DECEMBER 2024

Mediterranean Basin

Biodiversity Hotspot

ECOSYSTEM PROFILE

CRITICAL ECOSYSTEM PARTNERSHIP FUND

Ecosystem Profile

Mediterranean Basin Biodiversity Hotspot
2024 update

DECEMBER 2024

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CONTENTS

EXECUTIVE SUMMARY

The Critical Ecosystem Partnership Fund (CEPF) is designed to safeguard the world's biologically richest and most threatened regions, known as biodiversity hotspots. Thirty-six biodiversity hotspots have been identified globally, defined as regions that have at least 1,500 endemic plant species and have lost more than 70% of their original natural vegetation. Remaining natural ecosystems within these hotspots cover only 2.3% of the Earth's surface but contain a disproportionately high number of species, many of which are threatened with extinction. Hotspots, therefore, are global priorities for conservation.

CEPF is a joint initiative of l'Agence Française de Développement (AFD), Conservation International, the European Union, Fondation Hans Wilsdorf, the Global Environment Facility (GEF), the Government of Japan and the World Bank. It also benefits, at hotspot level, from the support of regional donors. A fundamental purpose of CEPF is to engage civil society, such as community groups, non-governmental organizations (NGOs), academic institutions and private enterprises, in biodiversity conservation in the hotspots. To guarantee their success, these efforts must complement existing strategies and programs of national governments and other conservation funders. To this end, CEPF promotes working alliances among diverse groups, combining unique capacities and reducing duplication of effort for a comprehensive, coordinated approach to conservation. One way in which CEPF does this is through preparation of "ecosystem profiles": shared strategies, developed in consultation with local stakeholders, that articulate a multi-year investment strategy for CEPF, informed by a detailed situational analysis.

The Mediterranean Basin Biodiversity Hotspot is the second largest hotspot in the world and the largest of the world's five Mediterranean-climate regions. The hotspot covers more than two million square kilometers and stretches west to east from Portugal to Iraq and north to south from Italy to Cabo Verde. The Mediterranean Basin is the third richest hotspot in the world in terms of plant diversity. Approximately 25,000 plant species occur here, more than half of which are endemic to the hotspot, meaning that they are found nowhere else.

Rivaling the natural diversity in the hotspot, the cultural, linguistic and socioeconomic diversity of the region is spectacular. The Mediterranean Basin was the cradle of some of the great civilizations of antiquity, the world's oldest sovereign state and its first constitutional republic. Many of the ecosystems long ago reached equilibrium with human activity dominating the landscapes. However, this delicate balance is in a precarious state, as many local communities depend on remaining habitats for fresh water, food and a variety of other ecosystem services.

In 2012, CEPF started a five-year program of investment in the Mediterranean Basin Hotspot which resulted in the award of 108 grants to 83 different organizations in 12 countries, with a total value of US$11 million. A second phase ran from 2017 through to 2024 and awarded a further 200 grants to 133 organizations in 13 countries with a total value of US$13.9 million. CEPF-funded actions contributed directly to improved management of sites, conservation of critically endangered species, improved policies for the environment, and greater collaboration and regional networking among civil society organizations (CSOs), as well as between civil society and government and private sector actors.

The Mediterranean region has experienced unprecedented levels of political change in the last decade. Large movements of refugees and economic migrants have taken place, both within countries and across international borders. Many governments across the region are becoming more open to collaboration with civil society, and new opportunities are emerging for NGOs to engage in work on the ground and in influencing planning and policy making. These trends are not universal, however, and some countries continue to experience war and insecurity, as well as changes in policy that restrict the activities of civil society.

The last decade has also seen major advances in the identification of priority species and sites in the hotspot, with major initiatives on plants and freshwater biodiversity in particular, and in the identification of Key Biodiversity Areas (KBAs) - sites that make significant contributions to the global persistence of biodiversity. In 2016, 5,785 species recorded in the Mediterranean Basin Hotspot had been assessed for the IUCN Red List, and 1,311 (23%) of them had been classified as globally threatened. The sites that provide critical habitat for these species, KBAs, are in many cases the only sites where they are known to exist. 572 KBAs have been identified in the 17 countries covered by the ecosystem profile update.

The process for the update of the Ecosystem Profile was led by a consultant with active input from CEPF and Regional Implementation Team (RIT) staff and from two workshops with the RIT and the CEPF Mediterranean Basin Advisory Committee. There was also consultation and active dialogue with grantees and other experts via questionnaires and direct interractions with a number of government stakeholders and fellow donors. This process also benefitted from the results of the final assessment of CEPF's second phase of investment in the hotspot, from an externally commissioned evaluation of the performance of the RIT in late 2023, and from externally commissioned reviews of the achievements against the strategic directions, in particular those for freshwater and cultural landscapes (Strategic Directions 2 and 3). The profile also builds on the extensive process of revision and updating, which occurred in 2016 for the previous ecosystem profile, and which included extensive reviews of KBAs and Red Lists, as well as national and regional workshops and commissioned studies.

In planning for the next phase of CEPF grant making in the hotspot, it is important to consider the existing strategies and programs of national governments, donors and other stakeholders. The review of conservation investment presented in the profile concludes that, while this is a region with very significant support from development aid, support to biodiversity conservation is limited and has reduced since the last investment phase, while national governments, in a post-Covid era and facing macro-economic issues tend not to prioritize support to conservation action, in spite of ambitious international objectives. The new CEPF phase also start while the landscape of philanthropies and foundation in the region is getting reorganized, following the end of the activities of MAVA Foundation.

CEPF Niche and Investment Priorities

The ecosystem profile identifies a suite of conservation outcomes at species, site and corridor scales, which constitutes a long-term, overarching agenda for conservation of the Mediterranean Basin's unique and valuable biodiversity. Only a fraction of these priorities can be tackled by CSOs over the next five years with CEPF support. The ecosystem profile, therefore, defines a niche for CEPF investment, which focuses on supporting civil society to implement projects rooted in ground-level realities that provide local CSOs with the experience and credibility needed to engage effectively at a larger scale. Building from this niche, the profile identifies geographic and thematic priorities for support that form the basis for a six-year investment strategy. In this phase, CEPF also plans to scale its support for civil society organizational development, to move the sector towards greater capacity, effectiveness and sustainability.

CEPF support to conservation action in the Mediterranean Basin Hotspot will be delivered through six strategic directions focused on three ecosystems (coastal/marine, freshwater and traditionally managed landscapes), a species group (plants), and a supporting thematic focus (organizational development). Underpinning these strategic directions are several cross-cutting priorities grouped around capacity building and empowerment, site and species conservation, climate mitigation and adaptation, and good project development and management.

Strategic Direction 1 addresses the threatened coastal and marine ecosystems in the hotspot. Coastal ecosystems are under increasing pressure from human population growth and migration, the growth of tourism, and associated urbanization and pressure on land and water resources. CEPF will support more work in marine areas, recognizing the importance of increasing the number of new and well managed marine protected sites, and the need to build more capacity within civil society. CEPF will give emphasis to the protection and enhancement of coastal wetlands, which have been dramatically reduced from their original extent. CEPF will prioritize projects which improve the status of threatened species and KBAs, noting that many marine sites that may warrant KBA status are not yet assessed.

Strategic Direction 2 will continue to address the need to improve knowledge on important sites for freshwater biodiversity in and around KBAs, using this as an opportunity to build capacity for research and conservation action on freshwater organisms: an area in which clear gaps in capacity were recognized during consultations. Beyond that, this strategic direction will focus on site-based action, working with local stakeholders to mitigate threats to KBAs and their constituent species, primarily those within the six large conservation corridors originally identified in relation to SD3 (see below). CEPF aims to enhance the management of freshwater ecosystems, by improving their protection status where possible but also ensuring existing protected areas give higher priority to freshwater ecosystems where they occur within their boundaries. This will include seeking and taking opportunities to restore degraded habitats in and connected to KBAs.

Strategic Direction 3 will continue to support threatened terrestrial species that are dependent on habitats maintained through continuing human intervention for agriculture, seasonal grazing or harvesting of wild products. CEPF investment will focus on landscapes where grazing has been a key component of management and maintaining the conditions in which biodiversity has thrived. These are primarily in more upland parts of the hotspot. Supporting more sustainable grazing management practices is also expected to help the protection and sustainability of Mediterranean forests, which are threatened by poor regeneration due to overgrazing, as well as to reduce the incidence of wildfires, a growing threat related to climate change. CEPF will promote these practices by trialing solutions and innovations, sharing experiences, and promoting lessons and successes widely to government, local communities and donor agencies. Grants will be made for relevant projects in six priority corridors, all of them upland zones where traditional practices persist: Orontes Valley and Levantine Mountains; Atlas Mountains; Rif Mountains, the Dorsal and Tellian Atlas, Southwest Balkans and Eastern Adriatic.

Strategic Direction 4 specifically addresses the conservation of plants, which comprise 35% of the threatened species in the hotspot, even with vast numbers of species not yet assessed. The limited range and very specific habitat requirements of some threatened plants means that their conservation can be tackled effectively by local CSOs working on the ground with limited resources, often in partnership with protected areas managers or local landowners. CEPF will support projects that work with these groups to safeguard their habitats. CEPF will also continue to strengthen the botanical knowledge and skills of scientists, conservationists and land managers within the hotspot. Lastly, CEPF will support the protection of threatened plants that are of cultural, medicinal and/or economic value.

While capacity building at the level of individual grantees and projects will be integrated into individual grants, Strategic Direction 5 focuses on a more holistic approach to organizational development. CEPF will give more structured support to selected CSOs to build their overall capacity, effectiveness and sustainability. CEPF will also support collective actions and partnerships at the sectoral level. These two approaches have much in common and reinforce each other: working together, learning through peer experience contributes to individual organizations' development, and stronger organizations can contribute more to the collective efforts.

Finally, Strategic Direction 6 covers the functions of the RIT in implementing and managing the program over the next five years and contributing to the sustainability and wider policy impact of the overall grant portfolio. The RIT will consist of one or more CSOs active in conservation in the hotspot and will be responsible for converting the plans in the ecosystem profile into a cohesive portfolio of grants that exceeds in impact the sum of its parts.

Strategic Directions and Investment Priorities for CEPF in the Mediterranean Basin Hotspot, 2025-2030

Strategic Directions	Investment Priorities
1. Support local partnerships for conservation of globally important coastal biodiversity	1.1. Support involvement of civil society in the management of Marine Protected Areas and realize opportunities to establish new ones
	1.2. Advance the protection, restoration and improved management of coastal wetlands, with the participation of local stakeholders
2. Promote the values of freshwater ecosystems and advance their protection, restoration and improved management	2.1. Document and promote recognition of the freshwater biodiversity and ecosystem service values of Key Biodiversity Areas
	2.2. Advance protection, restoration and improved management of important sites for freshwater biodiversity, with the participation of local stakeholders
3. Promote traditional land-use practices that maintain biodiversity in priority corridors	3.1. Support traditional resource managers to follow land management practices that maintain biodiversity in mountain landscapes
	3.2. Document and promote traditional land-use practices and Other Effective area-based Conservation Measures among local and national governments
4. Strengthen the engagement of civil society to support conservation of threatened plants and plant communities	4.1. Build the capacity of the botanical community to increase knowledge and skills and engage in applied conservation of threatened plants
	4.2. Secure better implementation of plant conservation in the management of protected areas
	4.3. Take innovative actions for conservation of threatened plants, working with landowners and land users
	4.4. Improve conservation efforts for wild crop relatives, medicinal plants and other wild plants of economic and cultural value

Strategic Directions	**Investment Priorities**
5. Facilitate the development of a robust and resilient community of conservation Civil Society Organizations (CSOs)	5.1. Provide support to targeted conservation CSOs engaged in a process of organizational development
	5.2. Enhance the collective strength and ability of conservation CSOs at national and regional levels
6. Provide strategic leadership and effective coordination of conservation investment through a regional implementation team	6.1. Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile

Acronyms

AAO	Association Les Amis des Oiseaux/BirdLife Tunisia
ACCOBAMS	Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area
AEWA	African-Eurasian Migratory Waterbird Agreement
AFD	l'Agence Française de Développement
AFED	Arab Forum for Environment and Development
AFOLU	Agriculture, forestry and other land-use
AMU	Arab Maghreb Union
ANEF	Agence Nationale des Eaux et Forêts
BMU	German Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety
BMZ	German Federal Ministry of Development Cooperation
BPSSS	Bird Protection and Study Society of Serbia
CBD	Convention on Biological Diversity
CBO	Community Based Organisation
CEPF	Critical Ecosystem Partnership Fund
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species
CMZ	Catchment Management Zone
CoE	Council of Europe
COP	Conference of the Parties
CR	Critically Endangered
CSF	Civil Society Facility
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
CZIP	Centre for Protection and Research of Birds (Centar za zaštitu i proučavanje ptica Crne Gore)
CSTT	Civil Society Tracking Tool
DAC	Development Assistance Committee
DCI	Development Cooperation Instrument
DIMFE	The Donor Initiative for Mediterranean Freshwater Ecosystems
DOPPS	Društvo za opazovanje in proučevanje ptic slovenije/BirdLife, Slovenia
EBSA	Ecologically or Biologically Significant Marine Areas
EC	European Commission
EDF	European Development Fund
EIA	Environmental Impact Analysis
EIB	European Investment Bank
ELAW	Environmental Law Alliance Worldwide
EN	Endangered
ENI	European Neighborhood Instrument
ENP	European Neighbourhood Policy
EPI	Environmental Performance Index
EU	European Union
EUROBATS	Agreement on the Conservation of Populations of European Bats

FAO	Food and Agriculture Organisation of the United Nations
FFEM	Fonds Français pour l'environnement mondial
FoE	Friends of the Earth
FSC	Forestry Stewardship Certification
GBF	Global Biodiversity Framework
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHG	Greenhouse gases
GREPOM	Groupe de Recherche pour la Protection des Oiseaux au Maroc
GTT	Gender Tracking Tool
ha	hectares
HDI	Human Development Index
ICCAT	International Commission for the Conservation of Atlantic Tuna
ICNL	International Center for Not-for-Profit Law
ICZM	integrated coastal zone management
IKI	International Climate Initiative
INCA	Institute for Nature Conservation of Albania
INDC	Intended Nationally Determined Contribution
IPA	Important Plant Area
IPA	Instrument for Pre-accession Assistance
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IPPC	International Plant Protection Convention
IT PGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resource Management
KBA	Key Biodiversity Area
LAS	League of Arab States
LEF	Lebanese Environment Forum
LS	Land Stewardship
LPO	Ligue pour la Protection des Oiseaux
MAB	Man and Biosphere Programme
MAP	Mediterranean Action Plan
MAVA	MAVA Foundation
MDG	Millennium Development Goals
MEA	multilateral environmental agreements
MedPAN	Network of Marine Protected Area Managers in the Mediterranean
MedWet	Mediterranean Wetlands Initiative
MENA	Middle East and North African Arab countries
METT	Protected Areas Management Effectiveness Tracking Tool
MoU	Memorandum of Understanding
MPA	Marine Protected Area
NBSAPs	National Biodiversity Strategies and Action Plans
NDC	Nationally Determined Contribution

NGO	Non-governmental Organisation
NTFP	Non-timber Forest Product
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PA	Protected Area
PAME	Protected Area Management Effectiveness index
PPI	Programme de Petites Initiatives (Small Scale Initiatives Programme)
PPI-OSCAN	Small-scale Initiatives Programme for Civil Society Organisations in North Africa
PPNEA	Protection and Preservation of Natural Environment in Albania
RAC/SPA	Regional Activity Centre for Specially Protected Areas (under Barcelona Convention)
REC	Regional Environment Centre
REDD	Reducing Emissions from Deforestation and Forest Degradation
RIT	Regional Implementation Team
RSCN	The Royal Society for the Conservation of Nature
SAP	Species Action Plan
SD	Strategic Direction
SEO	Sociedad Española de Ornitología
SIBE	Biological and Ecological Interest Sites
SPA	Specially Protected Areas
SPAMI	Special Protected Area of Mediterranean Importance
SPNL	Society for the Protection of Nature in Lebanon
UAE	United Arab Emirates
UAM	Union of Arab Maghreb
UK	United Kingdom
UNCCD	Convention to Combat Desertification
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	UN Framework Convention on Climate Change
USA	United States of America
USAID	United States Agency for International Development
USFWS	US Fish and Wildlife service
VU	Vulnerable
WCMC	World Conservation Monitoring Centre
WCPA	World Commission on Protected Areas
WDPA	World Database on Protected Areas
WEI	Water Exploitation Index
WHC	World Heritage Convention
WWF	World Wide Fund for Nature

1. INTRODUCTION

There is growing evidence of the many functions and economic benefits of natural ecosystems for human beings. Nevertheless, the fast depletion of natural resources continues worldwide. The current rate of global extinctions of plants and animals due to human activities is more than 1,000 times higher than the average rates observed throughout the history of life on Earth (Pimm et *al*. 2014, Prakash and Verma 2022). As a response to this dilemma, a range of tactics have been developed to help sustain the world's critical ecosystems and ecological services, one of the most influential being the "biodiversity hotspots" concept (Myers *et al.* 2000). There are 36 recognized biodiversity hotspots in the world, each holding at least 1,500 plant species found nowhere else, or endemic, and having lost at least 70% of its original habitat extent (Mittermeier *et al.* 2004). The biodiversity hotspots concept has united much of the world's conservation community, leading to action across the world's most threatened areas.

Founded in 2000, the Critical Ecosystem Partnership Fund (CEPF) has become a global leader in enabling civil society to participate in and influence the conservation of some of the world's hotspots. CEPF is a joint initiative of l'Agence Française de Développement (AFD), Conservation International (CI), the European Union (EU), Fondation Hans Wilsdorf, the Global Environment Facility (GEF), the Government of Japan, and the World Bank. As one of the founders, CI administers the global program and hosts the CEPF Secretariat.

The Mediterranean Basin Hotspot is the second largest hotspot in the world and the largest of the world's five Mediterranean-climate regions. It covers 2,085,292 km^2 and stretches west to east from Portugal to Jordan and north to south from northern Italy to Tunisia. It also includes parts of Spain, France, most of the Balkan States, Türkiye, Syria, Iraq, Lebanon, Palestine[1], Egypt, Libya, Morocco and Algeria, as well as around 5,000 islands scattered around the Mediterranean Sea. West of the mainland, the hotspot includes a number of Atlantic islands: the Canaries, Madeira, the Selvagens, the Azores and Cabo Verde (Figure 1.1).

In 2012, CEPF started a five-year program of investment in the Mediterranean Basin Hotspot, which resulted in the award of 108 grants to 83 different organizations in 12 countries, with a total value of US$11 million. A second phase ran from 2017 through to 2024 (with extensions) and awarded a further 200 grants to 133 organizations in 13 countries, with a total value of US$13.9 million. Since the start of the investment, parts of the region experienced dramatic political change, collectively referred to as the Arab spring, which has had profound effects on stability and economies, and on the role of and opportunities for civil society in these countries. War has continued in Syria, insecurity is an obstacle to conservation activities in parts of Libya, and to a lesser extent elsewhere. The COVID-19 pandemic had a dramatic impact on lives across the hotspot and affected the delivery of the program, especially in 2020 and 2021. More recently, the dramatic evolution of the security and geopolitical situation in the Middle East, particularly in Palestine and Lebanon, has impacted inhabitants and organizations in this part of the hotspot.

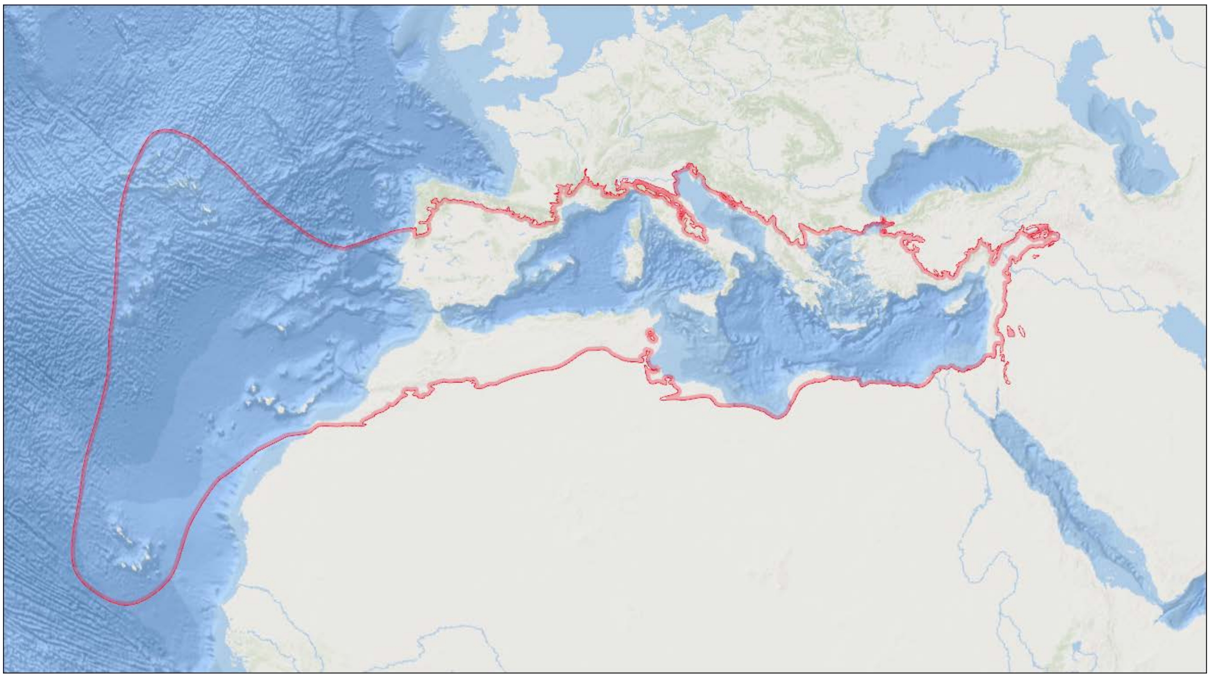
The political upheaval and insecurity as well as global economic uncertainty and the pandemic, have impacted one of the region's major drivers of economic activity, tourism. The pandemic caused serious economic problems in all tourism sectors (e.g. Bodroža and Lazić 2021) but there has been strong recovery where other factors are favorable. The hotspot is one of the most popular tourism destinations of the world, with 27% of the world's tourists (400 million per year) (Plan Bleu 2020), but some of the countries

[1] This designation is without prejudice to the individual positions of the CEPF donors on the issue of the status of Palestinian territories.

and regions most dependent on tourist income have experienced stagnation, while in others (notably the Balkans and Cabo Verde) the industry has continued to grow.

The growing populations and consequent economic activity on the coastal fringe of the southern Mediterranean are increasing the demand for energy, water and infrastructure. Climate change is worsening the problem, and all the countries of the southern part of the hotspot experience water deficit. The increasing number and magnitude of water investments has caused irreversible damage to the fragile water cycle of small river basins in the hotspot.

Figure 1.1 Location of the Mediterranean Basin Hotspot



CEPF develops ecosystem profiles to identify and articulate an investment strategy for each hotspot that will receive funding. Preparation of the ecosystem profile involves a participatory consultation process, so that the final output is owned and used by stakeholders in the hotspot. Each ecosystem profile reflects a rapid assessment of biological priorities and the underlying causes of biodiversity loss within particular ecosystems. The profile couples these two elements with an inventory of conservation-related investment taking place within the region and other key information to identify how CEPF funding can provide the greatest incremental value. Finally, each profile provides a clear picture of what the conservation priorities are, and specifically, which ones would be the most appropriate to receive CEPF investment.

Defining the "conservation outcomes" for a given hotspot is the most critical step in the ecosystem profiling process. These outcomes refer to the entire set of conservation targets in a hotspot to be achieved in order to prevent biodiversity loss. The CEPF funding niche and strategy is based upon these outcomes, firstly to ensure that CEPF investments are directed at relevant issues, and secondly to enable measurement of the success of investments, since these targets also represent a baseline for monitoring.

Conservation outcomes are identified at three scales, representing (i) the globally threatened species within the hotspot, (ii) the sites that sustain them (i.e., Key Biodiversity Areas or KBAs), and (iii) the landscapes necessary to maintain the ecological and evolutionary processes upon which those sites depend (i.e., conservation corridors). Respectively, these outcomes are: "extinctions avoided," "areas protected" and "corridors created." In defining outcomes at the species, site and corridor levels, CEPF aims to identify targets that are quantitative, justifiable and repeatable. CEPF is not trying to achieve all these targets in every hotspot, but its investment niche and strategy aim to address a priority subset of them.

Each ecosystem profile recommends broad strategic funding directions that can be implemented by civil society to contribute to the conservation of biodiversity in the hotspot. To this end, CEPF provides civil society with a flexible funding mechanism. An additional purpose is to ensure that those efforts complement existing strategies and frameworks established by local, regional and national governments. CEPF promotes working alliances among community groups, nongovernmental organizations (NGOs), government, academic institutions and the private sector, combining unique capacities and eliminating duplication of efforts for a comprehensive approach to conservation. CEPF targets transboundary cooperation when areas rich in biological value straddle national borders, or in areas where a regional approach will be more effective than a national approach.

The first update of the ecosystem profile in 2017 involved extensive regional consultation and national workshops, while this current update, in advance of the third phase, is a more modest exercise, as changes in the intervening years were considered to be less significant, and the CEPF Grant Director and implementing organisation have remained the same, thus assisting consistency and continuity.

2. BACKGROUND

The first phase of CEPF investment in the Mediterranean Basin Hotspot (2012-2017) was guided by an ecosystem profile prepared in 2010. The purpose of the ecosystem profile is to provide a shared strategy that can be used by other funders as well as CEPF to guide their investments in conservation actions led by civil society groups. Given the very significant political changes that occurred in the region after 2010, the availability of new information on biological priorities, and the rich experience gained from five years of grant making, it was necessary to update the ecosystem profile to guide the next five-years of CEPF investment. The revision of the ecosystem profile was then launched in 2016, with financial support by CEPF, Fondation Prince Albert II de Monaco and the MAVA Foundation.

This first revision of the ecosystem profile was led by a consortium consisting of BirdLife International, the International Union for the Conservation of Nature (IUCN), Tour du Valat, Conservatoire du Littoral, and three BirdLife Partners from Mediterranean-based organizations: Sociedad Española de Ornitología (SEO/BirdLife Spain); Društvo za opazovanje in proučevanje ptic Slovenije (DOPPS/BirdLife Slovenia); and Association Les Amis des Oiseaux (AAO/BirdLife Tunisia). The team sought the advice of specialist groups and other experts and input from local governments, communities, businesses and civil society organizations (CSOs). A total of 461 participants attended 14 national workshops between September and November 2016. These workshops discussed biological data, threats faced and prioritization in detail. A regional meeting was organized at the end of November 2016, where 51 participants contributed to the validation of the new profile, the final definition of corridors and the investment strategy.

Given the extensive update process to prepare for the second phase, and the relatively modest changes since then, in terms the availability of data and the external environment, it was decided in 2024 to undertake a much shorter process to update the ecosystem profile for the third phase. This also enabled the process to be undertaken quickly and at minimal cost.

The process for the present profile update was led by a consultant with active input from CEPF and Regional Implementation Team (RIT) staff. It involved two workshops, with RIT and then with the CEPF Mediterranean Basin Advisory Committee[2]. Consultation and active dialogue took place with grantees and other experts via a questionnaire, and direct interactions with government stakeholders and fellow donors. This process also benefitted from the results of the final assessment of CEPF's second phase of investment in the hotspot[3], and from an externally commissioned evaluation of the performance of the RIT[4] in late 2023. Additional reviews of the achievements against the strategic directions, in particular those for freshwater and cultural landscapes (Strategic Directions 2 and 3), during which consultations with experts and grantees also took place, provided important lessons learned and input for the update of the strategy.

The update of the ecosystem profile focuses on 17 potential eligible countries or territories from the Mediterranean. Although a small part of Iraq is eligible and we include KBA data, a full analysis of the situation across the whole country has not been included. The document may additionally provide information about non-eligible

[2] The committee is composed of Fabrice Bernard, Conservatoire du Littoral, Raphaël Billé, Tour du Valat, Paule Gros, BiodivEarth, Maher Mahjour, IUCN Centre for Mediterranean Cooperation, Magda Aboudager Kharrat, European Forest Institute, Charlène Minster, Hans Wilsdorf Foundation, Dragana Mileusnić, The Nature Conservancy, Bertrand de Montmollin, IUCN-SSC Mediterranean Plant Specialist Group, Philippe Mondielli, Fondation Prince Albert II de Monaco, Ezra Ricci, Audemars-Watkins Foundation, and Nicolas Rossin, Fonds Français pour l'Environnement Mondial

[3] https://www.cepf.net/resources/investment-analysis/mediterranean-basin-phase-ii-final-assessment

[4] www.cepf.net/resources/documents/mediterranean-basin-regional-implementation-team-evaluation

countries of the hotspot, including EU countries, when relevant. The eligibility is further discussed in chapter 12.

Table 2.1. Countries Covered by the Ecosystem Profile

Subregion	Country	Former CEPF Investment
Balkans	Albania	Yes
	Bosnia and Herzegovina	Yes
	Kosovo	No
	North Macedonia	Yes
	Montenegro	Yes
Middle East	Iraq	No
	Jordan	Yes
	Lebanon	Yes
	Palestine	Yes
	Syria	No
North Africa	Algeria	Yes
	Egypt	Yes
	Libya	Yes
	Morocco	Yes
	Tunisia	Yes
Macaronesia	Cabo Verde	Yes
Türkiye	Türkiye	Not under Mediterranean Investment

3. PHASES I AND II OF CEPF INVESTMENT: OVERVIEW AND LESSONS LEARNED

3.1 Investment strategy and outcomes for phase I (2012-2017)

The ecosystem profile[5] that guided the first phase of CEPF investment in the Mediterranean Basin Hotspot was formulated in 2010, through an inclusive, participatory process that engaged more than 100 experts from civil society, donor and government stakeholders throughout the region. The ecosystem profile defined geographic priorities for CEPF investment. At the landscape level, these comprised six conservation corridors, and 50 high-priority KBAs within them. A further 20 KBAs, representing highly irreplaceable and vulnerable sites in five other corridors, were the focus of site-level investments. Overall, therefore, 70 KBAs were eligible for CEPF investment, together with six priority corridors.

The CEPF investment strategy for the first phase comprised 13 investment priorities grouped under four strategic directions, one of which was dedicated to the RIT.

Table 3.1 CEPF investment strategy for phase I (2012-2017)

STRATEGIC DIRECTIONS	INVESTMENT PRIORITIES
1. Promote civil society involvement in Integrated Coastal Zone Management to minimize the negative effects of coastal development in three priority corridors (Southwest Balkans; Cyrenaican Peninsula; and Mountains, Plateaus and Wetlands of Algerian Tell and Tunisia), and in 20 coastal and marine priority key biodiversity areas in other corridors	1.1 Support civil society involvement in the development and implementation of Integrated Coastal Zone Management (ICZM) and the advancement of best practices in integrating nature conservation with the tourism sector 1.2 Raise awareness and influence the choices of the European tourist market and tourism businesses in favor of tourism practices appropriate for nature 1.3 Support local stakeholders to advance and benefit from nature-based tourism through the diversification of tourism-related activities and generation of alternative livelihoods
2. Establish the sustainable management of water catchments and the wise use of water resources with a focus on the priority corridors of the (1) Atlas Mountains, (2) Taurus Mountains, (3) Orontes Valley and Lebanon Mountains and (4) Southwest Balkans	2.1. Contribute to and establish Integrated River Basin Management (IRBM) initiatives for pilot basins and replicate best practices, to reduce the negative impacts of insufficiently planned water infrastructures 2.2. Support IRBM policy and legislation development and implementation through capacity building and advocacy at all appropriate levels 2.3. Support innovative financing mechanisms for conserving and restoring freshwater ecosystems and traditional water catchments 2.4. Facilitate and support adaptation to climate change via improving water use efficiency in agricultural landscapes and allowing environmental flows for key biodiversity areas 2.5 Share and replicate the lessons learned and best practices from and with other river basin management experiences elsewhere in the Mediterranean
3. Improve the conservation and protection status of 44 priority key biodiversity areas	3.1. Establish new protected areas and promote improved management of existing protected areas by developing and implementing sustainable management plans 3.2. Develop financial mechanisms that support protected areas while enhancing sustainable livelihood and promoting community management of priority key biodiversity areas 3.3. Raise awareness of the importance of priority key biodiversity areas, including those that have irreplaceable plant and marine biodiversity

[5] www.cepf.net/resources/ecosystem-profile-documents/mediterranean-basin-ecosystem-profile-0

STRATEGIC DIRECTIONS	INVESTMENT PRIORITIES
4. Provide strategic leadership and effective coordination of CEPF investment through a regional implementation team	4.1. Build a broad constituency of civil society groups working across institutional and political boundaries toward achieving the shared conservation goals described in the ecosystem 4.2. Act as a liaison unit for relevant networks throughout the Mediterranean to harmonize investments and direct new funding to priority issues and sites.

The CEPF investment in the Mediterranean Basin, although regional in scope and ambition, was limited to 12 countries during phase I. National endorsements were not secured for Egypt and Türkiye, while the political and security situation prevented work in Syria. Kosovo and Palestine were not eligible, but Croatia briefly was, prior to its accession to the EU. The spending authority was initially set at $10 million but increased to US$11 million in 2013, with the commitment of additional funds from the MAVA Foundation. CEPF supported 108 projects in the 12 eligible countries, evenly distributed between large and small grants – the latter being grants below US$ 20,000 at that time (Table 3.2).

Table 3.2 Grants awarded during phase I

Strategic Direction	Allocation (US$)	Awarded grants			Percentage awarded
		Total value (US$)	No. of large grants	No. of small grants	
1. Integrated coastal zone management	3,390,000	3,228,953	21	16	95
2. Sustainable management of water catchments	2,017,652	2,113,580	14	12	105
3. Strengthened KBA conservation	3,500,000	3,533,250	18	26	101
4. Regional Implementation Team	2,109,092	2,109,092	1[6]	0	100
TOTAL	**11,016,744**	**10,984,876**	**54**	**54**	**100**

The final assessment[7] was produced in 2017. Some of the most important impacts in phase I were as follows:

Biodiversity Conservation

- Activities in 65 KBAs
- Strengthened management of 51 KBAs, covering 2,177,000 ha
- Eight new protected areas created, covering 27,651 ha
- Eleven new protected areas were declared as result of Phase I investment, covering 54,502 ha (some actually officially declared several years after close of the phase)
- Projects to support management of 30 protected areas. 80% of target protected areas with improved management (measured by Management Effectiveness Tracking Tool), covering 1,114,000 ha
- Improved management of natural resources in 1,485,000 ha of productive landscape, working with local communities

Strengthening Civil Society

- 91 beneficiary organizations
- 81% of grants to National/Local CSOs (60% of funding)

[6] Administratively, the RIT was funded by two grants: administration; and programmatic. It is considered here as one grant because these grants were *de facto* managed jointly. The RIT grant is not considered in the subsequent analyses.
[7] www.cepf.net/resources/investment-analysis/mediterranean-basin-final-assessment

- 72% of organizations with increased capacity as monitored by Civil Society Capacity Tracking Tool (16% with an increase over 25%)
- Eight networks of civil society created, 11 supported in total.

Human well-being
- 48 projects included community-based conservation actions
- 12,000 people with increased revenues through livelihood activities
- 400 jobs created in ecotourism and small businesses around the region.

Enabling conditions.
- Assessment of freshwater KBAs for 12 countries of the Mediterranean Basin
- Assessment of Important Plant Areas in Lebanon and Cabo Verde
- 15 policies, laws or regulations influenced, mainstreaming biodiversity conservation in seven countries.

3.2 Overview of CEPF investment in phase II (2017-2024)

3.2.1 Framework for grant making in phase II
The RIT for the Mediterranean Basin was established to provide strategic leadership and effective coordination of CEPF investment in the hotspot. The RIT for the Mediterranean Basin for both phase I and phase II was managed by a consortium of member organizations of the BirdLife Partnership, led by BirdLife International and including LPO (BirdLife France), DOPPS (BirdLife Slovenia) and BPSSS (BirdLife Serbia).

In the ecosystem profile for phase II[8], five strategic directions were identified in addition to a standard provision encompassing the operation of the RIT itself (Table 3.3).

Table 3.3: Strategic Directions and Investment Priorities as listed in the 2017 ecosystem profile

Strategic direction	Investment priorities
1: Support civil society to engage stakeholders in demonstrating integrated approaches for the preservation of biodiversity in coastal areas.	1.1: Engage local stakeholders in conservation actions that address threats to key elements of biodiversity in priority KBAs in the coastal zone.
	1.2: Engage private sector stakeholders to adopt sustainable practices that deliver positive impacts for conservation in priority KBAs in the coastal zone.
	1.3: Support civil society to engage with local or national governments to mainstream biodiversity conservation into integrated coastal zone management, land-use and development planning processes.
2: Support the sustainable management of water catchments through integrated approaches for the conservation of threatened freshwater biodiversity.	2.1: Enhance the knowledge base on freshwater biodiversity and the importance of freshwater ecosystem services.
	2.2: Take action to reduce threats and improve management of selected sites in priority freshwater catchments with the participation of local stakeholders.
	2.3: Engage with government, private sector and other stakeholders to support integrated river basin management practices that reduce threats to biodiversity in priority CMZs.
3: Promote the maintenance of traditional land use practices necessary for the conservation of Mediterranean biodiversity in priority corridors of high cultural and biodiversity value.	3.1: Support local communities to increase the benefit they receive from maintaining and enhancing traditional, biodiversity-friendly land-use and agricultural practices.
	3.2: Promote awareness of the value of traditional, biodiversity-friendly land-use practices among local community and government decision makers, to secure their recognition and support.
	3.3: Encourage business actors in the trade chain to support and promote traditional, biodiversity-friendly land-use practices.

[8] www.cepf.net/MedBasin/profile

Strategic direction	Investment priorities
4: Strengthen the engagement of civil society to support the conservation of plants that are critically endangered or have highly restricted ranges.	4.1: Increase knowledge and skills to support assessment and planning for the conservation of plants, and foster the emergence of a new generation of young professionals in plant conservation.
	4.2: Support integration of plant conservation into the management of protected areas.
	4.3: Support innovative actions for the conservation of important populations of plants, working with land owners and managers.
5: Strengthen the regional conservation community through the sharing of best practices and knowledge among grantees across the hotspot.	5.1: Support regional and thematically focused learning processes for CSOs and stakeholders.
	5.2: Support grantees to understand and engage with international conventions and processes.
6: Provide strategic leadership and effective coordination of CEPF investment through a Regional Implementation Team.	6.1: Build a constituency of civil society groups working across institutional and political boundaries toward achieving the shared conservation goals described in the ecosystem profile.
	6.2: Act as a liaison unit for relevant networks throughout the Mediterranean to harmonize investments and direct new funding to priority issues and sites.

Investment continued in same countries as in phase I, with new investments in Egypt and Palestine, the latter being included in the programme following a decision of CEPF Donor Council in October 2019.

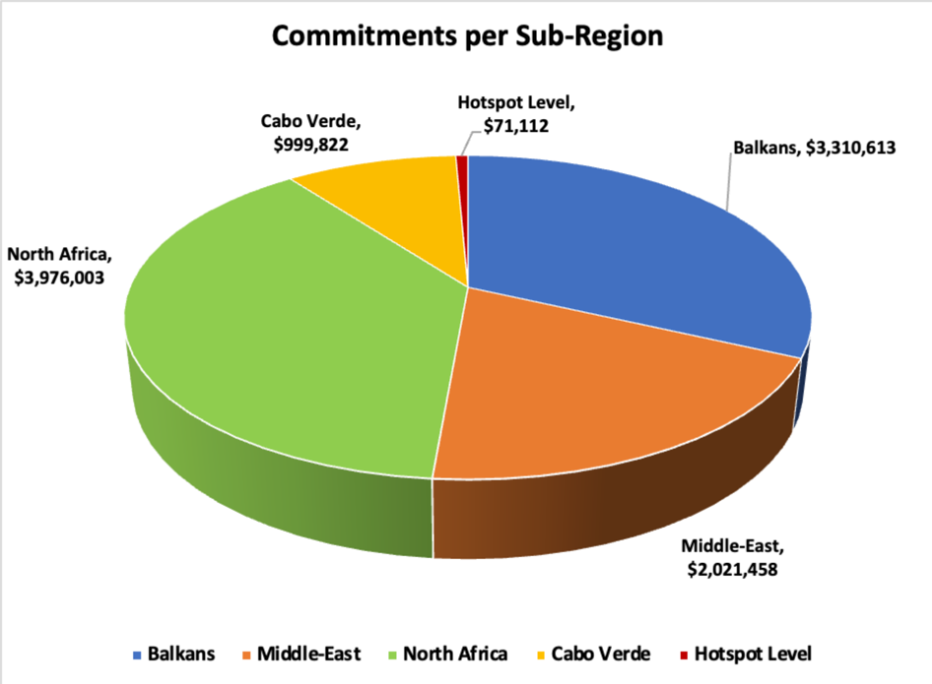
3.2.2 Portfolio overview

During phase II, to the end of 2022, CEPF invested close to US$13 million representing 93% of the available budget. Additional funds of US$912,282 were subsequently committed during an extension period in 2023 and 2024, to support an extension of the RIT grant, small grants under a collaboration between the Donor's Initiative for Mediterranean Freshwater Ecosystems (DIMFE) and CEPF, and extensions to priority projects. This brought the total investment during phase II to US$13.9 million. Because many of the investments made during this extension period had not ended at the time of updating the ecosystem profile, they are not included in the following figures.

Table 3.6. Allocation of Resources by Strategic Direction during Phase II

Strategic Direction	Budget	Contracted Grants			Budget Balance	Percentage Contracted
		Total Amount	Large Grants	Small Grants		
SD1 - Coastal	$ 3,180,000	$ 3,182,577	17	26	$ (2,577)	100.1%
SD2 - Freshwater	$ 3,098,565	$ 2,542,798	15	24	$ 555,767	82.1%
SD3 - Cult. Landscapes	$ 2,492,155	$ 2,413,111	14	17	$ 79,044	96.8%
SD4 - Plants	$ 1,850,000	$ 1,707,692	7	31	$ 142,308	92.3%
SD5 - Regional Coop.	$ 595,000	$ 532,830	2	17	$ 62,170	89.6%
SD6 - RIT	$ 2,664,280	$ 2,588,711	0	0	$ 75,569	97.2%
TOTAL	**$ 13,880,000**	**$ 12,967,718**	**55**	**115**	**$ 912,282**	**93.4%**

Figure 3.1: Investments by Sub-Region and Country



In comparison with Phase I (2012-2017), granting increased significantly in the Middle East sub-region, in relation to a higher demand in Lebanon and, even more so, with the opening of investment in Palestine at the end of 2019. The investment in Cabo Verde almost doubled, a reflection of the increase of capacity and the creation of new organizations in this country since Phase I. Overall, the investment was balanced among sub-regions and countries during phase II.

CEPF awarded 154 grants to local organizations for 89% of the budget. This represents a significant evolution from phase I, when 75% of grants (representing 61% of the total budget) were awarded to local organizations. This trend reflects the increased capacity of local organizations in the region, which are now able to manage larger projects on their own. This is exemplified by several small grantees from phase I becoming large grantees in phase II.

3.2.3 Summary of impacts

The final assessment[9] for phase II was produced in 2024. Some of the most important impacts in phase II were as follows:

Biodiversity Conservation

- 163 globally threatened species benefitted from conservation action.
    - 96% of these species benefitted from science, research and monitoring activities.
    - 57% benefitted from preservation/restoration of their habitats.
    - 34% benefitted from direct species conservation actions.
- The management of 69 KBAs, covering 624,497 ha, was strengthened.
- The creation of 11 new protected areas and extension of four existing areas was supported, covering 8,420 ha in total.
- Management effectiveness was evaluated through METTs completed for 52 protected areas, covering a total area of 973,108 ha. On average, the protected areas where

[9] www.cepf.net/resources/investment-analysis/mediterranean-basin-phase-ii-final-assessment

CEPF supported CSOs' involvement reported an increase of their score by 9.3 points, from an average score of 41.4 initially to an average of 50.6 at the end of the phase.

Strengthening Civil Society

- 170 projects were supported (counting only those that ended before December 2023), which were implemented by 129 individual organizations.
- Of these 129 organizations, baseline and end-point Civil Society Tracking Tools were completed by 99 organizations, among which 78% reported an increase in their score.
- In addition, 57% of grantees (47 organizations) reported an increased integration of gender within their organizations (using the Gender Tracking Tool).
- 154 grants were awarded to local/national organizations (49 large grants and 105 small grants), representing 91% of the projects, or 89% of the budget for grant making.

Human Well-being

- 2,372 people, (854 women, 1518 men) received direct economic benefits.
- 205 communities, consisting of an estimated 150,000 people (54% male, 46% female), received benefits including improved access to natural resources, development of new market for local products, increase of ecotourism, protection of water sources, etc.

Enabling Conditions

- Grantees supported the official declaration of 39 policies or regulations.
- CEPF grantees leveraged a combined total of US$6,659,071 in additional funding for their projects and organizations.

3.3 Overview of lessons learned from phases I and II

3.3.1 Lessons learned from phase I (2012-2017)

A full review of lessons learned in the first phase can be found in the 2017 ecosystem profile. Most of these were acted upon and are reflected on further in the lessons of the second phase below. A few major issues only are summarised here.

The Mediterranean Basin is unquestionably one of the most complex of the world's hotspots with many countries (11 of which were eligible for investment under phase I) and habitat types of importance spread across three continents. The importance of retaining flexibility in the strategic directions and approaches taken was immediately obvious. Regular review, mid-term assessment and specifications in calls for proposals helped to mitigate this.

Alongside this, aspects of the external environment add complexity. Some important countries (or parts of countries) could not be active in the program due to a lack of political endorsement or for security reasons. This picture evolved through time and collaboration with other funders was critical. It was learned that it was important to have more sites included in the portfolio than CEPF could fund, to avoid duplication and to respond to opportunities or threats as they arose.

The Mid-term Assessment[10] and routine grant and portfolio-level monitoring indicated that CEPF's niche in the hotspot lies in providing support to local and national CSOs. Across the hotspot, limited funding sources existed for local and national CSOs wanting to engage in nature conservation, making CEPF a crucial source of support for these organisations. Building networks of such groups and encouraging collaboration and mutual learning was also highlighted.

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[10] www.cepf.net/resources/investment-analysis/mediterranean-basin-mid-term-assessment-2015

While it was important to take risks and support young organisations with a limited experience, there was also strong support for 'follow on funding' to enable successes from earlier projects to be consolidated and expanded at the same KBAs. It was recognised that influencing wider policy took time and was best achieved by organisations who had first worked 'in the field' and had experience of practical implementation. Generally, it proved hard for CSOs to engage with larger scale planning issues such as coastal zone management and river basin management as the timing and direction of this was led by government. There was a need to be look across longer time scales to succeed in such work but also to be opportunistic.

3.3.2 Lessons learned from phase II (2017-2024) – structural and organizational issues

Lessons learned were identified through several processes during phase II of the program:

- Ongoing monitoring by the RIT and CEPF, site visits and annual review meetings.
- The final completion reports prepared by grantees at the end of their projects, which included four explicit questions related to lessons learned.
- Grantee questionnaires at the time of Mid-term Assessment[11] and routinely at the end of projects.
- The Annual Portfolio Overviews, which were produced internally by the CEPF Secretariat and RIT, and the meetings of the Advisory Committee.
- The Mid-term Assessment conducted in 2020.
- An evaluation of the performance of the RIT and lessons learned from the second phase of investment carried out in late 2023.
- Reviews of lessons learned from Strategic Directions 1-4 during 2024, undertaken by consultants in the cases of SD2 and SD3, and internal assessments for SD1 and SD4.

