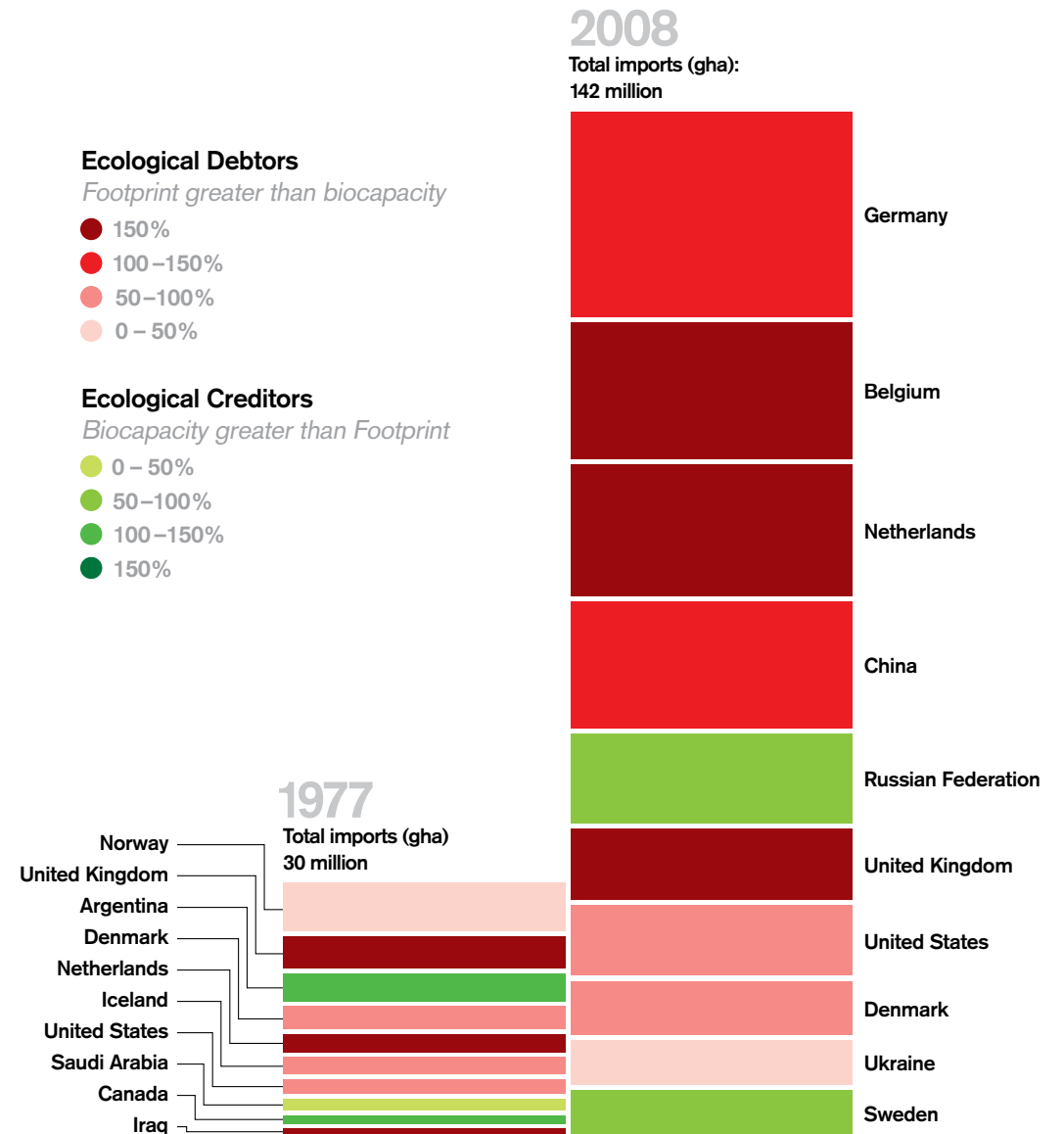
Is security of supply at risk?

More than ever before, the Mediterranean region is dependent on trade. Reliance on foreign ecological assets, notably to provide food and other essential commodities, has increased by approximately 70 percent in the last three decades.