Overall structure and management of the Mediterranean program

Given the heterogenous nature of the hotspot and the wide distances involved, the dispersal of the RIT in offices across the region has been effective. Nonetheless the management and the monitoring of the program is complex and expensive, as are opportunities to bring grantees together to share experiences and learning. This has implications for the way in which the program is operated and managed and the budget necessary for it.

The Mediterranean Basin has a broad and fluid donor environment. CEPF fills an essential niche, which currently centers on being one of the most significant contributors to biodiversity conservation through the channel of local and national CSOs. CEPF plays a catalytic role, with many examples where young organisations have completed CEPF grants and gone on to secure larger funds from other donors. CEPF is a member of the Mediterranean Donors' Roundtable, an informal forum for exchanges and strengthening cooperation, which meets at least annually (see also Chapter 13).

Phase II witnessed some impressive impacts where several projects of a complementary nature were operated by different orgnaisations in the same area, for example at Lake Skadar and the Ulcinj Salinas in Montenegro. Often, there has been great benefit from extending grants or awarding grants for follow-on activities. In considering priorities for phase III, strong consideration should be given to where follow up from phase II projects can still offer benefits.

Consultees appreciated that CEPF remained willing to invest in countries or parts of countries that were seen to be high risk. These gave CSOs the chance to build their capacity and gain experience in areas where other donors are reluctant to support work.

[11] www.cepf.net/resources/investment-analysis/mediterranean-basin-mid-term-assessment-2020

In phase II, there were some excellent results achieved from projects in Palestine, while NGOs in Libya have delivered some good work, despite ongoing security concerns. Looking forwards, there may be similar opportunities to support CSOs in post-conflict/crisis situations over the next five years. Globally, CEPF has an established track record of supporting CSOs in post-conflict countries (Liberia, Mozambique, Rwanda, Sierra Leone, etc.), where minimal funding can make a major difference to the resurgence of a CSO community and to integrating environmental concerns into plans for reconstruction and social and economic recovery.

In some countries where investment has been possible in phase II, political and practical issues have nonetheless restricted the numbers of projects implemented. This is particularly true in Algeria and Egypt, where there are some restrictions on the operation of NGOs, as well as practical difficulties in disbursement of funds. Some work has been possible through grants to entities such as private companies and universities. These are important countries for biodiversity and CEPF will continue to explore ways to increase support to civil society there.

Capacity building
Phase II initiatives made a very strong contribution to capacity building, within the context of the development and implementation of projects but also more widely to organisations, as CEPF structured its approach to organizational development more effectively. Notable inputs have been to the development of organisational strategies and plans, the introduction of training events on project design and project proposal writing, and the training opportunities for young taxonomists. Good use has been made of the grantee network, as other more experienced individuals and institutions are often best placed to assist others.

A number of organisations have been assisted to form informal or formal networks of grantees at the local, national or sub-regional level. This can be hugely beneficial to all. The best example is the evolving environmental NGO network on Cabo Verde, which is supported by CEPF and other partners. These networks work best when they have some clear objectives for where collaboration can add value. They may also form the framework for more structured efforts to build civil society capacity across the conservation sector.

CEPF has played a strong role in promoting better equality of opportunity between women and men. Promoting conversations in training and project development workshops has been key to this, as has the comprehensive use of gender disaggregated data. Engaging women in small local enterprise development has been an effective route to empowerment. In conservative societies, getting at least some women’s representation (e.g., on NGO boards) can start to shift the style and content of discussion.

Exchange of experience has proven to be important for building the capacities of individual NGOs, as well as for developing a stronger “conservation community”, able to influence policy making and business. While social media and electronic mailing lists proved to be useful means of disseminating reports and diffusing analysis, stakeholder surveys underlined the importance of face-to-face exchanges. These were especially difficult during the middle of phase II as a result of the pandemic and some meetings had to be cancelled. Such meetings should be continued, while exploring ways to make them as cost effective and as focused as possible.

Sustainability and long-term self-sufficiency of grantees
The investment has generated some excellent outcomes and some projects that, in themselves, have potential to be scaled up and replicated within their or neighboring countries. Some of the outcomes from grants awarded under Strategic Direction 3, which have found ways of supporting and retaining traditional agricultural systems that benefit

biodiversity, but which are becoming economically or culturally archaic, are great examples of this. There have been a number of communication channels used to promote these including webinars and site visits but thought needs to be given to how to better promote outcomes to decision makers in government and other donors, so as to encourage the evolution of related policies and larger scale funding support.

3.3.3 Lessons learned from phase II (2017-2024) – thematic issues

Lessons relating to the individual strategic directions are discussed in Chapter 12 in considering the niche for CEPF investment for the third phase. This section discusses lessons learned related to general thematic issues.

The focus on KBAs and globally threatened species allows CEPF investment to be prioritized where it is most needed. Reviews and assessments found that the approaches to KBAs and strategic directions were about right. It will be important to retain flexibility where knowledge is incomplete, where security limits the ability to work and where key species occur outside of KBAs. There were successful examples of where work in wider landscapes and catchments was vital to safeguard the integrity of the core KBAs. There was also interest in enabling restoration of degraded habitats both inside and adjacent to the recognised key sites.

Influencing policy continued to be challenging for most CEPF grantees, although there were some notable successes, especially in preventing damaging developments. Policy successes were often achieved with provincial and local levels of government, and this can be a more effective focus for effort when working at the site level and with limited resources. While changing laws and policies can be essential, the region also has multiple examples of good policy and laws that are not well implemented. Supporting government to implement their own programs can be a more achievable prospect in some countries and is an effective way of establishing better relationships and building trust.

Private sector engagement in phase II continued to be limited, although there were some examples of grants successfully delivered by the private sector, who, in some cases, saw this as part of their corporate social responsibility, as they undertook work for much reduced revenues. At the local level, projects that supported the establishment of small local enterprises or cooperatives to enable local people to gain livelihood benefits from local production or tourism were often successful. Such enterprises also demonstrated the value and benefits to be derived from conservation practices. Engagement with fishing or farming communities has demonstrated CSOs' ability to influence and support adoption of more sustainable practices (e.g., sustainable fishing practices, abandonment of the use of non-reusable plastic material).

It is essential to take into account potential adaptation to climate change in all relevant projects, due to its significant impact on the success and sustainability of initiatives. This can be part of a wider approach to risk management. Negative impacts can be anticipated and where possible mitigated. Working with policymakers to create flexible and robust frameworks ensures that projects can adapt effectively to unpredictable events, increasing their resilience and ability to achieve positive long-term outcomes. This ensures more efficient management of resources and better protection of the environment, which contributes to the well-being of communities and the conservation of ecosystems.

4. BIOLOGICAL IMPORTANCE OF THE HOTSPOT

4.1 Introduction

Biodiversity Hotspots are terrestrial regions that have at least 1,500 vascular plant species confined to them, and which have lost at least 70% of their original natural habitat (Mittermeier *et al.* 2004). The Mediterranean Basin Hotspot is one of 36 areas in the world that meet these criteria. The collision of the African and Eurasian plates in the mid-tertiary has shaped the basin to yield huge topographic, climatic and geographic variability, giving rise to an astounding array of species and habitats. These factors combined make the Mediterranean Basin Hotspot the third richest hotspot in the world in terms of its plant biodiversity (Mittermeier *et al.* 2004), and one of the most important areas for endemic plants on Earth, including several epicenters of plant diversity. Approximately half of the 25,000 vascular plant species estimated to occur in the hotspot are endemic (Blondel *et al.* 2010).

This chapter describes the importance of the Mediterranean Basin Hotspot from a geographical, geological, climatological, biogeographical, biological and ecological perspective. It also outlines the importance of the hotspot in terms of the ecosystem services it provides to its human population.

4.2 Geography and geology

The Mediterranean Basin Hotspot covers 2,085,292 km^{2}of landmass. It stretches across 34 states and territories from Madeira and the Azores in the west to northern Iraq in the east. It includes most of Greece, Italy and the majority of the Iberian Peninsula. Regarding those countries covered by the ecosystem profile update, the hotspot encompasses almost all of Morocco, a broad strip of northern Algeria and Tunisia, and a narrow coastal portion of Libya and Egypt. The Middle Eastern portions cover much of the mountains of Lebanon, Palestine and Syria and stretch as far inland as northern Iraq. Nearly 30% of Türkiye is covered. The hotspot stretches into the Balkan states, covering karstic lakes, rivers and mountain ranges extending from sea level up to above 2,000 m. The altitudinal range is enormous, with the Atlas Mountains towering at more than 4,000 m above sea level and the shores of the Dead Sea as low as 420 m below sea level, the lowest point anywhere on Earth’s land surface.

Surrounded by the terrestrial hotspot, the Mediterranean Sea covers 2,500,000 km^2, extending 4,000 km from 5.5ºW to 36ºE, and from 30º to 46ºN. The name of the sea refers to *Mediterraneum,* which means “in the middle of land”. The sea has connections to the Atlantic Ocean through the narrow Strait of Gibraltar (14 km wide and 300 – 900 meters deep), to the Black Sea through the *straits of İstanbul Boğazı* (Bosphorus) *and Çanakkale* (Dardanelles) and, since 1869, to the Red Sea through the artificial Suez Canal (Hofrichter 2001). The Strait of Sicily divides the Mediterranean Sea into two main sub basins - the western Mediterranean Basin (with more Atlantic influence) and the eastern Mediterranean Basin (Cartes *et al.* 2004). The complex topography, water mass circulation and oceanographic conditions produce a degree of isolation between areas within the two main Mediterranean sub-basins, thus contributing to the local marine biodiversity (Abelló *et al.* 2002). Despite its relatively small size and isolation, the Mediterranean Sea is rather deep (average depth 1,500 m, maximum depth 5,267 m in the Ionian Sea), with narrow continental shelves that represent less than 25% of the total area. Coastal areas with a relatively wide continental shelf are primarily sedimentary and related to the most important rivers in the region (especially the Nile, Po, Rhone and Ebro), except for the Tunisian Plateau, which is a structural part of the continental shelf (Sardà *et al.* 2004).

Geologic features in the present-day Mediterranean mainly result from two major processes: the tectonic displacement caused by the subduction of the African Plate underneath the Eurasian Plate; and the progressive closure of the Mediterranean Sea involving a series of submarine-insular sills. Some areas of the Mediterranean Basin, such as Sicily and the Apennine Mountains, are still experiencing tectonic uplift and rapid erosion as a result of their folded and faulted characteristics. The Macaronesian islands, on the other hand, originated through volcanic activity, with substantial differences among the archipelagos.

Volcanic activity throughout Macaronesia has both historic and present importance, with ongoing seismic activity and recent eruptions on the Canary Islands (its youngest island being El Hierro, which is only 750,000 years old) and on Fogo, Cabo Verde. These features have created a landscape that is both complex and varied. The eastern Canary Islands (Lanzarote and Fuerteventura) are characterized by arid and rocky landscapes with scrub vegetation. The western Canary Islands are more forested with mountainous areas. Madeira has rugged terrain, while the Azores, to the west, are home to river valleys and active volcanoes (EEA 2008).

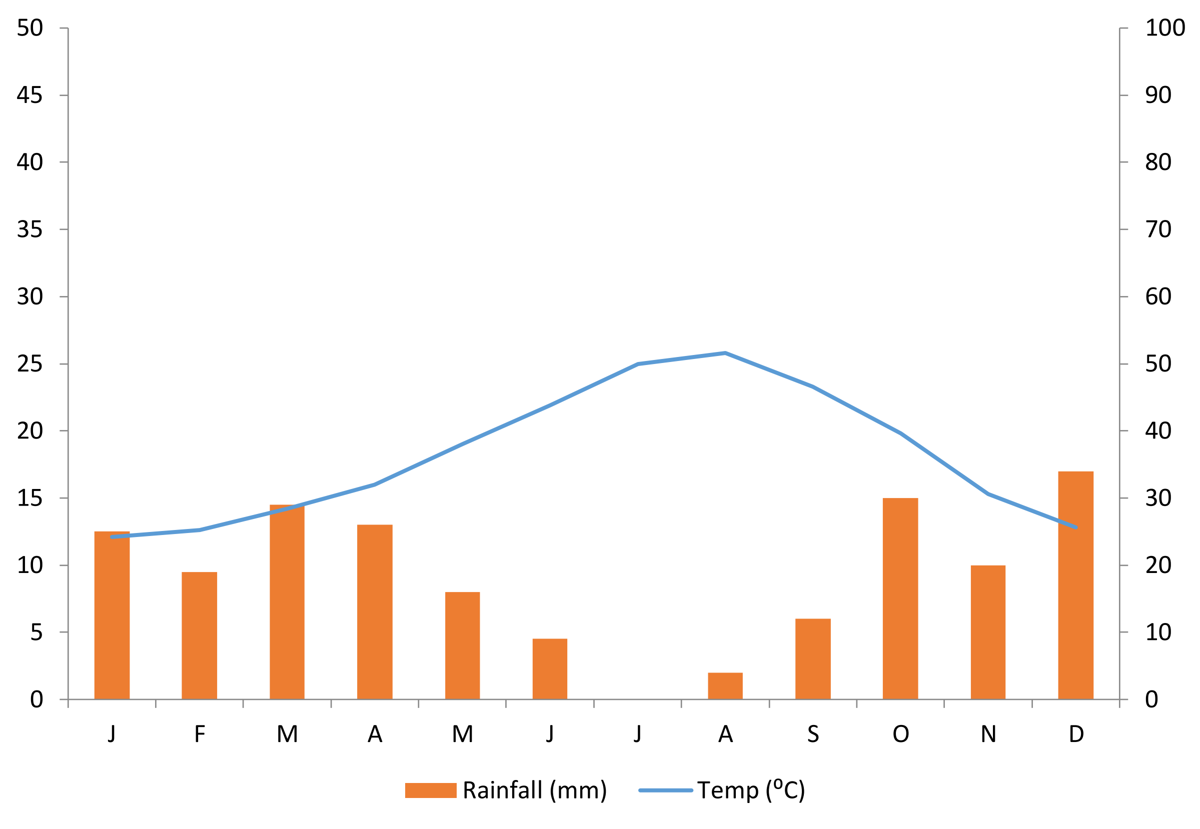
The high diversity of habitats at local and regional scales is highly influenced by the diversity of soil types. Many soils and substrates are limestone, of marine origin. Unusual soil types and discontinuous geological substrates including volcanic soils occur. Metamorphic granitic and siliceous (acidic) parent rocks occur locally, as do also occasional ultrabasic rock outcrops in Cyprus, continental Greece, Serbia, Croatia, and Montenegro. As lime content and degree of alkalinity have a great influence on plant growth, different vegetation types occur on calcareous compared with non-calcareous substrates (Blondel *et al.* 2010).

Many soil types, especially in the northern part of the basin, are ferruginous brown soils, known as *terra rossa*, but dolomite (from degraded calcites), clayey marls, rendzines, loess, regisols, lithosols, and alkaline and gypsum outcrops also occur sporadically in many regions. The latter are very poor in nutrients and often harbor endemic plant species. In some parts of the basin, especially in Spain, along the Adriatic coast of Croatia, Montenegro, and Albania, and in Anatolia, large karstic outcroppings occur, where rainfall infiltrates rapidly and then reappear far away as vauclusian springs at the foot of mountain ranges. These springs are the outcome of networks of underground water resulting from the dissolution of thick calcareous deposits (Blondel *et al.* 2010).

4.3 Climate

Most of the Mediterranean Basin Hotspot is characterized by a Mediterranean climate, although on the Macaronesian islands the climate ranges from Mediterranean to arid and sub-tropical. The Mediterranean climate is characterized by cool, humid winters and hot, dry summers (Figure 4.1). Rainfall in the region is irregular, and annual precipitation can vary from as little as 100 mm to more than 3,000 mm in different years. The Atlas Mountains and the Macaronesian Islands receive plentiful rainfall because of moisture from the Atlantic, while portions of the Cyrenaic Peninsula in Libya receive very little precipitation. Almost all the precipitation occurs during the autumn, winter and spring, and there may be periods of almost two months in the western and five-to-six months in the eastern half of the Mediterranean without any significant precipitation. Accordingly, the short spring and autumn seasons are critical periods for plant growth (Blondel *et al.* 2010). Apart from in the mountains, snow falls rarely in the Mediterranean but periods of hard frost are not infrequent.

Figure 4.1 Example of climate pattern of Mediterranean Basin (Almeria, Spain)



Mean annual temperatures in the basin, range from 2–3°C in mountain ranges, such as the Atlas and the Taurus, to over 20°C at places along the North African coast. The Mediterranean is well known for pronounced climatic differences over very short distances, because of factors including slope, exposure, distance from the sea and parent rock type.

The islands of Lanzarote and Fuerteventura, as well as the southern parts of Gran Canaria, Tenerife and La Gomera are characterized by a predominantly hot desert climate, except in higher areas. In the Azores, a temperate climate with no dry season and mild summers is prevalent in nearly all the islands (Instituto de Meterologia de Portugal and AEMET 2012).

The Cabo Verde islands are part of the Sahelian arid belt and lack the rainfall levels of the West African mainland. The average annual rainfall of 261 mm (even though this differs between the islands) makes the climate on the islands a semi-desert one (Sociedade Caboverdiana de Zoologia 2016). The Tropical Atlantic region, which encompasses Cabo Verde, is dominated by a massive convection center over Africa, the marine Intertropical Convergence Zone (ITCZ) and the trade wind system. This climate system causes seasonal tropical storms and easterly waves in the area (Sociedade Caboverdiana de Zoologia 2016).

The general ocean circulation of the Mediterranean Basin is extremely variable and dynamic and is dominated by the exchange of water masses though the Strait of Gibraltar (Millot and Taupier Letage 2005), greatly affecting the climate. The warm Atlantic surface waters enter the Mediterranean Basin through the strait, whereas cold, low-salinity, deep Mediterranean waters leave to the Atlantic. Within the Mediterranean, the overall circulation is cyclonic: the influx of Atlantic waters moves towards the east and crosses the Strait of Sicily into the eastern basin. The return water flows along the European Mediterranean coast, increasing in salinity and temperature. As a result, the western basin is characterized by higher productivity than the eastern basin, with most primary production concentrated over the continental shelf, declining sharply with increasing distance from the coast and depth. The Macaronesian region covers an open oceanic area, characterized by relatively low productivity (Davenport *et al.* 2002).

4.4 Biological history

The Mediterranean Basin is a center of plant endemism, with 10% of the world's plants found on about 1.6% of the Earth's surface (Blondel *et al.* 2010). The hotspot has roughly the same plant diversity as all of tropical Africa, in a surface area one-fourth that of sub-Saharan Africa.

Many factors have contributed to this diversity. Tectonic movement, earthquakes, volcanic activities and the near desiccation of the sea during the Messinian Salinity Crisis, had consequences for living systems, and produced a mosaic of habitats with local topographies, soils and microclimates related to altitude, rainfall and slope exposure (Blondel *et al.* 2010).

These factors, combined with the region's location at the intersection of three major landmasses (Europe, Asia and Africa), result in an exceptionally diverse and highly distinctive fauna and flora. A final factor is the long history of human occupation in the region, with the region showing closer interrelations than any other region in the world between its flora, major landscapes and the human activities that have been molding them for nearly 10,000 years (Pons and Quézel 1985). Through their particular life traits, Mediterranean endemic plants reflect the rich diversity of specialized habitats, topography and history of the region. Areas that have been exposed to high rates of geological change represent important endemism zones, where relict and more recent taxa coexist. Thus, the Mediterranean region constitutes both a refuge area and one that encourages floral exchange and active plant speciation due to isolation (Quézel 1985). In the western basin, high-endemism areas are related to regions derived from the southeastern part of the Iberic Plate, whereas, in the east, vicariant endemism is high due to the moderate role of glaciations and the presence of ultrabasic rocks (Verlaque *et al.* 1997).

The majority of the avian and mammalian fauna originate from outside the Mediterranean Basin, in particular from Eurasia and Africa. These species have higher dispersal abilities than the herpetofauna, which show a higher rate of endemism across the basin. There are several ancient lineages and many endemic genera for reptiles, amphibians and freshwater fish.

Evergreen oak, coniferous and deciduous forests form the natural climax communities of large areas of the hotspot. However, much of this forest has disappeared or been altered as a result of thousands of years of human settlement and habitat modification (Tucker and Evans 1997). The Mediterranean Basin Hotspot has the lowest percentage of natural vegetation remaining of any hotspot, with less than 5% (Sloan *et al.* 2014). Despite human pressures altering Mediterranean ecosystems throughout history, this long-lasting "co-evolution" between ecosystems and land-use practices has helped shape many semi-transformed habitats that today hold many rare and threatened taxa (Blondel *et al.* 2010). The most widespread vegetation type is hard-leaved or sclerophyllous shrublands called maquis, maintained by grazing and sporadic fires. Many of the endemic and restricted-range plants depend on this anthropogenic habitat, and as a result several species are threatened by land-use changes and rural abandonment (Sirami *et al.* 2010).

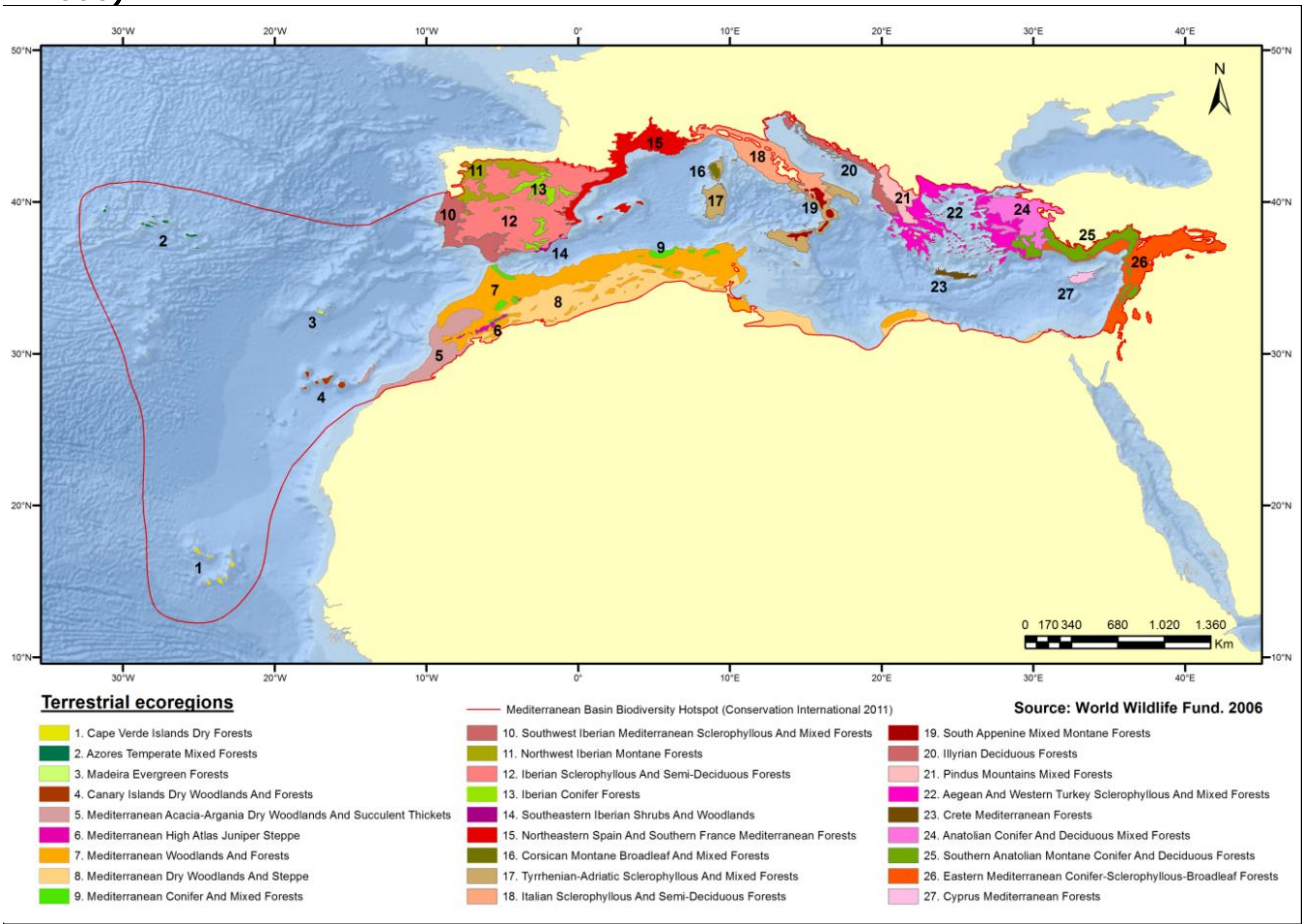
4.5 Biogeographical zonation and ecoregions

Ecoregions are large units of land or water containing a geographically distinct assemblage of species, natural communities and environmental conditions. Sixty-four ecoregions are now recognized based on WWF (2006) and The Nature Conservancy (2011-2013): 27 terrestrial (Figure 4.2); 26 freshwater (Figure 4.3); and 11 marine (Spalding *et al.* 2007; Figure 4.4).

4.5.1 Terrestrial ecoregions

The Mediterranean Basin Hotspot supports six terrestrial biomes: (1) Mediterranean forests, woodlands and scrub; (2) tropical and subtropical dry broadleaf forests; (3) temperate broadleaf and mixed forests; (4) temperate coniferous forests; (5) montane grasslands and shrublands; and (6) deserts and xeric shrublands (WWF 2006). These are further divided into 27 terrestrial ecoregions, with 21 of these covering the Mediterranean forests, woodlands and scrub biomes.

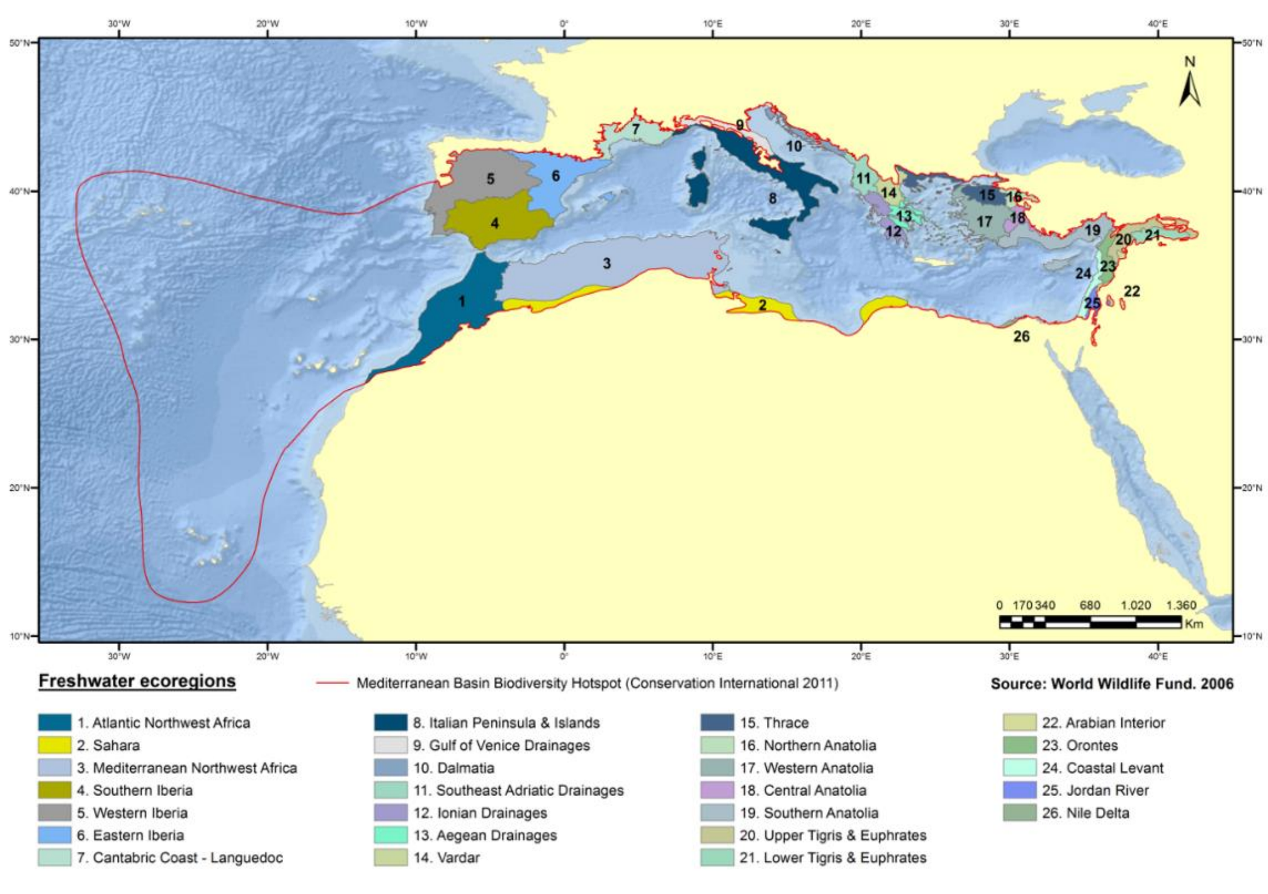
Figure 4.2 Terrestrial ecoregions of the Mediterranean Basin Hotspot (WWF, 2006)



4.5.2 Freshwater ecoregions

The Mediterranean Basin Hotspot supports 26 freshwater ecoregions comprised of four biome types: (1) temperate coastal rivers; (2) temperate floodplain rivers and wetlands; (3) xeric freshwaters and endorheic (closed) basins; and (4) large river deltas (The Nature Conservancy 2011-2013; Figure 4.3).

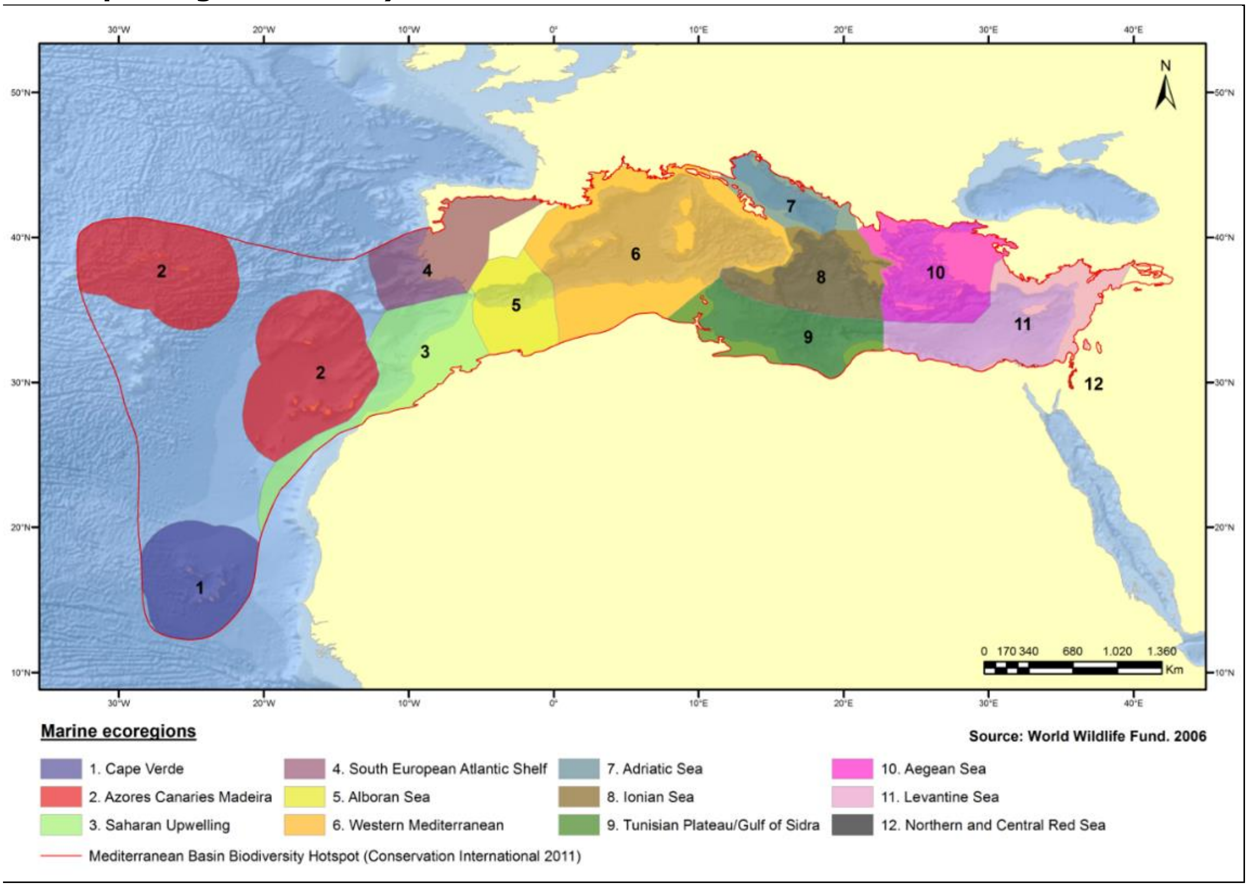
Figure 4.3 Freshwater ecoregions of the Mediterranean Basin Hotspot (WWF, 2006 and TNC, 2011-2013)



4.5.3 Marine ecoregions

The Mediterranean Basin Hotspot supports 11 marine ecoregions from two biomes: Tropic Atlantic and Temperate Northern Atlantic. The ecoregions are Cabo Verde; Azores Canaries Madeira; Saharan Upwelling; South European Atlantic Shelf; Adriatic Sea; Aegean Sea; Levantine Sea; Tunisian Plateau/Gulf of Sidra; Ionian Sea; Western Mediterranean; and the Alboran Sea (Spalding *et al.* 2007; Figure 4.4).

Figure 4.4 Marine ecoregions of the Mediterranean Basin Hotspot (WWF 2006 from Spalding *et al*. 2007)



Note: Ecoregion 12 (Northern and Central Red Sea) is not in the hotspot.

For the marine portion of the hotspot, the disconnection between the Mediterranean Sea and the Atlantic Ocean is only partial, with Mediterranean taxa primarily derived from the Atlantic Ocean (Coll *et al.* 2010), and intense gene flow still present in some groups (Patarnello *et al.* 2007). The isolation of the basin is reflected in the high degree of endemism, estimated to be roughly 20% (Coll *et al.* 2010). Most of the biodiversity is concentrated in shallow coastal areas, although there is a rich diversity of fauna associated with deep waters, as well as with offshore pelagic waters (WWF and IUCN 2004, Danovaro *et al.* 2010).

The Macaronesian islands are largely oceanic, with abyssal plains scattered with numerous seamounts (plus the islands) that act as biodiversity islands for marine biota (for example, deep-water coral reefs) (Mitchell-Thomé 1976). Biological marine diversity occurs mostly on seamounts and the slopes of the islands, which remain largely isolated from each other. The region is also important as a stronghold for large pelagic fish, seabirds and cetaceans. Almost 8% of the world's marine fauna and 18% of marine flora are concentrated in this region (Coll *et al.* 2010).

4.6 Species diversity and endemism

While there is huge diversity across this vast region, there are 10 principal areas that serve as centers of plant diversity for the basin (Médail and Quézel 1997-1999). These areas account for roughly 44% of the endemism in the basin. Most of them are mountain ranges and islands. The 10 areas are (1) the High and Middle Atlas Mountains in North Africa, (2) the Betic-Rif range including southern Spain and two coastal strips in Morocco and Algeria, (3) the Maritime and Ligurian Alps of the French-Italian border, (4) the Tyrrhenian Islands, (5) southern and central Greece, (6) Crete, (7) southern Türkiye and

Cyprus, (8) the Syria-Lebanon-Palestine area, (9) Cyrenaica in Libya, and (10) the Canary islands and Madeira. Cabo Verde, not included in Médail and Quézel's analysis, is also a center of plant diversity, with a 12.5% rate of endemism (Romeiras *et al.* 2016).

Table 4.1 Number of species and level of endemism for selected species groups in the Mediterranean Basin Hotspot

Group	Native species	Endemic Species	Endemism (%)	Source
Vascular plants	25,000	12,500	50	Quézel (1985)
Vertebrates				
Marine fishes	1,122	122	7	Abdul Malak *et al.* (2011); IUCN (2016)
Freshwater fishes	622	280	45	Smith *et al.* (2014); Smith and Darwall (2006)
Amphibians	109	54	50	Cox *et al.* (2006); IUCN (2016)
Reptiles	299	117	39	Cox *et al.* (2006); IUCN (2016)
Birds	534	63	12	Birdlife international (2016)
Mammals*	298	38	13	IUCN (2016)
Invertebrates				
Butterflies*	462	98	21	Numa *et al.* (2016)
Dung beetles	579	150	26	Numa *et al.* (2020)
Saproxilic beetles	507	194	38	Garcia 2018
Dragonflies and damselflies	164	21	13	Riservato *et al.* (2009); Gobierno de Canarias (2016); Gobierno de Azores (2016)
Freshwater crabs	16	1	6	IUCN (2016)
Anthozoans*	150	26	17	Otero *et al.* (2017)
Freshwater mollusks*	629	384	61	García *et al.* (2008); Smith *et al.* (2014)

Note: * = For these groups, data from the Macaronesian islands are not included.

The high level of biodiversity and endemism occurring in the Mediterranean Basin Hotspot are summarized in Table 4.1 and described in the following sections. Taxonomic and other changes may have occurred to change some of the figures in Table 4.1 slightly but they remain illustrative.

4.6.1 Vertebrate species diversity and endemism

Mammals

The mammalian fauna of the Mediterranean Basin Hotspot is mainly derived from the Eurasian and African biogeographic zones and, therefore, exhibits relatively low levels of endemism (Temple and Cuttelod 2009). There are almost 300 species, around 38 of which are terrestrial endemics, with rodents and shrews being the most numerous. The majority of mammal species are small mammals. The Muridae is the largest family, comprising 51 species of rats, gerbils or mice. Other speciose families in the region include the Vespertilionidae (vesper bats – 38 species) and Cricetidae (hamsters and voles – 23 species). Eight species can be considered as associated with freshwater environments. None of the hotspot's 31 marine mammals are endemic.

Birds

The avifauna of the hotspot consists of 534 species, including around 63 endemic species. Three main groups of species can be identified: a group of species of northern, boreal origin, which are characteristic of forests, freshwater marshes and rivers over the western Eurasian part; a group of steppe species in the margins of the current Mediterranean area; and a group of species associated to shrubland habitats such as partridges (*Alectoris* spp.) and warblers (*Sylvia* spp., *Hippolais* spp.) (Blondel *et al.* 2010). There are a significant number of species that migrate from Europe to Africa crossing the Mediterranean Basin at the Bosphorus, the Rift Valley, Gibraltar, Sicily, the Balearics, Corsica, Crete, Sardinia and Cyprus.

Reptiles
Richness and endemism among reptiles are notably higher when compared with other taxa. There are about 299 species of terrestrial reptiles, including five freshwater species and four marine species, of which around 117 species, almost 40%, are endemic (Cox *et al.* 2006; IUCN 2016). The reptile fauna of the Mediterranean Basin includes snakes, lizards, tortoises and tropical relicts, such as two species of chameleon (*Chamaeleo chamaeleon* and *C. africanus*). Most of the Mediterranean reptile species are lizards (67%) and snakes (27%). Many species of reptiles in the genera *Podarcis, Lacerta, Chalcides*, and *Vipera* evolved in the basin as a result of intensive adaptive radiation in localized areas. In the Lacertidae, the genera *Algyroides* and *Psammodromus* are typical relict Mediterranean endemics (Blondel *et al.* 2010). Reptiles in the Macaronesic Islands have high endemism rates with 90% (38 species) of the species being endemic.

Amphibians
Amphibian diversity and richness patterns are opposite of that for reptiles. Species richness is low overall (109 species) and the species distribution patterns have highest richness for amphibians in areas of higher rainfall, notably western Spain, northern Italy, France, Slovenia and Croatia. Despite richness being lower, endemism is relatively high with almost 50% (around 54 species) of all species endemic to the hotspot.
Most amphibians endemic to the Mediterranean belong to archaic lineages that have remained relatively unchanged since their origins. Some examples include two genera of toads, *Pelobates* (1 of the 4 species endemic) and *Discoglossus* (4 of the 6 species endemic), a genus of salamanders, *Euproctus* (2 endemic species) and the olm genus, *Proteus* (1 endemic species).

Freshwater fishes
Biogeographic and hydrological factors are the major drivers of freshwater fish biodiversity patterns in the region. With 26 freshwater ecoregions, each with its own particularities, the Mediterranean basin harbors high numbers of freshwater species and high levels of endemism.

Of the 622 species of freshwater fish in the hotspot, 280 are endemic (IUCN 2016b, Smith *et al.* 2014, Garcia *et al*, 2010). Most of these endemics belong to the Cyprinidae (63%) but other families rich in endemic species are Balitoridae (8%), Cobitidae (6%), Gobiidae (5%) and Cypronodontidae (4%).

Marine fishes
The Mediterranean Sea has high species diversity for a temperate sea (FAO 2003a, b). It is estimated that around 7% of the world's marine fish species occur in this sea (Bianchi and Morri 2000), with a wide range of both temperate and tropical species being present (Abdul Malak *et al.* 2011). Currently, there are more than 600 marine fish species in the Mediterranean Sea, 519 of them being native. Approximately 122 species are endemic to the seas around the hotspot of which 74 are confined to the Mediterranean Sea. Families with the higher numbers of endemic species are Gobiidae (25%), Blennidae (6%) and Labridae (6%).

4.6.2 Invertebrates species diversity and endemism
As in other biodiversity hotspots, invertebrates in the Mediterranean are highly diverse but little known; new species are still being described every year. For insects alone, the number of species in the hotspot is estimated at 150,000 species (Baletto and Casale 1991). In the marine environment, is estimated that 10,000 of the 17,000 species occurring in the Mediterranean Sea are invertebrates and that about 1,000 are endemic (Coll *et al.* 2010).

Anthozoans
Anthozoans are a group of Cnidaria which include the corals, sea anemones, sea fans, and sea pens. It is estimated that 164 species occur in the Mediterranean Sea (Coll *et al.* 2010) from which approximately 26 species are endemic (Otero *et al.* 2017). The higher numbers of anthozoa species endemic to the Mediterranean Sea correspond to anemones of families Zoanthidae (8 species) and Actiniidae (9 species) (Otero *et al.* 2017).

Freshwater mollusks
Freshwater mollusks are divided in two main groups, the bivalves and the gastropods. They find their highest levels of endemism and diversity in ancient lakes, large river basins and artesian basins (Seddon *et al.* 2014) and all of these habitats can be found in the Mediterranean region. At least 629 species are known to occur in the Mediterranean Basin Hotspot, around 384 of them being endemic (IUCN 2016, Garcia *et al*, 2010). More than 96% of the endemic species are gastropods, most of them from the family Hydrobiidae. New species are still being described. CEPF grantees described three new species for science during phase II: *Maroccoarganiella touarguii* and *Moroccohoratia bouregregensis* are freshwater snails from springs and wells of the Bouregreg area in Morocco; and a snail from the family Hydrobiidae, *Belgrandiella kurtovici,* was discovered at Popovo polje KBA, part of the karstic fields in Bosnia and Herzegovina.

Damselflies and dragonflies
A total of 165 species of the order Odonata (damselflies and dragonflies) are found in the Mediterranean Basin Hotspot of which 61 belong to the Zygoptera suborder (damselflies) and 104 to the Anisoptera suborder (dragonflies). Diversity largely coincides with precipitation patterns: areas with relatively high rainfall, like the Alps and the mountains of the Balkans, Türkiye and the Maghreb, have high diversity. One in eight of the dragonfly species (around 21 species) found in the Mediterranean Basin is endemic to the region, with the highest numbers of endemic species found in the Maghreb and the Levant. The Southern Balkans, Crete and the Western Mediterranean are also important areas for endemic species of odonate (Riservato *et al.* 2009).

Butterflies
The butterfly fauna in the Mediterranean comprises 462 species (not including the Macaronesian islands). The families Nymphalidae and Lycaenidae comprise 75% of the species occurring in this part of the hotspot. Twenty-one percent (98 species) are endemic. The majority of the endemic species are concentrated in the north of Africa, especially the Rif Mountains and the High and Middle Atlas Mountains in Morocco and the Aurès Mountains in Algeria. There are also important zones of endemism in the southeast of Spain, on the islands of Corsica and Sardinia, in southern Türkiye and in Lebanon (Numa *et al.* 2016).

Dung beetles
About 579 species of dung beetles occur in the Mediterranean Basin Hotspot, of which approximately 150 are endemic (Numa *et al.* 2020). The majority of the endemic species are concentrated in the north of Africa and the south of the Iberian Peninsula. Higher values of endemism are found in Morocco, especially along the Atlantic coastal habitats from Tangier to Safi, the Rif Mountains, the Middle Atlas and the coastal habitats of Algeria and Tunisia. Important areas of dung beetle endemism can also be observed in the southern edge of the Iberian peninsula in Spain and Portugal and the northern part of Sicily in Italy (Numa *et al.* 2020).

Saproxylic beetles
This group includes a variety of Coleoptera families comprising species that are dependent, during some part of their life cycle, upon the dead or dying wood of moribund or dead trees, or upon wood-inhabiting fungi or the presence of other saproxylics (Speight 1989). The families Cerambycidae and Elateridae contain the

highest numbers of endemic saproxylic species in the Mediterranean Basin Hotspot (excluding the Macaronesian Islands). It is estimated that there are at least 507 species of saproxylic beetles, of which approximately 320 are endemic (194 species) or almost endemic in this part of the hotspot (Garcia *et al* 2018, IUCN 2016).

4.6.3 Plant diversity and endemism

Mediterranean plant diversity is enormous, with roughly 25,000 plant species, almost half of them endemic to the basin (Quézel 1985). Species richness is particularly high on true islands, on 'edaphic islands' which result from peculiar and/or hostile soil or rock types such as dolomites, limestones, gypsum, ophiolites, and on 'topographical islands' surrounded by extremely steep slopes or located on the top of mountain ranges (Blondel *et al.* 2010). The endemism rate generally increases with altitude: on Mediterranean mountain ranges, whether continental (Atlas, Taurus, Lebanon, Anti-Lebanon) or insular (Corsica, Sardinia, Sicily, Crete), the percentage of endemic species can exceed 25% (Blondel *et al.* 2010).

Despite widespread acknowledgment of the region as a global plant hotspot, precise data on the distribution and conservation status of plants and habitats within many Mediterranean countries are frequently insufficient, out of date or absent. This is particularly true of countries in the south and east of the Mediterranean Basin (North Africa and the Middle East subregions). Without baseline data on the patterns of plant diversity, it is difficult to monitor the condition of this diversity (Radford *et al.* 2011).

The high values of both species richness and endemism recorded within the Mediterranean realm are strongly influenced by the number and the patchiness of local plant communities, which are in turn a consequence of the history of both natural and human disturbance regimes. Hence, in some cases diversity and endemism may be considered a 'byproduct' of anthropogenic impact on Mediterranean landscapes (Rackham 2008).

Vegetation

The most complex vegetation types usually considered as 'typically Mediterranean' are evergreen shrublands and forests often described as 'maquis' and mostly dominated by sclerophyllous oaks such as *Quercus ilex s.l.*, *Q. coccifera s.l.* and *Q. suber*, and conifer forests dominated by *Pinus halepensis*, *P. brutia* or *Cupressus sempervirens*. In the sectors of the Southern and Eastern Mediterranean subject to more arid climatic conditions open and discontinuous maquis communities prevail; they are often dominated by summer-deciduous species such as *Rhus* spp., *Lycium* spp., *Periploca angustifolia*, *Euphorbia dendroides*, etc. Additionally, an increasing number of recent paleoecological investigations point out that deciduous and semi-deciduous broadleaved trees played a major role in Mediterranean ecosystems during the post-glacial period, especially in the northern Mediterranean, and that the dramatic reduction of these forests was mainly due to the impact of humans and their domesticated livestock.