During the same period, the Mediterranean's major trade partners saw a steady increase in their ecological deficits. In addition, trade relationships have shifted from countries with ecological reserves (e.g., Canada, Argentina) to those with ecological deficits (e.g., Germany, Belgium, the Netherlands and China).

Global ecological overshoot, when our demands for nature's products and services exceed the planet's ability to renew them, also increased during this time. By 2008, humanity was using 52 percent more resources and ecological services than were available globally.

As resources are getting scarcer and competition for them is heating up, the Mediterranean's exposure to world market price volatility and supply disruption is increasing. Nations in the region now need to factor in the resource constraints of their trade partners and recognize the risk it poses to their own economic prosperity.



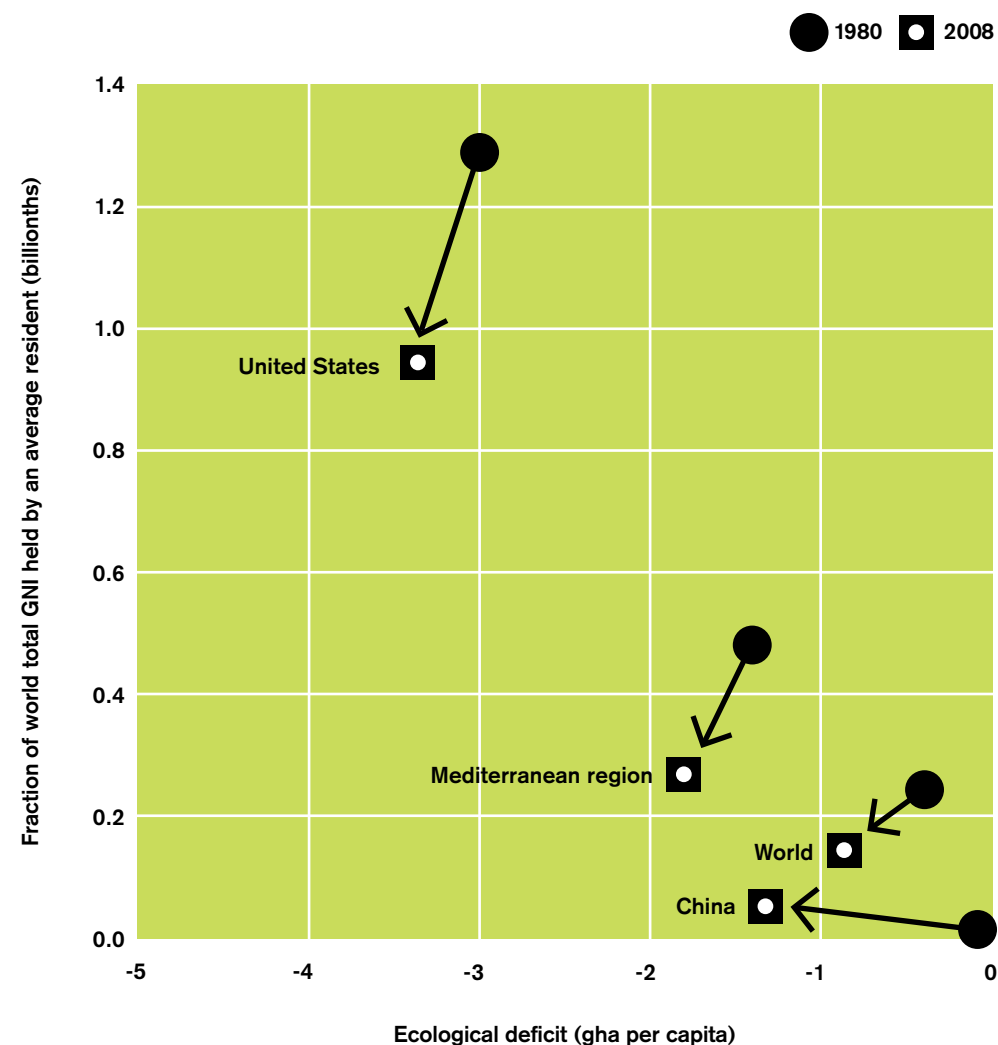
MEDITERRANEAN'S TOP TRADING PARTNERS / The Mediterranean region's import dependence has increased 70 percent during the last 30 years. Meanwhile, countries exporting resources to the region have moved towards larger ecological deficits (red shaded) or lost their ecological reserves (green shaded). This may compromise exporter countries' future ability to supply the Mediterranean region.