Mediterranean islands often host peculiar vegetation types and landscapes, because of the existence of endemic or range-limited plant species that characterize their ecosystems. This is the case of mountainous forests with *Pinus nigra* subsp. *laricio* in Corsica, Calabria and on Mt. Etna (Sicily), *Cedrus brevifolia* on Cyprus, of the open woodlands with *Zelkova abelicea*, *Quercus coccifera* and *Acer sempervirens* on Crete (Quézel and Médail 2003). The combined effect of disturbance (mostly wildfires and over browsing) and climatic stress gives rise to a kaleidoscope of low-stature plant communities throughout the Mediterranean. These are called *phrygana* or *batha* in the eastern Mediterranean, where they are mostly dominated by thorny, often aromatic and summer-deciduous shrubs and sub-shrubs, while the open and low shrublands or heathlands, dense and high scrub communities occurring in the central and western part of the northern Mediterranean are called *garrigues*, *tomillares*, *matorrals* depending on the dominant woody species and the country. Most of the islands are dominated by vegetation characteristic of the thermo-Mediterranean and meso-Mediterranean belts, whereas the upper vegetation levels (supra-Mediterranean to oro-Mediterranean) are restricted to the summits of the largest and highest islands (i.e., Corsica, Sardinia, Sicily, Crete and Cyprus) and are characterized by discontinuous dwarf shrublands adapted to the extremely hostile climatic conditions of the high Mediterranean mountains (Guarino *et al.* 2005).

Flora

Due to its complex biogeographical history, the Mediterranean area played and still plays a role of melting pot for plants with the most diverse origins. For example, many boreal or temperate hosts not only survived there, but were able to display local evolution, like firs (*Abies cephalonica*, *A. nebrodensis*, *A. numidica*, *A. pinsapo*, etc.), birches (*Betula aetnensis*, *B. celtiberica*), black pines (*Pinus laricio s.l.*, *P. nigra* subsp. *dalmatica* and subsp. *pallasiana*), cedars (*Cedrus brevifolia* and *C. atlantica*), willows (e.g., *Salix pedicellata*-group), alders (e.g., *Alnus suaveolens*) and many small trees and shrubs belonging to the family Rosaceae (*Amelanchier*, *Cotoneaster*, *Prunus*, *Pyrus*, *Rosa*, *Sorbus*, etc.).

The Mediterranean flora has plenty of evergreen woody species, such as *Cneorum tricoccon*, *Myrtus communis*, *Phillyrea* spp., *Pistacia lentiscus*, *Chamaerops humilis*, and even evergreen oaks, such as *Quercus coccifera/calliprinos*, *Q. ilex*, *Q. suber*, co-occur to build up maquis communities in semi-arid regions. Many others, like *Taxus baccata*, *Arbutus* spp., *Buxus* spp., *Ilex* spp., *Laurus* spp., *Hedera* spp., *Rhamnus* spp., *Smilax* spp., might have been intermingled with deciduous and semi-deciduous trees belonging to the genera *Acer*, *Carpinus*, *Quercus* and *Platanus*, giving rise to warm temperate forest communities which underwent dramatic disruption along with the Alpine-Himalayan orogenesis and the onset of glacial events (Box and Fujiwara 2015).

Also, thermophilous conifers play a major role in the physiognomy of Mediterranean landscapes. For instance, *Cupressus sempervirens*, *Tetraclinis articulata*, many species of junipers (*Juniperus phoenicea s.l.*, *J. oxycedrus s.l.*, *J. foetidissima*, etc.) and pines (*Pinus halepensis*, *P. brutia*, *P. pinaster s.l.*, *P. pinea*) still dominate the woodlands and the scrublands over wide areas in many countries.

Other genera and species belong to the so-called Tethysian element. Despite their current Mediterranean and/or Macaronesian and/or Irano-Turanian distribution, they often show clear relationships with paleotropical (e.g., *Anagyris foetida*, *Ceratonia siliqua*, *Plocama calabrica*, *Olea* spp.) and even southern African (e.g., *Androcymbium*, *Calendula*, *Moraea*, etc.) families or genera.

The Saharo-Sindian element is mostly represented by scrub chenopods linked to coastal areas and salty soils, such as members of the genera *Arthrochnemum, Sarcocornia, Halocnemum, Salsola, Suaeda*, etc.

Plant endemism

The peninsulas (Iberian, Italian, Balkans-Greece, and Anatolia) and the main islands of the Mediterranean show very high levels of species richness and endemism. The latter ranges between 9% on the Balearic Islands and Cyprus and 18% on Crete (Médail 2016). Mediterranean peninsulas and islands also provided suitable refugia for the last remnants of mid-Tertiary flora. This is the case for several relict plants often characterized by a prolonged evolutionary standstill (Médail and Diadema 2009), now restricted to one or few locations, like the Tethysian-Paleotropical fern Woodwardia radicans (Corsica, Sicily and Crete), Zelkova abelicea on Crete and Z. sicula in Sicily (Christe et al. 2014), Liquidambar orientalis on Rhodes and in southern Anatolia, Phoenix theophrasti in Crete, some Aegean islands, Peloponnese and southern Anatolia, Fontanesia phillyreoides in Anatolia, etc. (Quézel et al. 1999, Quézel and Médail 2003). Additionally, Mediterranean islands host several monotypic endemic genera, such as

Petagnaea and Siculosciadium in Sicily, Castroviejoa, Morisia and Nananthea in Corsica and Sardinia, Hostrissea and Petromarula in Crete, Femeniasia and Naufraga in the Balearic Islands, and many other very distinct and ancestral species, such as Cytisus aeolicus on Aeolian islands, Ribes sardoum in Sardinia, Eokochia saxicola along southern Tyrrhenian coasts, Atriplex lanfrancoi on Malta, etc. Many of these taxa are Critically Endangered (Montmollin and Strahm 2005).

In the Macaronesian islands, good information is available for the Spanish and Portuguese autonomous regions (Reyes-Betancort et al. 2008, Regional Ecosystem Profile – Macaronesian Region 2016, Borges et al. 2005) but published data from Cabo Verde remain scarce although increasing (e.g., Bonn Duarte et al. 2008; Romeiras et al. 2016, Rivas-Martinez et al. 2017, Castilla-Beltrán et al 2021). This is despite a lot of survey and monitoring that has been undertaken in the last decade through increased NGO activity, much of it supported by CEPF. The Macaronesian region hosts a high number of plant species, many of them endemics, with the Canary Islands outstanding in this regard (with 2,091 vascular plant species, 539 (26%) of which are endemic). The majority of the endemics are relict species with affinities with the flora of the Tertiary era, and they are typically isolated or have relatives in remote geographical areas. For example, a Macaronesian endemic, the Canary Island pine Pinus canariensis, is closely related to chin pine P. roxburghii in the Himalayas (EEA 2008), and the endemic aderno Heberdenia excelsa is closely related to H. penduliflora in Mexico. Most of the endemics are perennial trees and shrubs, with lower rates of endemism among annuals (Regional Ecosystem Profile – Macaronesian Region 2016). The Macaronesian islands (excluding Cabo Verde) have 792 species of bryophyte (mosses and liverworts), corresponding to about 5% of species globally and thus making Macaronesia a hotspot for bryoflora (Sérgio et al. 2008).

4.7 Ecosystem services in the Mediterranean Basin Hotspot

Ecosystem services are the benefits people obtain from the functioning of natural ecosystems. They can be categorized into four broad types: provisioning; regulating; supporting; and cultural services (Millennium Ecosystem Assessment 2005). In the Mediterranean Basin Hotspot, these services include those that are important at a global scale, such as climate mitigation through carbon storage and sequestration, as well as those benefitting local communities and individuals, including those providing essential products to sustain livelihoods, such as food, fuel, building materials (Martin-Lopez *et al* 2016). A summary of ecosystem services provided within the hotspot is shown in Table 4.2.

Table 4.2 Services provided by Mediterranean Basin ecosystems

Type of service	**Ecosystem service**	**Beneficiaries**	**Relative importance within the hotspot**
Provisioning	Water (artisanal and run-off) for drinking, irrigation, industrial use, energy generation	Entire population	Very important as the area is water stressed
	Fisheries in freshwater and marine systems	Local fishers, fish consumers, associated economic activity	Very important for coastal communities within the hotspot
	Wood for firewood, charcoal	Rural communities	Minor, but significant for some remote communities
	Timber, poles and other construction material	Timber traders, forest owners, craftspeople	Significant in some areas
	Non-timber forest products (e.g., cork, resins, fruits)	Rural communities, forest owners, craftspeople	Minor, but significant for some remote communities

Type of service	Ecosystem service	Beneficiaries	Relative importance within the hotspot
	Grazing and fodder for livestock	Local livestock herders and, indirectly, consumers of milk, meat	Significant in some areas
Regulating	Absorption of nutrient pollution, other pollutants in wetlands	Local populations, economic activity	Significant in some areas
	Reduction of disaster risk (flooding, landslide) through absorption of run-off	Local populations, economic activity, especially in mountainous areas	Significant in some areas
	Reduction of soil erosion and desertification through stabilization of soils	Local populations, economic activity, especially in mountainous and arid areas	Significant in some areas
	Control of pest species through predation, natural limits on populations	Farmers, livestock herders	Significant in some areas
Supporting	Source of novel genetic material for crops (e.g., olives, fruits)	Global	Potentially significant
	Carbon sequestration	Global	Minimal
Cultural	Recreation (including sport hunting)	Local populations, especially urban populations using natural areas	Important mainly in coastal/urban areas
	Tourism using natural spaces (beaches, coastal habitats)	Global tourists, local people engaged in the tourism economy	Important mainly in coastal areas

Provisioning services are critical for the livelihoods and economic activity of all human populations in the hotspot. Water is the single most important ecosystem service in this highly water-stressed region. Vegetation and soils, as well as geological features, allow infiltration of water to replenish ground water and ameliorate run-off intensity (Llorens *et al.* 1997; Cosandey *et al.* 2005), while wetlands, and, in particular, marshes and riparian vegetation, contribute to the filtration of water and to the improvement of its quality when polluted (Mediterranean Wetlands Observatory 2012). Cleaner water is easier and cheaper to use for drinking, irrigation and energy production.

Forests provide timber used as a building material and for furniture and handicrafts (especially from very high-quality woods, such as olive and sandarac), as well as firewood and charcoal, which are still essential in many rural areas in the hotspot. Cedar wood has been particularly important as a source of high-quality timber for construction in the eastern Mediterranean. Non-timber Forest Products (NTFPs) have been sustainably used by humans for millennia, with cork probably the single most important NTFP in terms of number of workers employed and revenue generated (Cork Quality Council 2016). Several woody plants produce resins (labdanum, mastic, myrrh, rosin, sandarac, etc.) and essential oils (in particular from Lamiaceae). Historically important, they became less significant as synthetic substitutes were created. However, markets for high-quality, natural products are now growing, and use of medicinal plants remains important in North Africa and the Middle East. Mushrooms, truffles, fruits and nuts are also commodities of great added value, consumed locally or exported (e.g., pine nuts). Ecosystems also provide nectar, essential for beekeeping and honey production, and browse and pasture, for livestock.

Overall, it was estimated that NTFPs in the Mediterranean provide an average revenue of €41/ha of forest (€54 in North Africa) (Croitoru 2007). No recent comparable estimates are available. One CEPF project undertaken in the Shouf Mountains of Lebanon attempted to value ecosystem services. Noting limitations, it estimated that the economic benefits generated by Shouf Biosphere Reserve every year are in the range of US$16.7 million to 21.3 million. Most of these benefits derive from water services, including grid water quality and bottled water. The value of carbon sequestration services and production of biomass (i.e., briquette) is also significant. Tourism injects an additional $700,000 in the region annually and supports local employment equivalent to circa 100 jobs (Al Shouf Cedar Society 2015).

Subsistence hunting and fishing would once have been major sources of animal protein for local populations but are now less important except in some areas of the Balkans. Commercial fishing, especially in coastal and marine areas, is an important economic activity and a major food source, with estimates of 158,000 people directly employed by the fishing industry in the hotspot in 2023, a considerable reduction from earlier estimates of more than 200,000 (Farrugio 2013, Di Franco *et al.* 2014, FAO 2023).

Regulating services can be expected to become more important as climate change impacts on increasingly densely populated areas. Between 2000 and 2009, more than 2 million people were affected by drought in the Mediterranean countries and more than 1.1 million by floods (including over 2,000 deaths). The cost of these events was estimated to be US$19 billion for drought (Mediterranean Wetlands Observatory 2012). Wetlands and other habitats provide important protection for coastlines and mountainous regions, mitigating the impact of increasingly intense storm and rainfall events.

Supporting services include the provision of renewable energy from solar and wind power, which will be increasingly important as energy demand rises and needs to be met from sources that are carbon neutral. Sequestration of CO_2, mitigating the increased levels of greenhouse gases in the atmosphere and thus slowing climate change, is also a supporting service. The arid climate of most of the region however limits the direct carbon sequestration potential of the forests. The sea-grass beds of the Mediterranean Sea (consisting of Posidonia oceanica) are an important long-term carbon sink in the region (Pergent-Martini *et al.*, 2021)

Cultural services include the importance of natural ecosystems for the tourist industry, one of the three principle service sectors on which much of the hotspot relies for its income (Chapter 6). However, in addition to this modern, economic significance, Mediterranean landscapes and species form the backdrop for the development of some of the world's oldest civilizations and religions. The region is also known globally for its culinary uniqueness and diversity, and this is based on the wild plants and animals of the region as well as the products of traditional farming and livestock.

For many people hunting has changed from being a source of food to being a leisure activity in recent decades. Closely bound up with local identity and recreation, the intensity of some hunting activities, especially of migrant birds, make it a serious environmental concern (BirdLife International 2016).

Despite the tremendous importance of ecosystem services to the economy and livelihoods, they are frequently unrecognized and undervalued and, as a result, may be damaged or destroyed in the process of economic development. In other cases, the value of communal resources is recognized, but traditional systems for maintaining these services (e.g., the *hima* system for managing pasture) have broken down as a result of state-imposed land categories, cultural and economic modernization and urbanization. A challenge with many services (e.g., water supply) is that there is spatial or temporal separation between land managers who can influence the quality of ecosystem services and the beneficiaries who may be willing to pay for the service. In other cases, the services (e.g., clean air, clean beaches) are difficult to quantify or manage, and may be perceived differently by, for example, local people and foreign visitors. Tourists are often willing to pay directly to governments to invest in natural and cultural ecosystem services (Seidl 2014).

Key to the integrating the protection and management of ecosystem services into government land use and development planning is information on the values of these services, and the impacts of change. Detailed information is available in parts of Europe, but it is much less comprehensive in the hotspot countries covered by the ecosystem profile update. The mandate of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) includes producing Regional IPBES assessments which present a thorough analysis of Ecosystem Services for Europe, Asia and Africa, though the countries of the Mediterranean are inevitably dissipated across these three volumes. (IPBES 2018a, 2018b, 2018c, Morán-Ordóñez A et al 2019). There are also useful models of participatory, local valuation of ecosystem services from protected areas in Madagascar (Neugarten *et al.* 2016), which could be adapted for implementation in areas where the ecosystem services issue is key to making the case for conservation.

The Mediterranean Basin is one of the most vulnerable regions of the world to climate change (see Chapter 10), and this will impact on the capacity of ecosystems to provide goods and services to human society (Ali *et al* 2022, Bangash *et al.* 2013), which is especially concerning given the increasing demands placed on ecosystems. Water availability for drinking and hydropower production will decrease, while water demand for irrigation and tourism will increase. Mediterranean forests will shrink as conditions become drier and fires more intense and more frequent. In combination, these changes will contribute to increasing erosion and loss of agricultural potential, and higher costs to manage the problems (Schröter *et al.* 2005, Bangash *et al.* 2013, Terrado *et al.* 2014).

5. CONSERVATION OUTCOMES DEFINED FOR THE HOTSPOT

5.1 Introduction

Despite its uniqueness and fragility, the Mediterranean Basin Hotspot has to provide livelihoods for nearly 300 million people in a region of global political and economic importance. Huge changes have already taken place in the region's ecosystems and in the numbers and distribution of species. These changes will continue and, in some cases, accelerate, as human populations grow and patterns of economic activity change. For most species, these changes mean loss of habitat and increased pressure from harvesting and hunting, which result in smaller, more fragmented and more vulnerable populations.

Even with unlimited resources, it would be impossible to maintain all the species and ecosystems in the hotspot in their present state. Resources are highly limited, so conservation has to compete for space with land uses that are considered more economically productive. Choices need to be made, therefore, about which species, sites and corridors are the most important, feasible or urgent to conserve. CEPF refers to these priorities as "conservation outcomes," and this chapter describes the process and results of defining conservation outcomes for the hotspot.

These outcomes constitute a long-term agenda for the Mediterranean Basin Hotspot which needs support from governments, civil society and funders. Over the next five years, within the limits of the available budget and with a focus on civil society, CEPF cannot address more than a small proportion of them. Chapters 12 and 13 define more specifically which outcomes will be prioritized for CEPF support in the coming five years.

5.2 Species outcomes

5.2.1 Methodology

Species outcomes are all those species that regularly occur in the hotspot and are classified as globally threatened. The identification of these species is based on the IUCN Red List, by selecting species in categories Critically Endangered, Endangered or Vulnerable. Species classified as Data Deficient are treated separately as candidates for further research, because it is considered that many of them are likely to be threatened with extinction, although they are not high priorities for CEPF investment at this time. Thirteen species groups across all three realms (marine, freshwater, terrestrial) have been at least partially assessed against the Red List criteria and were considered for this review: amphibians; birds; freshwater fishes; marine fishes; mammals; reptiles; anthozoans; dung beetles; butterflies; freshwater mollusks; dragonflies and damselflies; freshwater crabs and shrimps; and plants. Species lists were drafted combining lists of species from published Mediterranean Red List reports[12] with the results of targeted search by Mediterranean countries on the IUCN Red List website[13], in order to include the most up-to-date data for each species.

The previous update of the ecosystem profile in 2016 included checking and updating global and Mediterranean Red List categories and Mediterranean occurrence (according to the limits of the Mediterranean Basin Hotspot). Given that many countries are only partly within the Mediterranean Basin Hotspot, species distribution maps published on the IUCN Red List website were used to identify species endemic to or present in the hotspot. Species with distribution ranges fully enclosed within the hotspot boundaries

[12] See iucnredlist.org/initiatives/mediterranean
[13] See iucnredlist.org/

were considered to be endemic to the hotspot, with a 10 km buffer beyond the hotspot boundary employed to account for the lack of precision in mapping species' ranges. Species that are not present within the hotspot limits were removed from the list. For the species published in the IUCN Red List that do not have a distribution map, the review of Mediterranean distribution was based on the range description in the Red List assessment. The summary analysis for the hotspot as a whole (Table 5.1) was not revised in 2024 for phase III but the figures for individual countries (Table 5.2) were updated.

5.2.2 Species outcomes in the Mediterranean Basin Hotspot

From 5,785 species recorded in the Mediterranean Basin Hotspot with a global assessment in the IUCN Red List (2016), 1,311 species (23%) are globally threatened (Table 5.1). Sixty-five percent of the globally threatened species are animals, with freshwater mollusks (320) and freshwater fishes (224), making up the greatest number of threatened species. Plants make up 462 of the threatened species, 35% of the total (IUCN 2016).

In interpreting the relative level of threat among groups, it is important to note that some groups have been completely, or almost completely, assessed, while, for other groups, work has only just started. As shown in Table 5.1, assessments of the threat status for amphibians, birds, freshwater and marine fish, mammals and reptiles are complete or nearly so. This means that the numbers of threatened species can be assumed to be representative of the real situation in the field. For plants and most invertebrates, however, the proportion that has been assessed is much lower. This means that the figures for the total number and proportion of threatened species should be treated as provisional. In the Mediterranean Basin, plants are of particular concern. Only approximately 7% of Mediterranean plants had been assessed for their conservation status at the time of analysis (fewer in the southern and eastern Mediterranean countries) but 28% of these are threatened. This figure has increased since then but a full analysis is not yet available.

It is also useful to look at the proportion of the species assessed that are in the Critically Endangered category. In the Mediterranean Basin, the proportion of threatened species categorized as Critically Endangered is particularly high for freshwater fishes (26%), reptiles (24%), freshwater mollusks (32%) and plants (34%).

In addition to the species listed in Table 5.1, 32 species from the hotspot are known to have become globally Extinct (EX), or Extinct in the Wild (EW): 11 freshwater fishes; two mammals; one reptile; 14 freshwater mollusks; and four plants.

The distribution of the major taxonomic groups of threatened species in each of the countries in the hotspot shows that the highest proportion of threatened species can be found in Spain, Greece and Türkiye (Table 5.2).

By species group, the highest numbers of threatened species associated principally with freshwater environments (i.e., freshwater fishes, freshwater mollusks, dragonflies and damselflies, and freshwater crabs and shrimps) are found in Spain, the Balkans, Greece and Türkiye, with important numbers of threatened dragonflies and damselflies being found in the Middle East region. Italy, Morocco and Tunisia are the countries with the highest number of threatened marine species. Greece, Spain and Türkiye are the countries with the highest number of threatened terrestrial vertebrates. Italy and Morocco have high numbers of amphibians and reptiles and mammals, respectively. Syria also has high numbers of threatened species of reptiles, birds and mammals. With regard to terrestrial invertebrates, Greece, Spain, Morocco and Türkiye are the countries with highest numbers of threatened species. For plants, the Canary Islands are the territory with the highest number of threatened species; mainland Spain and Italy are the countries with the highest numbers.

The full list of threatened and endemic species in the hotspot is presented in Annex 1.

Table 5.1 Globally threatened species in the Mediterranean Basin Hotspot

Group	No. of threatened species				% estimated completeness of IUCN Red List assessment at global (Mediterranean) level	% threatened species at global (Mediterranean) level
	CR	EN	VU	Total		
Vertebrates – total	**94**	**157**	**207**	**458**		
Amphibians	6	12	14	32	100	31
Birds	5	8	22	35	100	7
Freshwater fishes	60	83	81	224	96	37
Marine fishes **	7	15	46	68	100	7
Mammals	2	15	24	41	100	14
Reptiles	14	24	20	58	89	22
Invertebrates - total	**106**	**141**	**144**	**391**		
Anthozoans*	0	3	1	4	21 (97)	14 (13)
Dung beetles	1	21	3	25	29 (35)	15 (13)
Butterflies	1	14	12	27	35 (98)	17 (7)
Freshwater mollusks	103	98	119	320	(98)	(52)
Dragonflies and damselflies	1	5	9	15	(95)	(10)
Freshwater crabs and shrimps	0	0	0	0	100	0
Plants	**158**	**148**	**156**	**462**	7	28
TOTAL	**358**	**446**	**507**	**1,311**		

Notes: CR = Critically Endangered; EN = Endangered; VU = Vulnerable; * = Mediterranean Sea only; ** = Atlantic Ocean and Mediterranean Sea. The data are from 2016, so there may be small changes but trends remain accurate.

A number of species groups in the Mediterranean Basin Hotspot can be considered to have been comprehensively assessed. For some groups, only endemic and almost endemic species have been assessed. The following overview of threatened species within the hotspot is compiled for each species group.

Vertebrates

Freshwater fishes. Eleven bony fish from the hotspot have already become extinct. All were freshwater species endemic to single lakes or river basins, and they disappeared because of habitat loss, pollution, introduced species, and/or drainage. Another 224 species are threatened with extinction, 167 of which are endemic to the hotspot. Sixty species are Critically Endangered (47 of them endemic), 83 are Endangered (62 endemic) and 81 are Vulnerable (59 endemic).

Table 5.2. Globally threatened species by country and group

Country	Mammals	Birds	Reptiles	Amphibians	Fishes	Freshwater molluscs	Other invertebrates	Plants	Fungi	Total
Albania	4	13	4	2	61	54	24	2	0	164
Algeria	18	19	7	2	66	10	33	31	2	188
Bosnia and Herzegovina	5	9	3	4	53	22	39	5	1	141
Cabo Verde	5	6	6	0	47	14	1	51	0	130
Croatia	9	15	4	4	80	56	46	10	26	250
Cyprus	7	8	3	1	40	7	16	23	3	108
Egypt	20	16	12	0	95	2	58	13	0	216
France	13	9	6	6	78	97	132	66	63	470
Gibraltar	4	10	0	0	37	5	4	1	0	61
Greece	12	18	7	6	95	188	178	86	11	601
Iraq	13	17	3	2	49	0	15	4	0	103
Israel	17	18	10	1	91	11	64	41	2	255
Italy	9	7	6	13	73	89	191	121	50	559
Jordan	13	15	6	0	34	5	55	8	0	136
Lebanon	10	11	7	0	43	10	9	101	0	191
Libya	12	10	6	0	53	1	5	8	0	93
Malta	3	6	1	0	44	5	7	4	1	71
Monaco	5	0	0	0	38	2	3	2	0	50
Montenegro	7	12	4	3	53	27	57	6	4	173
Morocco	21	21	12	3	86	49	35	58	7	292
North Macedonia	7	12	3	2	13	71	28	6	7	149
Palestine	7	15	4	0	18	1	2	12	0	60
Portugal	15	17	4	4	89	86	170	141	14	540
Slovenia	8	11	3	4	53	36	69	12	22	218
Spain	18	23	19	9	99	168	186	291	50	863
Syrian Arab Republic	15	17	9	0	64	10	13	45	0	173
Tunisia	15	13	5	0	60	8	15	12	2	130
Türkiye	18	21	20	12	148	44	43	138	8	452

Notes: From IUCN Red List of Threatened Species. Note that figures are for the whole country not only the hotspot. Figures for plants very incomplete.

Marine fishes. There are 68 species of marine fishes threatened with extinction at the global level in the Mediterranean Basin Hotspot, nine of which are endemic to the hotspot. Seven species are considered Critically Endangered, all of which are cartilaginous fishes. For this group, there are important differences in the conservation status at global and Mediterranean Sea levels. Forty-nine species are threatened at the Mediterranean Sea level, whereas 15 of these species are not threatened at the global level. Five of these threatened species in the Mediterranean Sea are listed as Data Deficient at global level, which could indicate that their global conservation status could be the same. Moreover, 19 species have a higher risk of extinction at the Mediterranean Sea level than at the global level. For example, five species listed as Vulnerable at the global level are considered Endangered in the Mediterranean Sea.

Amphibians. Six amphibians in the hotspot are Critically Endangered: four frogs; a salamander; and a newt. Another 26 amphibians are Endangered or Vulnerable, most of them salamanders or newts.

Reptiles. One reptile from the hotspot is already extinct. Cabo Verde giant skink (*Chioninia coctei*) was last seen in 1912, and probably succumbed to predation by introduced cats and rats. La Palma giant lizard (*Gallotia auaritae*) is classified as Critically Endangered (Possibly Extinct), while a further 13 reptiles are Critically Endangered, 24 as Endangered and 20 as Vulnerable. These include four marine turtles, three land tortoises, a snake of freshwater habitats, seven terrestrial snakes, and 31 lizards.

Birds. Thirty-five bird species occurring in the hotspot are globally threatened, five of which are Critically Endangered: sociable lapwing (*Vanellus gregarious*); slender-billed curlew (*Numenius tenuirostris* – possibly extinct); Balearic shearwater (*Puffinus mauretanicus*); (rarely) Ruppell's vulture (*Gyps rueppelli*); and Raso lark (*Alauda razae*), an endemic species to Cabo Verde. For all these species, the wetlands and grasslands of the hotspot play a key role in their survival. The remaining 30 Endangered and Vulnerable species include 14 marine or wetland species and three grassland specialists, reflecting the critical importance of these habitats in the region.

Mammals. One mammal in the hotspot is Extinct. Sardinian pika (*Prolagus sardus*), a relative of hares and rabbits, was native to the islands of Sardinia and Corsica but was last seen in 1774. The nominate subspecies of hartebeest (*Alcelaphus buselaphus buselaphus*) also became Extinct in North Africa in the first quarter of the 20th century. Scimitar-horned oryx (*Oryx dammah*), a desert-dwelling antelope, is Extinct in the Wild, as is Atlas lion (*Panthera leo leo*). A further 41 mammals are threatened, two of which are Critically Endangered, although neither of these species has the main part of its range within the hotspot: Dama gazelle (*Nanger dama*); and European mink (*Mustela lutreola*). Of greater conservation concern within the hotspot are 13 mammals that are endemic to the hotspot and classified as either Endangered or Vulnerable. These include two shrews, two gerbils, one hamster, four bats, Corsican hare (*Lepus corsicanus*), Iberian lynx (*Lynx pardinus*), Cuvier's gazelle (*Gazella cuvieri*) and Barbary macaque (*Macaca sylvanus*).

Invertebrates

Freshwater mollusks. Freshwater mollusks are the group with the largest number of threatened species overall (320 species), and the largest number of Extinct species (14, all of them mud snails) and Critically Endangered species (103, 97 of them mud snails, six of them bivalves). Many of these species are known from one or very few locations in karst environments, where they are vulnerable to pollution and/or mining (Garcia et al 2010). Three new species were discovered by CEPF grantees during phase II and these are very likely to be globally threatened when assessed

Dragonflies and damselflies. Only one odonate is Critically Endangered: Greek red damsel (*Pyrrhosoma elisabethae*), which has a restricted range and depends on coastal freshwater areas that are threatened by climate change and tourism development. Another 14 species are Endangered or Vulnerable, nine of which are endemic to the hotspot. There is an additional species, which has not been assessed at the global level but is classified as Vulnerable at the Mediterranean level. This is *Ischnura hastate*, which occurs in the Mediterranean Basin Hotspot in Azores.

Butterflies. Overall, 27 butterflies in the hotspot are threatened with extinction, 21 of which are endemic to the hotspot. The only Critically Endangered species, Bolland's blue (*Polyommatus bollandi*), is known only from a single locality in Türkiye. Twenty-six species are Endangered or Vulnerable. Three additional species, which have not been assessed at global level, are considered to be at risk of extinction in the Mediterranean: *Apharitis cilissa* and *Spialia osthelderi* from Türkiye and Lebanon; and *Colias caucasica* from the Balkans, Greece and Türkiye (Numa *et al.* 2016).

Dung beetles. Twenty-five dung beetle species from the hotspot are threatened with extinction globally. One is Critically Endangered and known only from four localities in karst habitats in Morocco, where it is threatened by quarrying. Twenty-one species are listed as Endangered, and three species are classified as Vulnerable. Most of the threatened species occur at high elevations in south-eastern Spain, the high and medium Atlas Mountains, and southern Türkiye in the Anti-Taurus Mountains (Numa et al 2020).

Anthozoans. Four anthozoans are listed as Endangered or Vulnerable. Two of them are species with limited ranges, and the other two are widespread species that have shown marked declines in recent years. Seventeen species that have not been assessed at global level are threatened with extinction in the Mediterranean, and a further 21 endemic species are considered Data Deficient. *Isidella elongate* is considered Critically Endangered and nine are listed as Endangered, including red coral (*Corallium rubrum*), known for its historical uses in handicrafts and jewelry (Otero *et al.* 2020).

Plants
With only 7% of the total estimated species richness globally assessed, 462 plant species are considered to be threatened with extinction, 420 of which are endemic to the hotspot. Almost 70% of these species (319) are at risk due to reduced geographic distribution, fragmentation and progressive reduction of their habitat area and quality (IUCN Red List Criteria B1 and B2). Assessing the threats to Mediterranean plants is very difficult due to the lack of recent data on their distribution, particularly in the south and east of the Mediterranean Basin.

5.2.3 Data Deficient species and research priorities
A total of 430 animal species assessed according to the IUCN Red List criteria were classified as Data Deficient in 2016, including a large number of marine and freshwater bony fish. There is a high probability that some of these are in fact globally threatened. These endemic Data Deficient species are, thus, a priority for further survey work and clarification of their status. Table 5.3 summarizes the number of assessed species in the hotspot that are Data Deficient. There are also many plants that are Data Deficient but there is no accurate assessment of the numbers of species involved.

Table 5.3 Number of species in assessed groups that are Data Deficient

Group	Data Deficient species	Data Deficient species endemic to the hotspot
Vertebrates – total	**258**	**75**
Amphibians	1	0
Freshwater fishes	41	20
Mammals	40	8
Marine fishes*	167	42
Reptiles	9	5
Invertebrates – total	**172**	**138**
Anthozoans	20	19
Butterflies	20	19
Dragonflies and damselflies	2	1
Dung beetles	68	64
Freshwater mollusks	62	35
Plants	Not available	Not available
TOTAL	**430**	**213**

*Notes: * = Five species of cartilaginous fishes that are Data Deficient at the global level have been assessed as threatened in the Mediterranean Sea. Data from IUCN (2016).*

Based on this information and in discussions during the regional consultation, it was suggested that research effort should be focused on poorly known, restricted-range species. This is a particular need for plant species, which have a high proportion of restricted-range species and a low proportion of species assessed against the IUCN Red List criteria. It is suggested to focus on those species with an expected or inferred distribution smaller than 5,000 km^2 (i.e., endemic to an area smaller than 5,000 km^2). This threshold was used to determine restricted range plants in Mediterranean by Plantlife International (Radford *et al.* 2009).

5.2.4 Priority species outcomes

Threats to most species are connected with habitat loss and over-exploitation, and, in many cases, these will be effectively addressed through the effective protection of KBAs (see Section 5.3). However, some species cannot be effectively conserved within protected areas, because they occur at very low densities, or engage in long-distance movements seasonally or at different stages in their life history. Others may exist within protected areas but be under special threat because they are targets for illegal exploitation or persecution. Finally, for some species, the small size of their population makes them vulnerable to disease or chance events, such as fires, and they, thus, require specific conservation attention.

Based on these considerations, the full list of species outcomes were assigned priority rankings, according to the following criteria:

A. Species that are Critically Endangered.
B. Species that are Endangered.
C. Species that are endemic to the Mediterranean Basin Hotspot (i.e., 100% of the known global population or known global range is within the hotspot).

Species that met both criteria A and C were assigned to priority rank 1. Species that met either criterion A or both criteria B and C were assigned to priority rank 2. A total of 317 species were assigned to one of these two priority ranks (Annex 1).

For plants, due to the incompleteness of the Red List assessment, some specific criteria based on restricted range for endemic species, were also added (See chapter 13).

5.3 Site outcomes

5.3.1 Methodology

KBA Criteria

KBAs are sites that make significant contributions to the global persistence of biodiversity. KBAs are identified for the biodiversity elements for which specific sites contribute significantly to their global persistence, such as globally threatened species or ecosystems. The identification of KBAs uses multiple criteria and sub-criteria, each withassociated thresholds (www.keybiodiversityareas.org and IUCN 2016). Sites are identified as KBAs when they meet at least one of the following criteria:

- A1: presence of a significant proportion of the population of a globally threatened species.
- A2: presence of a significant proportion of a threatened ecosystem.
- B1 to B4: presence of geographically restricted biodiversity (which may not necessarily be threatened), including individual species, co-occurring species, assemblages of species, and ecosystem types.
- C: ecological integrity: sites that hold exceptional intact ecological communities with supporting ecological processes.
- D: exceptional biological processes, including aggregations of a large proportion of a species’ population, ecological refugia, and source populations essential for the survival of the species.

- E: high irreplaceability: quantitative analysis of complementarity between sites shows that a site has a very high irreplaceability (i.e., is highly unique) in terms of global biodiversity.

KBAs are *sites*, meaning that they have a boundary which can be shown on a map. Delineating the boundary of a site requires judgement on the likely limits of the ecosystems or trigger species that the site is identified for, and the KBA boundary should represent an ecologically meaningful management unit, to ensure persistence of the biodiversity elements for which it is important. Boundary delineation also requires pragmatic judgement. For example, it may make sense to use an existing boundary of a protected area or an administrative boundary where this appears to coincide with the ecological boundary of the site.

Geographic scope of the KBA assessment
The site outcomes analysis was limited to the countries covered by the update of the ecosystem profile. KBA data for other countries in the hotspot were presented in the first ecosystem profile, and these data were used, where relevant, to give an overall picture of KBAs in the hotspot.

KBA identification and revision process
The process for identification and delineation of KBAs is necessarily fluid and ongoing, responding to the provision of new information and a constantly changing environment. It is expected that this current KBA dataset will continue to be refined as further information becomes available.

Since the start of CEPF investment in the Mediterranean Basin, there have been important additions to the inventory of KBAs, although less so in the last few years. A brief summary of major steps forward is given below.

The identification of Important Plant Areas (IPAs). IPAs within the Mediterranean Basin Hotspot have been identified through several projects (Byfield *et al.* 2005, Radford *et al.* 2009, 2011) and compiled and validated at national workshops by Plantlife International and its partners. During 2016, there was a process of revision of IPA boundaries through an online micro-site and consultation, in parallel to national processes for the identification of new IPAs in certain countries (Algeria, Cabo Verde and Tunisia). The resulting IPAs required harmonization with the new global KBA standard, and this was done through national validation, as well as a regional workshop with plant specialists held in Montenegro in October 2016. This workshop allowed IPAs to be checked against the new KBA criteria and for data on plant trigger species to be compiled.

Identification of freshwater KBAs. Freshwater KBAs were identified and validated through a series of three stakeholder workshops during the period 2012 to 2013. Through this process, 102 sites in the countries covered by the update of the ecosystem profile were identified, delineated and validated (Darwall *et al.* 2014). These original results were revised following publication of the new global KBA standard (IUCN 2016), and site outcomes were identified at two scales: freshwater KBAs; and Catchment Management Zones (CMZs).

Freshwater KBAs are defined as distinct areas (e.g., lakes, headwater streams or springs) within a CMZ that is of particular importance for one or more KBA trigger species. For example, a freshwater KBA may contain all or the majority of one or more trigger species populations, or the only known spawning area or migratory route of a species. Freshwater KBA boundaries were drawn on this basis. Where freshwater KBA boundaries overlapped with existing KBAs identified for other taxa, they were harmonized wherever appropriate, ecologically relevant, shared boundaries could be identified. The process of boundary harmonization will require further work as better data become available.

CMZ boundaries were delineated on the basis of clusters of river/lake subcatchment boundaries, as the appropriate management unit for freshwater ecosystems. Subcatchments are an appropriate basis to delineate sites as they represent well defined and ecologically meaningful management units and account for hydrological connectivity. They can be applied at 12 different grain sizes, the smallest being approximately 10 km^2, and this being the level used as the starting point for KBA delineation· The standardized data facilitated input into conservation planning software, such as Marxan.

In total, 100 CMZs were identified and validated in the countries covered by the first update of the ecosystem profile. These CMZs are not now used as the basis for prioritisation but are retained and referenced in this updated profile for reference, as some KBAs will require work in the wider catchment in order to plan for their management and safeguard their integrity (see Annex 3).

Improved data on threatened species. New data on the population and distribution of species that trigger KBA identification in the Mediterranean have been collected by a wide range of NGO partners, scientists and others since the original ecosystem profile was prepared in 2010. These data were collated through national workshops and specialist consultations for IPAs, freshwater KBAs and other projects.

The 2010 ecosystem profile identified KBAs for marine turtles and seabirds. KBA delineation for very widespread species is challenging and more effectively based on their key nesting and feeding grounds but otherwise on more range restricted species. These are included alongside additional data that have been gathered since. There have been a considerable number of additions to the number of species assessed according to the IUCN Red List criteria, resulting in an increased list of KBA trigger species.

National consultations. A draft set of KBAs was discussed at the national technical workshops organized as part of the ecosystem profiling process for phase II, which brought together experts from relevant organizations. The consultation process gave a wide range of national stakeholders and international experts the chance to make inputs to KBA trigger species lists and boundaries, and to identify new KBAs where appropriate.

New KBA standard. The revised criteria for KBA identification encompass the full range of marine, terrestrial and freshwater biodiversity (IUCN 2016). Most importantly, the new criteria introduce specific, percentage-based criteria for the proportion of a species's global population that must be at a site for it to qualify as a KBA (in the past, a site could qualify as a KBA on the basis of the presence of a globally threatened species). For many KBAs identified previously, the required population data are not yet available, and so it is impossible to confirm whether the KBA meets the new global criteria. It is also expected that KBAs should be approved at the national level and this process is still at an early stage. Although a distinction can be made between KBAs that have gone through a full assessment process, and those that may still have their "global/regional status not confirmed", the latter are not necessarily of less value. In this profile, both types of KBA are included on the lists and maps and treated as of equal value and eligibility.

Data limitations and improving the analysis

Site outcomes were defined using the global KBA standard developed by IUCN and its members, which has the advantage of being a standard "currency" for identifying KBAs. It does, however, mean that the identification of KBAs requires confirmed records of the presence of trigger species or ecosystems, with sufficiently accurate data on populations of species and area of ecosystems.

In many places in the southern and eastern Mediterranean, there have been few surveys, and so the requisite data for KBA identification are not available. In some places, survey data are available for the more easily identified groups (e.g., birds, non-flying mammals, flowering plants, etc.) but lacking for many of other groups of species. There is, thus, a bias in the identification of KBAs towards better-known groups, and towards countries where there has been greater survey effort.

Given the particularities of the marine realm, there are few KBAs identified there, even though Red List assessments have been carried out for certain marine taxonomic groups (e.g., sharks, bony fishes, anthozoans). Other marine species, such as seabirds and marine turtles, have KBAs identified for the critical stages in their lifecycle when they come on to land to breed. Nevertheless, the KBA analysis represents the best available summary of the current status of species and ecosystems, and the sites that are important for their conservation.

Biological prioritization of KBAs
In the last ecosystem profile, KBAs were put through a process of prioritization using a set of eight criteria. This assessment broadly followed the detailed methodology for the biological prioritization of KBAs in Langhammer *et al.* (2007).

This prioritization of the KBAs was then used to inform decisions on investment across the profile. While generally followed, some projects in the remaining non-priority KBAs were also supported where good justifications were made.

All KBAs are, by their nature, priorities, having biodiversity values that are globally significant. While the prioritization was generally correct and, therefore, useful for directing resources, it may have inhibited the development of effective projects at other KBAs. Also, it should be noted that priorities may have changed since 2016 and will change further between 2024 and 2030. Therefore, CEPF chose not to invest the significant resources that would have been needed for a further reprioritization exercise.

Given limited resources, the ecosystem profile indicates priority KBAs and (in some cases) other geographic priorities for CEPF investment for each strategic direction. CEPF wants to encourage work at important KBAs that have not received investment from the fund thus far, and to respond to new threats and opportunities. The geographic scope of particular investment priorities will be further refined in individual calls for proposals.

5.3.2 KBAs in the Mediterranean Basin Hotspot
In total, 572 KBAs were identified for the 17 countries and territories in the Mediterranean Basin Hotspot covered by the update of the ecosystem profile. While KBAs were identified in all countries, there are marked differences between regions, with Türkiye having the highest number of KBAs, and Libya having the greatest proportion of its (rather restricted) land area within the hotspot included in KBAs (Table 5.4, Figure 5.1). Overall, the KBA data is often heterogeneous, as a result of KBA identification based on processes that took place at different time and most of them before adoption of standard methodology.

Table 5.4 Number and area of KBAs in the countries and territories of the Mediterranean Basin Hotspot covered by the ecosystem profile update

Country/Territory	No. of KBAs	Total land area of KBAs (km^2)	Total land area in Hotspot (km2)	Percentage of Hotspot land in KBAs
Albania	29	5,715	26,027	22%
Bosnia and Herzegovina	9	839	4,776	18%
Kosovo	1	132	227	58%
Montenegro	18	1,133	4,198	27%
North Macedonia	14	2,169	5,567	39%
Balkans sub-region	**71**	**9,988**	**49,794**	**24%**
Iraq	2	61	1,226	5%
Jordan	13	2,066	9,496	22%
Lebanon	19	3,431	10,133	34%
Palestine	20	1,433	5,062	28%
Syria	42	10,270	50,495	20%
Middle East sub-region	**96**	**17,262**	**76,412**	**23%**
Algeria	62	51,521	302,341	17%
Egypt	10	263	3,677	7%
Libya	14	35,396	63,918	55%
Morocco	69	35,350	325,299	11%
Tunisia	69	4,761	81,885	6%
North Africa sub-region	**224**	**127,291**	**777,120**	**16%**
Cabo Verde	**33**	669	4,058	16%
Türkiye	**148**	74,642	268,989	28%
TOTAL	**572**	**229,853**	**1,167,373**	**20%**

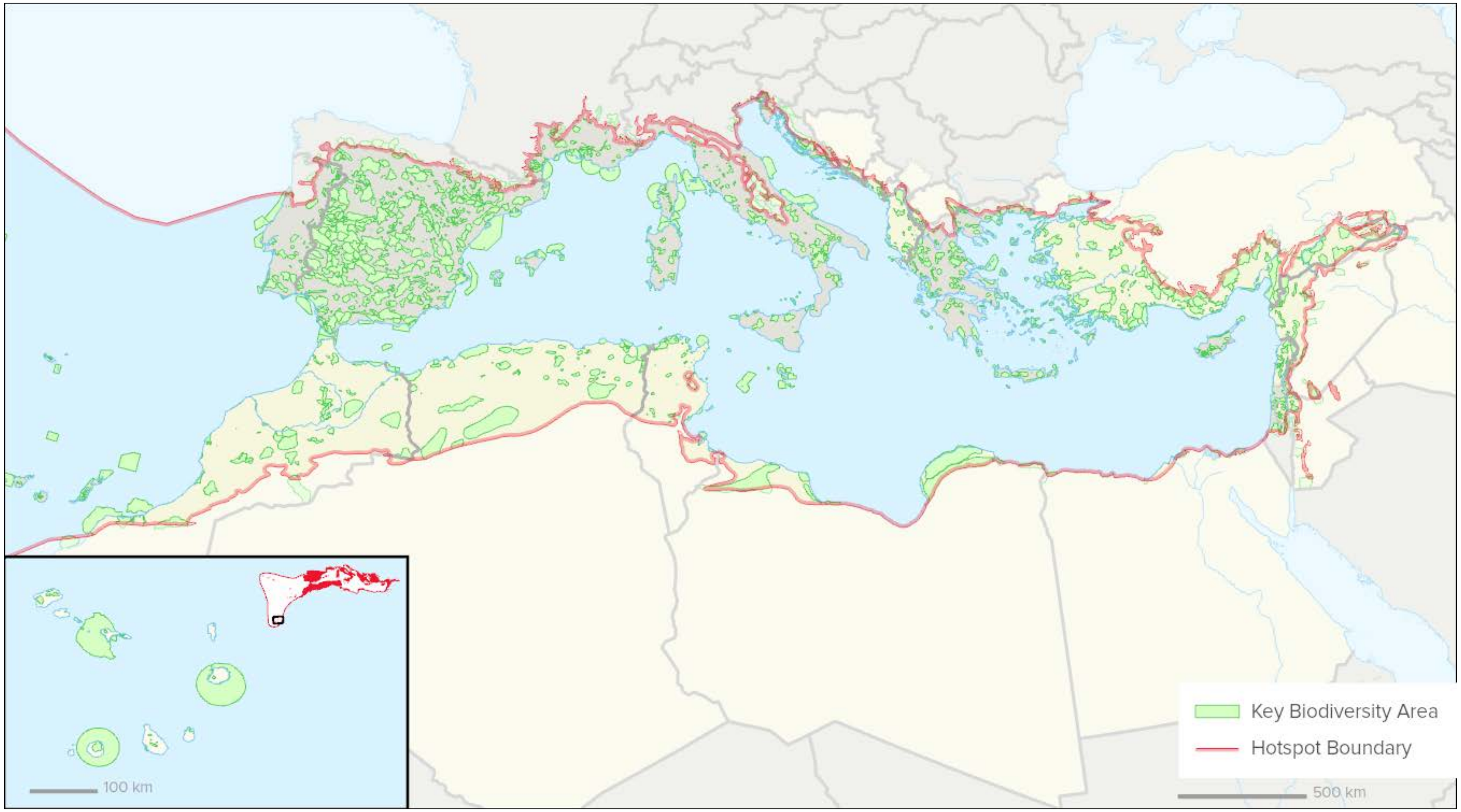
Notes: 1 = Figures consider only the terrestrial portion of the hotspot and exclude marine KBAs and portions of terrestrial KBAs that cover marine areas.