Can we afford ecological deficits during a time of economic crisis?

Our analysis highlights the fundamental conflict between two major trends in the region: The Mediterranean's demand for ecological assets is at an all-time high, far exceeding what the region can supply. Meanwhile, the average Mediterranean resident's share in global income has fallen at a faster rate compared to a world average resident (a 44 percent since 1980) making it more difficult to economically compete for the world's limited resources.

The Mediterranean region today can only renew 40 percent of its natural resource and services demand. Approximately a quarter of these requirements are now met through commodities imports. On the waste side, residents in the region emit far more CO₂ than local ecosystems can absorb, causing greater stress on ecological assets. The fact that Earth is already in ecological overshoot, when the planet cannot keep up with humanity's demands, increases competition for natural resources and services.

These trends have led Mediterranean economies into a particularly vulnerable position, as the region's ongoing economic crisis further constrains its ability to meet resource needs.



ECOLOGICAL DEFICIT GOES UP, RELATIVE INCOME COMES DOWN / While the Mediterranean ecological deficit has been growing fast, income of Mediterranean residents compared to global income has been shrinking, weakening the region's position to access limited resources around the globe.

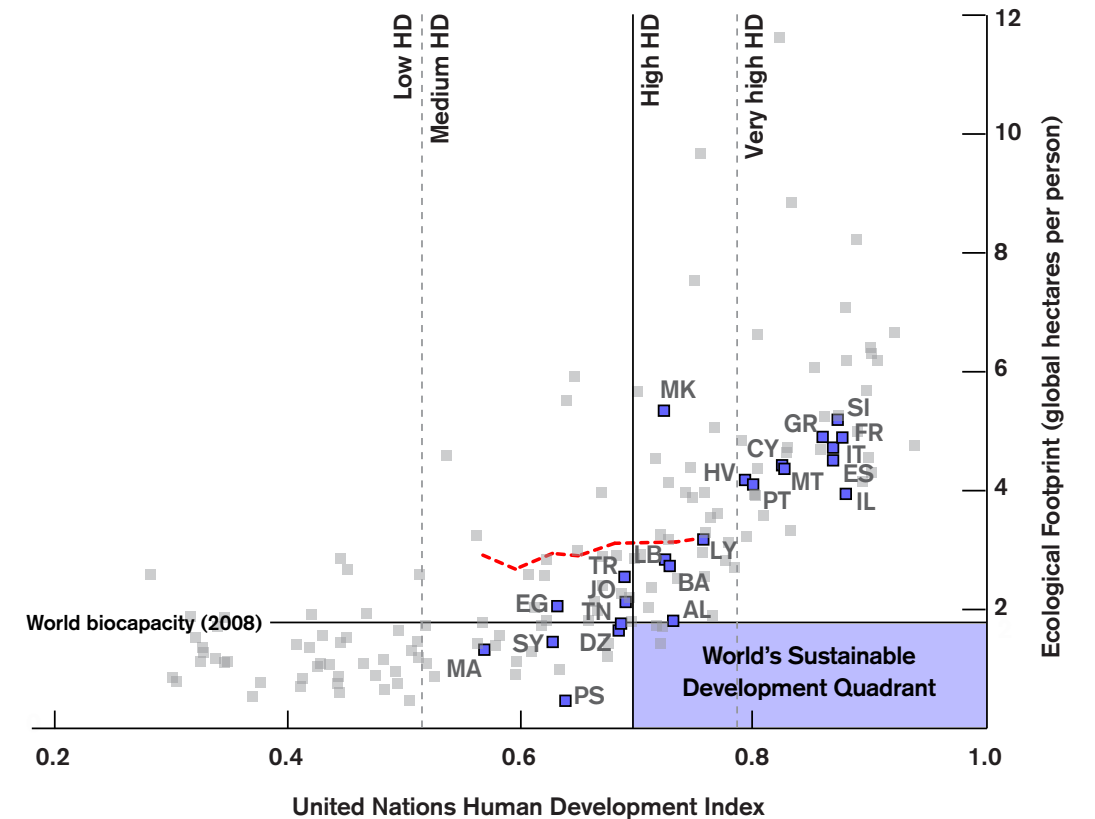
Does this impact long-term quality of life?