A total of 1060 KBAs were identified for other countries in the hotspot (Table 5.5).

Table 5.5 Number of KBAs in the countries of the Mediterranean Basin Hotspot not covered by the ecosystem profile update

Country/Territory	No. of KBAs	Total land area of KBAs in Hotspot (km2)	Country/Territory	No. of KBAs	Total land area of KBAs in Hotspot (km2)
Bulgaria	0	-	Italy	121	53,914
Croatia	71	17,465	Malta	21	3,248
Cyprus	32	2,456	Monaco	0	-
France	70	34,266	Portugal	105	30,011
Gibraltar	2	177	San Marino	0	-
Greece	195	38,465	Slovenia	10	1,446
Israel	10	2,393	Spain	423	207,451
TOTAL	**1060**	**391,292**			

Figure 5.1 Map of KBAs in the Mediterranean Basin Hotspot



Because factors similar to those outlined above also apply to KBAs, this list is in need of revision. The full list of 1,150 KBAs in the hotspot is, therefore, considered to remain provisional. While it can be expected to increase further in the future, the number of KBAs can also decrease. This may be because a KBA is deleted (in a few cases experts in the national workshop reported that the site no longer had any conservation value and agreed to delete it) or, more often, due to the amalgamation of two or more KBAs to form a single unit. This most often occurs when new KBA boundaries derived from IPAs, freshwater KBAs, and older KBA designations are overlain.

Balkans sub-region
The Balkans sub-region has 71 KBAs, equivalent to 12% of the total number in the hotspot. These cover 9,988 km^2 of terrestrial land within the hotspot or 4.3% of the total area of all KBAs in the hotspot countries covered by the ecosystem profile update.

Table 5.6 List of KBAs in Kosovo

KBA code	KBA name	surface	
KOS-1	Pashtrik Nature Park	20,921	ha

Table 5.7 List of KBAs Albania

KBA code	KBA name	surface	
ALB-1	Liqeni i Zi	2,843	ha
ALB-2	Boboshtica	1,091	ha
ALB-3	Gjergjevica	3,130	ha
ALB-4	Liqeni i Butrintit	14,792	ha
ALB-5	Gjiri i Vlorës - Karaburun - Mali i Çikës	65,734	ha
ALB-6	Krujë - Tujan	1,965	ha
ALB-7	Laguna e Patokut	3,233	ha
ALB-8	Liqeni i Prespes se Madhe	22,828	ha
ALB-9	Liqeni i Ohrit	11,067	ha
ALB-10	Liqeni i Shkodrës - Lumi i Bunës - Velipojë - Vau i Dejës	56,818	ha
ALB-11	Gjirokastra	56,083	ha
ALB-12	Mali i Dajtit	42,862	ha
ALB-13	Mali i Gramozit	9,968	ha
ALB-14	Mali i Gribes	3,884	ha
ALB-15	Mali i Munellës – Bjeshka e Oroshit – Liqenet e Lurës	160,725	ha
ALB-16	Mali i Pashtrik - Morinë	21,046	ha
ALB-17	Mali i Tomorrit	11,677	ha
ALB-18	Masivi Guri i Topit - Valamarë	13,014	ha
ALB-19	Rrajca	23,568	ha
ALB-20	Rrjedha e sipërme e Devollit	278	ha
ALB-21	Rrjedha e sipërme e Osumit	624	ha
ALB-22	Laguna e Karavastase	19,126	ha
ALB-23	Vargmali Korab-Korritnik	48,973	ha
ALB-24	Laguna e Nartes	19,629	ha
ALB-25	Zhej - Nemërçkë	48,231	ha
ALB-26	Liqeni i Prespes se Vogel	606	ha
ALB-27	Prespa dhe Zona Përreth	276	ha
ALB-28	Delta e Drinit	2,283	ha
ALB-29	Gjiri i Lalzit	1,340	ha

Figure 5.2 Map of KBAs in Albania and Kosovo

Table 5.8 List of KBAs in Bosnia-Herzegovina

KBA code	KBA name	surface
BIH-1	Dabarsko i Fatnicko Polje	4,068 ha
BIH-2	Hutovo blato	8,165 ha
BIH-3	Livanjsko polje and Busko jezero	45,881 ha
BIH-4	Mostarsko Blato	3,672 ha
BIH-5	Orijen i Bijela gora	18,622 ha
BIH-6	North Travunija	17,104 ha
BIH-7	Rijeka Neretva	1,320 ha
BIH-8	Trebinjsko Jezero	2,831 ha
BIH-9	Pritoka Rijeke Trebižat	4,299 ha

Table 5.9 List of KBAs in Montenegro

KBA code	KBA name	surface
MNE-1	Buljarica	157 ha
MNE-2	Ćemovsko Polje	2,614 ha
MNE-3	Bojana Delta	12,552 ha
MNE-4	Kanjon Cijevne i Hum Orahovski	3,576 ha
MNE-5	Katici, Donkova i Velja Seka	440 ha
MNE-6	Kotorsko-Risanski Zaliv	2,779 ha
MNE-7	Lovćen	6,268 ha
MNE-8	Orjen	17,246 ha
MNE-9	Platamuni	1,699 ha
MNE-10	Rijeka Morača	5,304 ha
MNE-11	Rijeka Zeta	22,182 ha
MNE-12	Rumija	9,260 ha
MNE-13	Skadarsko jezero	37,113 ha
MNE-14	Tivatska Solila	133 ha
MNE-15	Trebjesa	40 ha
MNE-16	Kakaricka gora	504 ha
MNE-17	Sasko jezero	447 ha
MNE-18	Ulcinjska solane	1,455 ha

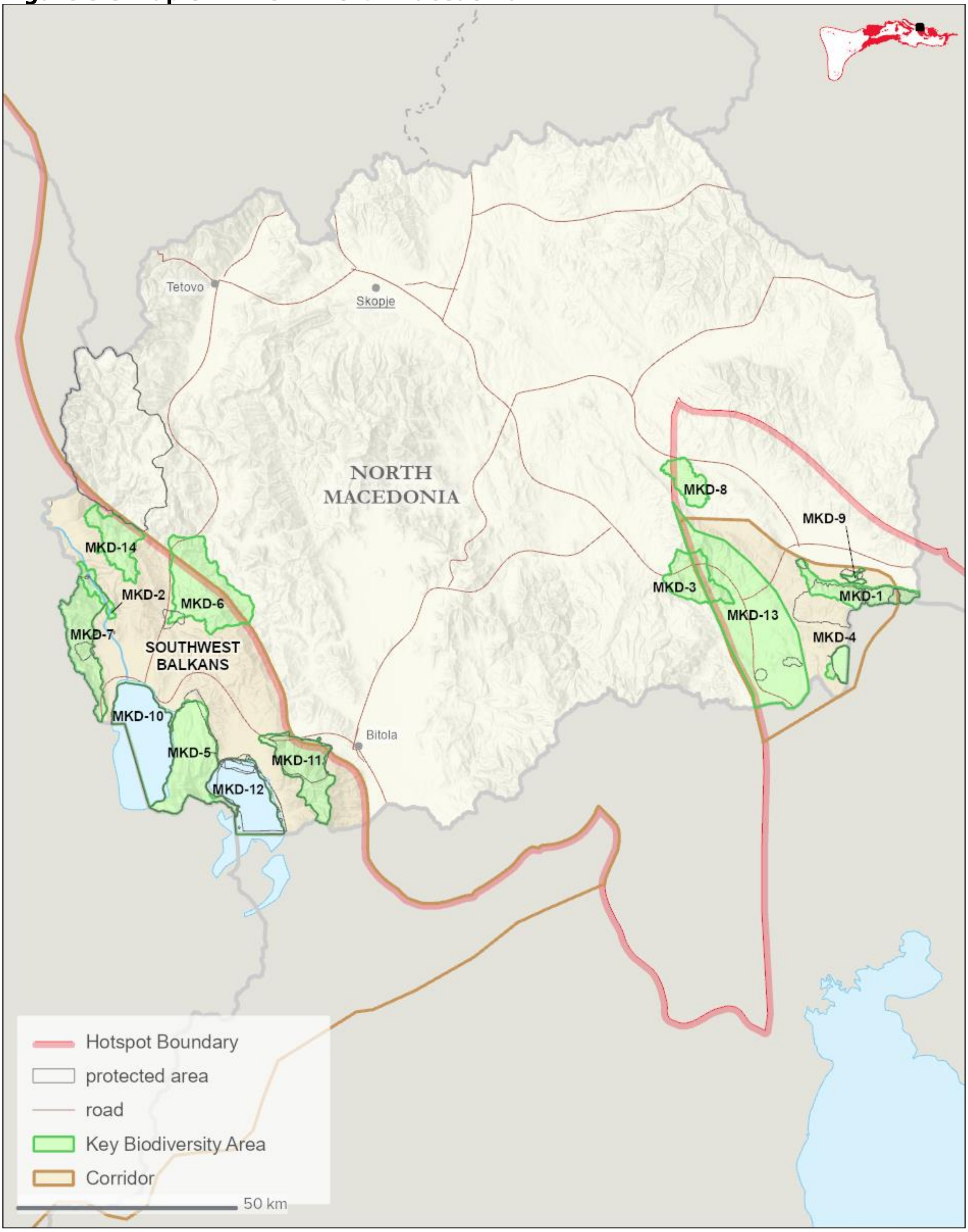
Figure 5.3 Map of KBAs in Bosnia-Herzegovina

Figure 5.4 Map of KBAs in Montenegro

Table 5.10 List of KBAs in North Macedonia

KBA code	KBA name	surface
MKD-1	Belasica	11,183 ha
MKD-2	Crn Drim gorge	3,215 ha
MKD-3	Demirkapiska Klisura	11,998 ha
MKD-4	Dojransko Ezero	3,302 ha
MKD-5	Galichica Mountain	24,896 ha
MKD-6	Ilinska Planina	27,548 ha
MKD-7	Jablanica	16,214 ha
MKD-8	Mantovsko Ezero i reka Kriva Lakavica	6,923 ha
MKD-9	Monospitovo Blato	873 ha
MKD-10	Ohridsko Ezero	24,757 ha
MKD-11	Pelister	17,171 ha
MKD-12	Prespansko Ezero	19,770 ha
MKD-13	Reka Vardar	61,590 ha
MKD-14	Stogovo	11,586 ha

Figure 5.5 Map of KBAs in North Macedonia



Türkiye sub-region

Türkiye has 148 KBAs in the hotspot, 26% of the total. These cover 74,642 km^2 of land within the hotspot or 32.5 % of the total area of all KBAs in the countries covered by the ecosystem profile update.

Table 5.11 List of KBAs in Türkiye

KBA Code	KBA Name	Surface
TUR-1	Acigöl	32,745 ha
TUR-2	Acikir Bozkirlari	98,493 ha
TUR-3	Ahir Dagi	34,487 ha
TUR-4	Akbük Kiyilari	15,481 ha
TUR-5	Akçakale Bozkirlari	108,633 ha
TUR-6	Akdag - Çivril	52,262 ha
TUR-7	Akdag - Denizli	126,964 ha
TUR-8	Akseki ve Ibradi Ormanlari	134,444 ha
TUR-9	Aksu Vadisi	22,181 ha
TUR-10	Alaçam Daglari	80,675 ha
TUR-11	Alaçati	56,783 ha
TUR-12	Aladaglar	244,043 ha
TUR-13	Alata Kumullari	747 ha
TUR-14	Altinözü Tepeleri	74,530 ha
TUR-15	Altintas Ovasi	19,595 ha
TUR-16	Amanos Daglari	372,473 ha
TUR-17	Andirin	43,814 ha
TUR-18	Antalya Ovasi	27,043 ha
TUR-19	Araban Tepeleri	18,856 ha
TUR-20	Armutlu Yarimadasi	80,028 ha
TUR-21	Aydincik ve Ovacik Kiyilari	26,413 ha
TUR-22	Ayvalik	25,835 ha
TUR-23	Baba Dagi	54,871 ha
TUR-24	Babakale - Asos Kiyilari	13,800 ha
TUR-25	Bafa Gölü	17,659 ha
TUR-26	Bakirçay Deltasi	3,158 ha
TUR-27	Barla Dagi	59,419 ha
TUR-28	Bati Mentese Daglari	142,210 ha
TUR-29	Berit Dagi	73,030 ha
TUR-30	Beydaglari	191,002 ha
TUR-31	Beysehir Gölü	93,115 ha
TUR-32	Biga Daglari	31,089 ha
TUR-33	Binboga Daglari	92,158 ha
TUR-34	Bismil Ovasi	141,309 ha
TUR-35	Bodrum Yarimadasi	37,517 ha
TUR-36	Bogaziçi	55,317 ha
TUR-37	Bolkar Daglari	399,242 ha

KBA Code	KBA Name	Surface
TUR-38	Boz Daglari	236,238 ha
TUR-39	Bozova	164,731 ha
TUR-40	Bozyazi Kiyilari	2,144 ha
TUR-41	Burdur Gölü	25,100 ha
TUR-42	Burnaz Kumsali	1,360 ha
TUR-43	Büyük Menderes Deltasi	24,626 ha
TUR-44	Büyükçekmece Gölü	5,124 ha
TUR-45	Çanakkale Bogazi	110,313 ha
TUR-46	Çesme Bati Burnu	3,466 ha
TUR-47	Ceyhan Deltasi	34,040 ha
TUR-48	Ceylanpinar	384,633 ha
TUR-49	Çiçek Adalari	8,723 ha
TUR-50	Çiglikara Ormanlari (ve Avlan Gölü)	49,474 ha
TUR-51	Cizre ve Silopi	12,178 ha
TUR-52	Çorak Gölü	1,931 ha
TUR-53	Dalaman Ovasi	45,330 ha
TUR-54	Datça ve Bozburun Yarimadalari	256,763 ha
TUR-55	Dedegöl Daglari	138,585 ha
TUR-56	Devegeçidi Baraji	6,783 ha
TUR-57	Dicle Vadisi	135,559 ha
TUR-58	Dilek Yarimadasi	28,708 ha
TUR-59	Dimçay Vadisi	9,478 ha
TUR-60	Dogu Boncuk Daglari	40,079 ha
TUR-61	Egirdir Gölü	62,643 ha
TUR-62	Elbeyli	2,038 ha
TUR-63	Ermenek Vadisi	139,673 ha
TUR-64	Eruh Daglari	132,481 ha
TUR-65	Feke	167,885 ha
TUR-66	Fethiye	23,531 ha
TUR-67	Foça Yarimadasi	25,425 ha
TUR-68	Gavur Gölü	6,652 ha
TUR-69	Gazipasa - Anamur Kiyilari	30,354 ha
TUR-70	Gediz Deltasi	26,178 ha
TUR-71	Gelibolu Kemikli Burnu	22,923 ha
TUR-72	Gevne Vadisi ve Gokbel Yaylasi	22,353 ha

KBA Code	KBA Name	Surface
TUR-73	Geyik Daglari	251,440 ha
TUR-74	Girdev Gölü ve Akdaglar	74,960 ha
TUR-75	Gökçeada Dalyani	8,949 ha
TUR-76	Gökçeada Kuzey Kiyilari	9,148 ha
TUR-77	Gökdere	60,547 ha
TUR-78	Gökova Kuzey Kiyilari	18,339 ha
TUR-79	Göksu Deltasi	21,612 ha
TUR-80	Göksu Vadisi	52,791 ha
TUR-81	Gölcük Gölü	433 ha
TUR-82	Gölgeli Daglari	75,318 ha
TUR-83	Gorduk Deresi	11,987 ha
TUR-84	Güllük Dagi	35,251 ha
TUR-85	Güllük Körfezi	24,271 ha
TUR-86	Gülnar	17,543 ha
TUR-87	Güney Firat Vadisi ve Birecik Bozkirlari	210,048 ha
TUR-88	Harran Harabeleri	365 ha
TUR-89	Honaz Dagi	25,590 ha
TUR-90	Incirli Tepeleri	6,488 ha
TUR-91	Isikli Gölü	9,731 ha
TUR-92	Istanbul Adalari	9,454 ha
TUR-93	Kale	4,718 ha
TUR-94	Karaburun ve Ildir Körfezi Adalari	87,319 ha
TUR-95	Karacadag	135,464 ha
TUR-96	Karakuyu Sazligi	1,583 ha
TUR-97	Karamik Sazligi	9,341 ha
TUR-98	Karatas Gölü	2,428 ha
TUR-99	Kargi Çay Vadisi	7,385 ha
TUR-100	Karkamis	16,071 ha
TUR-101	Kas-Kalkan Kiyilari	9,496 ha
TUR-102	Kastabala Vadisi	9,141 ha
TUR-103	Kaz Daglari	160,233 ha
TUR-104	Kazanli	1,616 ha
TUR-105	Kekova	27,302 ha
TUR-106	Kibriscik	95,339 ha
TUR-107	Kiliç Dagi	6,987 ha
TUR-108	Kizildag	2,210 ha
TUR-109	Kizildag Izmir	80,515 ha
TUR-110	Kizilot	8,129 ha
TUR-111	Kocaçay Deltasi	38,421 ha
TUR-112	Köprüçay Vadisi	147,008 ha
TUR-113	Köycegiz Gölü	39,857 ha

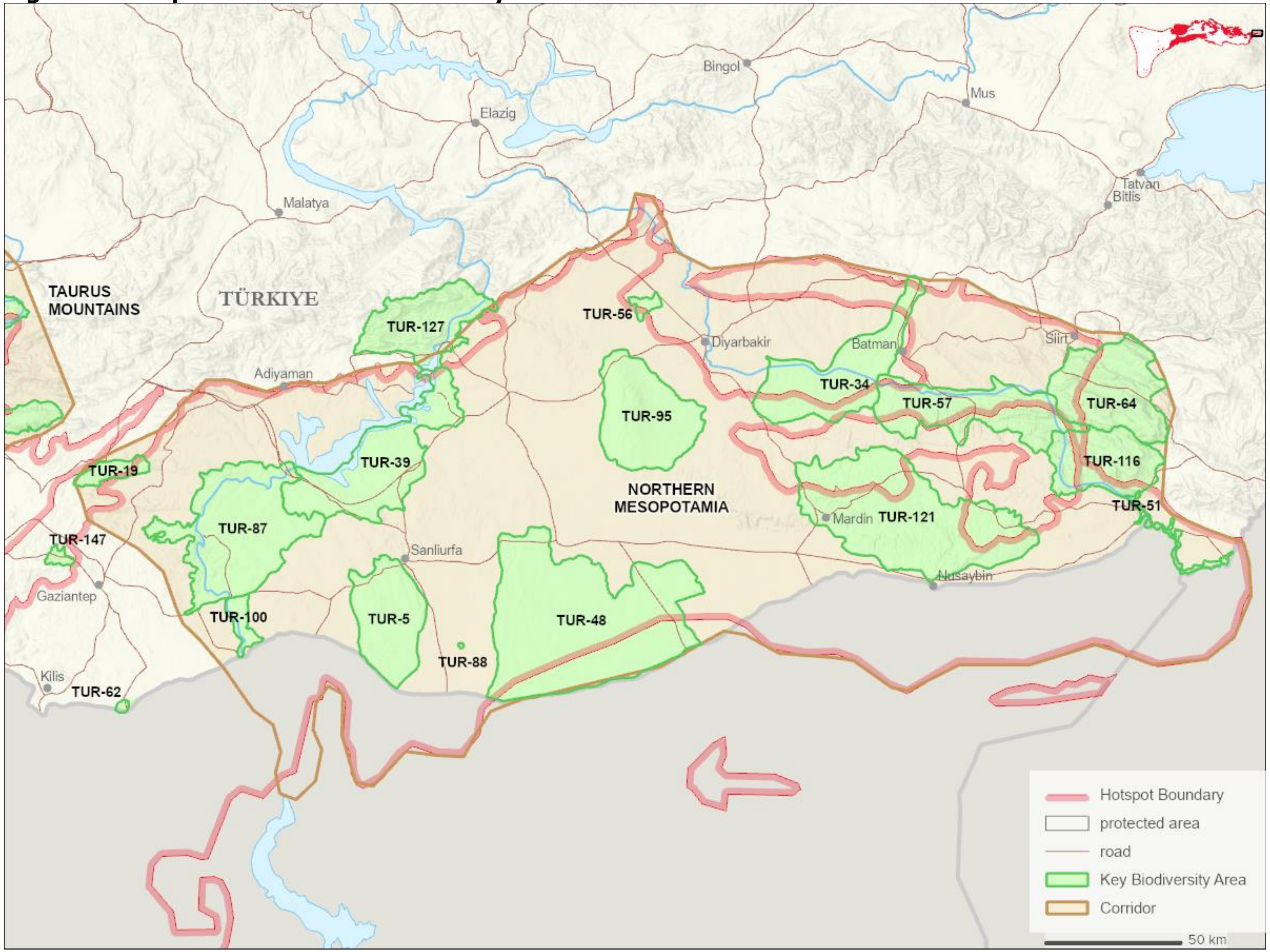
KBA Code	KBA Name	Surface
TUR-114	Küçük Menderes Deltasi	7,775 ha
TUR-115	Kumluca	3,168 ha
TUR-116	Küpeli Dagi	96,907 ha
TUR-117	Limonlu Havzasi	24,274 ha
TUR-118	Lower Orontes hydrobasin	9,394 ha
TUR-119	Mahal Tepeleri	69,820 ha
TUR-120	Manyas Gölü (Kus Gölü)	22,689 ha
TUR-121	Mardin Esigi	287,090 ha
TUR-122	Marmara Adalari	102,863 ha
TUR-123	Marmara Gölü	6,916 ha
TUR-124	Meriç Deltasi	15,297 ha
TUR-125	Mersin Tepeleri	46,152 ha
TUR-126	Murat Dagi	130,942 ha
TUR-127	Nemrut Dagi	104,096 ha
TUR-128	Nif Dagi	21,409 ha
TUR-129	Patara	11,854 ha
TUR-130	Pendik Vadisi	2,851 ha
TUR-131	Salda Gölü	6,224 ha
TUR-132	Samandag Kumullari	2,915 ha
TUR-133	Sandras Dagi	133,693 ha
TUR-134	Saros Körfezi	41,729 ha
TUR-135	Seyhan Deltasi	41,001 ha
TUR-136	Southern Çatalca Peninsula	128,966 ha
TUR-137	Spil Dagi	26,464 ha
TUR-138	Sugözü - Akkum	851 ha
TUR-139	Sündiken Daglari	212,703 ha
TUR-140	Tahtali Daglari	132,813 ha
TUR-141	Taseli Platosu	113,294 ha
TUR-142	Türkmenbaba Dagi	53,994 ha
TUR-143	Uluabat Gölü	24,515 ha
TUR-144	Uludag	136,513 ha
TUR-145	Yamanlar Dagi	36,247 ha
TUR-146	Yarisli Gölü	2,622 ha
TUR-147	Yesilce	5,453 ha
TUR-148	Yilanlikale Tepeleri	9,636 ha

Figure 5.6 Map of KBAs in North-Western Türkiye

Figure 5.7 Map of KBAs in South-Western Türkiye

Figure 5.7 Map of KBAs in Southern Türkiye

Figure 5.7 Map of KBAs in Eastern Türkiye



Middle East sub-region
The Middle East has 96 KBAs, 17% of the total number in the hotspot. These KBAs cover 17,262 km^2 of land in the hotspot or 7.5% of the total area of all KBAs in the countries covered by the ecosystem profile update.

Table 5.12 List of KBAs in Iraq (shown on map 5.11 with Syria)

KBA code	KBA name	surface
IRQ-1	Fishkhaboor	4,177 ha
IRQ-2	Mosul Lake	48,119 ha

Table 5.13 List of KBAs in Jordan

KBA code	KBA name	surface
JOR-1	Ajloun	15,183 ha
JOR-2	Dana	118,781 ha
JOR-3	Dibbin	46,501 ha
JOR-4	Hisma Basin - Rum	209,921 ha
JOR-5	Irbid - Mafraq plains	29,297 ha
JOR-6	Madaba - Hisban	25,925 ha
JOR-7	Wadi Mujib	34,839 ha
JOR-8	Northern Jordan Valley (North Ghor)	5,970 ha
JOR-9	Rumeinin spring	9,149 ha
JOR-10	Lava Safawai	79,683 ha
JOR-11	Wadi Ibn Hammad - Haditha	26,002 ha
JOR-12	Western Shuaib	6,795 ha
JOR-13	Wadi Yarmuk	38,337 ha

Table 5.14 List of KBAs in Lebanon

KBA code	KBA name	surface
LBN-1	Awally to Litani estuary	4,652 ha
LBN-2	Beirut Coast	3,279 ha
LBN-3	Beirut River Valley	10,151 ha
LBN-4	Bentael forest area	2,117 ha
LBN-5	Enfeh - Medfoun	5,518 ha
LBN-6	Jbail coast	208 ha
LBN-7	Jabal Moussa Mountain	21,953 ha
LBN-8	Mount Hermon	32,095 ha
LBN-9	Ehden - Bcharre - Tannourine / Makmal - Ainata	46,533 ha
LBN-10	Nahr Ed-Damour	6,266 ha
LBN-11	Nahr el Kabir southern basin	8,244 ha
LBN-12	Nahr Ibrahim estuary	54 ha
LBN-13	Nakoura - Tyre	4,387 ha
LBN-14	Palm Islands Nature Reserve	1,650 ha
LBN-15	Rihane - Chouf - Ammiq - Sannine	51,197 ha
LBN-16	Sarada	317 ha
LBN-17	Semi-arid north-western Anti-Lebanon	79,680 ha
LBN-18	Upper Litani River	11,673 ha
LBN-19	Qammouaa - Dinnyeh - Jurd Hermel	66,337 ha

Figure 5.8 Map of KBAs in Jordan

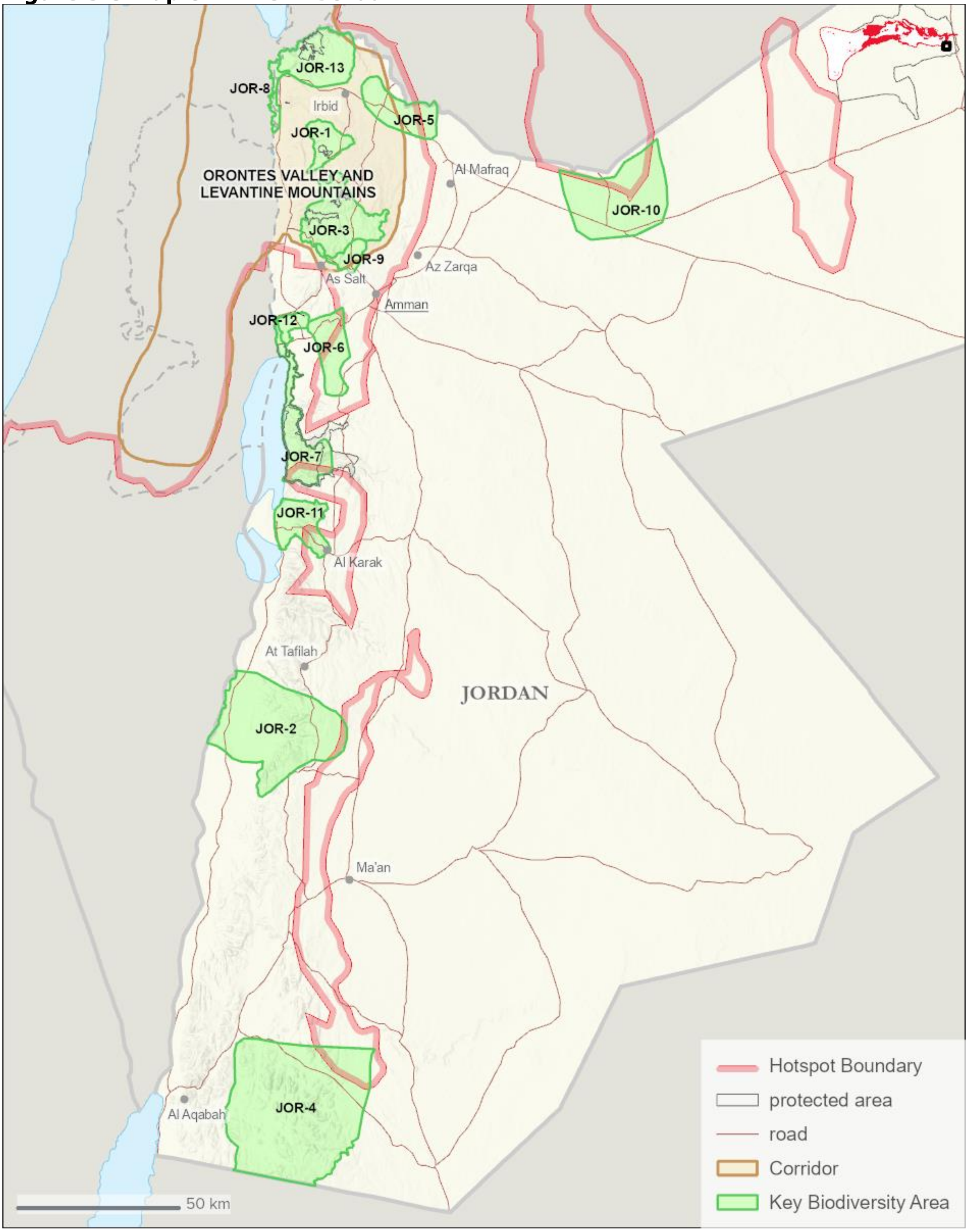


Figure 5.9 Map of KBAs in Lebanon

Table 5.15 List of KBAs in Palestine

KBA code	KBA name	surface
PSE-1	Al-Quds	5,166 ha
PSE-2	Central Ghor region	21,630 ha
PSE-3	Ein Al-Fashkha	22,110 ha
PSE-4	Ein el 'Auja and Wadi el Qilt region	13,495 ha
PSE-5	Jebal Al Khalil North region	5,761 ha
PSE-6	Jebal Al Khalil West region	4,708 ha
PSE-7	Jerusalem wilderness	21,624 ha
PSE-8	Masafer Yatta and Bani Naeim region	14,320 ha
PSE-9	North-eastern Slopes region	30,378 ha
PSE-10	Ein Qinia	2,170 ha
PSE-11	Um Al-Rihan	10,766 ha
PSE-12	Um Al-Safa - Nabi Saleh	5,193 ha
PSE-13	Wadi Al-Qof - Beit Kahel	2,519 ha
PSE-14	Wadi Qana and Wadi Al Shaer region	15,609 ha
PSE-15	Jebel Al-Ras - Wadi Al-Makhrour	1,106 ha
PSE-16	Jericho	2,109 ha
PSE-17	Mar Saba - Wadi Qadron	1,389 ha
PSE-18	Wadi Al-Qelt	6,274 ha
PSE-19	Wadi Gaza	1,836 ha
PSE-20	Ein Al-Oja	3,611 ha

Figure 5.10 Map of KBAs in Palestine

Table 5.16 List of KBAs in Syria

KBA code	KBA name	surface
SYR-1	Abu Zad	10,073 ha
SYR-2	Afrin - Kurd Dag	157,250 ha
SYR-3	Northern El Kabir River	23,366 ha
SYR-4	Eastern Anti Lebanon Mountains	33,989 ha
SYR-5	Daher Al Qseir	4,423 ha
SYR-6	Eastern Akroum	5,343 ha
SYR-7	Euphrates Valley (Upper Section)	27,706 ha
SYR-8	Fronloq - Kasab	11,786 ha
SYR-9	Ghab	1,592 ha
SYR-10	Hadhbat al-Jawlan	80,098 ha
SYR-11	Hass - Jabbul	40,863 ha
SYR-12	Jabal Abdul Aziz	58,232 ha
SYR-13	Jabal Al Arab / Djebel el-Druze	154,028 ha
SYR-14	Jabal al-Shaykh	19,271 ha
SYR-15	Jabal al-Shuah	25,534 ha
SYR-16	Jabal Slenfeh	8,041 ha
SYR-17	Jebel Bilas	80,101 ha
SYR-18	Jebel El Wastani	112,160 ha
SYR-19	Jisr al Shoghur	16,417 ha
SYR-20	Kanfo	188 ha
SYR-21	Karatchok - Tigris	24,782 ha
SYR-22	Lajat	24,871 ha
SYR-23	Lattakia Beach	612 ha
SYR-24	Lower Orontes River	10,482 ha
SYR-25	Marmousa	47,970 ha
SYR-26	Qadmus	12,556 ha
SYR-27	Muzaireeb Lake	169 ha
SYR-28	Nahr al Hawaiz River	6,825 ha
SYR-29	North of Wuguf Plain	2,428 ha
SYR-30	Qassioun	18,979 ha
SYR-31	Quwayq River	38,525 ha
SYR-32	Sabkhat al-Jabboul	41,781 ha
SYR-33	Salma - Haffeh	4,136 ha
SYR-34	Tual al-'Abba	87,622 ha
SYR-35	Umm al-Tuyyur	17,123 ha
SYR-36	Upper Orontes River and Homs Lake (Bahrat Homs)	96,981 ha
SYR-37	Wadi al-Azib	108,184 ha
SYR-38	Wadi al-Qarn - Burqush	10,600 ha
SYR-39	Wadi al-Radd	52,181 ha
SYR-40	Wadi Qandil Beach	20 ha
SYR-41	Yarmuk valley	20,857 ha
SYR-42	Zebdani	16,058 ha

Figure 5.11 Map of KBAs in Syria and Iraq

North Africa sub-region
North Africa has 224 KBAs, equivalent to 39% of the total number in the hotspot. These cover 127,291 km^2 of terrestrial land in the hotspot or 55.4% of the total area of all KBAs in the countries covered by the ecosystem profile update.

Table 5.17 List of KBAs in Algeria

KBA code	KBA name	surface
DZA-1	Aures - Chelia	483,447 ha
DZA-2	Barrage de Boughzoul	22,540 ha
DZA-3	Cap Tenes	1,362 ha
DZA-4	Chaîne des Bibans	105,069 ha
DZA-5	Chaîne du Dahra	340,762 ha
DZA-6	Chott Ech Chergui	399,139 ha
DZA-7	Chott El Hodna	62,402 ha
DZA-8	Complexe de zones humides de la plaine de Guerbes - Sanhadja	39,906 ha
DZA-9	Dayet El Ferd	1,087 ha
DZA-10	Djebel Aissa	628,842 ha
DZA-11	Djebel Amour	1,272,100 ha
DZA-12	Djebel Babor et Tababort	24,486 ha
DZA-13	Djebel Boutaleb (Hodna)	29,448 ha
DZA-14	Djebel Chenoua	7,891 ha
DZA-15	Djebel Mégriss	6,668 ha
DZA-16	Constantine	28,575 ha
DZA-17	Djebel Ouarsseniss	1,908 ha
DZA-18	Djebel Takoucht	455 ha
DZA-19	Djebel Zaccar	77,155 ha
DZA-20	El Abiod Sidi Cheikh	114,719 ha
DZA-21	El Bayadh	158 ha
DZA-22	El Kala - Tarf	253,498 ha
DZA-23	Forêt d'Akfadou	28,241 ha
DZA-24	Forêt de Bainem (collines de la Bouzareah)	495 ha
DZA-25	Forêt de Djimla	1,197 ha
DZA-26	Forêt de Tamentout	5,625 ha
DZA-27	Ghar Rouban	66,599 ha
DZA-28	Haut Seybouse	119,792 ha
DZA-29	Lac Fetzara	7,534 ha
DZA-30	Marais de la Macta	44,585 ha
DZA-31	Massif de Ghazoul	5,518 ha
DZA-32	Mont de Dréat	5,491 ha
DZA-33	Monts des Traras	168,271 ha
DZA-34	Numidie occidentale	42,375 ha
DZA-35	Ouenza Nord	64,527 ha
DZA-36	Ouenza Sud	28,311 ha
DZA-37	Chréa	116,175 ha
DZA-38	Gouraya	2,394 ha
DZA-39	Taza	7,058 ha
DZA-40	Belezma	32,839 ha

KBA code	KBA name	surface
DZA-41	Massif Djurdjura	29,425 ha
DZA-42	Presqu'île de Collo	51,744 ha
DZA-43	Presqu'ile de l'Edough	61,434 ha
DZA-44	Mergueb	25,151 ha
DZA-45	Îles Habibas	63 ha
DZA-46	Sahel d'Arzew	11,810 ha
DZA-47	Sahel d'Oran	28,636 ha
DZA-48	Sebkha d'Oran	35,759 ha
DZA-49	Sebkhet Baker	1,513 ha
DZA-50	Tamesguida - Djendjen	5,883 ha
DZA-51	Théniet El Had	122,936 ha
DZA-52	Theniet El Had Zone Importante pour les Plantes	4,564 ha
DZA-53	Bou Redim	16 ha
DZA-54	Chott de Tinnsilt	2,000 ha
DZA-55	Garaet et-Tarf	23,199 ha
DZA-56	Île Rachgoune	27 ha
DZA-57	Lac Melah	921 ha
DZA-58	Lac Oubeïra	2,149 ha
DZA-59	Lac Tonga	2,660 ha
DZA-60	Levasseur	84,026 ha
DZA-61	Sebkhet Djendli	3,289 ha
DZA-62	Sebkhet Ez-Zemoul	5,047 ha

Figure 5.12 Map of KBAs in Algeria

Table 5.18 List of KBAs in Egypt

KBA code	KBA name	surface
EGY-1	Bohayrat El-Bardawil & Zaranik	128,215 ha
EGY-2	Bohayrat El-Burullus	109,160 ha
EGY-3	Lake Idku	1,823 ha
EGY-4	Lake Manzala and Lake Malaha	180,041 ha
EGY-5	Lake Maryut	543 ha
EGY-6	El Omayed	18,276 ha
EGY-7	Ras El Hekma coastal dunes	19,857 ha
EGY-8	Sallum Area	58,928 ha
EGY-9	Sallum Gulf	55,833 ha
EGY-10	Western Mediterranean Coastal Dunes	12,054 ha

Figure 5.13 Map of KBAs in Egypt

Table 5.19 List of KBAs in Libya

KBA code	KBA name	surface
LBY-1	Ajdabiya Marsh	1,365 ha
LBY-2	Al Hizam Alakhdar	88,384 ha
LBY-3	Bumbah Gulf	80,388 ha
LBY-4	Chat Elbadine	1,028,082 ha
LBY-5	Elfatayeh	1,054 ha
LBY-6	Geziret Farwa	13,562 ha
LBY-7	Geziret Garah	58 ha
LBY-8	Gulf of Sirte	73,572 ha
LBY-9	Jabal al Akhdar	1,151,978 ha
LBY-10	Nefhusa	1,338,156 ha
LBY-11	Karabolli	5,121 ha
LBY-12	Mamarica	155,876 ha
LBY-13	Sebkhet Qasr Ahmed (Taworgha)	106,139 ha
LBY-14	Tawuoryhe Sebkha	119,743 ha

Figure 5.14 Map of KBAs in Libya

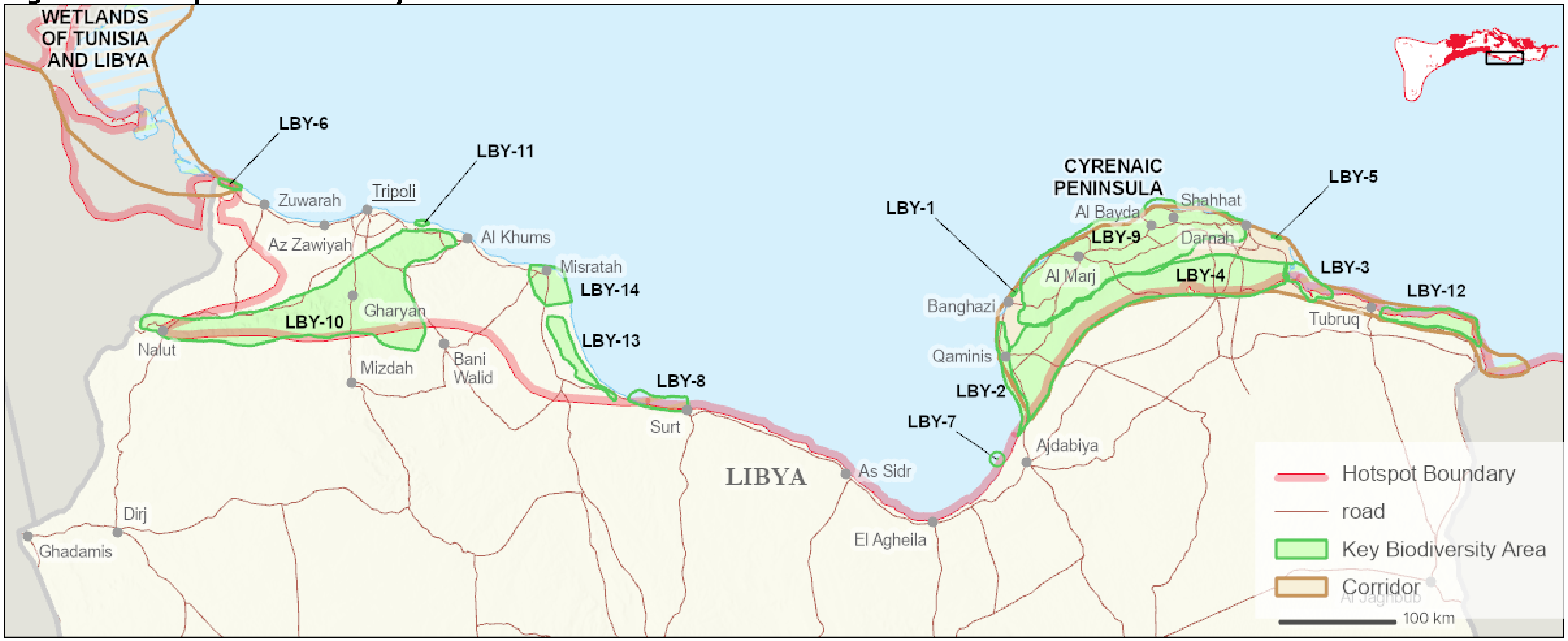


Table 5.20 List of KBAs in Morocco

KBA code	KBA name	surface
MAR-1	Aire Marine de Melilla - Nador (l'Orientale)	73,089 ha
MAR-2	Aire Marine du Nord-Maroc (Al Hoceïma)	87,392 ha
MAR-3	Barrage al Massira	18,436 ha
MAR-4	Barrage Mohamed V	10,255 ha
MAR-5	Basse Oum Er Rbia	14,722 ha
MAR-6	Beni Snassene	6,944 ha
MAR-7	Bou Hachem	9,702 ha
MAR-8	Cap Spartel - Perdicaris	2,433 ha
MAR-9	Cap des Trois Fourches	4,532 ha
MAR-10	Oued Chebeika	35,469 ha
MAR-11	Marais Larache (Bas Loukkos)	38,720 ha
MAR-12	Région Jorf Lasfar	413 ha
MAR-13	Côte Imsouane - Taghazout	12,966 ha
MAR-14	Courant des Canaries - Zone I	389,466 ha
MAR-15	Courant des Canaries - Zone II	671,400 ha
MAR-16	Courant des Canaries - Zone III	266,115 ha
MAR-17	Dayas d'Essaouira	6,906 ha
MAR-18	Dayas du Gharb	1,749 ha
MAR-19	Détroit de Gibraltar	108,091 ha
MAR-20	Dunes d'Essaouira	43,777 ha
MAR-21	Embouchure Oued Moulouya	16,505 ha
MAR-22	Falaise Sidi-Moussa	138 ha
MAR-24	Haute Moulouya	43,392 ha
MAR-25	Jbel Krouz	178,615 ha
MAR-26	Jbel Moussa	4,144 ha
MAR-27	Parc Naturel de Talassemtane	127,542 ha
MAR-28	Jbel Tichouket	14,695 ha
MAR-29	Jbel Zerhoun	22,937 ha
MAR-30	Imzi	167,213 ha
MAR-31	Maamora	160,899 ha
MAR-32	Marais et Côte du Plateau Rmel	234 ha
MAR-33	Dwiyate	733 ha
MAR-34	Merja Zerga	8,550 ha
MAR-36	Oued Oum Er-Rbia	152,260 ha
MAR-37	Msseyed	352,002 ha
MAR-38	Oued Amezmiz	17,720 ha
MAR-39	Oued Bouhlou	18,235 ha
MAR-40	Oued Matil - Ksob	124 ha
MAR-41	Oued Mird	456,213 ha
MAR-42	Oued Tizguite et Oued Ouaslane	68,797 ha
MAR-43	Oued Lakhdar - Oued Ahançal	80,326 ha
MAR-44	Parc National d'Al Hoceima	46,509 ha
MAR-45	Lagune de Khnifiss	165,509 ha
MAR-46	Parc National de Souss-Massa and Aglou	55,403 ha

KBA code	KBA name	surface
MAR-47	Parc National de Tazekka	13,868 ha
MAR-48	Parc National de Toubkal	37,194 ha
MAR-49	Parc Naturel d'Ifrane	78,268 ha
MAR-50	Parc National du Haut Atlas Oriental	55,471 ha
MAR-51	Plage Blanche - Ras Takoumba	4,077 ha
MAR-52	Plaines côtières de Saidia	4,356 ha
MAR-53	Canton Forestier de Sidi Bou Ghaba	949 ha
MAR-54	Sebkha Bou Areg	13,745 ha
MAR-55	Sebkha Zima	674 ha
MAR-56	Sahb al Majnoun	3,859 ha
MAR-57	Sidi Moussa - Oualidia	7,991 ha
MAR-58	Piste de Tagdilt	14,925 ha
MAR-59	Tasga	149,674 ha
MAR-60	Vallée du Haut Tifnout	12,678 ha
MAR-61	Wad et Jbel Mgoun	133,446 ha
MAR-62	Wad Lakhdar	331,407 ha
MAR-63	Région Fouchal - Matarka	322,657 ha
MAR-64	Zone Humide de Laayoune	1,882 ha
MAR-65	Archipel d'Essaouira	63 ha
MAR-66	Barrage Idriss Premier	3,347 ha
MAR-67	Montagnes du Moyen-Atlas Oriental	351,609 ha
MAR-68	Imouzzer du Kandar	85,841 ha
MAR-69	Islas Chafarinas	27,444 ha
MAR-70	Oued Tahadart	22,252 ha
MAR-71	Oued N'Fiss	113,579 ha

Figure 5.15 Map of KBAs in Morocco

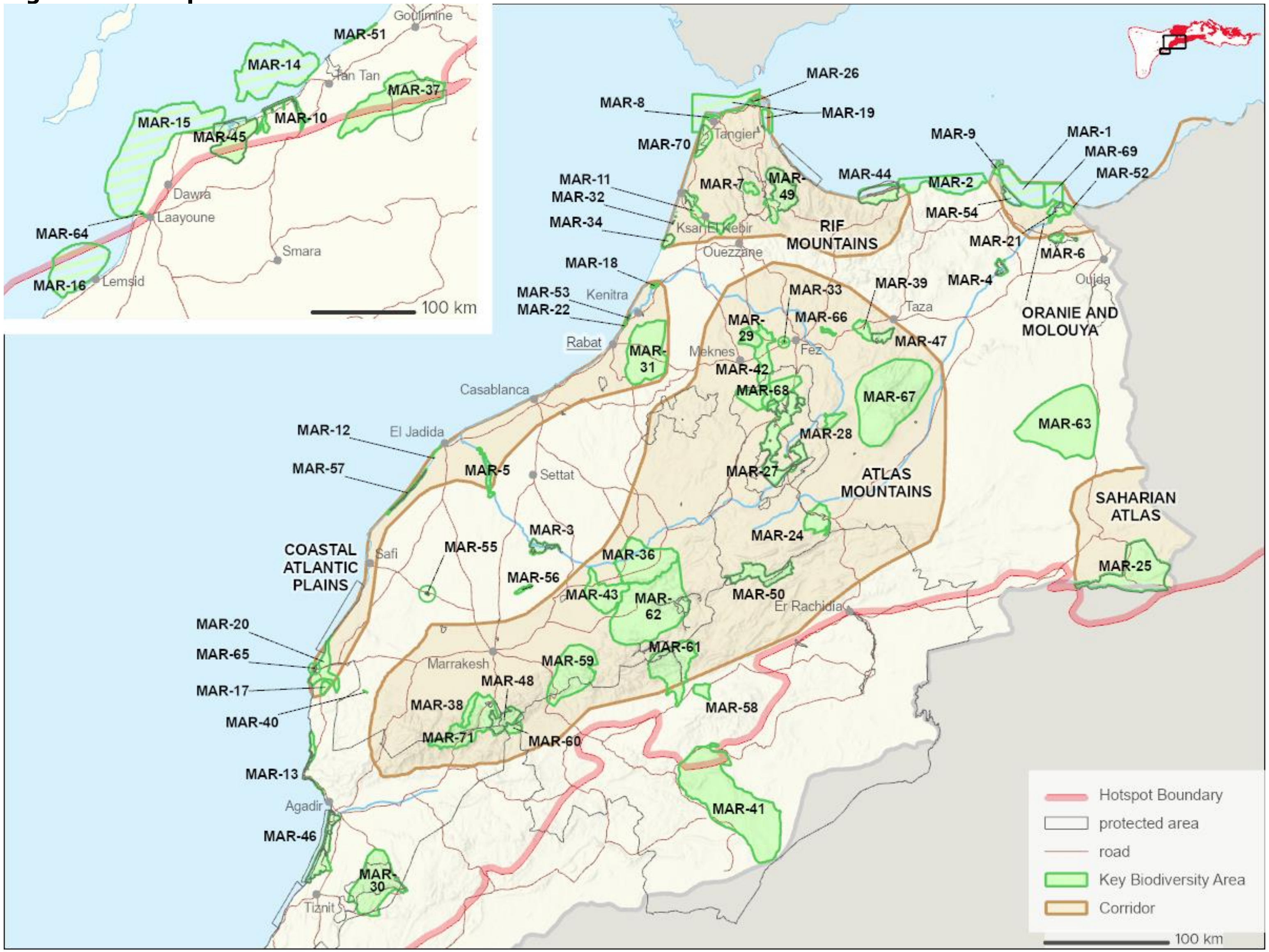


Table 5.21 List of KBAs in Tunisia

KBA code	KBA name	surface
TUN-1	Aqueduc de Zaghouan	6 ha
TUN-2	Archipel de la Galite	8,144 ha
TUN-3	Archipel de Zembra	141,221 ha
TUN-4	Barrage Bezikh	84 ha
TUN-5	Barrage Chiba	107 ha
TUN-6	Barrage Lebna	684 ha
TUN-7	Barrage El Houareb	868 ha
TUN-8	Barrage El Ogla	84 ha
TUN-9	Barrage Khairat	319 ha
TUN-10	Barrage Masri	78 ha
TUN-11	Barrage Mlaâbi	82 ha
TUN-12	Barrage Mornaguia	148 ha
TUN-13	Barrage Moussa	18 ha
TUN-14	Barrage Moussa Chami	30 ha
TUN-15	Barrage Oued El Haajar	210 ha
TUN-16	Barrage Oued Rmal	582 ha
TUN-17	Barrage Sidi Abdelmonem	24 ha
TUN-18	Barrage Sidi Jdidi	110 ha
TUN-19	Côte du Cap Negro - Cap Blanc (Plages de Sidi Mechreg)	8,119 ha
TUN-20	Forêt de Cap Negro - Cap Serrat (Oued El Zouara)	21,705 ha
TUN-21	Côte de Zerkine et El Grine	7,296 ha
TUN-22	Côtes de l'Île de Djerba	21,356 ha
TUN-23	Dunes de Ras El Melan	1,910 ha
TUN-24	Dyr El Kef	837 ha
TUN-25	Garaet Douza	1,643 ha
TUN-26	Garaet Sejnane	1,956 ha
TUN-27	Golfe de Boughrara	50,360 ha
TUN-28	Île de Djerba	48,406 ha
TUN-29	Îles Kerkennah	15,333 ha
TUN-30	Îles Kneiss	15,933 ha
TUN-31	Îles Kuriat	3,570 ha
TUN-32	Jbel el Haouaria	1,357 ha
TUN-33	Jbel Nadhour et Lagune de Ghar El Melh	23,952 ha
TUN-34	Jbel Zaghouan	8,073 ha
TUN-35	Kroumirie	7,205 ha
TUN-36	Lac de Tunis	3,739 ha
TUN-37	Lagunes de Korba	377 ha
TUN-38	Lagune de Soliman	635 ha
TUN-39	Lagune El Bibane	24,962 ha
TUN-40	Lagunes de Maâmoura et Tazarka	614 ha
TUN-41	Rivière Maden	82,003 ha
TUN-42	Metbassta	100 ha
TUN-43	Oasis de Gafsa	1,377 ha
TUN-44	Oasis de Lalla	887 ha

KBA code	KBA name	surface
TUN-45	Oued Maltine	659 ha
TUN-46	Jbel Bou Kornine	3,677 ha
TUN-47	Bouhedma	24,767 ha
TUN-48	Chaâmbi	7,620 ha
TUN-49	Ichkeul	13,270 ha
TUN-50	El Feidja	3,237 ha
TUN-51	Plaines de Kairouan	1,389 ha
TUN-52	Réserve Naturelle Aïn Zana	0 ha
TUN-53	Réserve Naturelle Jebel El Ghorra	2,348 ha
TUN-54	Salines de Thyna	33,670 ha
TUN-55	Sebkhet Ariana	3,849 ha
TUN-56	Sebkhet Dreiaâ	1,616 ha
TUN-57	Sebkhet Ennoual	23,076 ha
TUN-58	Sebkhet Halk El Menzel et Oued Sed	2,257 ha
TUN-59	Sebkhet Kelbia	13,559 ha
TUN-60	Sebkhet Sejoumi	2,705 ha
TUN-61	Sebkhet Sidi El Hani	44,376 ha
TUN-62	Sebkhet Sidi Khelifa	1,523 ha
TUN-63	Sebkhet Sidi Mansour	4,171 ha
TUN-64	Sejnane	76,133 ha
TUN-65	Steppe de Gafsa	24,358 ha
TUN-66	Garaet Mabtouh	2,059 ha
TUN-67	Jbel Serj	20,540 ha
TUN-68	Jbel Oust	15,795 ha
TUN-69	Salines de Monastir	1,300 ha

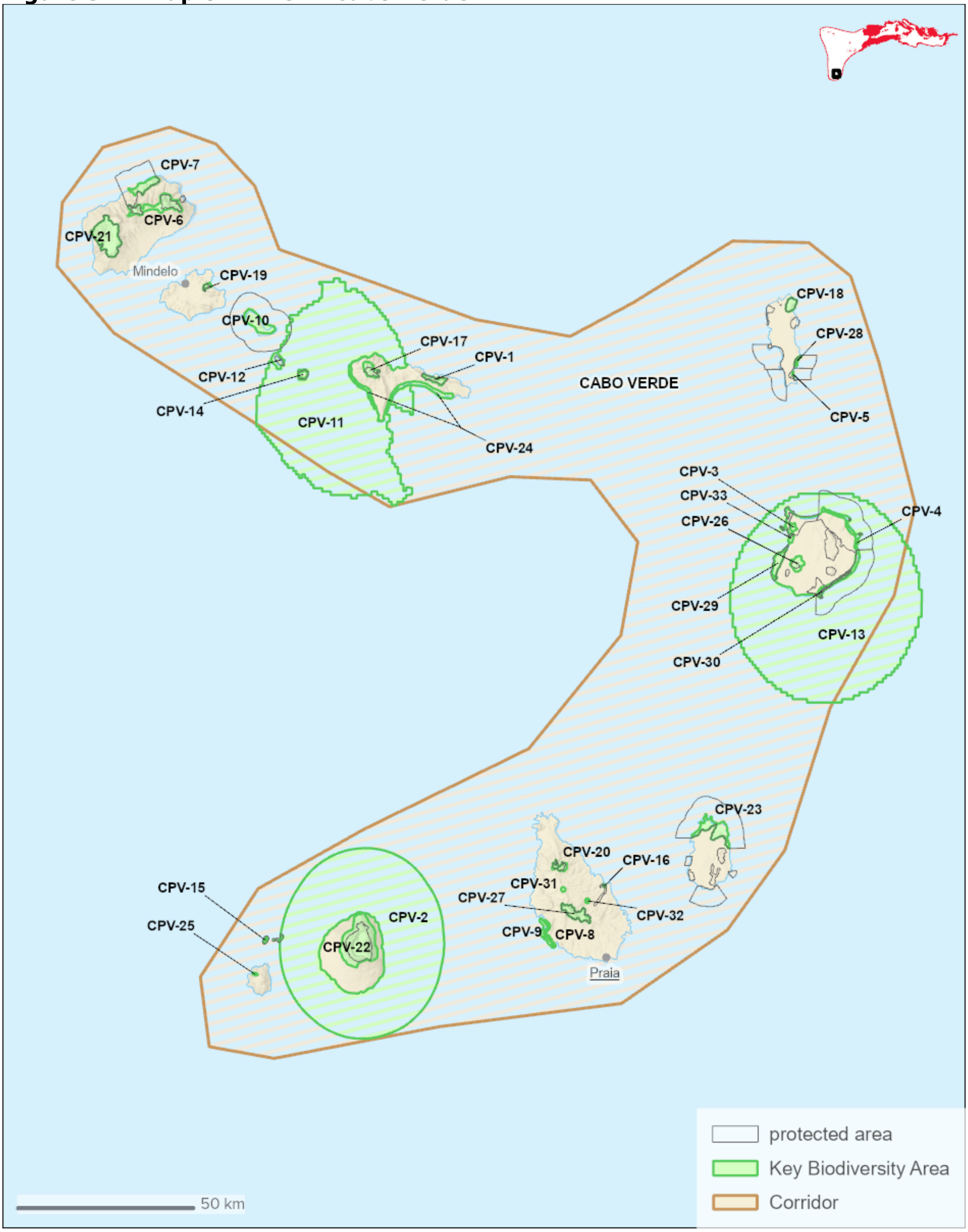
Figure 5.16 Map of KBAs in Tunisia

Macaronesia sub-region
Cabo Verde has 33 KBAs, equivalent to 5% of the total number in the hotspot. These cover just 671 km^2 of land in the hotspot.

Table 5.22 List of KBAs in Cabo Verde

KBA code	KBA name	surface
CPV-1	Alto das Cabaças	1,260 ha
CPV-2	Área do Vulcão, Ilha do Fogo - Marinha	247,251 ha
CPV-3	Boa Esperança	489 ha
CPV-4	Boavista praias	4,132 ha
CPV-5	Costa de Fragata	67 ha
CPV-6	Cova / Paul / Ribeira da Torre and Moroco	5,568 ha
CPV-7	Cruzinha da Garça	2,501 ha
CPV-8	Falésias costeiras entre Porto Mosquito e Baía do Inferno	212 ha
CPV-9	Falésias costeiras entre Porto Mosquito e Baía do Inferno - Marinha	1,293 ha
CPV-10	Ilha de Santa Luzia	4,246 ha
CPV-11	Raso / São Nicolau - Marinha	254,562 ha
CPV-12	Ilhéu Branco	1,546 ha
CPV-13	Ilhéu de Curral Velho - Marinha	307,052 ha
CPV-14	Ilhéu Raso	1,041 ha
CPV-15	Ilhéus do Rombo	280 ha
CPV-16	Lagoas de Pedra Badejo	105 ha
CPV-17	Serra Central da Ilha de São Nicolau	1,854 ha
CPV-18	Monte Grande	1,299 ha
CPV-19	Monte Verde / Norte da Baía	415 ha
CPV-20	Parque Natural da Serra da Malagueta	1,019 ha
CPV-21	Parque Natural de Tope Coroa	8,490 ha
CPV-22	Área do Vulcão, Ilha do Fogo	16,089 ha
CPV-23	Parque Natural do Norte do Maio	4,644 ha
CPV-24	Praias da Ilha de São Nicolau	5,145 ha
CPV-25	Ribeira de Fajã de Água	111 ha
CPV-26	Rocha de St António	1,709 ha
CPV-27	Serra do Pico da Antónia	2,873 ha
CPV-28	Serra Negra	327 ha
CPV-29	Varandinha	2,121 ha
CPV-30	Ilhéu de Curral Velho e zona costeira adjacente	625 ha
CPV-31	Kapok tree, Boa Entrada	183 ha
CPV-32	Mahoganies at Banana, Ribeira Montanha, Ilha de Santiago	183 ha
CPV-33	Ribeira do Rabil	473 ha

Figure 5.17 Map of KBAs in Cabo Verde



5.3.3 KBAs and protected areas

While KBAs are sites of elevated conservation importance, they are not necessarily protected areas, because they are identified on the basis of information on species and ecosystems, without taking into account the management status of the site. The fact that KBAs are identified independently of protected areas (even if boundary delineation processes do take into account the existence of protected areas) means that comparing the distribution of KBAs with the distribution of protected areas is a useful way of identifying gaps in the protected areas network, and of highlighting species or ecosystems that are not adequately protected. Once such gaps are identified, however, there are many possible ways of achieving the objective of ensuring that threatened biodiversity and associated ecosystem services are conserved. These include expansion of existing protected areas or creation of new ones, as well as sympathetic management of areas outside protected areas by resource users (e.g., local communities, private companies, etc.) or integration of biodiversity conservation into plans and policies for development sectors with an environmental footprint, for example water, tourism and energy. Wherever possible, KBAs should be granted an appropriate designation, with conservation objectives, as either a conventional protected area, a Community Conservation Area (CCA) or an Other Effective area-based Conservation Measure (OECM), in order that they can contribute to Target 3 (the so-called "30x30 target") of the Global Biodiversity Framework.

An indication of the degree of overlap between KBAs and protected areas was obtained by overlaying the KBA maps with available spatial information on protected areas. The World Database on Protected Areas was used as a basis but with updated data from several countries (Table 5.22). The analysis shows that, of 438 KBAs present in countries with reliable data, 189 (43%) are entirely or partly within protected areas. In all, 23,472 km^2, or 13% of the terrestrial area of KBAs in the hotspot, is covered by protected areas. This percentage is different among countries, with Egypt, Cabo Verde and North Macedonia having the greatest level of protection for KBAs (Table 5.23).

Table 5.23 Data sources for spatial analysis of KBAs and protected areas

Country Code	Country	Comments
ALB	Albania	Data provided by National Agency for Protected Areas of Albania
BIH	Bosnia and Herzegovina	Data from World Database on Protected Areas and corrections from CBD NFP Federal Ministry of Environment and Tourism. Data for Republika Srpska provided by Institute for Natural and Cultural Heritage
MNE	Montenegro	Data from World Database on Protected Areas
MKD	North Macedonia	Data from World Database on Protected Areas
LBN	Lebanon	Data from World Database on Protected Areas
SYR	Syria	Data from World Database on Protected Areas Data outdated, excluded from calculations
DZA	Algeria	Data from World Database on Protected Areas, and corrections from DGF
EGY	Egypt	Data from World Database on Protected Areas and corrections from EEAA Egypt
LYB	Libya	Data from World Database on Protected Areas. Data outdated, excluded from calculations
MAR	Morocco	Data from ANEF and World Database on Protected Areas
TUN	Tunisia	Data provided by World Database on Protected Areas and DGF in Tunisia
TUR	Türkiye	Data from World Database on Protected Areas
CPV	Cabo Verde	Data from World Database on Protected Areas and data provided participants at consultation workshop

Table 5.24 Summary of the overlap between KBAs and protected areas for countries with existing protected area data

Country	Total no. of KBAs	Total area KBAs (Km^2)	No. of KBAs partly or entirely within a PA	% of KBAs partly or entirely within a PA	Area of KBAs partly or entirely within a PA (km^2)	% KBA area partly or entirely within a PA
Albania	29	6,670	24	83%	3,232	48%
Bosnia-Herzegovina	9	1,057	7	78%	860	81%
Kosovo	1	209	1	100%	145	69%
Montenegro	18	1,219	14	78%	890	73%
North Macedonia	14	2,366	12	86%	1,186	50%
Balkans sub-region	**71**	**11,521**	**58**	**82%**	**6,313**	**55%**
Iraq	2	523	1	50%	481	92%
Jordan	13	6,464	8	62%	420	6%
Lebanon	19	3,563	9	47%	433	12%
Palestine	20	1,814	19	95%	531	29%
Syria	42	15,141	2	5%	0	0%
Middle East sub-region	**96**	**27,506**	**39**	**41%**	**1,865**	**7%**
Algeria	62	51,451	31	50%	10,463	20%
Egypt	10	5,847	7	70%	1,899	32%
Libya	14	41,635	0	0%	0	0%
Morocco	69	57,377	43	62%	20,004	35%
Tunisia	69	8,344	44	64%	2,505	30%
North Africa sub-region	**224**	**164,655**	**125**	**56%**	**32,366**	**20%**
Cabo Verde	33	8,781	27	82%	801	9%
Türkiye	148	93,768	9	6%	1,217	1%
TOTAL	**494**	**176,118**	**181**	**40%**	**23,900**	**14%**

Note : The data for protected areas has been extracted from WDPA (November 2024); the reliance of data is questionable for some countries which have not send or update their contributions to the World Database at the time of profiling (e.g. Libya, Syria). Kosovo data from https://ammk-rks.net/al/drejtorite/37/zonat-e-mbrojtura. *The WDPA data for Türkiye are incomplete and results for this country should be considered to be tentative calculations only. The WDPA data for Albania do not reflect recent changes in protected area network, and result for this country should be considered as estimates only.*

5.4 Corridor outcomes

5.4.1 Methodology

Corridors represent higher-level spatial units necessary to maintain ecological and evolutionary processes at the landscape scale. In the 2010 ecosystem profile, 17 corridors were identified, covering 435 KBAs. They were identified for the presence of highly threatened endemic species, provision of key ecosystem services, importance in maintaining ecosystem resilience, and ability to safeguard the health and biological integrity of the hotspot.

In 2016, the original analysis of corridors was reviewed and updated at the regional workshop. Where improved spatial data, especially on the boundaries of water catchments (often as a product of the identification of freshwater KBAs), were available, the boundary of the corridor was amended to more closely follow the catchment boundary. Where new information supported it, an existing corridor was extended or a new one defined.

Of the 17 corridors identified in the 2010 ecosystem profile, five were modified and two were merged. Hence, the 2016 update ecosystem profile included 16 corridors (Figure 5.27). These corridors have been retained for the current update to the ecosystem profile.
Of the 572 KBAs identified in the countries covered by the current update, 422 (or 74% of the total) are wholly or partially located within one or more corridors. Table 5.24 summarizes the relationship between corridors and KBAs, while the following section gives a brief summary of the main features of each.

Table 5.25 Corridors and KBAs in the Mediterranean Basin Hotspot

Corridor	Number of KBAs	Total corridor area (km^2)	Terrestrial area of corridor (km^2)	Terrestrial area of KBAs (km^2)	% of corridor in KBAs
Atlas Mountains	21	106,629	106,629	18,046	17%
Cabo Verde	33	42,742	4,058	669	16%
Coastal Atlantic Plains	10	13,297	12,863	2,267	18%
Cyrenaic Peninsula	10	30,109	27,211	22,372	82%
Dorsal and Tellian Atlas	51	82,650	82,083	13,325	16%
Eastern Adriatic	14	23,402	19,110	1,134	6%
Marmara Sea Basin	21	60,516	45,456	8,496	19%
Nile Delta Coast	6	14,759	11,114	1,590	14%
Northern Mesopotamia	22	62,011	62,011	19,165	31%
Oranie and Molouya	13	17,168	15,312	6,045	39%
Orontes Valley and Levantine Mountains	61	38,424	38,424	13,097	34%
Rif Mountains	11	15,488	15,174	1,930	13%
Saharian Atlas	5	61,902	61,902	21,935	35%
Southwest Balkans	53	37,808	35,280	8,574	24%
Taurus Mountains	98	167,616	153,698	52,503	34%
Wetlands of Tunisia and Libya	18	35,033	24,426	1,720	7%
Total	**447**	**809,554**	**714,751**	**192,867**	**24%**

5.4.2 Descriptions of corridors in the Mediterranean Basin Hotspot

Cabo Verde, Cabo Verde
The 10 islands and five islets that comprise the Cabo Verde corridors form one of the most important complexes of islands within the Mediterranean Basin Hotspot. The islands were once covered by dry forests and typical Mediterranean scrub habitat. However, agricultural intensification has destroyed much of the native vegetation. The remaining habitat is limited to the montane peaks and steep slopes. Some 92 species of plants (14%) are endemic to these islands. The KBAs in the corridor support three globally threatened species. Given the complex interactions between the island and marine ecosystems, an integrated landscape-scale approach is necessary to secure the biodiversity found here. Protection levels in the corridor are relatively high, with 57% of the terrestrial surface area of KBAs protected. The principal threats in this corridor are

residential and commercial development, alien invasive species and overexploitation of marine resources.

Figure 5.18 Corridors in the Mediterranean Basin Hotspot

Coastal Atlantic Plains, Morocco
Located between the Atlantic Ocean and the Atlas Mountains, this corridor covers some of the broadest coastal plains in Morocco, comprising the country's breadbasket for agriculture. This area is densely populated with several large cities found in the corridor, including Casablanca (Morocco's largest city with a population well in excess of 4 million in the metropolitan area). Consequently, threats to biodiversity include intensification of agriculture, development of housing areas and tourist resorts, which particularly threaten coastal wetlands and dune ecosystems. Nevertheless, pockets of suitable habitat for a diversity of highly localized, endemic and globally threatened species are still found (a total of 12 globally threatened species).

These core habitats form the basis of zones where connectivity can be increased by linking them together in the corridor. Wetlands, in particular, are home to rare aquatic plants (e.g., *Lotus benoistii*, CR), amphibians (e.g., *Pelobates varaldii*, EN) and mammals (e.g., *Gerbillus hesperinus*, EN). They also hold five species of fish in the *Barbus* genus endemic to Morocco. Sidi Bou Ghaba KBA also represents one of the principal sites for marbled teal (*Marmaronetta angustirostris*, VU) in North Africa. The corridor also holds the most southerly cork oak forests in the hotspot, including in Maamora KBA. These forests serve as source populations for both anchoring connectivity around these areas, and providing essential dispersal zones from which other regions can be propagated. Unfortunately, the protection level of KBAs in this corridor is very low.

Atlas Mountains, Morocco
The Moroccan Atlas Mountains are divided into separate ranges, including the Middle Atlas, High Atlas and Anti-Atlas. They all, however, comprise one ecological block of mountains and ensuring connectivity across them is a clear need. The most important rivers of the Maghreb region originate in this corridor. The mountain slopes of Middle and High Atlas ranges hold extensive forests, intersected by deep valleys. The dominant canopy tree species of the montane conifer forests is the endemic Atlas cedar (*Cedrus atlantica*, EN), which normally forms mixed stands with the evergreen holm oak (*Quercus ilex ballota*) and less frequently with deciduous oak species (*Q. faginea* and *Q. canariensis*). This corridor is home of a number of plant and animal species, especially reptiles and freshwater fishes, that are endemic to Morocco. The rate of endemism in flowering plants is also very high, with 237 endemic plant species in the Middle Atlas range. The southernmost mountains in the corridor, the Anti-Atlas Mountains, are under the Sahara's climatic influences and precipitation is much lower. KBAs in the corridor host 26 globally threatened species. The main threats to biodiversity include unsustainable water management, agricultural intensification, overexploitation of wild plant resources (aromatic and medicinal plant collection), and overgrazing, which causes soil erosion. This corridor is large enough to allow dispersal of species with large range sizes, such as Barbary macaque, Barbary sheep and Cuvier's gazelle. It maintains an altitudinal gradient rising up to Mt Toubkal, the highest peak in the hotspot, at 4,167 m.

Rif Mountains, Morocco
The Rif Mountains are one of the wettest regions of North Africa, with some parts receiving upwards of 2,000 mm of precipitation per year. As with many areas in the Mediterranean Basin Hotspot, historically most of the massif was covered with forests of Atlas cedar, Holm oak, cork oak, Moroccan fir and Aleppo pine. Today, remnants of montane forests still hold an enormous diversity of endemic amphibians and birds, as well as scattered populations of Barbary macaque (EN). The Rif Massif itself has more than 190 plant endemics. The corridor extends west and east of the main ridge to incorporate coastal wetlands, which are very important for waterbirds and threatened species of reptiles, amphibians, dragonflies and freshwater plants (for example, *Juncus maroccanus*, CR). Amongst these wetlands, Merja Zerga KBA was the last known regular wintering site for slender-billed curlew (CR) until the 1990s. The Strait of Gibraltar, which connects the Atlantic Ocean to the Mediterranean Sea and separates Spain from Morocco, is also crucial for many migratory species of sea fishes, mammals and birds. A

total of 15 globally threatened species are present in the KBAs in the corridor. Threats to biodiversity are numerous, and include water pollution, agricultural intensification, urbanization and human disturbance. Massive deforestation due to overgrazing and forest clearing for agriculture has taken place over the last century. Plantations have been developed to increase resiliency and connectivity in the corridor, and also to combat soil erosion.

Oranie and Molouya, Algeria and Morocco
This transboundary corridor between Morocco and Algeria includes a diversity of natural habitats, including typical Mediterranean maquis and forests, freshwater and brackish wetlands, and steppes. Some offshore islets are also important breeding sites for a significant number of seabirds. KBAs identified in the corridor are especially important for several highly threatened and restricted-range species of lizard (*Chalcides* spp.), marbled teal (VU), wetland-dependent plant species (e.g., *Spergularia embergeri*, VU, and *Limonium battandieri*) and, more generally, high numbers of waterbirds in winter. A total of six globally threatened species occur in the KBAs in the corridor. The area is quite densely populated, especially around the city of Oran in Algeria. Residential and tourist developments pose major threats to natural ecosystems in coastal areas. Pollution due to untreated waste urban water also contributes to the degradation of wetlands. Overgrazing and the intensification of agriculture are also serious threats. Given these threats, potential clearly exists for tackling these issues at a landscape scale, which will allow for greater connectivity in the corridor. Despite the designation of several wetlands as Ramsar sites, there is a difficulty of applying protection laws, notably due to the lack of support given to local protected-area managers. Moreover, none of the KBAs of the Oranie and Molouya corridor benefit from formal protection.

Saharian Atlas, Algeria and Morocco
This transboundary corridor between Morocco and Algeria includes three massifs, located at the southern boundary of the hotspot abutting the Sahara (Djebel Ksour, Djebel Krouz and Djebel Amour). Under both Mediterranean and Saharan influences, this area offers unique landscapes in North Africa, being at the transition zone from mesic to xeric habitats. Groves of *Juniperus* trees alternate with alfa steppes that were originally used by a large range of pre-Saharan mammals (such as lion, cheetah and hartebeest). This corridor is still important for several medium-sized mammals, particularly Barbary sheep (*Ammotragus lervia*, VU) and Cuvier's gazelle (*Gazella cuvieri*, VU). Two globally threatened species occur in the five KBAs present in the corridor. Threats include the development of infrastructures (roads and motorways) and illegal hunting, which cause major disturbances to large-range mammals occurring there. Overgrazing by livestock is also a problem as it prevents the regeneration of *Juniperus* forest and alfa steppes. Protected areas are still to be defined in this area.

Dorsal and Tellian Atlas, Algeria and Tunisia
This corridor covers terrestrial and coastal KBAs of two North African countries: Algeria; and Tunisia. The Tellian Atlas is a coastal mountain chain exposed to a typical Mediterranean climate allowing northern slopes to be covered with cedar, pine and cork oak forests. Important wetlands are found along the Algerian and Tunisian coasts, with El Kala and Ichkeul well known for their extraordinary congregations of wintering waterbirds. This corridor is home of threatened mammals, such as Barbary macaque (EN), Barbary sheep (VU) and Cuvier's gazelle (VU). Many species endemic to this part of the Maghreb are found there, including Algerian nuthatch (*Sitta ledanti*, EN). Twenty globally threatened species are present in the KBAs of the corridor. The extensive mixed *Quercus canariensis* and *Q. suber* forests of the Tellian Atlas and Kroumerie Mountains on the border between Algeria and Tunisia host the last existing populations of the African endemic deer subspecies, *Cervus elaphus barbarus*. These oak forests are also a refuge for serval (*Felis serval*), which has been almost extirpated from the Mediterranean region. The Tellian Atlas has 91 endemic plant species.

The area is densely populated, with several towns and one capital city (Algiers) included in the corridor or situated in the vicinity. As a result, urban and tourism development and water pollution are among the main threats, along with summer forest fires, dam building and overgrazing. The KBAs of the corridor are very poorly protected and although many wetlands are designated as Ramsar sites, very little management is in place.

Wetlands of Tunisia and Libya, Libya and Tunisia
This corridor encompasses the numerous wetlands found along the Gulf of Gabes, including the Tebessa Limestone Mountains and some of the last extant savannas in North Africa. The climate is semi-arid, with less than 300 mm of precipitation per year. Wetlands in the corridor harbor hundreds of thousands of wintering shorebirds on the extensive mudflats of the Gulf of Gabes. Freshwater marshes also hold good numbers of marbled teal (VU) and white-headed duck (*Oxyura leucocephala*, EN). The corridor is also home to the last populations of dorcas gazelle (*Gazella dorcas*, VU) and Cuvier's gazelle (EN) in Tunisia. Seven globally threatened species occur in the KBAs found in the corridor. The coast of Tunisia is a popular tourist destination. Consequently, housing and tourism development threaten wetlands and their biodiversity. Landscape-scale conservation is appropriate here, as this could increase resilience along the hard-hit coastal areas and further inland to the wetland KBAs. Overgrazing is also a serious problem here, as with many places in the Maghreb.

Cyrenaic Peninsula, Egypt and Libya
The Cyrenaic Peninsula (added in 2016) is an area of historic importance in Libya, as the region was heavily colonized by the Greeks in antiquity. Although annual rainfall is generally low, the vegetation and climate is more Mediterranean than in the rest of the country and sharply contrasts with the desert landscapes of the Great Sahara to the south. A diversity of habitats is found in the corridor, including Mediterranean maquis and forest, arid steppe, coastal wetlands and dune systems. Five globally threatened species occur in the KBAs in the corridor, which is of special importance for Egyptian tortoise (*Testudo kleinmanni*, CR), now almost extirpated from the country. Furthermore, the Cyrenaic Peninsula contains almost 80% of the Libyan flora, with approximatively 100 species endemic to the peninsula itself, including *Arbutus pavarii* (VU), *Cyclamen rohlfsianum*, *Libyella cyrenaica*, *Arum cyrenaicum* and *Orchis cyrenaica*. Wetlands in the corridor are home to the extremely threatened sebkha (a smooth, flat plain, usually high in salt) vegetation and associated endemic plants, such as *Frankenia syrtica*.

As the climate is more suitable for agriculture than in the rest of Libya, Cyrenaica is one of the most populated provinces. Consequently, conversion of coastal wetlands into housing areas is a serious threat (e.g., at Jabal al Akhdar and Chat Elbadine KBAs). Traditional hunting is very popular in this part of the country and a severe threat to waterbirds. Finally, agricultural expansion, charcoal production and road building threaten the KBAs in the corridor. Few protected areas are present, with only one (El Salum) being documented. Conservation initiatives are limited, partially due to the security situation. A landscape-level approach is essential for this corridor, as much of the endemic flora requires sufficient source areas that can serve as dispersal areas and corridors linking the fragmented habitat in the corridor. In addition, as climate change will likely alter rainfall patterns here, connecting the remaining habitat fragments in a matrix of land uses is essential to the corridor's long-term viability.

Nile Delta Coast, Egypt
This corridor covers the coastal part of the Nile Delta, with a series of extensive freshwater and brackish lakes. One of the world's largest river deltas, the Nile Delta, is home to hundreds of thousands of waterbirds in winter and hosts threatened and restricted-range small mammals and reptiles. The Nile Delta was once known for large swamps of papyrus (*Cyperus papyrus*) but papyrus is now largely absent from the delta.

Five globally threatened species occur in the KBAs in the corridor. People have lived in the Nile Delta region for thousands of years, and it has been intensively farmed for 5,000 years. Prior to the 20th century, the Nile River flooded on an annual basis but this ended with the construction of the Aswan dam in the 1960s.

Today, almost 40 million people live in the delta, which has a huge impact on the ecosystem. Agricultural intensification is perhaps the main threat, as it includes the conversion of remaining wetlands and the excessive use of pesticides and fertilizers. Pollution is a major problem, with industrial effluents, garbage and solid waste contaminating the water. The development of tourist resorts and road infrastructure also threatens coastal ecosystems. There are concerns about erosion, since the delta no longer receives an annual supply of nutrients and sediments from upstream due to the construction of the Aswan dam. While much of the work required here is upstream from the hotspot, there is still the possibility for conserving the wetland and lake KBAs at a landscape level, to ensure gene flow and connectivity between the species found there. Among the urgent conservation actions to undertake is developing better management of existing protected areas (covering 76% of the terrestrial area of KBAs in the corridor) and improving law enforcement for wildlife protection, as hunting pressure is very high in the whole area.

Orontes Valley and Levantine Mountains, Türkiye, Lebanon, Syria, Jordan and Palestine

This corridor stretches from the Orontes Basin in the north to the Great Rift Valley further south. The northern part of the corridor includes the valley, which serves as the main catchment area for the Orontes River, providing essential watershed services. The KBAs contained here include many of the snow-capped peaks of the Lebanon and Syrian Mountains and the rivers that flow from them. Elevations in the corridor range from sea level up to 3,000 m in Lebanon's Ainata KBA. The corridor has been designed to ensure that conservation in the montane KBAs can secure the catchment and water resources feeding KBAs in the Upper Orontes River Basin. The corridor extends further south to the Great Rift Valley, which is a landscape of great extremes in terms of altitudinal range and hosts the second most important flyway for migratory soaring birds in the world (1.5 million birds of 37 species, including five globally threatened species) and the most important flyway between Eurasia and Africa. The corridor has also been designed to ensure conservation of KBAs within large landscapes where traditional management is continuing. The focus is on threatened biodiversity, where it is clear that the survival of threatened species is dependent on the continuation of traditional management practices. Several highly threatened and endemic fish and reptiles are found in this corridor. The Upper Akkar/Hermel region is distinct in its 21% forest cover of ancient trees and as the entry bottleneck for soaring bird migration from Europe. Additionally, Mount Hermon KBA in Syria and Tannourine Nature Reserve KBA in Lebanon are important sites for endemic snakes and lizards. Collectively, the KBAs of the corridor support populations of 31 globally threatened species. The corridor delivers nearly all of the water for the country of Lebanon and has significant outflows into neighbouring Syria. The main threats acting in this corridor are residential and urban development, with many tourist facilities encroaching on important KBAs in the corridor and illegal hunting. However, agricultural intensification with poorly irrigated farms is the biggest threat to ecosystems and threatened species in the region.

Northern Mesopotamia, Syria and Türkiye

The Northern Mesopotamia Corridor covers semi-desert steppe habitats in Türkiye and Syria, including the Tigris and Euphrates Rivers and their surroundings, and the Anti-Taurus Mountains in the northern part. The corridor covers a vast altitude range from the Euphrates Valley KBA (310 m) up to an alpine peak of 2,240 m in Eruh Mountains KBA. The KBAs in this corridor collectively support populations of 11 globally threatened species, and contain good examples of riverine and riparian habitats of the Euphrates and Tigris Rivers, dry plain steppes and semi-desert habitats, volcanic steppe, mountain steppes, grassland, wetlands, cultivation, pistachio and fruit orchards, and eastern Mediterranean maquis and dry coniferous forests (Welch 2004). This region is considered one of the most important areas of plant diversity in Türkiye: 82 species are endemic to the Anti-Taurus Mountains and about 165 species are endemic to the Upper Euphrates region. The corridor is located in the northern part of the historically significant Fertile Crescent, where large-scale wheat domestication and cultivation first started. Prominent KBAs hosting wild relatives of various crop species in this corridor include Karacadağ and Ceylanpınar. The Euphrates and Tigris Rivers have been ecologically, socially and economically important for people over many millennia.

The main threats in the corridor are natural ecosystem modification through dam construction and irrigation, agricultural intensification, overgrazing and desertification. The corridor is one of the main energy and agricultural production centers for Türkiye. There have been efforts to develop irrigation and hydropower energy production on the Euphrates and Tigris Rivers since the 1970s. These efforts, known as the Southeastern Anatolia Project, transformed into a multi-sectoral social and economic development program in the late 1980s. The initiative had various negative environmental impacts, and led to extensive habitat and species loss, agricultural intensification, excessive irrigation and land encroachment for agriculture practices. Protecting the sites across this region to promote connectivity and resiliency is essential to maintaining and restoring the ecological functions and integrity of the landscape.

Taurus Mountains, Türkiye
The Taurus Mountains Corridor contains terrestrial, coastal and marine KBAs with good examples of the nearly all the diverse and varied habitats found in the Mediterranean Basin Hotspot. These include maquis and shrublands, Mediterranean forests, karstic ecosystems, alpine ecosystems, riverine systems, and coastal and inland wetlands. The world's largest and most intact stand of cedar of Lebanon (*Cedrus libani*, VU) is found here, along with forests of endemic fir and oak species. Prominent forest KBAs in this corridor include the Datça-Bozburun Peninsulas, Baba Mountain, İbradı-Akseki Forests and Amanos Mountains. Additionally, Türkiye's Lakes region lies within this corridor, with many important freshwater lakes. The corridor covers a vast altitude range, from the littoral zone at sea level in portions of the marine and coastal Datça-Bozburun Peninsula Specially Protected Area KBA up to an alpine peak of 3,756 m in Aladağlar KBA. The KBAs in the corridor collectively support populations of 43 globally threatened species. The Amanos Mountains KBA hosts the highest number of threatened species in Türkiye, is the main route of bird migration, and supports a unique, diverse and highly threatened relict flora with 20 Alliance for Zero Extinction species. Coastal KBAs in the corridor host seagrass (*Posidonia ocenica*) communities. Mediterranean monk seal (*Monachus monachus*, EN) is the flagship marine species of the corridor and several marine turtle nesting sites are on the coast. The corridor is the principal source of drinking water for main tourist centers on the coast and regulates the flow of water. The main threats in the corridor are residential and commercial development for tourism, forests fires, dams, unsustainable water use, agriculture and aquaculture, and road building. Marine and coastal zones have the potential for pollution due to oil pipelines and transport. Additionally, timber harvesting and extensive use of non-timber forest products by local communities are key threats.

Marmara Sea Basin, Türkiye
The Marmara Sea Basin Corridor covers marine, coastal, freshwater, wetland and terrestrial KBAs with both disturbed and intact patches of various Mediterranean and Euro-Siberian habitats, these include maquis and shrublands, the last remaining heathlands of Türkiye, Mediterranean forests, alpine ecosystems, riverine systems, Aegean and Marmara Seas and coasts, and inner and coastal wetlands. As one of the most important forest regions in Türkiye, the Istanbul Forests are represented in KBAs around Istanbul. Additionally, the Turkish straits system, Strait of İstanbul and Strait of Çanakkale (i.e., the Bosphorus and the Dardanelles) lie within this corridor as key

migration routes for marine species and birds in the western Palearctic region. The corridor covers a vast altitudinal range, from the depths of the Marmara Sea up to an alpine peak of 2,542 m within Uludağ KBA. The mountains of Kazdağları and Uludağ host most of the endemic species in the corridor. As the most threatened region of Türkiye, natural resources have been exploited for years as the principal source of land and water for the main industrial, urban and tourist centers.

The main threats in the corridor are: residential and commercial development for commercial, industrial, housing and urban areas; unsustainable water use; agriculture intensification; transportation and service corridors (including roads, utility lines, shipping lanes and flight paths); mining and extraction; and recreational activities. In the most populated region of Türkiye, pollution is one of the main threats. Pollution problems are caused by household sewage and urban wastewater, industrial effluents, agricultural effluents, garbage and solid waste, airborne pollutants and excess energy (heat, light, noise, etc.). Given that the threats to this corridor act at a landscape scale, the solutions to combating these threats also need to focus on the same scale. To preserve the ecological integrity of the corridor, it is essential to safeguard the key bottleneck sites along the Bosphorous and the Dardanelles. Additionally, geological events like earthquakes and tsunamis are also key threats.

Eastern Adriatic, Bosnia and Herzegovina, Croatia and Montenegro
This corridor covers a variety of habitat types, from karstic streams and caves to high mountain peaks to islands along the Croatian coast. The corridor ranges from sea level up to the lower slopes of Mount Dinara at 1,800 m. Many of the KBAs in this corridor are important for threatened plants, as well as restricted-range and threatened fishes and amphibians. Among the endemic and relict plant species are *Degenia velebitica*, *Viola elegantula* and *Sibiraea croatica*. The Krka River and Visovac Lake KBA host a Critically Endangered fish species (Visovac goby, *Knipowitschia mrakovcici*), and several endangered species, among which the Visovac trout (*Salmo visovacensis*) and the softmouth trout (*Salmothymus obtusirostris*), found in the lake and the lower drainage of this river. This species and many KBAs in this hotspot are threatened from land abandonment and agricultural intensification. Among coastal and island KBAs, tourism infrastructure poses a key threat to biodiversity. The KBAs in this corridor support 25 globally threatened species.

Southwest Balkans, Albania, North Macedonia, Greece, Kosovo and Montenegro
This corridor includes five countries in the hotspot, although CEPF investments, so far, are limited to three of them. This corridor was primarily identified for the unique freshwater biodiversity in this corner of the Mediterranean. There are three principal lake systems in the corridor: (i) Prespa - Ohrid, shared between Greece, North Macedonia and Albania; (ii) the Skadar/Shkodra Lake, shared between Albania and Montenegro; and Dojran Lake, shared between North Macedonia and Greece. This corridor includes highland KBAs, particularly important for plants, river valleys KBAs and coastal wetland KBAs particularly important for the avifauna. This corridor has some of the most important coastal wetlands for birds in the whole Mediterranean Basin, such as Divjake-Karavasta in Albania, that is home to up 1.5 of the global breeding population of Dalmatian Pelican (*Pelecanus crispus*) and Vjose-Narte, that is home for at least 4 wader species with reaching 1% threshold of the bio-geographical breeding population and several other species reaching the 1% threshold for congregations. In addition, the Drino Valley KBA holds congregations of Lesser Kestrel (*Falco naumanni*) containing upto 5% of the Global Population. It is essential to manage this region at a landscape scale, as pollution in the upper catchment is one of the key threats to the freshwater KBAs downstream. Civil society will not be able to avert threats from further farm abandonment unless integrated watershed management is undertaken in the montane and highland plateaus above freshwater lakes. Taken together, the global KBAs in this corridor support a total of 30 globally threatened species. This corridor ranges from sea level up to 2416 m in Tomorri Mountain in Albania. There is substantial overlay with the

bational networks of Protected Areas. However, threats have occurred, such as in Albania, that allows the construction of tourism infrastructure within several categories of Protected Areas, through the law 21/2024. Enforcement of the law and management of the PAs is inadequate and can be strengthened. Further, many of these protected areas are multiple-use zones, which do not effectively conserve the nature found in the KBAs. Habitat destruction, particularly in the coastal areas, is the main threat. Illegal hunting, overfishing and pollution of water resources are some additional key threats driving biodiversity loss.

5.5 Future work to improve the dataset for conservation in the Mediterranean Basin

The currently available information offers a sound basis for understanding and prioritizing conservation action. However, there are still many data omissions, which should be considered as priorities for further research and analysis by conservation actors working in the Mediterranean Basin. CEPF grantees may be able to contribute to these gaps in some cases:

- Implement studies, and publish existing studies, to describe new species and clarify the taxonomic status of many known species.
- Complete Red List assessments for more species in the region, with special emphasis on: (a) plants and other species groups that have not yet been widely assessed; (b) Data Deficient species that apparently have limited ranges and small populations; and (c) assessments based on data more than 10 years old.
- Carry out fieldwork to improve knowledge of the status and distribution of threatened species, particularly those known only from one or a few KBAs.
- Develop mechanisms at regional and national levels to locate, store and facilitate access to relevant data, link this this to KBA and Red List updating, and use this to periodically reevaluate the conservation outcomes.
- Invest in further survey and validation of the KBA network, as it becomes an increasingly important basis for directing conservation effort.
- Undertake reassessments of existing KBAs, applying the KBA criteria in the Global Standard, and identify additional KBAs based on updated biodiversity data.
- Identify and better understand ecosystem services in the Mediterranean Basin, including via a Red Listing process.
- Review and, if necessary, amend the Mediterranean Basin Hotspot boundary, which was defined 20 years ago, on the basis of earlier data. Any review of the boundary will need to consider how to take account of current and future impacts of climate change on its defining characteristics.

6. SOCIOECONOMIC CONTEXT OF THE HOTSPOT

6.1 Introduction

This chapter presents an overview of the socio-economic context of the 16 countries covered by the ecosystem profile update, with reference to other countries in the hotspot where relevant. Where data allow, a distinction is made between the portion of a country within the hotspot and the country as a whole. This distinction is important, because only a small part of the land area of some countries is included in the hotspot, although it should be noted that more than one-third of the Mediterranean population lives in the coastal administrative areas that overlap with the hotspot, and so national-level data often give a fair picture of the situation in the hotspot (UNEP 2016).

The chapter is based on the original ecosystem profile, with updated data and analysis based on desk research, consultation with a range of relevant experts, and with reference to the responses to questionnaires completed by grantees, donors, government agencies and others as part of the revision of this ecosystem profile. These responses provide additional detail of the impact of these economic and social sectors and issues on the environment, as well as an insight into use of natural resources in each country.

6.2 Context

The Mediterranean Basin has a recorded history of more than 5,000 years and is the hub of past civilizations whose heritage and cultural landscape made it unique in the world. The Mediterranean Sea has served as a central highway for commerce and cultural exchange among peoples from Africa, Asia and Europe, and contributed to the formation of a regional identity (EEA-UNEP/MAP 2014). In terms of religions, the Mediterranean can be broadly divided between countries that have traditionally followed Christianity (generally in the northwest of the region) and Islam (generally in the south and east of the region).

The Mediterranean region is a fragmented region politically, demographically and socio-economically. Its complex political and cultural history has led to the creation of over 30 countries and territories, ranging in area from 49ha (Vatican City) and 2 km^2 (Monaco) to 2.4 million km^2 (Algeria). More than half of these countries and territories have surface areas smaller than 100,000 km^2, while three, all in the North-African sub-region, have a surface area larger than 1 million km^2. There is a North-South gap, with the economically richer states of the northern rim (particularly the EU member states and, to a lesser extent, the Western Balkans) characterized by ageing populations, industrialized societies, expanding urban concentration and decreasing rural populations. In these countries, EU membership or candidacy status has contributed to peace and development of market economies. In contrast, the Arab states of the Middle East and North Africa are significantly poorer, with young, rapidly growing populations and often a larger proportion of the population living in rural areas and dependent on natural resources for their livelihoods. However, urban populations are increasing, especially in coastal areas, as large numbers of people migrate from the poorer south to the richer north. These flows have intensified in recent years due to insecurity following the "Arab spring" uprisings. The process of political and economic integration that has occurred among the EU countries has no equivalent the Middle East and North Africa, many of which continue to be politically unstable.