From 1980 to 2008, human development (as measured by UNDP's Human Development Index, or HDI) in the Mediterranean region went from medium (HDI=0.57) to high levels (HDI=0.75).

The traditional development path, notably followed by the high-income countries in the region, has been resource-intensive. As countries improved the well-being of their citizens, their resource use grew in parallel.

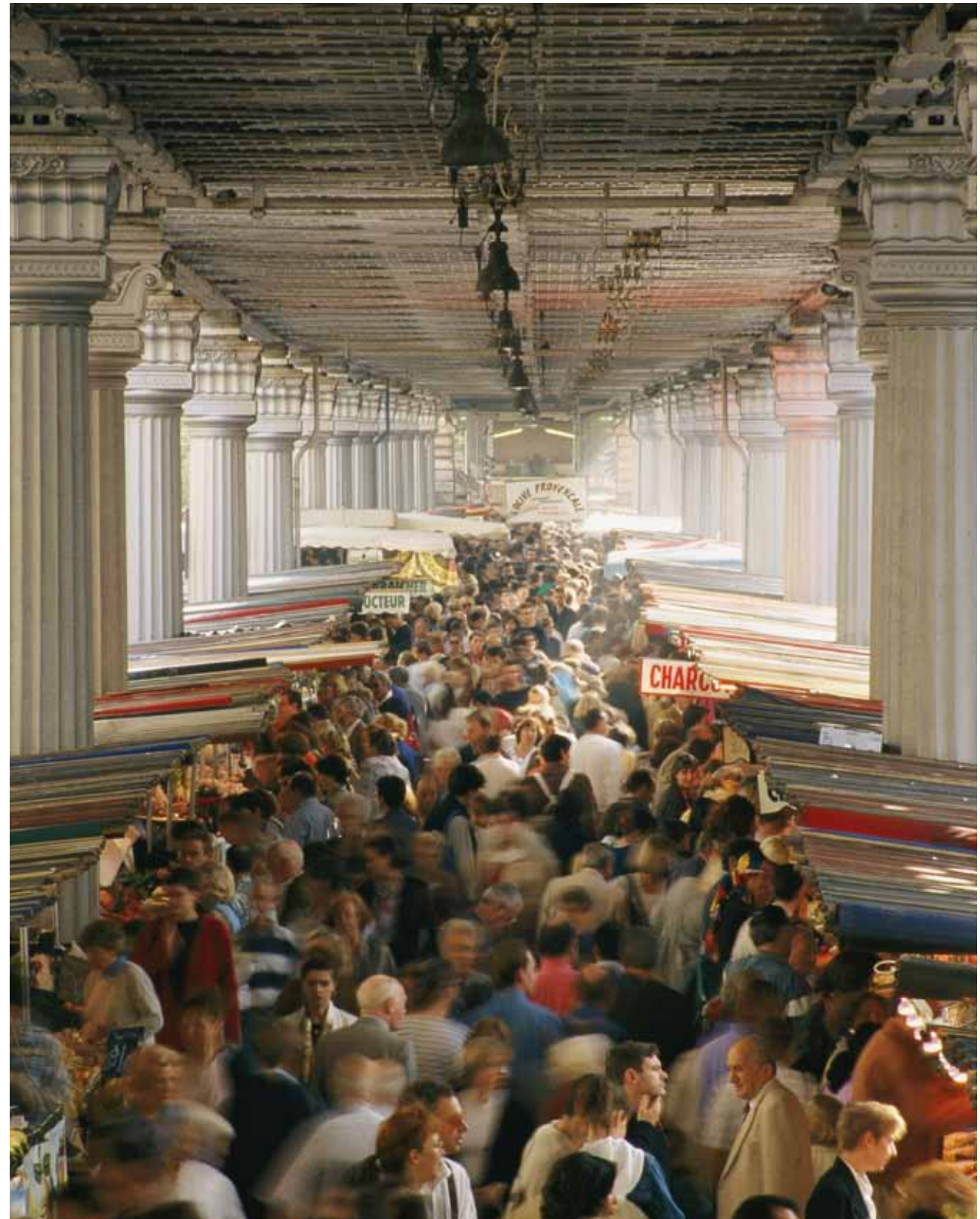
As people continue to consume more natural resources than Earth can produce, access to resources is becoming more difficult. For Mediterranean countries—highly dependent on outside ecosystems—this is becoming a limiting factor to future well-being. Increasing costs and possible supply disruptions for essential resources such as fuels and food can affect the welfare of the region's citizens as well as countries' economies.