6.3 Key demographic trends and implications on environment

6.3.1 Demographic trends

The total population of the Mediterranean countries was 564 million in 2023 (UNEP 2016, World Bank Data 2024; Table 6.1).

Table 6.1 Summary of national level demographic statistics for main hotspot countries and territories

Country	Land Area (km^2)	Population (million) 2023	Population density (ppl/km^2) 2023	Annual population growth (%) 2023	Urban[1] population (% of total) 2023	Net migration (2023)
Countries covered by profile update						
Albania	28,750	2.7	96	-1.1	65	-8,000
Algeria	2,381,740	45.6	19	1.6	75	-9,999
Bosnia-Herzegovina	51,210	3.2	63	-0.7	50	-500
Cabo Verde	4,030	0.6	149	0.9	68	-1227
Egypt	1,001,450	112.7	112	1.5	43	-29,998
Kosovo	10,887	1.8	161	-0.7	…	-5,000
Jordan	89,320	11.3	127	0.5	92	-157,392
Lebanon	10,450	5.4	512	-2.5	89	-177,331
Libya	1,759,540	6.9	4	1.1	82	-2,000
Montenegro	13,810	0.6	45	-0.2	69	-480
Morocco	446,550	37.8	85	1.0	65	-39,998
North Macedonia	25,710	1.8	70	-1.1	59	-1,000
Palestine	6,020	5.2	858	2.4	78	-5,000
Syria	185,180	23.2	125	4.9	57	757,103
Tunisia	163,610	12.5	76	0.8	71	-4,000
Türkiye	783,560	78.7	109	0.4	77	-318,067
EU						
Croatia	56,590	3.9	68	-0.1	59	-2,000
Cyprus	9,250	1.3	136	0.7	67	5,000
France	549,087	68.2	124	0.3	82	67,761
Greece	131,960	10.4	78	-0.6	81	5,000
Italy	301,340	58.8	195	-0.3	72	58,496
Malta	320	0.6	1,729	4.1	95	850
Portugal	92,220	10.5	114	1.1	68	9,999
Slovenia	20,270	2.1	105	0.4	56	2,000
Spain	505,940	48.4	96	1.2	82	39,998

Coastal areas tend to have a concentration of economic activities, such as tourism, fishing and maritime trade, and, as a result, the population is highly concentrated along or close to the coast. Among the 739 administrative regions, 224 are considered coastal. Table 6.2 provides data about the share of the national population in coastal regions. The population data here are updated from World Bank data but the proportions of the population living in coastal areas are taken from 2014 and assumed to be constant.

Table 6.2 Proportion of the population living in coastal regions and Mediterranean hydrological basins (2001–2008) (EEA-UNEP/MAP 2014)

Country	% nat. pop. in Mediterranean coastal regions	% nat. pop. in Mediterranean hydro basins	Pop. within the hotspot (millions)	*Basis for calculating hotspot pop.*
Countries covered by profile update				
Albania	67	100	2.4	*Pop. in hydro basin*
Algeria	39	70	31.92	*Pop. in hydro basin*
Bosnia-Herzegovina	6	18	0.58	*Pop. in hydro basin*
Cabo Verde	100	100	0.60	*National pop.*
Egypt	35	93	39.45	*Pop. in coastal area*
Jordan	...	...	Not available	
Kosovo	...	...	Not available	
Lebanon	72	90	4.82	*Pop. in hydro basin*
Libya	83	85	5.86	*Pop. in hydro basin*
Montenegro	67	54	0.41	*Pop. in coastal area*
Morocco	11	12	37.84	*National pop.*
North Macedonia	...	...	0.91	*50% nat. pop.*
Palestine	68	38	5.17	*National pop.*
Syria	9	10	2.32	*Pop. in hydro basin*
Tunisia	69	84	10.46	*Pop. in hydro basin*
Türkiye	20	27	23.04	*Pop. in hydro basin*
EU				
Croatia	50	15	0.58	*Pop. in hydro basin*
Cyprus	100	100	1.26	*Pop. in hydro basin*
France	11	23	15.68	*Pop. in hydro basin*
Greece	59	88	9.12	*Pop. in hydro basin*
Italy	55	97	32.32	*Pop. in coast area*
Malta	100	100	0.55	*National pop.*
Portugal	...	...	5.27	*50% nat. pop.*
Slovenia	5	13	0.11	*Pop. in coast area*
Spain	39	45	21.77	*Pop. in hydro basin*
TOTAL			**262.65**	

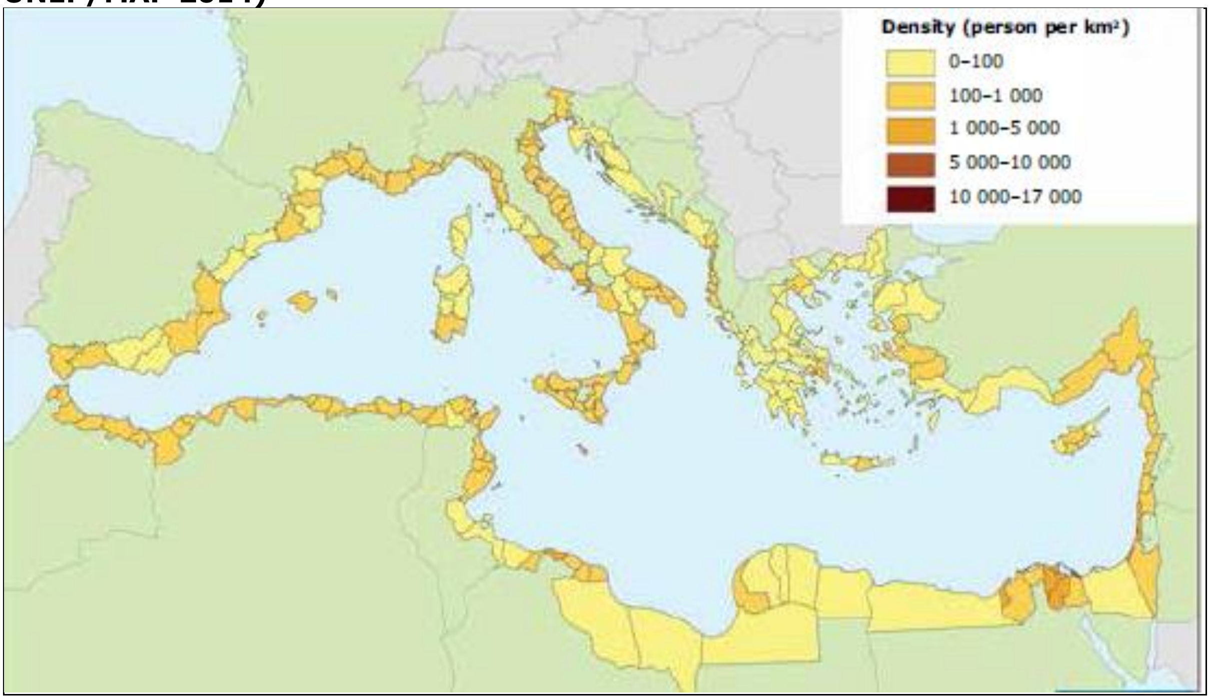
Twenty six out of the 30 Mediterranean countries exceed the global average population density of 59.8 people/km^2. However, there are marked differences of population density among the hotspot countries covered by the ecosystem profile update, with Lebanon and Palestine by far the most densely populated (572 and 796 people/km^2), and another five countries with density over 100 people/km^2 (see Table 6.1). At the other extreme, Libya (4 people/km^2), Algeria (17 people/km^2) and Egypt (28 people/km^2) have very low population densities.

Population density in the coastal regions of the Mediterranean is, on average, 120 people/km^2, as opposed to the national average of 58 people/km^2 (EEA-UNEP/MAP 2014). In the countries covered by the ecosystem profile update, the greatest concentration of population in coastal areas occurs in Libya (83%), Lebanon (72%), Tunisia (69%), Palestine (68%), Albania (67%) and Montenegro (67%). The variation in population density is greatest in North Africa, ranging from less than 20 people/km^2 in coastal Libya to over 1,000 people/km^2 in Nile Delta (UNEP 2012).

The population of the Mediterranean countries doubled from 240 million in 1960 to over 560 million in 2023. Over this period, the distribution of population around the Mediterranean changed dramatically. In 1960, Mediterranean EU member states accounted for 59% of the total population, while by 2023 this figure had dropped to 36%. In contrast, the share of Middle Eastern and North-African countries increased from 27 to 48% and the share of Western Balkans and Türkiye from 14 to 16% (EEA-UNEP/MAP 2014 updated). These changes are a consequence of differences in population growth rates. Two out of three of the largest countries covered by the ecosystem profile update (Algeria and Egypt) have annual population growth rates of around 1.6%. In contrast, Mediterranean countries on the north and a majority of the Western Balkan countries are characterized with either stagnant or decreasing population. Fertility in many countries of the south and east are also declining, and it is suggested that demographic convergence with northern countries is close in Lebanon, Türkiye and Tunisia, while rates in Libya and Morocco are falling (Plan Bleu 2020, UNEP 2020).

Thus, while only having 2.6% of the world's freshwater resources, 7.4% of the world's population has to be supplied with water (MED-EUWI 2007). Contrary to the total population development of the Mediterranean region, some single country projections show a decrease in population of 1% to 5% until 2025 and even 16 to 62% until 2100. Most of the countries with negative population growth rates are in the northern Mediterranean region (Albania, Bosnia and Herzegovina, Greece, Italy, Malta, Montenegro, North Macedonia, Portugal), except for Lebanon, which belongs to the eastern part (UN 2019, Fader *et al.* 2020)

Figure 6.1 Population density in the Mediterranean coastal regions (EEA-UNEP/MAP 2014)



Urbanization in the whole Mediterranean region has been very rapid in recent decades. In 1960, 48% of people in the region lived in urban areas. By 2023, this figure had risen to around 69%, with 388 million urban dwellers (EEA-UNEP/MAP 2014).

The region has traditionally been an area with strong migration flows into the EU member states, primarily from North-African Maghreb countries and, to a lesser extent, from Western Balkan countries and Türkiye. Over recent decades until a few years ago, these flows were dominated by economic migrants. The juxtaposition of wealthy

European countries and relatively poorer countries in North Africa and the Middle East has long created opportunities for northward migration for work or to settle. The jobs occupied by most immigrants in the European economies are unskilled or semi-skilled but, even so, wages in the agriculture sector are 10 to 13 times higher in Europe than south of the Mediterranean Sea (Compés-López *et al.* 2013).

The highest figures for net emigration in the last decade have been for Syria and Libya, as a result of the wars in these two countries, while lower but still significant emigration was experienced also by Algeria, Egypt and Morocco.

Türkiye, Lebanon and Jordan were the main destinations of the refugees from the Syrian war and so registered net immigration. There are close to 1.5 million refugees in Lebanon, making it the country with the highest per-capita concentration of refugees worldwide[14], plus another four million in Türkiye. There has been some reversal of migration in the last 2-3 years, as the level of active conflict in Syria has lessened, alongside political pressures for migrants to return.

The areas closest to the Straits of Gibraltar and Messina and the Aegean Sea are the conduit for displaced people trying to reach Europe. In 2010, arrivals by sea to Europe were less than 10,000 but, by 2015, there were estimated to be more than one million (UNHCR 2016). Over 10,000 people died making these journeys between 2014 and 2016, nine out of ten of immigration casualties in the world (IOM 2016). In addition to those displaced from Syria and Libya, countries of the hotspot are also transit routes for people migrating from sub-Saharan African and Asian countries to Europe.

6.3.2 Implications of demographic trends for the environment

The Mediterranean region is undergoing intense demographic change. Population growth, high population density and coastal urbanization cause increased demand for water and water resources, air and water pollution, increased land consumption, fragmentation of natural habitats, deterioration in the functioning of natural wetland ecosystems, overexploitation of biological resources, and rapid expansion of poorly planned coastal development. Conversely, rural depopulation causes the abandonment of traditional grazing and changes in forestry regimes, which can lead, in turn, to loss of habitats that are dependent on environmentally sustainable human activity to maintain their diversity. The introduction of diseases and invasive alien species through human activity presents an additional threat to biodiversity.

Conservation efforts in the region need to address population pressures on land and resources, by mitigating infrastructure development risks and supporting traditional rural livelihoods. In the recent years, refugee flows have added to pressure on the environment in both host and transit countries.

Finally, climate change in the region has numerous implications for the population. A general rise in temperature accompanied by more frequent heat waves is already facilitating the spread of tropical diseases, especially insect-borne diseases, while an increase of dust-charged winds from Sahara (as well as air pollution) could increase incidence of allergies and respiratory problems. Climate change will also disrupt traditional agricultural systems and water supplies, affecting food security and putting increasing pressure on upland ecosystems. These pressures will exacerbate environmental degradation, so that there is a risk that climate change and unsustainable land management become mutually reinforcing drivers of degradation. Finally, sea-level rise is threatening low-lying coastal areas already under pressure from increasing coastal erosion due to sediment retention in dams. These issues are discussed in greater detail in Chapter 10.

[14] Note that most data on refugees and migration are estimates, as much of the process is illegal and unrecorded.

6.4 Key economic and social trends

6.4.1 Macroeconomic trends

There is a large difference between levels of national GDP north and southeast of the Mediterranean Sea. The balance is changing, with the contribution of Mediterranean EU member states to Mediterranean GDP declining from 82% in 1980 to 75% in 2015. However, the EU economies remain dominant, with France, Italy and Spain each with a GDP of over US$1.5 trillion in 2023. The GDP of France or Italy alone was higher than the combined GDP of all 16 countries covered by the ecosystem profile update. Among these countries, Türkiye is by far the largest in economic terms with GDP of US$1.1 trillion in 2023, and with G-20-member status. Three other countries (Egypt, Algeria and Morocco) have GDPs exceeding US$140 billion (Table 6.3).

GDP growth rates of the countries covered by the ecosystem profile update have been higher in recent decades than those of the EU members. A majority of Middle Eastern and North-African countries as well as Türkiye registered a growth rate of over 2% in 2015, and three grew even faster (Morocco, 4.4%; Egypt, 4.2%; Türkiye, 4%). However, all countries suffered economic downturns and crises during the coronavirus pandemic in 2020 and 2021. Since then, recovery has been mixed, with strong economic growth in Algeria, Egypt, Morocco, Jordan and Türkiye, while Libya and Palestine both experienced negative growth in 2023 and Lebanon experienced a serious economic crisis with severe inflation and economic retraction.

Among EU member states, growth rates were significantly lower, partly due to the ongoing consequences of the global and euro-zone financial crises, followed by the pandemic and increases in costs of living in part associated with the Russian invasion of Ukraine. Growth slowed in other areas in 2023, as a result of high costs, and, for some, the slowdown in the EU. For example, growth in the Western Balkans slowed from 3.4% in 2022 to 2.6% in 2023, although some countries' economies grew faster, for example Montenegro at 6% in 2023 and Albania at 3.3% (World Bank 2024).

The relatively high economic growth rates of the Middle Eastern and North African countries have not kept pace with their rapid population growth and cost of living increases. In 2023, the average income per capita of southern countries (around US$6,000) was still five times lower than the average per capita income in the EU, little changed since 1980 (EEA-UNEP/MAP 2014). This masks a significant variation in per capita GDP among the countries covered by the ecosystem profile update, with Syria by far the poorest country, with a 2021 estimate of just US$421 per capita, although the accuracy and comparability of this figure is uncertain. Egypt, Morocco, Palestine, Libya and Lebanon are the next lowest (all below US$4,000) while Montenegro and Türkiye are the highest (over US$12,000). Most other countries sit at levels between US$5,000 and US$8,000 (Table 6.3).

Unemployment continues to be a major economic and developmental problem throughout the region (Table 6.3). Two-digit unemployment rates were registered in all but three of the countries covered by the ecosystem profile update. Unemployment was particularly high in some of the Western Balkan countries over the past decade and, although now reduced, still exceeds 10% in each of them and remains at over 15% in Montenegro. Elsewhere, rates remain high in Palestine (24.4%), Libya (18.7%) and Jordan, and lowest in Egypt (7.3%). Unemployment is generally lower in EU countries (each less than 10%) after recovery by some of those worst hit by the eurozone crisis.

6.4.2 Economic sector trends

Economic development in the Mediterranean region is dominated by three sectors, all of which have a very large ecological footprint (see Section 6.5): (i) natural resources, including agriculture, forestry and fishery; (ii) energy, based on non-renewable sources, primarily oil and gas, as well as on renewable sources, primarily wind, hydropower and solar energy; and (iii) services, primarily tourism and shipping.

Over 85% of the Mediterranean's total agricultural production is cereals, vegetables and citrus fruit. The area of cultivated land has remained approximately stable since the 1960s, even though total production has increased between 2.5 and 5 times (UNEP 2012), primarily as a result of greater use of irrigation. Nevertheless, the Middle Eastern and North-African countries are still highly dependent on food imports. In drier parts of the Mediterranean, agriculture relies heavily on the use of areas of good soil and adequate rainfall or irrigation water but the need to produce sufficient food forces the population to use marginal land that is easily degraded. Soil erosion often affects previously optimal grazing areas and can be expected to get worse with climate change impacts (UNEP 2012).

Table 6.3 Selected economic indicators (World Bank 2024)

Country	GDP current prices (US$ billion) (2023)	Annual GDP growth (%) (2023)	GDP per capita current prices (US$) (2023)	Annual inflation constant prices (%) (2023)	Unemployment (% of labor force) (2023)
Countries covered by profile update					
Albania	23.0	3.4	8,368	6.7	11.6
Algeria	240.0	4.1	5,260	9.3	11.8
Bosnia and Herzegovina	27.1	1.7	8,426	2.1 (2012)	10.4
Cabo Verde	2.6	5.1	4,322	7.9 (2022)	12.0
Egypt	395.9	3.8	3,513	33.9	7.3
Kosovo	10.4	3.3	5,943	4.9	…..
Jordan	50.8	2.6	4,482	2.1	17.9
Lebanon	17.9	-0.2	3,350	221.3	11.6
Libya	50.5	-1.7	7,330	2.4	18.7
North Macedonia	14.8	1.0	8,146	9.4	13.1
Montenegro	7.4	6.0	12,017	8.6	15.3
Morocco	141.1	3.2	3,672	6.1	9.1
Palestine	17.4	-5.5	3,368	5.9	24.4
Syria*	8.98	1.3	421.1	36.7 (2012)	13.5
Tunisia	48.5	0.4	3,895	9.3	15.1
Türkiye	1,100.0	4.5	12,986	53.9	9.4
EU					
Croatia	82.7	3.1	21,450	7.9	6.1
Cyprus	32.2	2.5	34,701	3.5	6.0
France	3,300.0	0.7	44,461	4.9	7.3
Greece	238.2	2.0	22.990	3.5	11.0
Italy	2,250.0	0.9	38,373	5.6	7.6
Malta	21.0	5.6	37,882	5.1	3.1
Portugal	287.1	2.3	27,275	4.3	6.5
Slovenia	68.2	1.6	32,163	7.4	3.6
Spain	1,580.0	2.5	32,677	3.5	12.1

Notes: Syria: figures for 2021, figures for inflation for 2023 except Bosnia and Hercegovina, Cabo Verde and Syria (see year indicated in brackets)

In the energy sector, Algeria, Egypt and Libya are among the moderately sized oil producers of the world and have significant oil and gas reserves. In the western Balkans, hydropower production is economically important and has potential environmental impacts. Manufacturing capacity is frequently located along the region's coasts where there is high population density, either within urban centers or close to other economic activities, primarily agriculture or tourism.

Within the services sector, tourism plays an important role. The Mediterranean region countries accounted for 400 million international tourist arrivals (ITAs) (or 27% of global international tourism) in 2019. The bulk of the tourists are from Europe, and the main destinations are coastal areas, comprising at least 250 million of the total ITAs in 2019. The four most important sectors of the tourist market in Mediterranean countries are cruises, nautical activities, sun and beach holidays, and cultural getaways (UNEP/MAP and Plan Bleu 2020, UNWTO 2019c, IEMed 2003). Coastal tourism is, thus, the backbone of Mediterranean economies and development strategies, as it triggers sectoral synergies (e.g., between the transportation, accommodation, food and beverage, and entertainment sectors) (Europarc 2019).

Tourism is heavily seasonal in its character but is a vital part of the Mediterranean economy, as it creates jobs, contributes to GDP and is also an extremely important source of foreign exchange generation. The outbound tourism expenditure represented US$1,439 billion in 2019, compared to US$1,229 billion in 2013 and around 764 billions in 2006 (World Bank, 2024) – and tourism represent today about 9.1% of global GDP (WTTC, 2023). Tourism in the Mediterranean accounted for 11.3% of GDP and 11.5% of employment in 2015.

The tourist economy is sensitive to disturbance, however. Since 2010, political upheaval, wars and terrorism have significantly reduced tourism to Libya, Egypt and Tunisia, and, to a lesser extent, to Türkiye and Jordan (Horwath 2015). Tourism across the hotspot was hugely threatened with the onset of the COVID-19 pandemic in 2020, when ITAs decreased exponentially from 400 million inbound arrivals in 2019 to 88 million ITAs in 2020. This had severe economic and social impacts across the region, with the greatest impacts felt in poorer countries. The harshest economic impacts of COVID-19 were felt in Montenegro (22.1% decrease in GDP), Croatia (14.1%) and Greece (11.6%). The southern and eastern economies affected most were Lebanon (15.2%), Tunisia (6.7%) and Türkiye (6%). The most severe impacts on total employment rates included Montenegro (4.6% decrease), Albania (3.8%), Morocco (3.6%) and Egypt (3.0%).

The triple crises of climate change, biodiversity loss and environmental pollution, as well as external disruptions, such as the COVID-19 pandemic and growing geopolitical conflicts, are increasing threats for the tourism industry globally, and particularly in the Mediterranean. Tourism has recovered in most stable countries since 2022 but there are also indications that its nature has evolved, including the onset of longer terms stays by people who are partly working, and a willingness to pay more for safety and security.

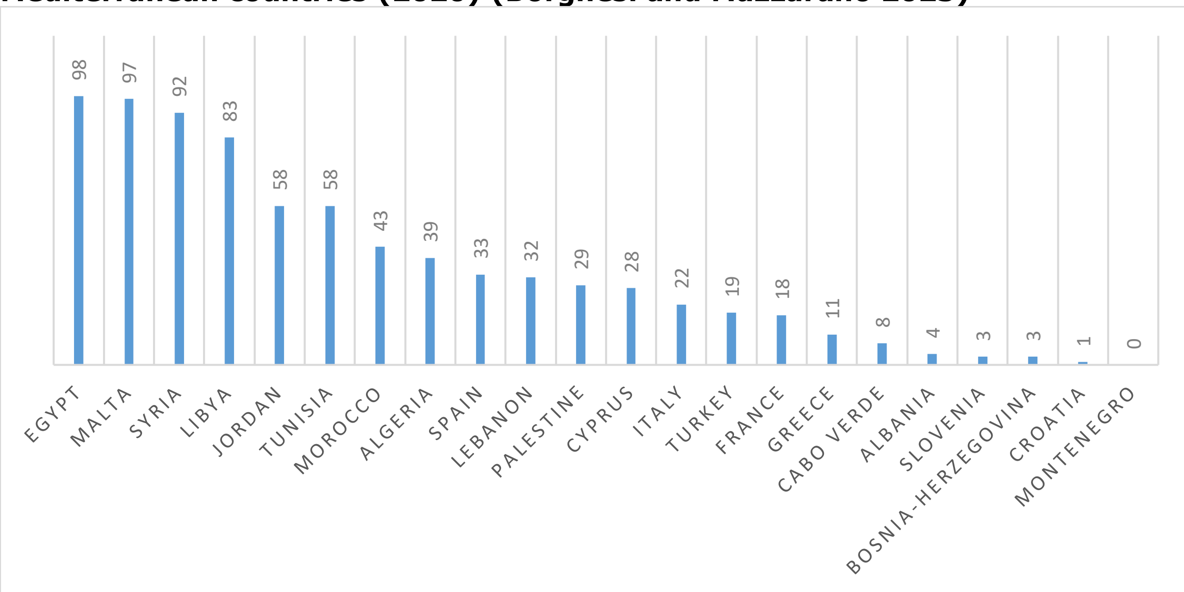
While tourism increases carbon emissions, provokes new pressures for development and risks disturbance, it can also bring income and strong incentives for environmental protection. Globally the ecotourism market was valued at US$181 billion in 2019 and is expected to reach US$333.8 billion by 2027. According to a recent European survey, 43% of tourists' searches are for natural environment in the destination. Recent regional initiatives, such as the Mediterranean Eco-tourism Network (MEET), actively promote high-quality ecotourism experiences that benefit conservation and local communities.

Shipping is the region's second largest service sector, and the Mediterranean Sea is among the world's busiest waterways, accounting for around 15% of global shipping activity by the number of calls, and 10% by vessel deadweight tonnes (UNEP 2012). In

2007, almost two-thirds of the traffic was between Mediterranean ports, while a significant proportion of the rest was transit through the Mediterranean. The development of shipping is directly linked to the development of coastal infrastructure, such as ports and railways connecting these ports with inland areas.

The structure of Mediterranean economies, highly dependent on climate-sensitive agriculture and tourism, coupled with increasing population concentrated in coastal urban areas, puts extreme pressure on the region’s water resources. The arid climate of the region means that water has always been an issue of concern for the population, and these new factors are only adding to the problem. Middle Eastern and North African countries are highly water stressed (Figure 6.2). Many countries in the region have a Water Exploitation Index (WEI)[15] higher than 40%, and Egypt, Malta, Syria and Libya have WEIs exceeding 80. According to existing projections, the Mediterranean population classified as 'water-poor' (i.e., below 1,000 m^3 per resident per year) will increase from 180 million people in 2015 to over 250 million by the mid-2030s (EEA 2015).

Figure 6.2 Water Exploitation Index for renewable freshwater resources in Mediterranean countries (2020) (Borghesi and Mazzarano 2023)



6.4.3 Social trends

The long history of the Mediterranean has not only led to a diversity of political orientations and the political fragmentation but also to a diversity of economic approaches and social systems. The overall socioeconomic status of individual countries of the region is most comprehensively captured by the UNDP Human Development Index (HDI). Out of 188 countries of the world covered by the most recent Human Development Report (2015 Human Development Report), only one of the 30 Mediterranean countries, Syria, has an HDI that puts the country within the last third (UNDP 2023; Table 6.4).

All the Mediterranean EU member states and Montenegro are included in the ‘very high human development’ group, as they are ranked among top 47 countries in the world by HDI. North African countries, Middle Eastern countries, Türkiye and Western Balkan countries (except Montenegro) are middle income countries but also perform rather well in terms of their HDI, all of them included in either ‘high human development’ or ‘medium human development’ HDI groups, with ranks between 49 and 134. None of the Mediterranean countries are in the ‘low human development’ HDI group.

[15] The WEI is the mean annual total demand for fresh water, divided by the long-term average freshwater resources. ‘Water stress’ starts at 20%, and WEI of >40% are considered severely water stressed (EEA 2003).

Other indicators of the relatively good performance of countries in the region include life expectancy at birth, which is on average around 75 years in the countries covered by the ecosystem profile update. Although this is some five to seven years less than in EU member states, it is still well above 72 years global average for developing countries (UNDP 2024). However, Egypt, Libya and Syria are still at or below this average. Education, measured as expected years in schooling, was on average around 17 years for the EU member states compared to 14-15 years for the countries covered by the ecosystem profile, and 12 years for developing countries as a whole.

Table 6.4 Selected social indicators

	HDI rank (2022)	Change of HDI rank (2014-2022)	Life expectancy at birth years (2022)	Expected years of schooling (2022)	Gini coefficient (2010-2022)	Population below national poverty line (2021,%)
Countries covered by profile update						
Albania	74	+11	77	14.5	29.4	21.8
Algeria	93	-10	77	15.5	27.6	5.5
Bosnia and Herzegovina	80	+5	75	13.3	33.0	16.9 (2011-16)
Cabo Verde	131	-9	75	11.5	42.4	…
Egypt	105	+3	70	12.9	31.9	32.5 (2011-16)
Kosovo	…	…	80	…	…	…
Jordan	99	-19	74	12.6	33.7	15.7
Lebanon	109	-42	74	12.1	31.8	...
Libya	92	+2	72	14.0	...	...
North Macedonia	81	0	74	13.0	33.5	21.8
Montenegro	50	-1	76	15.1	36.8	22.6
Morocco	120	-6	75	14.6	41.9	4.8
Palestine	106	+7	73	13.2	33.7	29.2
Syria	157	-23	72	7.4	…	…
Tunisia	101	-5	74	14.6	32.8	15.2
Türkiye	45	+27	78	19.7	41.9	…
EU						
Croatia	35	+12	78	15.6	29.5	..
Cyprus	29	+3	82	16.2	31.7	...
France	28	-6	82	16.0	30.7	...
Greece	33	-4	81	20.0	33.6	...
Italy	30	-3	83	16.7	35.2	....
Malta	25	+12	83	15.9	31.4	....
Portugal	42	+1	82	16.8	34.7	....
Slovenia	22	+3	81	17.4	24.0	…
Spain	27	-1	83	17.8	34.9	....

Sources: UNDP (2023) except column 3 (life expectancy) from World Bank (2024).

The Mediterranean performs relatively well also in terms of the equality of distribution of income among individuals and households within the country. For most countries for which data are available, the Gini coefficient is between 30 and 40, with only three countries scoring above 40, and three below 30. A Gini co-efficient of 0 represents absolute equality; 100 represents absolute inequality.

While many of the countries covered by the ecosystem profile update have a relatively high per capita GDP compared to other developing countries, the proportion of the population under national poverty lines is important for the social and environmental fabric of the region. The levels that are set for these measures varies across countries, as do the resultant figures. Some such as Algeria and Morocco appear very low at 6% or less. However, others are above 25% and some, such as Albania, Egypt and Montenegro, have increased significantly since the last profile. Even if absolute poverty is not very significant in the region as a whole, it is significant in war-affected regions as well as within specific groups of the population that face problems, such as minority ethnic groups, the unemployed and low-income families. Poverty is a driver of environmental degradation and migration, and makes populations vulnerable to crime and political radicalization. All this has fed into the civil wars in Syria and Libya, and triggered much of the resultant migrant crisis.

Table 6.5 Gender Inequality Index scores and ranks for hotspot countries

Country	**GII score 2010** - range 0 (equality) to 1 (total inequality)	**GII score 2016** - range 0 (equality) to 1 (total inequality)	**GII score 2022** - range 0 (equality) to 1 (total inequality)	**GII 2022 rank** Position out of 288 countries
Countries covered by profile update				
Montenegro	0.21	0.129	0.114	33
Albania	0.192	0.161	0.116	34
North Macedonia	0.172	0.155	0.134	38
Bosnia and Herzegovina	0.215	0.167	0.148	40
Tunisia	0.287	0.26	0.237	59
Türkiye	0.416	0.329	0.259	63
Libya	0.286	0.272	0.266	65
Cabo Verde		0.36	0.325	75
Lebanon	0.432	0.442	0.365	86
Egypt	0.547	0.401	0.389	93
Morocco	0.549	0.452	0.440	110
Jordan	0.487	0.441	0.449	111
Algeria	0.517	0.407	0.460	114
Syria	0.493	0.475	0.487	123
Kosovo			(no data)	(no data)
Palestine			(no data)	(no data)
EU				
Slovenia	0.128	0.057	0.049	5
Italy	0.123	0.075	0.057	14
Spain	0.105	0.07	0.059	15
Portugal	0.127	0.081	0.076	21
France	0.129	0.092	0.084	24
Croatia	0.136	0.155	0.087	25
Malta	0.264	0.19	0.117	35
Greece	0.153	0.125	0.120	37

Cyprus	0.191	0.194	0.253	62

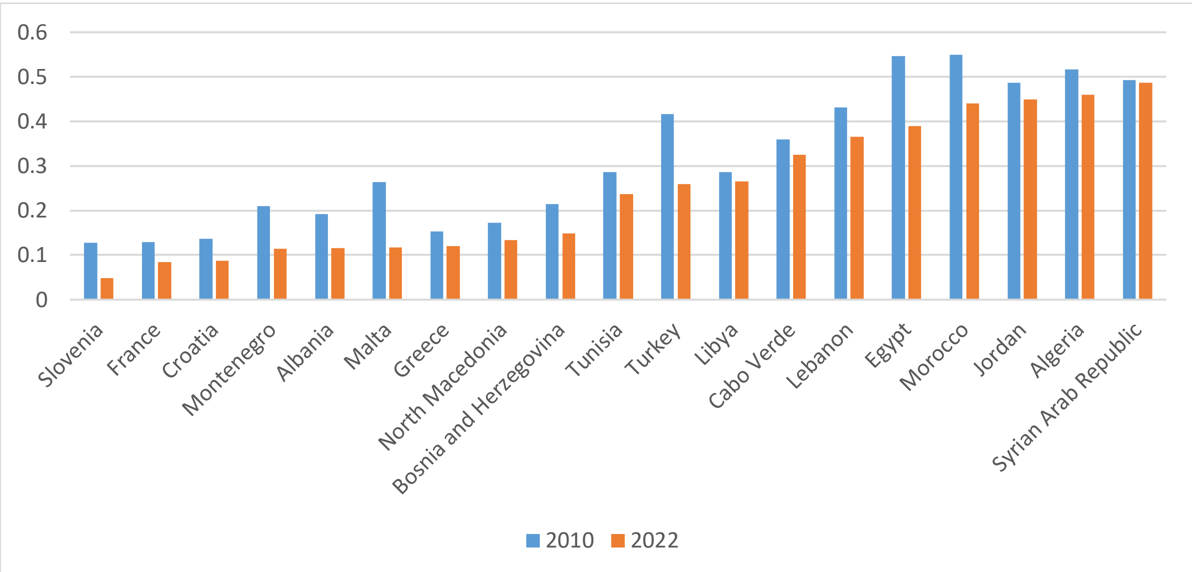
Source: *UNDP Data Center, 2023*

Gender issues

Gender gaps in various spheres of life in Mediterranean countries are reflected in the Gender Inequality Index developed by UNDP. Out of 167 countries ranked in the 2022 index, all the EU members except Cyprus are among the top 40 countries indicating their low level of gender inequality. The Balkan countries are also relatively highly ranked, with the ranks between 33 for Montenegro and 34 for Albania (Table 6.5). Countries in Middle East and North Africa are characterized by higher levels of gender inequality, with several of them placed at ranks over 100. It should, however, be mentioned that the situation of women in most of these countries has improved greatly with respect to literacy rates and equal opportunities for educational enrolment and completion. However, there is still discrimination in terms of streaming girls out of technical and vocational subjects in some countries and gender gaps at tertiary levels of education. Similarly, there have been improvements in health status and health care. Women's economic participation has also increased despite many obstacles remaining. Overall, all countries have improved their scores since CEPF commenced investment in 2010, although those of Algeria and Libya have declined after reaching a higher point in 2016.

Gender inequality results in different attitudes of women and men in relation to the environment and different possibilities to act as agents of environmental change. Experiences of work, resource management and public vs private transport may mean women and men have exposure to very different environmental problems and risks, along with different perspectives on the degree of seriousness of environmental problems, as well as on appropriate interventions, adaptations and solutions. Further, because of the social construction of gender roles, women and men may have different, usually unequal, capacities and approaches for acting as agents of environmental interpretation and change (UNEP 2016).

Figure 6.3 Gender Inequality Index scores for CEPF and selected other hotspot countries



Note that the lower the figure, the close to equality. Cabo Verde first figure is for 2016.

6.5 Implications of economic and social trends on the environment

In contrast to the EU member states, the countries covered by the ecosystem profile update are characterized by higher political risks, with weak and unstable public finances and significant external imbalances. In such a fragile macroeconomic situation, governments are often focused on short-term oriented economic solutions that can deliver "quick win" gains in terms of increased income. Consequently, environmental sustainability is typically not very high on political agendas, but environmental issues can, nevertheless, be turned into a priority if appropriately linked with economic and security concerns.

Pressures on the Mediterranean environment stemming from demographic factors are amplified by economic activities in the region. In addition to classical rain-fed and irrigated cultivation, other agricultural land uses in the Mediterranean include pastures, dairy farming and orchards, and all of them have significant implications for the environment. Agricultural production based on irrigation puts pressure on already scarce water resources in the region while intense use of fertilizers and pesticides has potentially devastating implications for the soil and water quality.

Strong negative implications for the Mediterranean environment also come from energy production and manufacturing, and include the use of land and natural resources, the generation of waste and the release of pollutants into the atmosphere and into the waters.

Although tourism brings significant economic benefits to the Mediterranean region, it is also associated with significant negative implications on environment. Tourism contributes to CO_2 emissions, primarily through air and road transportation. As tourism is highly concentrated along the coastal areas, it intensifies pressure on the marine and coastal environment in form of the demand for space, both in the coastal zone (impact on urbanization) and on the coastline itself (construction of infrastructure, such as hotels and marinas). Coastal tourism is, by definition, located in sensitive habitats within the coastal zones and degradation of these habitats is unavoidable. Mass tourism typically intensifies this degradation process. Tourism in the Mediterranean is not only strongly spatially concentrated but is also highly seasonal. The summer season peak amplifies the negative impact on the environment due to increased waste generation and water consumption as well as an increased pressure on natural resources.

Environmental changes strongly impact critical sectors in the Mediterranean region and put local economies under stress. A report on the cost of environmental degradation in Morocco in 2014 (requested by the Government of Morocco and published by the World Bank in 2017) estimated the total cost of environmental degradation to Moroccan society at approximately 3.5% of national GDP. The cost associated with water degradation alone represented around 1.6% of Moroccan GDP, followed by air pollution at 1.05% of GDP. Costs of land degradation are associated with erosion issues and the conversion and desertification of rangeland. The report also states that damage to the coastal zone is considerably underestimated, as it is largely captured under other categories (air pollution, land and water degradation). In addition to national impacts, greenhouse gas emissions cause damage to the global community, which was estimated at 1.6% of GDP in 2014 (UNEP 2020).

Environmental degradation in southern countries has continued to act as a push factor in encouraging people to consider emigrating to areas where there appear to be better economic prospects.

6.6 Ecological footprint

There is a general lack of coherent environmental data and information tools in the region, especially in eastern Mediterranean and North African countries. The systematic collection, processing, analysis, production, dissemination and exchange of environmental information would lead to more robust decision making and proper policy formulation and implementation. Trends show the need to make use of additional measures to improve enforcement and compliance processes. Moreover, there is a significant need for regular environmental reporting in all West Asian countries, as well as for greater public and private participation.

The involvement of the public in the environmental regulatory systems remains low, because people are neither well informed nor encouraged to participate. Although access to general environmental information has recently improved, much effort is still required to achieve real public participation in environmental management.

The socio-economic analysis of the previous sub-chapter has broadly split the Mediterranean countries into two separate clusters. One consists of the northern rim countries belonging to the EU and the Western Balkans, while the other includes Middle Eastern countries, North-African countries plus Cabo Verde and Türkiye. The countries in the latter group generally have higher population growth, a younger population, lower per capita GDP, less developed infrastructure and also lower HDI. They also have generally lower ecological footprints than their counterparts on the northern side of the Mediterranean[16].

The most commonly reported type of Ecological Footprint is the Consumption Footprint (in gha), which includes the area needed to produce the materials consumed and the area needed to absorb the carbon dioxide emissions. The Consumption Footprint of a nation is calculated as a nation's primary production footprint plus the footprint of imports minus the footprint of exports. The national average of per capita Consumption Footprint is equal to a country's Consumption Footprint divided by its population. In contrast, a nation's productive footprint is the sum of the footprints for all of the resources harvested and all of the waste generated within the defined geographical region.

The biocapacity of a country is the ecosystems' capacity to produce biological materials used by people and to absorb waste material generated by humans, under current management schemes and extraction technologies. The biocapacity of a country is calculated by multiplying the actual physical area by the yield factor and the appropriate equivalence factor. It is usually expressed in global hectares.

Between 1961 and 2010, the Mediterranean per capita ecological footprint increased by 54%, while the regions' per capita biocapacity decreased by 21%. As a consequence, the growing gap between the demand and supply created a more-than-threefold increase in the regions' ecological deficit. In 2018, the average ecological footprint in the Mediterranean was 3.2 gha/cap, slightly above the global average (2.8 gha/cap) and more than double the 1.2 gha/cap biocapacity of the region. This clearly confirms that the current economic development trends in the Mediterranean are not sustainable on longer-term basis (UNEP 2020).

Table 6.6 presents 2022 country-by-country data for ecological footprint, biocapacity and ecological deficit/reserve. As the table shows, there is not a single Mediterranean country that does not have an ecological deficit, and that the ecological footprint of all Mediterranean countries exceed their capacity to regenerate resources. It is noticeable that most countries have a higher consumption footprint than production footprint, i.e. they are exporting additional impacts through consumption of materials produced elsewhere.

Most countries had an ecological footprint that was higher in that year than the world average biocapacity (1.5 gha/cap in 2022), and only two countries (Bosnia and Herzegovina and Montenegro) had a biocapacity higher than the world average. Middle Eastern and North African countries are all below half of the world's average biocapacity.

[16] See Countries - Global Footprint Network

The Middle East region has been in a state of ecosystem deficit since 1979, with consumption double what local ecosystems can provide, and a four-fold decrease in freshwater availability. There are two main drivers that have led to this: (1) a three-fold increase in population, leading to higher overall consumption; and (2) a sharp rise in the amount of resources and services consumed per person as a result of higher incomes and changing lifestyles. The available average biocapacity per capita in Arab countries decreased by 60% over 50 years, from 2.2 to 0.9 gha. The vast deficit in the region's ecological resources is largely bridged by imports and an over-exploitation of finite local resources. For oil-importing countries, carrying debt to finance imports imposes burdens on their economies and places a limit on future wellbeing.

Table 6.6 Ecological footprint indicators

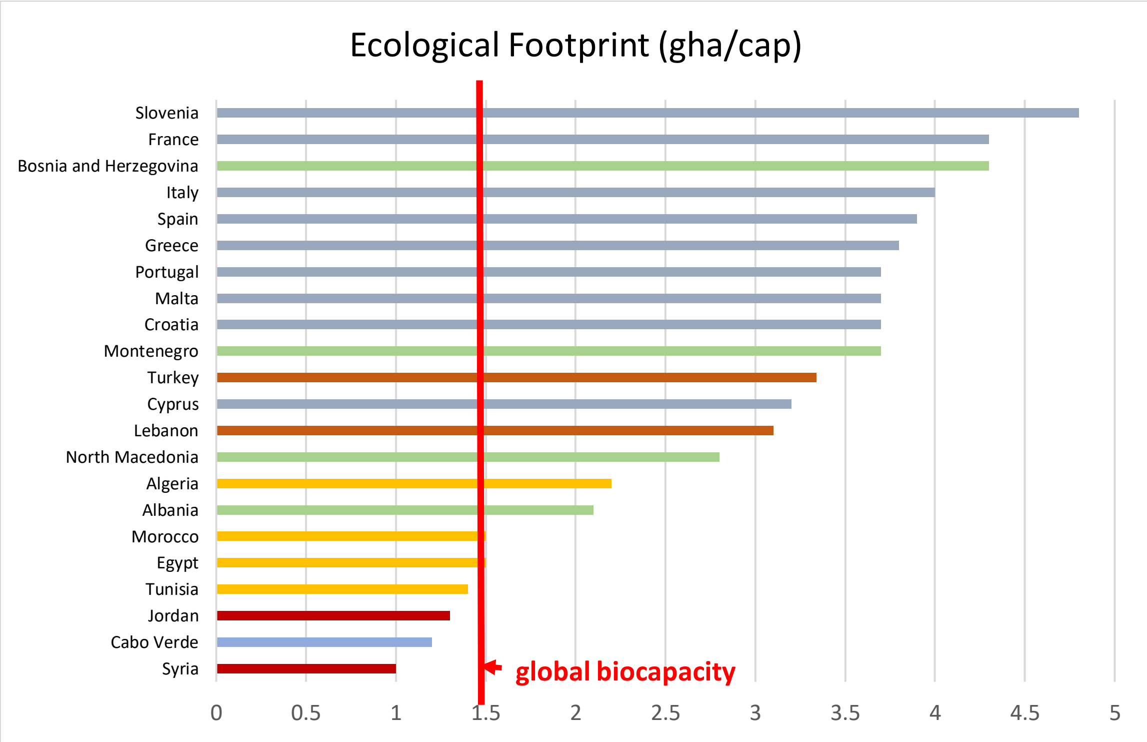
Country	Ecological footprint of production (gha/cap) (2022 estimate)	Ecological footprint of consumption (gha/cap) (2022 estimate)	Biocapacity (gha/cap) (2022 estimate)	Ecological deficit / reserve (gha/cap) (2022 estimate)
Countries covered by profile update				
Albania	1.6	2.1	1.2	-0.9
Algeria	1.8	2.2	0.7	-1.6
Bosnia and Herzegovina	4.3	4.3	2.2	-2.1
Cabo Verde	1.4	1.2	0.4	-0.7
Egypt	1.1	1.5	0.3	-1.1
Jordan	0.8	1.3	0.2	-1.1
Kosovo		…	…	…
Lebanon	1.9	3.1	0.3	-2.8
Libya				
Montenegro	3.3	3.7	2.8	-1.8
Morocco	1.3	1.5	0.6	-1.0
North Macedonia	2.1	2.8	1.6	-1.3
Palestine		...	...	...
Syria	0.9	1.0	0.6	-0.4
Tunisia	1.4	1.4	0.7	-0.6
Türkiye	2.9	3.34	1.5	-1.9
EU				
Croatia	3.3	3.7	2.6	-1.1
Cyprus	2.0	3.2	0.4	-2.8
France	3.5	4.3	2.5	-1.9
Greece	3	3.8	1.6	-2.2
Italy	2.5	4.0	1.0	-3.0
Malta	1.2	3.7	0.5	-3.3
Portugal	2.9	3.7	1.5	-2.2
Slovenia	3.7	4.8	2.5	-2.3
Spain	3.6	3.9	1.7	-2.2
Global Average	**2.5**	**2.6**	**1.5**	**-1.0**

The Arab Forum for Environment and Development (AFED) annual reports on the state of the Arab region's environment have repeatedly warned that overexploitation of resources, the impact of climate change, high population growth rates, uncontrolled economic growth and urbanization amplify the region's environmental challenges and constrain its ability to manage them. Significant among those challenges are water scarcity, land degradation, inadequate waste management, coastal and marine environment degradation, and air and water pollution. AFED reports have estimated the cost of environmental degradation in the Arab region as a whole, at 5% of total GDP, while budgetary allocations for environmental purposes do not even come close to 1% of GDP in any country.

Countries with higher per capita GDP on the northern side of the Mediterranean are also countries with the highest demand for resources. The ecological footprint of the EU members in the region is on average significantly higher (2.9/3.9gha/cap) than of the group of countries covered by the ecosystem profile update, consisting of Türkiye, Western Balkan, Middle Eastern and North African countries (1.9/2.3gha/cap). Also, the ecological deficits of these countries are, on average, lower than in the EU member countries (1.8 gha/cap vs 2.3 gha/cap) even though countries from this part of the region have biocapacity more than 50% greater in comparison to Türkiye, and Western Balkan, Middle Eastern and North-African countries (1.6 gha/cap vs 1.0 gha/cap).