Taking full account of resource constraints and physical limits in decision making is a key requisite for securing economic prosperity and well-being for the region's population.



HUMAN DEVELOPMENT INDEX AND ECOLOGICAL FOOTPRINT / Mediterranean countries' HDI and Footprint positions in 2008 are highlighted with blue dots. The Mediterranean region's overall trend from 1980 to 2008 is shown with the red dotted line. A low average Ecological Footprint and a high HDI score are the necessary minimum conditions for globally replicable sustainable human development.

What if more countries are bidding on fewer resources?





How we can track risks and opportunities.

Leaders today require strategies that address the twin trends of shrinking resource supply and our growing demands upon the planet. Staying on the current trajectory brings great risk. As policies and investments increase resource consumption, the Mediterranean region's economic ability to succeed in the global competition for resources is vanishing.

Global Footprint Network and its partners have the tools and programs necessary to help countries thrive in a resource-constrained world. These programs help economic decision-makers to react to resource limitation, and to demonstrate that it is both in countries' own self-interests and within their power to reverse these dangerous resource trends.

Even in this resource-constrained world, countries can remain economically successful. It all comes down to decisions: What tools will governments use to help plan policy and investment? How will they measure their country's full wealth, risks and vulnerabilities? How will they prepare for the tightening competition for resources? How will their decisions generate net wealth?

By showing decision-makers that they can be more successful by operating within nature's budget, Global Footprint Network aims to help them create a stable and prosperous economy.

“We call on governments and international institutions to consider Ecological Footprint and biocapacity to assess the state of ecological assets, and to measure progress towards sustainable development and green economy in the Mediterranean region.”

Mathis Wackernagel
President, Global Footprint Network

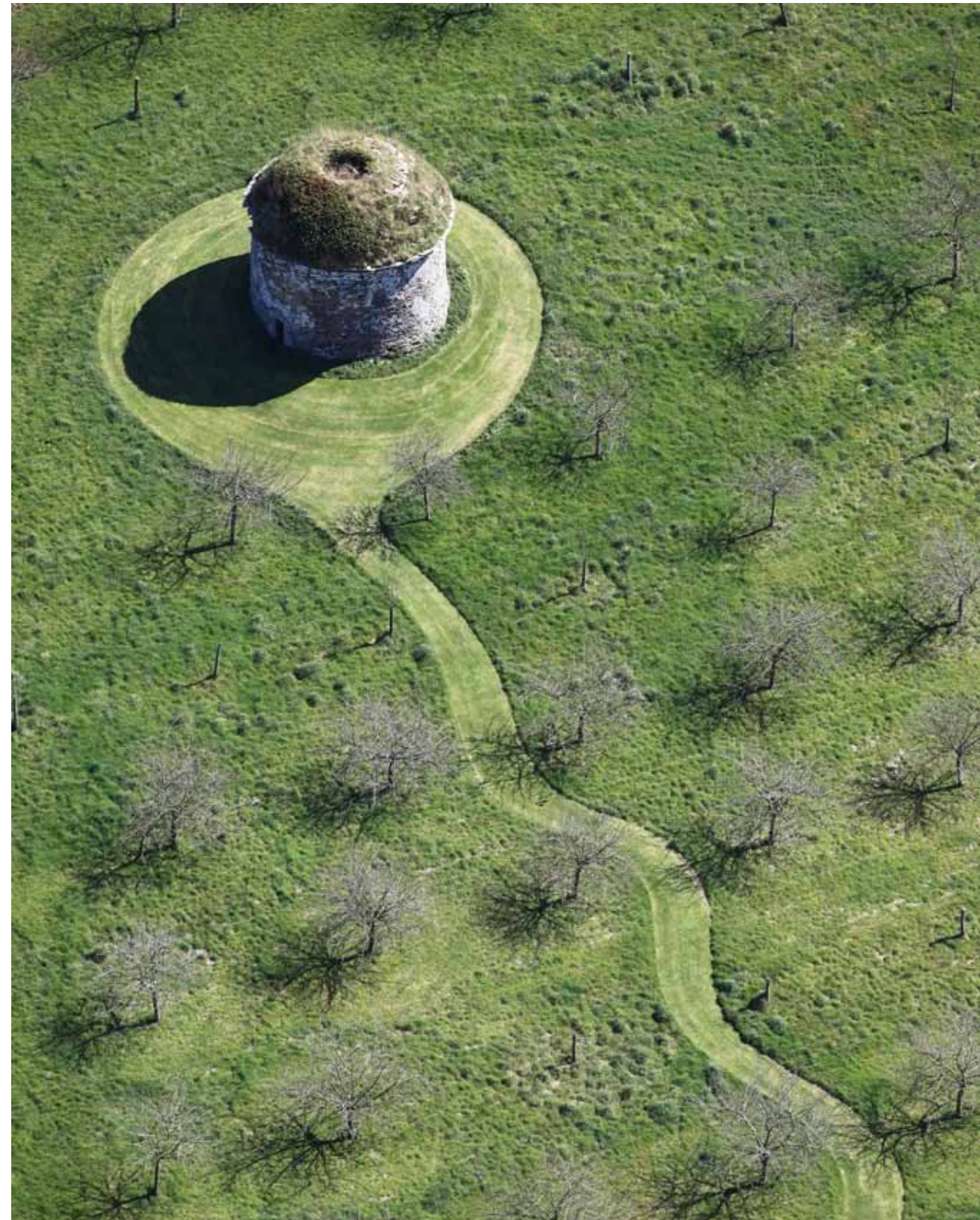
Lynda Mansson
Director General, MAVA Foundation

Hugues Ravenel
Director, Plan Bleu

Paolo Lombardi
Director, WWF Mediterranean Programme

Yolande Valle-Neff
Director, UNESCO Office in Venice

For the complete analysis and country factsheets, please refer to the *Mediterranean Ecological Footprint Trends* report at www.footprintnetwork.org/med



Analysis:



Global Footprint Network®
Advancing the Science of Sustainability

Global Footprint Network promotes a sustainable economy by advancing the use of the Ecological Footprint, a resource management tool that measures how much nature we have, how much we use and who uses what.

Funding:



The MAVA Foundation was established in 1994 and is a family-led, Swiss-based philanthropic foundation whose mission is to engage in strong partnerships to conserve biodiversity for future generations.

Support:



Plan Bleu aims to produce information and knowledge in order to alert decision-makers and other stakeholders to environmental risks and sustainable development issues in the Mediterranean, and to shape future scenarios to guide decision-making processes.



WWF's mission is to build a future in which people live in harmony with nature. The WWF Mediterranean initiative aims at conserving the natural wealth of the Mediterranean and reducing human footprint on nature for the benefit of all.



United Nations
Educational, Scientific and
Cultural Organization

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Venice Office
Regional Bureau for Science
and Culture in Europe
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The UNESCO Venice Office is developing an educational and training platform on the application of the Ecological Footprint in SEE and Mediterranean countries, using in particular the network of MAB Biosphere Reserves as special demonstration and learning places.