More encouragingly, the majority of countries at least appear to be on a trajectory to reduce their per capita ecological footprint, especially in the north, although not by as much as is urgently needed. It is also a still unclear whether this change is permanent or in part related to impacts of recent economic downturns, as well as the pandemic. At first sight, transitions to more service-based and digital economies may seem to be a development that favours less resource and material consumption and less pollution. However, service-based economies continue to rely on significant and varying amounts of resources and emit different types of pollution. The relationship between the transition towards the tertiary sector and environmental impact is, in reality, complex and ambiguous. In addition, it can be associated with displacement of environmental impacts to other locations (UNEP 2020).

Figure 6.4 Illustration of the relationship between ecological footprint and the biocapacity of each Mediterranean country



In conclusion, the Mediterranean Basin faces a serious ecological challenge, creating an unsustainable situation. The region's future economic development and livelihoods will be profoundly impacted by this ecological deficit. Countries in the northern Mediterranean, while wealthier, are consuming resources at a rate far beyond what their environment can support, while nations in the southern and eastern Mediterranean, though consuming less per capita, are grappling with extreme resource scarcity and environmental degradation. Addressing these challenges will require urgent action to shift towards more sustainable consumption patterns, better resource management, and regional cooperation to mitigate the ecological impacts of continued development in this fragile region.

7. POLICY CONTEXT OF THE HOTSPOT

7.1 The wider political context

The portion of the hotspot that is the focus of this ecosystem profile comprises 16 states and territories. Government institutions, legal systems and the place of the environment within them have been influenced by the history of each country, which includes colonial periods and the influence of trade and interaction among Europe, Africa and the Middle East. A large part of the territory within the hotspot in south-eastern Europe, Türkiye, the Middle East and North Africa (as far as part of Algeria) was under the control of the Ottoman Empire until the First World War (1914-1918). After the war, the empire was broken up, with new countries and federations emerging in the Balkans along broad ethnic lines (Yugoslavia, Albania and Greece), while European powers expanded their control over the Middle East and North Africa, with Egypt, parts of Syria and most of Jordan under British rule, Lebanon, Algeria and Tunisia controlled by France, and Libya occupied by Italy. Morocco remained a sovereign kingdom under the protectorates of France and Spain. Cabo Verde was unpopulated until it was colonized by Portugal in the 15th century. The North African and Middle Eastern countries gained independence between 1922 (Egypt) and 1975 (Cabo Verde). In the 1990s, Yugoslavia's constituent republics became sovereign states (North Macedonia in 1991, Bosnia and Herzegovina in 1992, Montenegro in 2006, while Kosovo declared independence in 2008. In a complex geopolitical situation, borders are sometimes still disputed while the international community is divided on the status of both Kosovo (which is not a member of the UN) and Palestine, which has UN observer status. Modern forms of government in the hotspot are diverse. Most countries are parliamentary republics. Algeria, Cabo Verde, Egypt, Syria and Tunisia are semi-presidential republics, while Jordan and Morocco are constitutional monarchies.

7.2 National environmental governance

7.2.1 Environmental institutions and mandates

Every country in the region has institutions responsible for the management of natural resources and conservation of nature. There is frequently a divide, however, between ministries or departments responsible for conservation of biodiversity, those responsible for forestry and agriculture, and those responsible for other aspects of the environment, such as water, waste management and licensing of exploitation. There is often a segregation between departments responsible for terrestrial (forest) conservation and those in charge of coastal and marine conservation, which can influence governance at national level. An integrated management approach for the environment, which balances the needs of conservation with economic development, requires effective cooperation between these different authorities, something which often proves challenging. The situation is made more complex when some responsibilities are delegated to subnational governments, while others (typically including management of protected areas) remain under the authority of central government institutions.

Decentralization of authority to lower levels of government is important because, in theory, it allows decisions to be made closer to the people (and environment) who are directly affected. In North Macedonia, several municipalities manage protected areas, forests are managed by a public enterprise, and game management is also delegated to hunting associations. In Montenegro, there is also some degree of decentralization but national parks remain with the national government. In Morocco, there have been structural changes in the institutions in charge of environment and conservation. Since 2021, the former *Haut Commissariat aux Eaux et Forêts et à la Lutte contre la Désertification* (HCEFLCD) was restructured into l'Agence National des Eaux et Forêts (ANEF). The new law 2207 relating to protected areas set several regulations and introduced a new willingness to collaborate with stakeholders. In Syria, the Environment

Ministry was merged with the local government ministry in 2018, to create a Ministry of Local Administration and Environment. In Tunisia, the government started to experiment with co-management of protected areas to counter the lack of human resources on the ground and to give more opportunities to CSOs. In a few cases, governments have used a different approach, delegating powers to non-government organizations, for example in Jordan, where protected area management is handled by the Royal Society for Conservation of Nature, and in Lebanon, where hunting associations manage 'responsible hunting areas'.

7.2.2 Environmental law and policies

Environment in national constitutions

The national constitutions of the hotspot countries generally refer to the right of people to enjoy a healthy environment, and some make specific reference to key environmental issues or responsibilities of the state. For example, the Egyptian constitution has an article on the River Nile, the constitution of Cabo Verde notes that the state should stimulate and support the creation of associations to defend the environment and protect natural resources, and Albania's constitution defends the public's right to be informed about the state of the environment and its protection. This applies also to Bosnia Herzegovina, Montenegro and North Macedonia via their environmental laws and as signatories to the Aarhus Convention. Only the oldest constitutions, such as those of Jordan and Lebanon, do not make any reference to the environment.

General environmental regulations

Environmental legislation and policy is diverse among the countries of the hotspot. The EU countries have a generally uniform and comprehensive body of legislation, based on European environment directives, including aspects such as environmental impact and strategic environmental assessments, integrated pollution prevention and control, industrial emissions, waste and landfills, water quality and sewage, noise, natural disasters, and the protection of species and sites. The implementation of these policies is supported by further directives on transparency, accounting, auditing and management control, and freedom of access to information. The (currently) 8th Environmental Action Plan of the EU sets a framework for this activity.

The non-EU countries in the Mediterranean Basin Hotspot are making significant progress in updating their environment policies and legislation. In the case of some Balkan states, this is motivated by their desire to become EU members, with North Macedonia, Montenegro and Albania updating their legislation as part of their moves towards accession, often with the assistance of EU technical advice. Recent changes in North Macedonian legislation allow more efficient enforcement of environmental legislation. Elsewhere in the hotspot, the picture is more variable. Türkiye and Bosnia and Herzegovina have less well-developed policy frameworks, although Türkiye has made moves to encourage multipurpose use of forests and has a detailed Desertification Model and Risk Map which shows that half the country is at risk from desertification. In general, however, their environmental laws and policies are poorly enforced.

In the Middle East and North Africa, all the countries have legislation allowing creation of nature reserves and conservation of wildlife, as well as soil and forest protection, but Algeria, Egypt, Morocco and Tunisia have progressed since 2000 in amending and updating their environmental laws (for example, Egypt has amended its Environmental Protection Law twice since 1994; Morocco has issued a new forest strategy in 2019 and ratified the protected area law in 2021). New forestry and hunting laws and by-laws were passed in Syria in 2023 and 2024. The most recent nature conservation laws in Libya were enacted in the 1990s, with laws on forest management and hunting even older. In Lebanon, new regulations banning land use change in forests aim to reduce burning.

Many Mediterranean countries have water policies but these are not always enforced in ways that sustain or protect biodiversity. A challenge for water management is to start to take the needs of ecosystems into account via such policies as integrated river basin management. Several recent experiences have demonstrated the win-win impact, both economic and environmental, of developing such policies. Tunisia has implemented a national irrigation water-saving strategy, which includes the creation of user associations, pricing aimed at progressive cost recovery, targeted financial instruments for water-efficient farming equipment and support to farmer revenues. The law was amended in 2001 and 2017, with more restrictions for water use. In 2023, Morocco launched National Program for Potable Water Supply and Irrigation (PNAEPI, 2020-2027) in the context of the 30-year National Water Plan (PNE, 2020-2050). This focuses on the role of complementary water management actions to address water problems and achieve coordinated management of supply and demand, while ensuring an equitable distribution between rural and urban areas. Multiple players are involved at both the central level (ministries, secretariats, National Office for Electricity and Potable Water) and the local level (municipally owned public operators called régies, private concessionaires, irrigation operators, river basin agencies, municipalities).

Protected areas

All of the countries of the hotspot have declared protected areas as part of their efforts towards protecting the environment. Data are not easily available (even from the World Database of Protected Areas) and, therefore, comparison is difficult. The proportion of each country covered by protected areas varies from less than 2% in Syria and Libya to 21.4 % in Albania and 28.2% in North Macedonia (Table 7.1).

Table 7.1 Protected areas in the hotspot countries covered by the profile update

Country	#Protected areas[1]	Area of terrestrial protected areas (km^2)	% country in terrestrial protected areas	Areas with PA management effectiveness (PAME)[2]
Albania	44 + 785	6,141.35	21.4	1 (52.9)
Algeria	14+7	107,462	4.6	11
Bosnia and Herzegovina	26+40	4,855	9.5	4 (37.5)
Cabo Verde	15+31	721	17.4	3 (41.3)
Egypt	12+31	128,871	13.1	28 (42.0)
Jordan	8+21	4,839	5.4	13 (74.3)
Kosovo	29+219	1,393	12.79	[no data]
Lebanon	19	195	1.9	9 (56.8)
Libya	3	2,078	0.13	0 (39.0)
Montenegro	17+43	3,236	23.4	3 (45.4)
Morocco	25+366	8,905	2.2	6 (61.6)
North Macedonia	22+53	7,174	28.2	44 (44.3)
Palestine	26+2	615	9.9	0
Syrian Arab Republic	0+17	1,290	0.7	2
Tunisia	2+101	12,254	7.89	10 (48.0)
Türkiye[3]	79+458	21,654	2.77	8

[1] The first figure is for IUCN categories I,II,IV and V (and any SPAMI sites under Barcelona Convention). The second figure is sites listed under IUCN categories III and VI. Area totals may include other sites as they are not separable. Data from WDPA (2024), except for Kosovo, where the information is from the Agency of Environment of Kosovo. See also USAID (2018).
[2] WDPA only gives number of assessments not their scores. Figures in brackets are METT scores from CEPF assessments – for reference only. See explanation below.
[3] WDPA data for Türkiye are incomplete. The Wikipedia entry has 79 national parks and nature preserve areas plus 458 nature parks, nature monuments, protected plains and national wetlands.

Morocco has general legislation that applies to the coastal and marine environment, and specific legislation for the protection and management of protected areas (Law 22-07 of 2010). Since the ratification of this law, in 2020, the protected area network is being updated. An example of the complexity of compiling data comes from Albania. A reform of December 2020 and subsequent amendments created 12 national parks (IUCN Category II), 22 nature parks and managed nature reserves (IUCN Category IV) and 10 protected landscapes (IUCN Category V), comprising 21.4% of Albania. Later, in 2023, the status of Vjosa River changed from nature park to national park, making a total of 12 national parks plus 22 nature parks and managed nature reserves in Albania. Nevertheless, in order for this network to be fully legally finalized, it is necessary that the government prepare Council of Minister decisions for each protected area, and some of these are still pending. The Law of Protected Areas also names Important Bird Areas (IBAs), Special Protection Areas (SPA, Area of Special Conservation Interests (ASCI) and Biosphere Reserves but the application of these designations is not yet fully clear. In Türkiye, the situation is complicated, but the 31 nature protection areas and 85 wildlife development zones are considered the best protected (Birben 2019).

Other countries have also declared sites under international conventions, including the Ramsar and the World Heritage convention (see Section 7.3). These are not included in the Table 7.1. In Albania, Bosnia and Herzegovina, Macedonia, and Montenegro, there are in total 131 sites inside the Emerald Network of Sites of Special Conservation Interest under the Bern Convention, covering 17,700 km^2.

Protected area management

The impact of protected areas on the conservation of biodiversity depends not only on the legal creation of protected areas but also on how well they are managed. The Protected Area Management Effectiveness (PAME) index (Coad *et al.* 2015) is a standard approach adopted by agencies such as the World Bank and GEF, which gives an indication of the quality of management of protected areas. These are not completed systematically, and scores are not available on the WDPA website.

In the context of projects supported by CEPF, the use of the Management Effectiveness Tracking Tool (METT) is encouraged. The tool allows for a standardized approach in assessing the evolution of management effectiveness of protected areas. Partners were asked to use this tool only when they were engaged for the long term with a protected area. Because CEPF projects only support some activities, it is not possible to claim that all improvements in METT scores are attributable to CEPF investment.

Overall, METTs have been completed for 52 protected areas in the region during 2017-2023 period, covering an area of 973,108 ha[17]. On average, the protected areas on which CEPF supported CSO's involvement saw an increase in their score by 9.3 points, from an average score of 41.4 initially to an average of 50.6 (Table 7.2).

This incomplete assessment on a portion of each country's protected area network shows that that some protected areas have effective management, and that support to protected areas have a demonstrable impact - but that considerable improvement is needed across the region.

[17] The total area of protected areas with improved management is larger than the figure provided for "KBAs with improved management". This is due to the fact that several PAs extend beyond KBA boundaries, but also to the fact that in some countries, CSOs may have worked and influenced only portion of very large, protected areas (e.g. in Morocco).

Table 7.2 METT Scores for Protected Areas with Long-term Involvement of CEPF Grantees (2017-2023)

	Number of PAs	Area (ha)	METT: Average Baseline Score	METT: Average Final Score	Average Increase in Score
Albania	9	163,458	46.0	52.9	**6.9**
Bosnia and Herzegovina	2	7,511	36.5	37.5	**1.0**
Montenegro	4	28,958	40.5	45.3	**4.8**
North Macedonia	4	53,125	39.0	44.3	**5.3**
Jordan	3	31,905	71.7	74.3	**2.7**
Lebanon	4	3,081	52.3	56.8	**4.5**
Libya	1	10,240	21.0	39.0	**18.0**
Egypt	1	46,200	40.0	42.0	**2.0**
Morocco	9	473,825	49.0	61.6	**12.6**
Tunisia	3	27,137	40.7	48.0	**7.3**
Cabo Verde	12	127,767	24.9	41.3	**16.3**
	52	**973,108**	**41.4**	**50.6**	**9.3**

As noted in Chapter 6, the Mediterranean region is rich in cultural landscapes, and much of the wild biodiversity relies on the maintenance of traditional management practices. Many traditional land management systems were lost during colonial times but those that survive have been adopted by CSOs looking for models of community-based sustainable exploitation (see examples in Chatty 2006). Resource use is present in many protected areas in the hotspot, legally or illegally. In the centralized administrations of the Middle East and North Africa, protected areas legislation typically lacks provisions to make creative use of these traditional institutions and conservation practices and offers little opportunity to involve local people in the establishment and management of protected areas, or to ensure the equitable sharing of benefits from the use of protected areas with local people (WCPA 2001). However, there are several examples of delegation of management responsibility to NGOs (see Chapter 8), and this creates opportunities for more constructive engagement between protected areas and local communities.

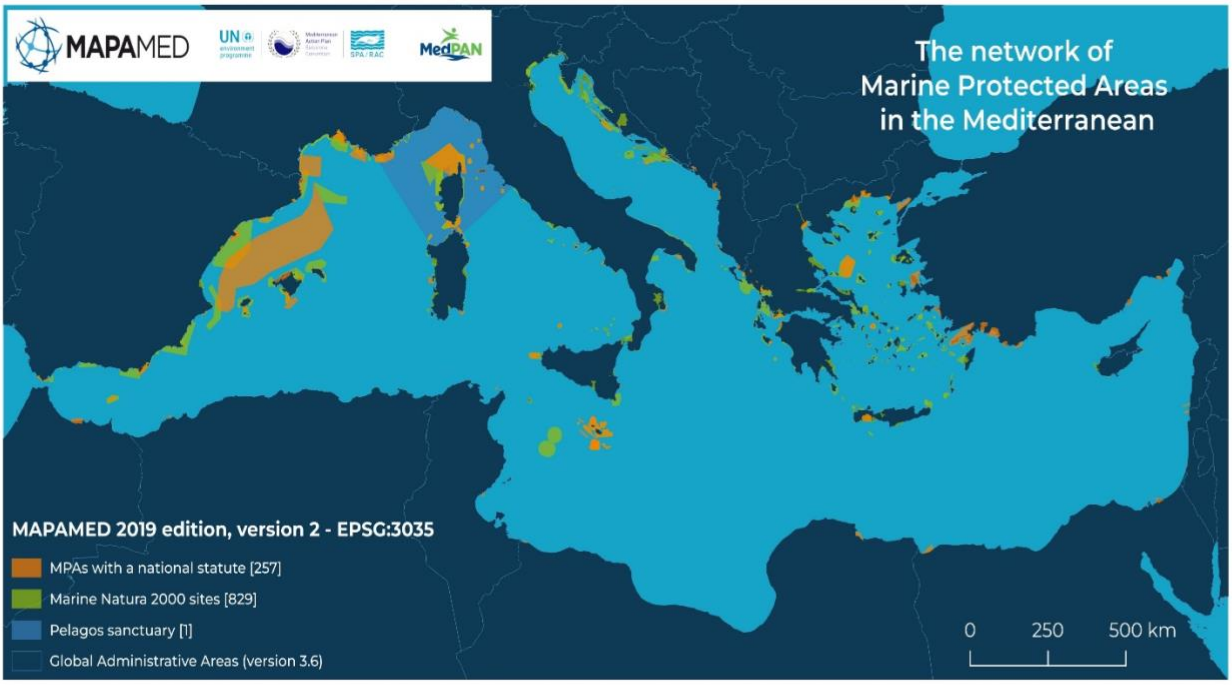
Protected areas are frequently on or close to national borders, partly because these are areas which are most inaccessible and so retain the best examples of wild biodiversity. Managing threats from across the border often poses a challenge to these protected areas, however, and so transboundary cooperation can be important, and may involve declaration of two contiguous protected areas, one in each country. There are not many transboundary collaborations for protected area management in the Mediterranean Basin Hotspot but there is cooperation over the management of Prespa Lake among Albania, Greece and North Macedonia (Avramoski 2004), and to a lesser extent of Skadar Lake between Albania and Montenegro (Hurrell 2014). Both of these collaborations have been supported under CEPF grants in previous phases.

Marine protected areas

There are a number of different marine designations in the Mediterranean. These include Natura 2000 sites in EU waters, a cetacean corridor and Pelagos Sanctuary in France, Italy and Monaco. For the countries covered by the ecosystem profile update, the main category of interest are nationally designated marine protected areas (MPAs). The MAPAMED database currently lists 82 official designations of MPA in the Mediterranean, 75 of which have a national statute (MedPAN *et al.* 2023). The MPAs cover a total surface area of 209,303 km², which represents 8.3% of the Mediterranean Sea (but only 92,899 km² or 3.7%, if Pelagos Sanctuary and the cetacean corridor are not taken into account).

Among the four marine subregions, the Western Mediterranean Sea has the highest coverage, with 6.7% of its area covered by MPAs with national statute. The Adriatic Sea, the Aegean-Levantine Sea, and the Ionian Sea and Central Mediterranean Sea have respectively 4.8 %, 2.1 % and 1.8 % of their surface area covered by MPAs. Of the countries in the profile update, Türkiye has four MPAs, Albania and Algeria have three each, Egypt, Montenegro, Syria and have two apiece and Lebanon and Libya each have one. In Tunisia, six MPAs are under creation, five of which benefit from co-management programs with NGOs in partnership with the MedFund. In Morocco, the MPA strategy initiated the creation of three MPAs with fisheries objectives. While 83.8% of the MPA area has an allocated management authority, only 2.5% of the MPA area has a fully implemented management plan. Just 0.11% of the whole sea area is covered by stringent protection measures (Rodríguez-Rodríguez and Abdul Malak 2022). There are also several MPAs in Cabo Verde withn potential for many more.

Figure 7.1 Map of Marine Protected Sites in the Mediterranean Sea



Source: http://mapamed.org

Protection of species

In the context of policy, legal protections against hunting or shooting of wildlife are considered here. National laws on hunting of wild animals were reviewed by BirdLife International (2015) and the findings form the basis of this section unless otherwise referenced.

In the Balkans, Albania has banned hunting and any form of trapping of wildlife by law since March 2014 up to 2025. Montenegro also has relatively tight legislation, with hunting for 19 bird species permitted on Sundays and public Holidays only, and many forms of hunting banned. North Macedonia restricts hunting to 33 bird species but there is a long open season; trapping is illegal. The situation is less clear in Bosnia and Herzegovina, where there are two valid hunting laws, for the Federation of Bosnia and Herzegovina and for the Republika Srpska. Both are complicated and poorly understood by the hunters themselves. For several species listed as game (12 in Federation of Bosnia and Herzegovina and 33 in Republika Srpska), no hunting season is defined, so they can be hunted throughout the year. Trapping is prohibited by both laws. In Türkiye, hunting is permitted for 27 species, with several methods banned.

All the Middle Eastern countries have regulations on hunting and trapping in place. In Jordan, licensed hunting is permitted during certain seasons for 26 bird species, but no hunting season is clearly stated in law. An annual ministerial decision defines the hunting season's duration and quota. Shooting with unlicensed hunting guns, shooting from a moving vehicle and use of electronic birds calls and decoys are illegal, as are trapping and falconry. In Lebanon, a complete hunting ban was put in place in 1995, with trapping allowed for pest species only. A new law, issued in 2004, refined the ban but the hunting season has not yet been reopened by the required ministerial decision. Palestine enacted a hunting law in 2000 but it has not been implemented. Syria had a complete hunting ban in 1994, with trapping allowed only for pest species, but this is not enforced.

A similar situation prevails across North Africa, with strong legislation and some controlled hunting allowed. Algeria has comprehensive legislation, and hunting was banned in 1994 but is tolerated in some areas. A 2004 hunting law revised the ban but has not been implemented; trapping is also banned. In Egypt, hunting is permitted in certain seasons for 24 bird species, with the season and species list determined by an annual ministerial decree. Prior to the civil war in Libya, hunting was illegal, but it is currently unclear what the regulation is. In Morocco, the game species list is defined by genus, not species, resulting in a long list (73) of species that may be hunted during the open season. Trapping and all hunting methods are allowed for pests, with landowners given the right to determine what species constitute pests on their land. Tunisia allows hunting of certain species and also allows some falcons to be caught, although they are otherwise protected.

7.2.3 Policy implementation

The quality of environmental management ultimately depends not only on good laws and policies but also on the effectiveness of policy implementation. The difference between official intentions, as reflected in policies and laws, and actual conditions on the ground is determined by funding, institutional cooperation, conflicts over land and resource rights, levels of knowledge and skills to implement policies. The challenges of policy implementation are made worse when there is corruption and weak rule of law (Mansourian 2012), and this is an issue in some of the countries of the hotspot. The political importance given to the environment by leaders can also have a major influence on how seriously environmental policies and laws are implemented. In recent years, political and humanitarian issues have preoccupied the short-term planning of many national governments in the region, to the detriment of long-term thinking about the environment.

Corruption is a global problem, which distorts effective decision making and implementation by conflating personal and public interests, and by undermining confidence in key institutions such as the judiciary and the government. Corruption also tends to restrict civil society and undermine democracy. The Corruption Perceptions Index (Wilhelm 2002) gives an indication of the level of corruption in public institutions in a country (Table 7.3). While some countries have noticeably improved their score (for example Cabo Verde, Kosovo and Montenegro), other have fallen. Countries in the area have tended to slip further down the rankings compared to countries elsewhere.

Bad governance could be an obstacle for some process like climate change adaptation or mitigation. For instance, Komendantova and Patt (2011) stress the fact that the main barriers for investment in renewable energy in North Africa have an important policy component (political instability, lack of support from local governments, instability of national regulations, complexity and corruption in bureaucratic procedures, absence of guarantees, etc.). NGOs have noted a lack of transparency in the process used to select country investment plans on nationally appropriate mitigation actions and have called for greater involvement from civil society in the development of investment plans (Osornio *et al.* 2011). Of special significance are policy issues regarding transboundary water-sharing that could affect regional conflicts, because, although corruption does not lead competition for water to escalate into conflict, it can precipitate the collapse or block the establishment of water-sharing arrangements (Solarte *et al.* 2008).

Table 7.3 Levels of governance and corruption in countries eligible for CEPF investment

Country	CPI score 2015 (0 = highly corrupt, 100 = very clean)	CPI score 2023 (0 = highly corrupt, 100 = very clean)	Rank 2023 (position among 180 countries globally)
Cabo Verde	55	64	30
Jordan	53	46	63
Montenegro	44	46	63
North Macedonia	42	42	76
Kosovo	33	41	83
Tunisia	38	40	87
Morocco	36	38	97
Albania	37	37	98
Algeria	36	36	104
Bosnia and Herzegovina	38	35	108
Egypt	36	35	108
Türkiye	42	34	115
Lebanon	28	24	149
Libya	16	18	170
Syria	18	13	177
Palestine	[no data]		[no data]

Source: Transparency International, 2023

7.3 International environmental agreements

7.3.1 The biodiversity conventions

Seven international conventions focus specifically on biodiversity issues (Table 7.4): the Convention on Biological Diversity (CBD), the Convention on the Conservation of Migratory Species (CMS), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Treaty on Plant Genetic Resources for Food and Agriculture (IT PGRFA), the Ramsar Convention on Wetlands of International Importance (Ramsar Convention), the World Heritage Convention (WHC) and the International Plant Protection Convention (IPPC). The status of accession/ratification by the hotspot countries covered by the ecosystem profile update, along with the number of sites declared under the Ramsar and World Heritage Conventions, is shown in Table 7.4.

Signatories to the main biodiversity conventions are committed to the achievement of the targets of the post-2020 Kunming-Montreal Global Biodiversity Framework (GBF), including establishing ecologically representative and well connected systems of protected areas and other effective area-based conservation measures that are integrated into the wider landscapes and seascapes.

The UN 2030 Agenda includes 17 Sustainable Development Goals (SDGs) and represents the common international political program that the 193 UN member countries have set themselves to reach by 2030. It was officially adopted on September 25, 2015, at a UN Summit attended by over 150 heads of state. The 17 SDGs are subdivided and better specified by 169 targets (Riccaboni *et al.* 2020).

Table 7.4 Status of the biodiversity conventions in the countries covered by the profile update

Country	CBD (inc. Nagoya protocol)	Ramsar[2]	CMS	AEWA (CMS)	Raptor MOU (CMS)	CITES	UNESCO WHC[4]	IT PGRFA	IPPC
Albania	X	4	X	X	-	X	2	X*	X
Algeria	X[1]	50	X	X	-	X	0	X*	X
Bosnia and Herzegovina	X*[1]	3	X	-	-	X	2	-	X
Cabo Verde	X[1]	4	X	-	-	X	0	X*	X
Egypt	X	4	X	X	X	X	1	X	X
Jordan	X	2	X	X	X	X	1	X	X
Kosovo	-	-	-	-	-	-	-	-	-
Lebanon	X[1]	4	-[3]	X	X	X	0	X	X
Libya	X[1]	2	X	X	X	X	0	X	X
Montenegro	X*	3	X	X	-	X	1	X*	X
Morocco	X	38	X	X	X	X	0	X	X
North Macedonia	X*[1]	3					2		
Palestine	X*	-	-	-	-	-	0[5]	-	-
Syrian AR	X	1	X	X	X	X	0	X	X
Tunisia	X	42	X	X	X	X	1	X	X
Türkiye	X[1]	14	-	-	-	X	2	X	X

Notes: CBD = Convention on Biological Diversity; Ramsar = Convention on Wetlands of International Importance; CMS = Convention on the Conservation of Migratory Species of Wild Animals; AEWA = Agreement on the Conservation of African-Eurasian Migratory Waterbirds (under the CMS); Raptor MOU = Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (under the CMS); CITES = Convention on International Trade in Endangered Species of Wild Fauna and Flora; UNESCO WHC = World Heritage Convention; IT PGRFA = International Treaty on Plant Genetic resources for Food and Agriculture; IPPC = International Plant Protection Convention; X, or a number = contracting party/signatory; X = acceded but not ratified the convention; - = not a contracting party/signatory; 1 = these states are not parties to the Nagoya protocol on access and benefit sharing; 2 = figures are the number of Ramsar sites within the hotspot in each country, for parties to the convention; 3 = Lebanon is not a Party to the main CMS agreement but is a signatory of the Raptors MOU and AEWA; 4 = figures are the number of natural or mixed natural and cultural world heritage sites within the hotspot, for parties to the convention; 5 = the UNESCO WHC is the only biodiversity convention to include Palestine.*

Convention on Biological Diversity (CBD)

The CBD is concerned with the conservation of biodiversity, its sustainable use, and fair and equitable sharing of benefits from use of genetic resources. It has subsidiary agreements on biosafety (the Cartagena Protocol) and access and benefit sharing (the Nagoya Protocol). The convention has adopted the GBF, which includes four key goals to 2050 and 23 targets to achieve by 2030. These include commitments to restore 30% of degraded areas and to conserve 30% of the areas of both land and sea by 2030. Parties to the convention prepare five-yearly National Biodiversity Strategies and Action Plans (NBSAPs) and submit annual reports to the convention. Twelve of the countries eligible for CEPF funding have so far produced NBSAPs, while Libya, Palestine and Syria have produced national reports. Kosovo has also produced a NBSAP, although it is not a signatory to the CBD. Under the CBD, 15 Ecologically or Biologically Significant Marine Areas (EBSAs) have been defined for the Mediterranean.

Ramsar Convention
The Ramsar Convention provides a framework for national action and international cooperation on the conservation and wise use of wetlands. All the countries in the hotspot, except Kosovo and Palestine, are contracting parties to the convention. One hundred and seventy-four wetlands of international importance have been listed under the convention by the hotspot countries covered by the ecosystem profile update, three-quarters of them in three North African countries: Morocco, Algeria and Tunisia. The convention has been less widely used in the other countries, with Jordan having nominated one Ramsar site in the hotspot (and one outside of it), Türkiye having nominated 14, and the other countries having nominated two to four sites each.

Three of the sites are listed on Ramsar's Montreux record of sites where a detrimental change in ecological character has or is likely to take place. These are Ichkeul, Tunisia, threatened by dam construction, and the two Ramsar sites in Egypt (Lake Burullus and Lake Bardawil), which are threatened by pollution and siltation.

Convention on the Conservation of Migratory Species of Wild Animals (CMS, or the Bonn Convention)
Thirteen of the 16 countries covered by the ecosystem profile update are parties to the CMS. Non-parties are Kosovo, Palestine, and Türkiye. Under the CMS, two mechanisms are of particular importance for the Mediterranean region: the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA); and the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia ('Raptors MoU').

The AEWA is an intergovernmental agreement for the conservation of migratory waterbirds and their habitats. Eleven of the 16 hotspot countries covered by the ecosystem profile update are contracting parties. Parties are legally bound by the AEWA Action Plans, which outline species and habitat protection measures, management of human activities, and supporting activities such as research and monitoring. A number of single species action plans have been developed which involve range states in the Mediterranean. Action Plans of relevance to the Mediterranean Basin Hotspot are:
- The AEWA Plan of Action for Africa (2019-2027), which contains actions and targets for the delivery of the five objectives of the AEWA Strategic Plan in Africa. The plan applies to North Africa countries in the hotspot (Morocco, Algeria, Tunisia, Libya and Egypt), and requires contracting parties to undertake a series of practical and management actions to improve the conservation status of water birds, ensure any use of water birds is sustainable, and improve knowledge, communication and capacity.
- The Plan of Action to Address Bird Trapping along the Mediterranean Coasts of Egypt and Libya, finalized in 2014, with implementation facilitated by an International Task Force, aims to address an apparent upsurge in the trapping of migrant birds as they arrive at the Mediterranean coast having crossed the Sahara and the Mediterranean Sea (Emile *et al.* 2014).

The Raptors MOU has been signed by seven of the 16 hotspot countries covered by the ecosystem profile update (among 56 range states globally), all of them in North Africa and the Middle East: Egypt; Jordan; Lebanon; Libya; Morocco; Syria; and Tunisia. Signatories of the MOU agree to work together to maintain or improve the conservation status of migratory birds of prey.

Also under the CMS is the Agreement on the Conservation of Populations of European Bats (Eurobats), which has been signed by 36 states including Albania, Montenegro and North Macedonia. Other hotspot countries covered by the ecosystem profile update are range states but have not signed. Parties commit to protecting the 55 species of bat that occur in Europe, through legislation, education and conservation measures.

In addition, the CMS has several working groups relevant to biodiversity in the Mediterranean Basin Hotspot:

- Migratory Land birds in the African-Eurasian Region (CMS COP Resolution 10.27).
- Minimizing the Risk of Poisoning to Migratory Birds (CMS COP Resolution 10.26).
- Working Group on Climate Change (CMS COP Recommendation 5.5, developed by subsequent Resolutions 8.13, 9.7 and 10.19).
- Working Group on Flyways (CMS COP Resolution 9.2, reinforced by Resolution 10.10 and 11.14).

Other agreements under CMS concern one or few species or they are relevant for only a part of the hotspot.

- The Slender-billed Curlew MoU aims for the conservation and recovery of slender-billed curlew. Albania, Croatia, Cyprus, Egypt, Greece, Italy, Morocco and Spain are signatories of the MoU, while Algeria, Bosnia and Herzegovina, Malta, Tunisia and Türkiye are in the range of the (possibly extinct) species.
- The Atlantic Turtles MoU concerns Atlantic African countries. Both Cabo Verde and Morocco are signatories, while Portugal and Spain are range states.
- The Aquatic Warbler MoU aims to safeguard aquatic warbler (*Acrocephalus paludicola*), the rarest migratory songbird in Europe. France and Spain are signatories, and Portugal and Morocco are range states.
- The MoU concerning Conservation Measures for the Eastern Atlantic Populations of Mediterranean Monk Seal counts Morocco, Portugal and Spain among its signatories.
- The Western African Aquatic Mammals MoU aims to achieve and maintain a favorable conservation status for manatees and small cetaceans of Western Africa and Macaronesia. Cabo Verde and Portugal are signatories, and Morocco and Spain are range states.
- The MoU on the Conservation of Migratory Sharks is the first global instrument for the conservation of migratory species of sharks. All the coastal countries in the hotspot are concerned by this treaty, although only Egypt, Jordan, Libya, Monaco, Portugal and Syria have signed.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

All the countries covered by the ecosystem profile update have acceded to CITES, although only Morocco and Tunisia have ratified the convention. CITES aims to ensure that trade does not threaten the survival of species and is the principal global forum for negotiating limits on the international trade in wild species. Six hundred and fifty-five species from the hotspot countries covered by the profile update are currently listed in the appendices of CITES (Table 7.5), the vast majority of which are on Appendix II (species where trade is controlled to avoid unsustainable utilization). However, 50 are included on Appendix I (trade prohibited). For the majority of species, wildlife trade is not thought to be a major threat, perhaps in part due to the deterrence effect of CITES initiatives. However, some species are over utilized. There will be many species where the value of adding them to CITES appendices has not yet been assessed.

Table 7.5 Number of species recorded from hotspot countries covered by the profile update listed in each of the CITES appendices

Group	Appendix			Total
	I	II*	III	
Plants	0	219	0	219
Vertebrates	55	201	43	299
Invertebrates	0	307	0	307
TOTAL	**55**	**727**	**43**	**655**

Data from speciesplus.net, Appendices | CITES

World Heritage Convention
All the countries in the hotspot, except Kosovo, are parties to the World Heritage Convention. There are nine natural (or mixed cultural/natural) World Heritage Sites within the countries covered by the ecosystem profile update: in Bosnia-Herzegovina, Egypt, Jordan, Montenegro, North Macedonia, Tunisia and Türkiye. There are large numbers of cultural World Heritage sites in North Africa and the Middle East, but the WHS mechanism has not been widely used for conservation of natural sites.

International Treaty on Plant Genetic resources for Food and Agriculture (IT PGRFA)
This treaty aims to enable farmers to access plant genetic resources, and to ensure that the countries of origin of these resources benefit from their use, anywhere in the world. The treaty explicitly recognizes and supports the importance of maintaining the diversity of local agricultural crops and varieties. Eight of the countries covered by the ecosystem profile update have ratified the convention, and another five have acceded or signed but not yet ratified.

International Plant Protection Convention (IPPC)
The IPPC aims to prevent the introduction and control the spread of pests of plants and plant products and promotes sharing of information and collaboration between states to achieve this. One of the three Strategic Objective of the 2020-2030 Strategic Framework *Protect the environment from the impacts of plant pests* recognises concerns related to plant biodiversity and emerging problems associated with plant pests as invasive alien species and the impacts of climate change. Fourteen of the 16 countries covered by the ecosystem profile update have ratified the convention.

7.3.2 Other relevant global conventions and programs
UN Convention on Combating Desertification (UNCCD)
UNCCD is a legally binding international agreement addresses social and environmental challenges in arid, semi-arid and dry sub-humid areas (‘drylands’), with the aim of preventing desertification and mitigating the impacts of drought in support of poverty reduction and environmental sustainability. As the issues addressed by the convention are strongly linked to climate change and biodiversity, the convention collaborates with the UNFCCC, and the CBD. All of the countries covered by the ecosystem profile update are parties to the convention, except Kosovo.

UN Framework Convention on Climate Change (UNFCCC)
The UNFCCC is the main international instrument for tackling climate change, including negotiating targets for emissions reductions. Important subsidiary agreements are the Kyoto Protocol, which establishes emissions reduction targets and guides emissions trading, and the 2016 Paris agreement, which forms a basis for current national level commitments to emissions reductions. Further information, including the National Determined Contributions, can be found in Chapter 10.

The UN Convention on the Law of the Sea (UNCLOS)
UNCLOS has been ratified by 12 of the 16 countries covered by the ecosystem profile update, with Kosovo, Libya, Syria and Türkiye not represented. The convention provides guidelines on a wide range of issues concerning national territorial rights over coastal waters, rights of passage for shipping and the management of ocean resources. Importantly in an environmental context, the convention has sub-agreements that require states to cooperate in the management of fish stocks found in open oceans and those that straddle open ocean and exclusive economic zone regions, through the operation of regional fisheries organizations. One of these is the International Commission for the Conservation of Atlantic Tuna (ICCAT), which is focused on conservation of tuna and related species in the Atlantic and adjacent seas, including the Mediterranean. The 51 contracting parties include nine of the hotspot countries covered by the ecosystem profile update.

UNESCO Man and Biosphere (MAB) Program
Governments of hotspot countries have declared nearly 100 biosphere reserves under the MAB Program within the hotspot, 28 of them in the countries covered by the ecosystem profile update, with the largest numbers in Algeria (seven) and Morocco and Tunisia (four each). Lebanon has three, Cabo Verde and Jordan have two each, while there is one in each of Albania, Egypt, Libya, Montenegro, North Macedonia and Syria. Cabo Verde, Egypt and Libya all declared these sites during the last CEPF investment phase, while additional sites were also listed in Morocco and Tunisia. There are two transboundary biosphere reserves, between Albania and North Macedonia (Ohrid-Prespa), and between Morocco and Spain (Inter-continental Biosphere Reserve of the Mediterranean).

The International Centre on Mediterranean Biosphere Reserves, established in 2014 in Spain (UNESCO 2016), aims to promote exchange and research cooperation across the Mediterranean.

7.3.3 Regional environmental agreements and partnerships
Several regional environmental agreements and conventions provide a shared platform for cooperation on environmental issues in the region.

The Mediterranean Action Plan (MAP) was established in 1975 as a multilateral environmental agreement in the context of the Regional Seas Programme of the UNEP. Mediterranean countries and the European Community approved MAP as the institutional framework for cooperation in addressing common challenges of marine environmental degradation.

Under the auspices of UNEP/MAP, a framework convention dedicated to the Protection of the Mediterranean Sea against Pollution was adopted in 1976 and a more ambitious one, **the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean** - called the Barcelona Convention - was adopted in 1995. The convention has been ratified by 21 Mediterranean countries (all countries covered by the profile with a maritime façade but Cabo Verde).

The convention has seven protocols addressing specific aspects of Mediterranean environmental conservation, of which two shape the regional policy context for important themes relevant to CEPF activities in the region. The Specially Protected Areas and Biodiversity Protocol (1995) encourages the creation of Specially Protected Areas of Mediterranean Importance (SPAMIs). Thirty-nine MPAs have been declared SPAMI (2022), nine of which are in countries covered by the ecosystem profile update (Morocco, Albania, Algeria, Tunisia and Lebanon) (Rodríguez-Rodríguez and Abdul Malak 2022).

Another protocol directly related to conservation is the Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol), which was adopted in 2008. Legally binding, it calls parties to take measures to protect the characteristics of coastal ecosystems, such as wetlands and estuaries, marine habitats, coastal forests and woods, and dunes.

Several centers have been established to foster regional coordination and support the parties for the implementation of the protocols. The one for Specially Protected Areas is RAC/SPA, based in Tunisia, while the RAC/PAP, following the Protocol on Integrated Coastal Zone Management, is based in Split, Croatia. Another Regional Activity Center (RAC) is Plan Bleu, an observatory of environment and sustainable development for the Mediterranean region, producing analysis and prospective papers for decision makers, which is based in Marseilles, France.

In the Portoroz Ministerial Declaration, following the 23rd meeting of the contracting parties in 2023, the parties to the Barcelona Convention committed to making every effort to ensure that by 2030 at least 30% of coastal and marine areas are effectively conserved and managed. They also renewed their commitment to halting the degradation of marine and coastal biodiversity through the effective implementation of the Mediterranean region's post-2020 Biodiversity Framework (aligned with the Kunming-Montreal Global Biodiversity Framework).

The Bern Convention on the Conservation of European Wildlife and Natural Habitats aims to conserve wild flora and fauna and their natural habitats, as well as to promote European cooperation in this field. The convention covers European countries. Among the countries covered by the ecosystem profile update, the Balkan states (except Kosovo), Türkiye, Tunisia and Morocco are parties. Algeria and Cabo Verde have observer status at meetings (countries outside Europe are concerned by migratory species). The Bern Convention launched the Emerald Network of Areas of Special Conservation Interest in states outside the EU (CoE 2016). For countries covered by the profile, sites have been nominated from Albania (25), Bosnia and Herzegovina (29), North Macedonia (35) and Montenegro (32) (CoE 2023).

The Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) is a binding agreement signed by 10 of the countries covered by the ecosystem profile update, which requires contracting parties to take legislative and practical action to reduce deliberate persecution and bycatch of cetaceans.

Other regional institutions that have some impact on environmental affairs include **the Arab Maghreb Union (AMU)**, a platform for economic and political cooperation between the members, Morocco, Algeria, Tunisia and Libya, in the hotspot, and Mauritania (Tabit-Aoul 2011). The union has promoted studies on underground water bodies in the Sahara, and the elaboration of a Maghreb charter on environmental protection and sustainable development. Other agreements and shared initiatives within or centered on the Mediterranean region include formal political forums, multi-stakeholder platforms for joint action, and donor-led initiatives to encourage coordination and sharing.

The Union for the Mediterranean (UfM) consists of 27 EU Member States and 15 countries from the southern and eastern shores of the Mediterranean Sea, which collaborate to enhance regional cooperation and dialogue in the Euro-Mediterranean region. It promotes activities with a direct impact on the lives of people, including some priority areas with relevance to the ecosystem profile, such as social affairs, research, urban development water and environment, and climate action.

The **Global Water Partnership (GWP)** aims at improving water security globally, through improved governance and management of water resources for sustainable and equitable development. GWP has a regional approach. All the countries in the hotspot belong to the GWP-Med, except Slovenia and Cabo Verde, which belong to the East Europe and West Africa regions, respectively.

8. CIVIL SOCIETY CONTEXT OF THE HOTSPOT

8.1 Civil Society in the Mediterranean Basin

8.1.1 Overview and scope of civil society

CEPF's definition of civil society includes many kinds of NGOs and voluntary organizations, philanthropic institutions, social movements, private businesses, media, academic and research organizations, and cooperatives. These groups may be international, national or local. This broad definition is pragmatic, because most CSOs cannot be neatly classified by type or activity. Conservation NGOs frequently implement community empowerment and development activities, in order to achieve their conservation goals. Conversely, NGOs working for community and economic development may align with global environmental movements and ideas. Moreover, both conservation and development CSOs also use advocacy to influence key agendas, such as land and social reform, in pursuit of their objectives. The line between profit and nonprofit is similarly blurred, and different in different countries. Private sector companies may establish their own nonprofit organizations to conduct Corporate Social Responsibility (CSR) programs, and these organizations may work on many of the same issues as other CSOs, from charity to microcredit, and from planting trees to natural disaster relief.

In most countries of the hotspot there are examples of the work of: (1) international CSOs that are based outside the hotspot but work within it (e.g., WWF, TNC, IUCN); (2) regional CSOs that are based in one hotspot country but also work in other hotspot countries (e.g., Medmaravis, Medasset and Tour du Valat); (3) national CSOs working within their own country and some being part of bigger networks (BirdLife International, Friends of the Earth); and (4) grassroots CSOs working on specific sites or within specific regions. There are multiple networks and collaborative relationships within and among these four groups, based on shared objectives, funding or exchange of skills and knowledge, as well as many initiatives for cross-border cooperation in nature conservation and sustainable development.

The opportunities for civil society to raise the profile of environmental issues, and contribute to addressing them, has generally increased. There is an increasing number of environmental NGOs in the countries covered by the ecosystem profile update, although the majority remain small and quite fragile. GEF Operational Focal Points in the governments of each country provide a contact point between the GEF, government and civil society. In some countries, there are also some NGOs established that are more-or-less controlled by governmental bodies. These "government-organized" non-governmental organizations (so-called "GONGOs") operate rather differently from grassroots, national or international CSOs (EuroMed Rights 2021, Council of Europe 2024).

In addition to the NGOs, academic and research institutions, and private sector organizations reviewed in the sections below, there are local associations for development that also include aspects of sustainability, and, frequently, the conservation of biodiversity, forest, wetlands and soils. These associations are frequently active only at the village level and are found throughout the whole hotspot in many different forms.

Academic interest in biodiversity conservation is well developed in most countries in the hotspot. In North Africa and the Middle East, especially where the NGO sector is under-developed, they may undertake some conservation action. More usually, however, their involvement is limited to research and publications. Research centers or academic institutions have often been incubators for NGOs, as is the case of the Macedonian Ecological Society. In many countries, it would be beneficial to strengthen the partnership between universities and NGOs to share and develop scientific expertise, mobilize resources and involve people in community projects.

The private sector is often considered separately from much of civil society, and, at times, can be considered a source of threats to the environment. However, there is much overlap, and, in some countries, the definitions are blurred. There are opportunities for the private sector to engage as a lead organization in or in support of conservation action. This may be via the CSR programs of larger businesses, through conservation organizations established as private companies or through small enterprises established at the community level to help local people to benefit from sustainable management of natural resources.

8.1.2 The role and capacity of civil society

The potential role for effective CSOs is huge. Many of the 500+ KBAs in the countries covered by the ecosystem profile update are inhabited or used by large numbers of people who rely heavily on them for water and other natural resources. Civil society is critically positioned between communities and government to facilitate and negotiate improvements to conserve and sustain biodiversity while enhancing livelihoods. In some cases, CSOs can also effectively stimulate partnership between the governments and the corporate sector for the conservation of biodiversity.

Despite the small number of conservation-focused NGOs in some of the countries covered by the ecosystem profile update, they play an important role in improving the management of protected areas in several countries. During the second phase of CEPF investment in the hotspot, the establishment of 15 new or extended protected areas and strengthened management in 52 protected areas was supported through grants to CSOs.

While there are some strong, sustainable CSOs in the countries covered by the ecosystem profile update, the overall picture is of relatively small CSO community, focused on local issues, rather poorly networked, and lacking sufficient capacity and resources to do the most effective job. Dependence on donor funding is generally high, although there are some cases of NGOs running their own business to fund conservation. In Jordan, for example, the Royal Society for Conservation of Nature (RSCN) raises funds to involve local community enterprises using its registered trademark, Wild Jordan. The existing funding for biodiversity conservation originates from a relatively small group of funding organizations that support civil society to play a role in the conservation of priority KBAs or wider landscapes (see Chapter 11).

Information on CSO capacity needs is available from the evaluations of the first two phases of CEPF investment in the hotspot, and from the national consultation process undertaken during the update of the ecosystem profile. In the second phase, grants were awarded to 133 different CSOs, among which 78% of those reporting acknowledged strengthening of their capacity through the project.

During various consultation processes, national stakeholders linked action to identified threats, and then identified the roles that CSOs can play in addressing these threats. CSOs in the countries covered by the ecosystem profile update continue to have weaknesses in many areas, including human resources, management systems and strategic planning, partnerships, financial resources and transboundary cooperation. For many, the greatest need is in securing sustainable funding and better levels of international cooperation, related, in some cases, to the difficulty in receiving funds and support from abroad.

The remainder of this chapter briefly summarizes the status of civil society in each of the eligible sub-regions and countries of the hotspot, and also of the private sector and of various regionwide and international organizations and networks.

For each country, the following factors are considered, to the extent that relevant information was available to the profiling team:

- The framing legal and policy environment for NGOs and other CSO organizations in the country.
- Any national mechanisms to support NGOs specifically.
- An overview of environmental CSOs in the country and their influence and strength.
- Environmental NGOs' impact on biodiversity conservation, and their interaction with other CSOs from related sectors.
- CSOs networking in the country, where it exists.
- An assessment of the opportunities for working with environmental CSOs in the country.

The list of all the CSOs which have been supported by CEPF is provided in the Final Assessments reports of CEPF Phase I[18] and Phase II[19].

8.2 Balkans Subregion

The Balkan countries within the hotspot are, with exception of Kosovo, members of the Council of Europe and, thus, parties to the Convention for the Protection of Human Rights and Fundamental Freedoms, which secures the right of association. There are no significant legal restrictions on the work of biodiversity CSOs in the Balkans. Limits on the effectiveness of CSOs are more a result of the geographical concentration of CSOs in capital cities, dependence on foreign donor support, limited internal capacity and mixed relationships with government, which have often been colored by a lack of trust on both sides. These circumstances are improving in some countries, where there is support from the European institutions in the context of accession/pre-accession process, or through EU Interreg funding, which promotes cooperation between CSOs and governmental institutions. Networking and cooperation between CSOs, and between CSOs and private sector organizations, is typically poor, the latter tending to comprise short-term projects that do not have longer-term benefits.

In the Balkans, the role of NGOs in management of protected areas is not enshrined in law but is usually formalized through MoUs or other agreements between NGOs and local governments or protected area authorities. Examples include the Centre for Protection and Research of Birds (CZIP, Montenegro, for management of Tivat Solila), Protection and Preservation of Natural Environment in Albania (PPNEA, being part of the National Council of the Wild Fauna and part of Managment Comittes of certain Protected Areas))), Regional Environment Centre (REC, Albania, for management of Dojran lake jointly with the local municipality), Institute for Nature Conservation of Albania (INCA, providing support to Karaburun-Sazan National Park with the Regional Agency for Protected Areas of Vlora), Naše ptice (Bosnia-Herzegovina, for management of Hutovo blato) and Macedonian Ecological Society (North Macedonia, providing support to Galichica National Park in wildlife monitoring). The role played by NGOs tends to be supporting, rather than taking on direct management responsibility, and includes raising funds, providing infrastructure and providing guides. Occasionally, international NGOs have also become involved, for example the NGO EuroNatur has supported the employment of rangers at Hutovo blato, with a local partner, Naše ptice.

CSOs in the Western Balkans face significant challenges, as highlighted in the recent European Commission (EC) *Rule of Law* report (European Commission, 2024). Across the region, CSOs face a variety of obstacles that undermine their ability to operate effectively and uphold the rule of law, including restrictive legal environments, insufficient funding, and limited engagement in public policy processes.

[18] www.cepf.net/resources/investment-analysis/mediterranean-basin-final-assessment
[19] www.cepf.net/resources/investment-analysis/mediterranean-basin-phase-ii-final-assessment

Throughout the region, the prevalence of Strategic Lawsuits Against Public Participation (SLAPPs) and other legal mechanisms has grown. These tactics, coupled with inconsistent and insufficient public funding, create an environment in which CSOs struggle to survive, let alone thrive. The tax frameworks in Albania and Montenegro add another layer of difficulty, with complex VAT regulations and anticipated legal reforms threatening the financial viability of CSOs.

Overall, the challenges faced by CSOs in the Western Balkans are reflective of broader issues within the rule of law in these countries. The deterioration of intersectoral cooperation, political polarization and inadequate legal frameworks pose significant risks to the sustainability of civil society, ultimately threatening the democratic processes that these organizations seek to support. The EC's report underscores the urgent need for comprehensive reforms to protect and empower civil society in the region, ensuring that these organizations can continue to contribute to the advancement of democracy, human rights and the rule of law.

8.2.1 Albania

The NGO sector in Albania has grown since the early 1990s, paralleling the country’s shift from a dictatorial regime to a democratic society. In 1991, the first NGOs were created in Albania, driven by the need for various social services. The sector’s growth was initially disadvantaged by a lack of legal frameworks and institutional support, and the first NGOs were created through special decrees of existing institutions, such as for the Academy of Sciences of Albania. A significant milestone was the approval of Law No. 8788/2001 on Non-Profit Organizations, amended through Laws No. 9814/2007 and No. 92/2013. This foundational law provides the legal framework for the establishment, registration, and operation of non-profit organizations in Albania. It outlines the procedures for forming NGOs, as well as for their organizational structures and governance requirements, aiming to ensure they operate transparently and effectively. In addition, Law No. 80/2021 on the Registration of Non-Profit Organizations, defines the rules for establishment, registration, operation, organization and activity of non-profit organizations.

Other laws directly or indirectly supporting the activity of NGOs include Law No. 9367/2005 on the Prevention of Conflict of Interest, which aims to prevent conflicts of interest among public officials. While it primarily affects government officials, its principles can also impact NGOs that interact with the public sector. Law No. 146/2014 on the Notification and Public Consultation provides the right to the NGOs to participate in the consultations of decision and laws relevant to their field of activity. Law No. 119/2014 on the Right to Information ensures public access to information held by public authorities. This law is crucial for transparency and can impact NGOs working in advocacy.

Since the early 1990s, NGOs in Albania have diversified their activity and scope, addressing a range of issues, from human rights and environmental protection to education and healthcare. They have been instrumental in advocating for marginalized groups, such as women and the Roma community, and in promoting democratic values and governance reforms. International partnerships and donor support have played a major role in sustaining and expanding their impact. Despite these achievements, challenges yet persist. The EC's 2024 *Rule of Law* report and the Balkan Civil Society Development Network’s (BCSDN’s) *Annual Report of 2023* highlight several issues relevant to CSOs in Albania. CSOs face significant challenges due to difficult registration processes, impacted by court delays and problems with registration. Anti-Money Laundering (AML) and Counter-Terrorism Financing (CTF) regulations further delay their operations, though the report points out the lack of emphasis on how these regulations specifically impact CSOs. The introduction of specific VAT treatment for CSOs in 2023 has been poorly implemented, adding to their difficulties. Additionally, public funding for CSOs is minimal and insufficient, which raises concerns for the financial sustainability of the CSOs and makes them heavily depended on foreign donations. The National Council for Civil Society is described as weak, and political polarization in the country disrupts legislative processes, limiting CSO participation in public consultations. These factors collectively create a challenging environment for CSOs in Albania.

Albania has a number of active organizations linked to environment. Some of them are part of international networks such as BirdLife International and IUCN.

Two dedicated studies on the needs and sustainability of the CSOs in Albania highlight: limited financial resources, inadequate legal and fiscal frameworks, and difficulties in government cooperation as the main challenges that NGOs face. In addition, other needs such as capacity building, better advocacy skills, and stronger partnerships, including with the private sector are also emphasized (PartnersAlbania 2019, USAID 2020).

8.2.2 Bosnia and Herzegovina

NGOs in Bosnia and Herzegovina act on the basis of the Law on Associations and Foundations, which regulates the establishment, internal organization, registration and termination of associations and foundations, as well as other issues of importance for the free and voluntary association of citizens and legal entities. The formation of associations and foundations needs at least three people.

Environmental/biodiversity research in Bosnia and Herzegovina is led by the National Natural History Museum, as well as the Center for Ecology and Natural Resources (associated with the University of Sarajevo), which collaborates with IUCN biodiversity projects and the Emerald Network.

As per the concept proposal for the Strategy of the council of ministers for creating stimulating environment for the development of civil society 2024-2028, the following weaknesses of the status of CSOs were defined:

1) Weak and insufficiently transparent public funding of NGOs.
2) Absence of unique, regularly updated and publicly available registers of NGOs (therefore, there is no objective overview of the situation in the sector).
3) Insufficiently stimulating tax policy.
4) Weak involvement of NGOs in the preparation of regulations and policies.
5) Relatively weak connection of NGOs with their own base.
6) Relatively weak connection of NGOs with the academic sector and media.
7) Lack of professional capacities (knowledge and staff) in NGOs.
8) Bad public perception of NGOs.
9) Too much dependence on foreign donors.

CSOs in Bosnia and Herzegovina continue to suffer from a lack of funding and expertise, particularly regarding nature and biodiversity conservation issues. A lack of management systems and strategic planning was identified during the first phase of CEPF investment. This has, however, improved in recent years.

8.2.3 Kosovo

The Constitution of the Republic of Kosovo guarantees freedom of association and includes the right of everyone to establish an organization without obtaining any permission. Kosovo has a number of environmental CSOs, including Ecological Association Eko Viciana, Association for Protection of Birds and Mammals, Environmentally Responsible Action (ERA) group, and Kosovo Environmental Education and Research Center (KEERC). The academic sector includes the Institute for Biological and Environmental Research.

There is a lack of human and financial resources for CSOs concerned with nature and biodiversity conservation. The GIZ study confirmed the poor access to financial support for CSOs in Kosovo, while an assessment by the United States Agency for International Development (USAID) points out the weakness of civil society and underlined the need for "training biodiversity-related CSOs in advocacy, fundraising, and other measures to ensure their sustainability" (USAID 2018).

8.2.4 Montenegro
The constitution of Montenegro guarantees civil rights and liberties, including freedom of association. In mid-2011, a new law on NGOs (number 39/11) was adopted, effective from January 2012, amended through Law No. 37/17 effective from June 2017. The law is harmonized with international standards (Convention on Human Rights of the Council of Europe and Recommendation CM / Rec (2007) 14 of the Committee of Ministers to member states on the legal status of NGOs in Europe) and the European Court of Human Rights. In addition, the law contributes to the strengthening of good governance and increased transparency in the work of NGOs.

The environment in the academic sector is represented by the Institute of Marine Biology, based in Kotor, which is affiliated with the University of Montenegro, with a Laboratory on General Biology and Protection of the Sea. The National Museum of Natural History collaborates with environmental organizations on species research and monitoring. Environmental/biodiversity research in Montenegro is led by Environmental Protection Agency of Montenegro, which is responsible for monitoring of environmental action and preparatory work for recognition of protected areas.

The lack of governmental support and limited capacity for biodiversity research and advocacy are important concerns for CSOs. National NGOs are located in the capital of the country and tend not to have local offices or employees, while grassroots NGOs have limited capacity (a conclusion supported by the GIZ study). Montenegro struggles with significant barriers to CSO participation in public processes. Despite the inclusion of civil society representatives in ministerial working groups, public consultations remain inadequate, and the legal framework for CSO financing is inconsistently implemented.

CSOs still depend significantly on EU funding, although some have managed to diversify funding sources. The state provides funds for financing projects and programs in areas of public interest implemented by non-governmental organizations, currently at least 0.3% of the current annual budget (Law No. 37/17, Article 32). Themes include rule of law, development of civil society and volunteerism, education, science, environmental protection, etc. The lack of management systems and strategic planning in local organizations that was identified at the beginning of the first phase has improved in the recent years.

8.2.5 North Macedonia
NGOs in North Macedonia act on the basis of the Law on Associations and Foundations (52/2010, 135/2011 and 55/2016), which regulates the establishment, internal organization, registration, and termination of associations and foundations. Funding for CSOs is distributed by government (between US$3.7-5.4 million per year), based on an annual plan, and includes funding for NGOs working on European integration processes. The government has a strategy and a unit for cooperation with NGOs.

Academic and research organizations with an interest in biodiversity include the Universities of Saints Cyril and Methodius in Skopje, State University of Tetovo, University of Goce Delchev Shtip, Saint-Naum Ohridski University in Bitoala, the Macedonian Academy of Arts and Sciences, the Macedonian Natural History Museum, and the Hydro-biological Institute (Lake Ohrid). Biodiversity research is also conducted by national parks.

Capacity is inadequate to respond to the conservation challenges in important areas including Lake Dojran, Lake Prespa, Lake Ohrid and the Drim catchment. The lack of funding is the most serious problem identified for CSOs.

North Macedonia also struggles with significant barriers to CSO participation in public processes. North Macedonia's civil society faces a boycott of the national Council for Civil Society, driven by controversies over funding allocations, further eroding trust between the government and the sector. There is limited transparency and poor coordination in civil society strategies, hindering progress toward more inclusive and effective governance.

8.3 Türkiye

After 2004, Türkiye improved the environment for CSOs, allowing easier access to foreign funding, partnerships or activities, with the previous repressive oversight by the authorities removed. In the middle of the instability created by disturbances and conflicts in 2015, the government outlined an action plan, which aimed, among other measures, to enhance the civil society environment. However, recently political changes have made it more difficult for many NGOs to operate effectively, and there is a divide between those who oppose and those who work with government.

Türkiye has a diverse and active civil society community, many of whom are active within the hotspot. There are several universities with interests in the field of biodiversity, including Akdeniz University, the Aegean (Ege) University, Dokuz Eylül University, Hacettepe University, Istanbul University Forestry Faculty, METU Institute of Marine Sciences, and the Middle East Technical University. There is also the Scientific and Technological Research Council of Türkiye (TUBITAK).

To date, CEPF has not been able to fund investment in Turkey as the ecosystem profile has not been endorsed by the Government or GEF Focal Point. There is huge potential to support civil society in the future. Monciatti et al (2022) produced a useful discussion document on informing civil society policy and consetrvation vision in Turkey in the context of climate action, and as part of dialogue between European Union and Turkish civil society. While this is a blueprint for CSOs on how to better articulate their vision on and align Turkish policy on climate change, there is much that is relevant to wider environmental action. A key element of this is to help structure civil society (and industries') strategies and action plans towards clear objectives.

8.4 Middle East sub-region

All the hotspot countries in the Middle East and North Africa are members of the Arab League (formerly the League of Arab States), though Syria was suspended between 2011 and 2023. Since the adoption of the Arab Charter on Human Rights in 2004, recognizing the right of association, CSOs have sought to promote human rights in the Arab region. The league has shown increasing willingness to address critical issues facing the Arab world jointly with civil society and declared 2016-2026 the Decade of Arab CSOs (ICNL 2013). The charter of the decade initiative, which was developed in cooperation with UNDP, explicitly recognizes the role CSOs play in sustainable development, and aims to develop a more favorable environment for Arab CSOs to play that role more effectively.

The Middle East's environmental NGO community has traditionally been characterized by a small number of quite well-established organizations, often with close relations with government and a clear mandate for their actions. Despite this, they may lack consistent and secure funding.

8.4.1 Jordan

Article 16 of the Jordanian Constitution guarantees the right to the freedom of association, although the formation and operation of NGOs remain restricted. The Law on Societies (2008), amended in 2009, improved the environment for NGOs in comparison to the previous 1966 law. Under the Law on Societies, all societies or associations must register with the Registry Council within the Ministry of Social Development to operate lawfully. Law 51 requires societies and NGOs to submit annual plans to the government in advance, to admit government officials in meetings, and to seek prior approval to receive any foreign funding. In early January 2020, Jordan introduced a new mechanism and a specialized committee for approving foreign financing granted to CSOs, which intends to shorten the funding process review.

NGOs affiliated with the royal family play an important role in different domains. Generally, organizations headed by members of the royal family are well-established and have clear programs and focus areas, and usually get financial support because of their credibility and reputation. This is the case of RSCN, which is a well established CSO.

Small organizations and cooperatives are less structured and have narrower mandates and limited numbers of beneficiaries. The presence of well established, national organizations can restrict the emergence of grassroots groups, however, by competing with them for funding and attention.

Environmental NGOs in Jordan are quite active and already filling a gap related to conservation aspects. Likewise, the cooperation with international organizations is also an important factor for the work of national NGOs.

CSO faces challenges related to the diversity of donors supporting environmental NGOs comparing with those supporting human rights especially, since 2020 and the COVID-19 pandemic.

8.4.2 Lebanon

CSOs have played an important role throughout history and saw a significant rise during the 1960s, with the creation of voluntary-run associations that sought to steer away from sectarian identities, while adopting broad development objectives. After the Civil War, the civil society sector continued to expand. The Civil Society Knowledge Center (CSKC, 2018) reported that donors' formal requirements for local CSOs (on logistics, financial management, result-based reporting, monitoring and evaluation, etc.) have contributed to push CSOs further towards professionalization. In recent decades, the number CSOs and NGO has risen consistently, often due to lack of government support in key sectors and fields, such as social services, human rights and freedoms, combatting corruption, and preserving justice and the rule of law.

According to Lebanon's (pre-independence) 1909 Ottoman Law on Associations,which remains in force more than a century later, formation of an association does not require prior approval from the government; rather, the law requires that the government be notified when an association is formed. Since 2000, Lebanon has established one of the most enabling legal and regulatory environments for civil society, with a focus on improved implementation. Since 2006, the process of legalization was simplified, as the administration has the obligation to issue a receipt when an organization files its statute. This "receipt" is important for an NGO's functioning, as it is required for an NGO to carry out a number of essential activities, such as opening a bank account or accessing international funding. However, a lack of public funding for NGOs makes them vulnerable to becoming dependent on private funders and utilized for political or sectarian purposes (ICNL, 2013).

Financial resources, coming from a range of different sources but particularly from international funding, are primarily only within the reach of large national CSOs. CSOs suffer from inadequate technological and infrastructural resources to achieve their goals.

Lebanon grappled with multiple challenges in 2021, including the continuation of an unprecedented economic and financial crisis, the disastrous impact of the massive August 2020 explosion at the Port of Beirut, political deadlock and shrinking public space. These crises were compounded by the COVID-19 pandemic. Despite these significant challenges, CSOs showed remarkable resilience, mitigating what might have been disastrous circumstances. The most recent crisis (2024) has increased the emigration of highly skilled professionals, creating challenges in sustaining the country's human capital base. This trend is leading to a significant gap in expertise and capacity, which could hinder long-term development efforts in the environmental civil society sector.

8.4.3 Palestine

Palestine has a strong tradition of civil action and a diverse CSO community, with NGOs having a history of providing essential social services. Earlier government attempts to control NGOs were successfully resisted, leading to an NGO law passed in 2000 that was the "least restrictive in the Middle East" (ICNL 2013c). NGOs have, however, been caught up in the political struggles within the Palestinian state, with arbitrary dissolution of NGOs perceived to be supporting rival groups. In 2015 and 2016, the Palestinian Authority has strengthened monitoring of the financial affairs of NGOs.

CSOs have been established since 1948, with several active in the field of human rights. Today, many CSOs focus on development-related issues, and some fill in gaps left by the Palestinian Authority in terms of service delivery. Extensive foreign funding has led to criticism of both the "NGO-isation" of Palestinian civil society and of international support to NGOs, which has been described as serving a political agenda. Development of Palestinian civil society has, meanwhile, been severely restricted by Israel, and activities of organizations made difficult by the occupation. CSOs focusing on environmental issues are active locally with the support of the Palestinian Authority.

8.4.4 Syria

In Syria, security in the present conflict and instability is a major concern for CSOs. In addition, counterterrorism legislation and onerous reporting requirements are imposed by donors, who are fearful of legal problems in their home countries if funds are misused (ICNL 2016). These restrictions have limited the freedom and effectiveness of NGOs. Currently, CEPF is not able to support activity in or for the benefit of Syria.

The Syrian Society for the Conservation of Wildlife (SSCW) is a pioneering organization, which works for wildlife conservation in partnership with the national authorities, as well as with national, regional and international organisations, to ensure the protection of all biodiversity. Research on the environment is currently limited. The main universities with faculties of sciences are Damascus, Aleppo and Tishreen (located in Lattakia city), in addition to a few other private universities. In 2024, SSCW began exploring with the IUCN West Asia Office and other officials how to resume international environmental support for the country.

8.5 North Africa sub-region

CSOs establishment and evolution in North Africa is interesting and dependant on different political situations. Since independence in Morocco but especially in Algeria and Tunisia, and after the 1952 putsch in Egypt, the regimes limited the existence of civil society and, even when it existed, CSOs were allowed a very limited scope of activity. Despite these regimes, CSOs were permitted to act in some fields. Exceptions were granted to development NGOs in rural areas, especially in Morocco and Egypt. Other agencies were not normally allowed to strengthen CSOs (Ferré 2004). Not all North African countries started from the same situation with regard to limits imposed on associations.

The events of 2011 and 2012, collectively referred to as the Arab Spring, brought positive changes for CSOs in Tunisia and, to some degree, in Morocco. However, legislation made the situation harder for Egyptian and Algerian CSOs, as restrictions impacted them and limited their interactions with international donors and NGOs.

The environmental NGO community in North Africa has historically been rather weak, making a relatively small contribution to conservation. At the same time, academic organizations have focused more on scientific research than applied work. There is a lack of trust between government institutions and NGOs, which limits opportunities for interaction. International NGOs play an important role in encouraging collaboration among NGOs, especially in Morocco, Tunisia and Libya. While networks and coordination platforms do exist, they often appear to be project based. These initiatives are frequently instigated by an international actor, and, even when handed over to a local partner for the sake of localizing efforts, the network winds up stagnating.

8.5.1 Algeria
The Algerian Constitution establishes the right to form associations and mandates the state to encourage a flourishing voluntary movement. However, the 2012 Law on Associations created additional restrictions on the freedom of association and gave the government broad discretion to refuse to register associations, to suspend an association’s activities or to dissolve it, and to place restrictions on an association’s founders. This makes it difficult for associations to receive foreign funds. This law limits the means by which associations can obtain funding, especially those that come from abroad. Donations and legacies from foreign organizations must be subject to prior agreement from the competent public authority, which will verify the origin of the amount as well as its relationship with the stipulated objectives. These conditions limit the support of international donors to CSOs in Algeria.

Despite this legal framework, CSOs in Algeria are participating in some national and international programs aimed at developing CSO capacity and increasing their impact on the ground. There is a lack of information on CSOs’ growth and evolution.

At the national level, there are several universities (Tarf, Annaba, Jijel, Bejaia, Tizi Ouzou, Houari Boumediene, Blida, Chlef, Mostaganem, Oran, Tlemcen, Mascara, Biskra, etc.) and Technical Superior Schools (ENSSMAL, ENSA). Some of these universities are active on environmental issues, and work with the government and CSOs.

The difficulty of linking to international networks and accessing international funds has been identified as a key obstacle. National funds are also scarce. NGOs lack capacity, particularly in management, governance and fundraising at the organizational level but also regarding legislation and technical issues related to biodiversity. Weak networking is also identified as a challenge. Lack of collaboration between government agencies and CSOs was also reported by stakeholders.

8.5.2 Egypt
Egypt has known volunteering for a long time, resulting from a long heritage, based on the concept of "charity". The network of civil associations in Egypt includes more than 16,800 thousand associations, which carry out activities in different sectors, including the environment.

Egypt has taken important steps to reform the legislative and institutional framework that regulates the movement of non-governmental organizations and institutions, through the promulgation of Law No. 84 in 2002 and the evolution of its executive status, to become a framework for the reform of civil associations. A law was approved in September 2016, which removed some of the restrictive elements of the previous (2002) Law on Associations and Foundations but maintained broad government authority over civil society, including the power to reject an organization's registration, constrain its activities, become involved in its internal governance and restrict its access to funding, particularly foreign funding.

Law No. 149 of 2019, regulating civil work, also contributed to easing restrictions on establishing civil associations and institutions, as it restored the establishment of civil associations by notification rather than by declaration, in addition to facilitating some administrative aspects related to managing these entities and regulating their relationship with the administrative authority. However, this law allows the authorities to close down and freeze any association that continues to operate without registering.

Academic institutions active in the environment sector are relatively numerous and well developed (more so than the NGO community), including Alexandria, Suez Canal, Tanta and Kafr El Sheikh Universities, the Coastal Research Institute and the Egyptian National Oceanographic Data Center (ENODC).

While there are several environmental NGOs located along the Mediterranean coast, there is still a clear shortage of CSOs working on environmental protection and nature conservation. In addition, there are tight restrictions on civil society funding and a lack of civil society engagement in larger decision-making processes.

8.5.3 Libya

The history of CSOs and NGOs in Libya is quite recent. Law No. 19 of 2001 on the Reorganization of NGOs and its executive regulation, Decree No. 73 of 2002, have served as the primary guidelines for NGOs in Libya. Under Law No. 19, the General People's Congress (now known as the Parliament) had the authority to oversee the registration of foreign NGOs, while national NGOs were registered by the Council of Ministers at national level and the relevant city council at the local level. This framework was significantly modified following the 2011 revolution.

In particular, Council of Ministers' Decree No. 1160 of 2018 established the Civil Society Commission to assume comprehensive responsibility for registering both international and national NGOs in Libya. Although subordinate to the Council of Ministers, the commission was granted the power to issue decrees to regulate the NGO registration process. One of the crucial decrees issued by the commission was Decree No. 5 of 2023 on the Establishment of Regulations for the Registration and Publication of NGOs (Rania Jamal 2023).

Many CSOs were established, including environmental ones. Libyan CSOs have the potential to play a crucial role in improving livelihoods and promoting local economic development, meeting the needs of local communities, and helping to resolve the economic and social challenges facing the country. However, growth in CSOs encountered difficulties from mid-2013 till 2018. During this period the lack of a safe operating environment, the fracturing of society, the economic recession and decline in foreign donors impacted upon implementation by CSOs. The situation has stabilized since 2019, and CSOs have evolved and strengthened their capacity. Libya has been eligible for CEPF grants since 2013, and the security situation in much of Libya improved since 2015, allowing CSOs to implement more activities safely in certain areas. Nevertheless, CSO activity and capacity remain low.

Environment research is represented by the Faculty of Science, University of Tripoli and the Marine Biology Research Centre. Both face capacity limitations, as a result of the unstable political and security situation.

There is a lack of public awareness about civil society work, as well as a lack of funding, partly as a result of the security situation in the country. CSOs in Libya are at an early stage of development, with limited opportunities to gain experience with on-the-ground conservation or to build their organizational capacity. As a result, Libyan CSOs typically have rather weak governance, difficulty raising funds and limited project management experience.

8.5.4 Morocco

Recent reforms in Morocco, since King Mohammed VI ascended to the throne in 1999, have included the adoption of a new civil society policy (2003), with regulations that defined the relationship between the State and CSOs, including facilitating their access to public funding. This has encouraged several ministries to develop CSO support programs, among them the Ministry of Environment. The launching of the National Initiative for Human Development in 2006 contributed to opening new opportunities for Moroccan CSOs in several fields, including the environment. The new constitution of 2011 strengthened the role of associations in formulation of strategies and actions plans and in the political, social and environmental life of the country. As a result, Moroccan civil society has undergone substantial development and is considered a key player in the country's current development process.

Most NGOs are very active at promoting environmental education and awareness and conducting public awareness activities. The majority have strong local anchoring and are committed to protecting their immediate environment.

The number of environmental associations reached 3,500 in 2016. At national level, these includes the Association of Natural Science Teachers (AESVT), considered one of the most important networks in Morocco on environmental education. CSOs are supported by the Mohamed VI Foundation for Environmental Protection, which was established by government to support civil society on environmental and development issues. This reflects the growing concern to contribute to nature conservation in the country. The foundation supports environmental education and awareness raising, in particular related to human enjoyment of the environment. Several networks have been set up to strengthen CSOs' work and advocacy, including the Alliance for Climate Justice and the Moroccan Network of NGOs for Wetlands.

Research institutes and universities in Morocco often work in partnership with NGOs on environmental issues. They have developed surveys, masters degree courses and projects related to biodiversity (e.g., the Rabat Institute of Science), renewable energy (e.g., the University of El Jadida), desertification (e.g., the National Centre for Forestry Research) and monitoring of wetlands (through Mohamed V University Rabat).

8.5.5 Tunisia

Since independence, CSOs were established in Tunisia for different objectives but often did not succeed in making much impact. During the rule of Ben Ali, development organizations were established primarily by government members. After the 2011 uprising, civil society was given a meaningful role and the space needed to operate freely as part of the democratic transition. The Decree-Law on Associations (No. 2011-88 dated September 24, 2011), enacted in line with international standards, aimed at regulating civil society and offering an enabling environment for civic action. This law allowed CSOs to carry out a broad range of activities, lobby the authorities regarding laws and policies, and receive foreign funding without government authorization. Taking advantage of the new-found freedom, many organizations were established to reach over 24,000 CSOs currently registered.

July 2022 was the second turning point for civil society in Tunisia, with increased restrictions on the operations of civil society. Although there have been no direct amendments to national laws, local regulations have been issued regarding receiving foreign funding and registering associations.

Environmental CSOs have played an important role in biodiversity conservation and awareness raising in recent years. Furthermore, it is possible for CSOs to co-manage a protected area, according to a law of 2009. Currently, five MPAs are co-managed by associations, in partnership with Agence de Protection et Amenagement de Littoral (APAL).

The Ministry of Environment set up a system to support CSOs by facilitating access to foreign funds, and with some funding allowance according to the annual activity of each organization. This mechanism, while welcome, does not support a significant level of funding for NGO activities.

Networking in Tunisia is not very active. Many networks were established in the environment field, such as RANDET (Réseau Associatif pour la Nature et le Développement en Tunisie) or Tunwet (Tunisian wetlands), but these have not generally been sustained or followed up.
Scientific institutions working on biodiversity or protected sites include the Institut National des Sciences et Technologies de la Mer, which is undertaking studies on the marine ecosystems and sustainable use of marine natural resources. The Institut des Régions Arides is focused on flora and fauna and reintroduction of species, while the Institut National Agronomique de Tunisie deals with management and sustainable use of marine natural resources, waterbird and wetland studies, and water management.

8.6 Cabo Verde

The Constitution of Cabo Verde establishes the basis for the freedom of association. In particular, Article 70 encourages the state and municipalities to collaborate with associations for environment protection, to adopt policies for the protection and conservation of the environment, to ensure the rational utilization of all natural resources, and to stimulate and support those associations.

The history of environmental CSOs in Cabo Verde is quite recent, with the first projects implemented by NGOs on sea turtle conservation beginning in the early 2000s. Organizations have been created since then, and many of them have become more active, professional and recognized.

Today the focus of CSOs is on marine, coastal and terrestrial biodiversity conservation. Marine and coastal work is largely focused on species conservation (sea turtles, sea birds, sharks and rays, marine mammals, etc.) and interaction with the artisanal fishing community (fishermen, fishmongers, restaurants, etc.). On the terrestrial side, there is a promising increase in work on endemic plant conservation at national level. In both marine and terrestrial environments, CSOs are involved formally or informally in the management of protected areas, and tangible conservation results are more and more evident.

In terms of categories of CSOs, the country hosts a variety of organizations. Many are groups of community members gathered to protect species or sites at a very local level (such as sea turtles on one beach or plants in a small valley) or trying to find sustainable energy access for a community. For formal NGOs, some are small, with just a few staff and one or two topics of intervention, while there are also larger NGOs that are able to manage a large number of projects with teams of more than 20 people. Environmental NGOs are active on each main island, with a diversity of activity among islands. A network of environmental CSOs, named TAOLA+ (based on the TAOLA network which was created for sea turtle conservation), has been in place since 2023. It aims to support its members, increase collaboration among CSOs and improve environmental advocacy.

The law in Cabo Verde encourages civil society engagement, with practical examples, such as Biosfera's involvement in the Santa Luzia natural reserve or Projecto Vito in the Rombo integral natural reserve. In 2024, the Ministry of Environment signed official agreements with several NGOs to give them funds to intervene in protected areas.

A few international NGOs are supporting local CSOs with larger scale projects on, for example, MPA management and creation, plant conservation, seabird conservation, and sea turtle conservation. It is important to note that, today, due to the capacity for management of larger projects by several local CSOs (quality of procedures, governance, transparency, scientific skills, material available, experience, etc.), opportunities to attract larger funds without being subgrantees of an international NGO should be encouraged. CEPF has had a significant impact in the development of CSOs in the country during the last two phases, with the direct support to eight local NGOs.

The Universidad de Cabo Verde (UniCV) and the University Tecnica do Atlantico (UTA) are the main national research organisation. The National Institute for Research on Agricultural Development (Instituto Nacional de Investigação e Desenvolvimento Agrário, INIDA) has a department on environment, in particular with experts in botany and supports research and monitoring activities with the national parks system. Other foreign universities are quite active in the country, supporting CSOs and local researchers in their projects, especially, but not exclusively, universities in Portugal, Spain and the UK.

8.7 The private sector in the Mediterranean

The private sector is partly responsible for unsustainable resource use and other activities that threaten biodiversity in the hotspot (Chapter 9). However private sector organizations may also have a stake in the sustainable management of resources, especially where they directly own and manage them. For example, in parts of the Balkans, woodlands owners are key players because they control up to half of the area of forest[20]. The private sector can also be a source of knowledge and investment in support of conservation. CSR funding is growing in the region and has had an important impact on the CSO activities. There are examples of NGOs and other institutions working with private sector landowners to make their management of resources more sustainable and biodiversity friendly. Many companies have developed systems to support local NGOs or communities working on biodiversity conservation, working with CSOs directly or through associated foundations.

Within the EU countries of the hotspot there are several examples of positive partnerships between NGOs and private sector companies, for example SEO/BirdLife Spain's involvement of corporations and local stakeholders in the *AlzandoelVuelo* program to conserve Spanish imperial eagle (*Aquila adalberti*, VU), and WWF's promotion of Forest Stewardship Council (FSC) standards. Collaboration between private landowners and NGOs to implement effective land stewardship has been widely used in Spain (Račinska *et al.* 2015) and has recently been replicated in Bosnia and Herzegovina. In the marine realm, the European fishing industry has strived to minimize the impact of by-catch of sea turtles and marine birds.

Within the hotspot countries covered by the ecosystem profile update, there are examples of private sector initiatives in the tourism, water and energy sectors, and a

[20] Alternative figures suggest that, in Montenegro, North Macedonia and Albania, the proportion under private ownership is lower (Pulla *et al.* 2013).

nascent fair-trade program has the potential to reward local communities that are directly producing wild-sourced products. These are described briefly below.

8.7.1 Tourism sector

The tourism industry is of particular significance to environmental management in the countries covered by the ecosystem profile update, because it represents an important source of revenue and employment, as well as a major source of pressure on resources (see Chapter 9). At the same time, it depends for its survival on maintaining the quality of the environment. Many large tourism companies with extensive operations in the northern Mediterranean have expanded into new destinations, building or encouraging governments to allow building of resorts on pristine locations. There are examples of sustainability policies for hotel operations and funding of environmental projects and institutions[21] but, to date, most tourism companies fail to consider their wider ecological 'footprint', in terms energy and water demand (Horwarth 2015). A variety of certification and accreditation schemes operate that allow tourism operators to demonstrate that they are working to minimize their environmental impacts.

There are several NGO initiatives working to mitigate the impacts of tourism on the environment. These include the SPEA and SEO/BirdLife Spain programs *MacaroAves*, for Macaronesia, including Cabo Verde, and *MediterAves*, for the Mediterranean, including Morocco and Tunisia (Adam 2011), which give training and technical support for entrepreneurs. There are also initiatives promoting good practice in fishing tourism (SEO/BirdLife 2014). IUCN, together with eight partners from Mediterranean, launched in 2013, the Mediterranean Experience of EcoTourism (MEET) network, an initiative on sustainable tourism in protected areas in the Mediterranean supported by the European Commission under several Interreg programmes – and which led to the creation of the Mediterranean Ecotourism Consortium in 2023.

8.7.2 Energy sector

The energy sector has an impact on the environment through its power generation activities (coal mining, hydropower generation, wind power generation, etc.), the management of waste in the air, water and spoil heaps, and through the wider impacts of climate change. Nevertheless, energy demand continues to rise and meeting this need is critical for meeting human development targets.

There are successful examples of collaboration between NGOs and the private sector on reducing or mitigating carbon emissions and reducing water use. In Montenegro, the Centre for Protection and Study of Birds (Centar za zaštitu i proučavanje ptica Crne Gore-CZIP) and Elektroprivreda CrneGore (a national electrical power supplier) worked together on improving the nesting sites for white stork (*Ciconia ciconia*) around Beranam, erecting platforms for nesting, and securing funds for buying telemetric equipment. CZIP has also worked with the CGES (Montenegro Electricity Utilities Company) on provision of nesting boxes for falcon and owl species. In Bosnia-Heregovina the CSO Lijepa naša had a small project on raising awareness about ISO standards and energy efficiency, while other NGOs have had similar small-scale projects on raising awareness in the field of environment protection. In Morocco, the NGOs GREPOM and ADM have worked with the public highways authority to mitigate the impacts of infrastructure. Elsewhere in the hotspot, LPO (BirdLife France) works closely with Electricité de France on reducing impact of wind farms on migratory birds.

[21] For example, Akwa Group in Morocco, has in the past funded environmental protection projects and received the Mohammed VI Foundation Award for its commitment to clean beaches and sustainable coastal management; Marti Hotels and Marinas, Divan group in Türkiye communicate on their environmental commitments and support reforestation projects.

8.7.3 Social enterprises

Social enterprises that encourage the generation of wealth for local communities from the sustainable management of resources can contribute to conservation by giving value to healthy, natural ecosystems. These enterprises have sustainability and improvement of local livelihoods at the core of their business, and they strive to develop markets which pay a premium for these values. Companies such as Lush seek to source products, such as olive oil, almond oil and sea salt, in ways that complement and support biodiversity conservation. The Women's Cooperative in Tighanimine (Morocco) is the first argan oil producer in the world to be Fairtrade certified, taking advantage of a recent boom in the use of argan oil for cosmetic purposes. CSO-private sector cooperation is also developing around the trade in immortelle (*Helichrysum* sp.) in Bosnia-Herzegovina; dates from the Beni Ghreb company, in Tunisia; various foodstuffs from Terroirs du Liban, in Lebanon. There are also various Albanian associations for organic farming, including the Organic Agriculture Association, Albanian Dairy and Milk Association, Albanian Permaculture Association, and Albanian Livestock Farmers Association.

8.7.4 Future directions

Despite these examples of positive actions by private sector companies and partnerships, the large number of players and lack of organization of the sector has, so far, proved an obstacle to the promotion of sustainable management and improved governance, and much of the private sector remains oblivious to or unwilling to engage in environmental concerns beyond legal compliance (Lengyel 2010, Petrović and Čabaravdić 2010).

The private sector needs a cultural shift, supported by policy stability, and a level playing field. Small and medium enterprises (SMEs) are the backbone of economies, but they often lack awareness of the latest eco-friendly technologies: a situation that hinders sustainability efforts (World Bank 2024a). The World Bank Enterprise Survey for the Balkans indicated that most SMEs do not actively monitor or manage their environmental impacts or even their use of electricity. Rapidly evolving and expensive green technologies can deter SMEs from investing in sustainability. A comprehensive effort is, therefore, required to align SMEs with initiatives such as the EU Green Deal. It is imperative to address information gaps, raise awareness about the necessity and long-term benefits of going green, and ensure an adequate provision of skills training (World Bank 2024b).

8.8 Regional and global organizations and partnerships

Several organizations and networks exist across the Mediterranean region or beyond, or cover parts of the Mediterranean and neighboring European or Arab countries.

8.8.1 Regional organizations and partnerships

The **Arab Forum for Environment and Development (AFED)** is a regional NGO providing a platform for NGOs, corporates, academic and research organizations to contribute to sustainable development in Arab countries, including Lebanon, Jordan, Tunisia and Syria. Its main programs are policy, green economy, CSR and education.

Conservatoire du Littoral is a French public body that works for the conservation and sustainable management of coastal ecosystems by buying land on the French coastline. Although it is governed by French national and regional state authorities, it is included here because of its role in facilitating international cooperation with partners across the Mediterranean. Conservatoire du Littoral provides technical support and assistance to coastal management agencies in partner countries, including Algeria and Tunisia, as well as leads or collaborates on projects in Morocco, Libya and Albania (see also information on AFD and Fonds Français pour l'Environnement Mondial (FFEM) projects in Chapter 11). The organization runs a Small Island Initiative to work on island restoration in the Mediterranean Basin, and has recently established new partnerships in Montenegro and

Lebanon. Conservatoire du Littoral is a member of the MedFund, a trust fund for MPAs, and leads the development of the Integrated Coastal Zone Management Protocol for the Barcelona Convention as a representative of France. It is also a member of the CEPF Advisory Committee for the Mediterranean Basin Hotspot.

EuroNatur is a non-profit charitable foundation, founded in 1987 by BUND (Friends of the Earth Germany), NABU (BirdLife Germany) and Deutsche Umwelthilfe. It promotes transboundary conservation efforts in Europe but also engages in advocacy towards the EU. It focuses on sustainable rural livelihoods and economies, as well as biodiversity protection. Its extended network includes nature conservation associations, scientists and their research teams, volunteers and public sector representatives in many European countries. Within the countries covered by the ecosystem profile update, EuroNatur is active in Albania, Bosnia and Herzegovina, Montenegro and North Macedonia, including at important KBAs, such as Lake Ohrid, Lake Skadar, Neretva Delta and Bojana River.

The **Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE)** is a non-profit Federation of 134 Mediterranean NGOs working on Environment, Development and Culture from all Mediterranean countries. In co-operation with governments, international organizations and other socio-economic partners, MIO-ECSDE plays an active role for the protection of the environment and culture and the promotion of the sustainable development of the Mediterranean region and its countries. In the hotspot countries covered by the ecosystem profile update it has members in Albania, Algeria, Eygpt, Jordan, Lebanon, Libya, North Macedonia, Montenegro, Morocco, Palestine, Syria, Tunisia, and Türkiye.

The **Network of Marine Protected Area Managers in the Mediterranean (MedPAN)** counts eight founding members, 84 members and 49 partners from 21 Mediterranean countries: Albania; Algeria; Bosnia and Herzegovina; Croatia; Cyprus; Egypt; France; Greece; Israel; Italy; Lebanon; Libya; Malta; Morocco; Monaco; Montenegro; Slovenia; Spain; Syria; Tunisia; and Türkiye. The initiative was originally established in 1990 by IUCN and the French Government, with the support of the World Bank, and was re-launched in 2003/2004 with funding from the EC Interreg III C South Initiative Funds, with WWF-France as the lead partner. Members and partners include CSOs and networks, government bodies (national and regional governments, departments, national park authorities of committees) and international organizations. The network covers 191 MPAs.

The **Mediterranean Wetlands Initiative (MedWet)** brings together 27 Mediterranean and peri-Mediterranean countries that are Parties to the Ramsar Convention. Its mission is to ensure and support the effective conservation of the functions and values of Mediterranean wetlands, and the sustainable use of their resources and services.

The **Regional Environmental Center for Central and Eastern Europe (REC)** is a regional organization with a mission to assist in addressing environmental issues. The center fulfils this mission by promoting cooperation among stakeholders, non-governmental organizations, businesses and other environmental stakeholders, and by supporting free exchange of information and public participation in environmental decision making. The REC has country and field offices in beneficiary countries, including Albania, Bosnia and Herzegovina, Croatia, North Macedonia, Montenegro, Slovenia and Türkiye. The REC actively participates in key global, regional and local processes and contributes to environmental and sustainability solutions within and beyond its country office network, transferring transitional knowledge and experience to countries and regions.

Tour du Valat is a private foundation dedicated to halting the loss and degradation of Mediterranean wetlands and their natural resources, and to restoring them. It is based in the Carmargue, France, where its 2,100 ha nature reserve and research facilities are used by scientists, academics, practitioners and students from around the Mediterranean. Tour du Valat addresses its mission through four main objectives: improving and sharing knowledge of Mediterranean wetlands; developing adaptive approaches to wetlands management and restoration; developing the capacity of decision makers and resource managers to conserve and use wetlands sustainably; and influencing decisions impacting wetlands through advocacy. Tour du Valat is active in all 27 MedWet countries through a wide network of CSOs, public bodies and research institutes.

The **Regional Activity Centre for Specially Protected Areas (RAC/SPA)** was established by the contracting parties to the Barcelona Convention and its protocols, in order to assist Mediterranean countries in implementing the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean. RAC/SPA's objective is to contribute to the implementation of the SPA/Biodiversity Protocol by assisting Mediterranean countries to reach their engagements for this protocol. With the entry into force of the protocol in 1999, a new phase for Mediterranean cooperation in the field of the conservation and sustainable use of the marine and coastal biodiversity was entered. RAC/SPA works with stakeholders in all Mediterranean countries covered by the ecosystem profile update and provides assistance to CSOs involved in relevant activities. Tunisia has hosted the center since its establishment in 1985.

The **Mediterranean Biodiversity Consortium** was launched in March 2021 by MedWet, MedPAN, the Mediterranean Small Islands Initiative (PIM), Tour du Valat, the IUCN Centre for Mediterranean Cooperation, and the International Association for Mediterranean Forests (AIFM), with the support of Conservatoire du Littoral. The consortium aims to preserve and restore Mediterranean biodiversity, based on the implementation and valorization of Nature-based Solutions, and by promoting the mobilization and support of local communities.

Within this framework, several targeted actions are planned:
- Implementation of Nature-based Solutions at pilot sites.
- Strengthening of the skills of local actors by promoting the exchange and sharing of experience in a logic of learning and autonomy.
- Establishment of a collaborative "Red Alert" system, aimed at identifying, thanks to a web mapping platform, development projects or practices that threaten natural sites, in order to limit their impacts or, even, stop them.
- Establishment of a "Green Light" list of wetlands with potential for good restoration projects, with advocacy, more planning and, often, a need for more funding.
- Creation of a "Think and Do Tank", with the objective of working on concepts related to the conservation of biodiversity and concretizing them, in order to give the keys to the Mediterranean actors to involve them in beneficial solutions with real impacts.

8.8.2 Sub-regional and transboundary partnerships and networks

There are many sub-regional networks in the northern Mediterranean, many of them promoted by EU regional policies. In the countries covered by the ecosystem profile update, however, there are far fewer. One of the most important impacts of CEPF investment has been the fostering of networks and collaborative actions. Several formal and informal networks have been formed as result of CEPF support, for example among organizations working on coastal areas in Tunisia, around Lakes Skadar, Orhid and Prespa in the Balkans, and in Cabo Verde.

In the Balkan States, there are a few cross-border networks active in biodiversity, with the Balkan Vulture Action Plan (promoted by the Vulture Conservation Foundation, Frankfurt Zoological Society and BirdLife International, together with local NGOs and governments) being a notable example. This plan is consolidating a regional network of local NGOs to work on nature conservation and sustainable development, using vultures as flagship species. At site level, there is transboundary cooperation over the management of Prespa lakes (North Macedonia, Albania and Greece) and Skadar Lake (Montenegro and Albania).

Another regional project is the Balkan Green Belt, which is part of the wider European Green Belt Initiative and includes nine Balkan countries. The Parks Dinarides network comprises 56 protected areas from Albania, Bosnia and Herzegovina, Montenegro, Croatia, Kosovo, North Macedonia, Slovenia and Serbia. The Southeast Europe Network on Energy and Transport (SEENET) was founded with the aim of coordinating the work of advocacy CSOs in the Western Balkans region on energy and transport issues but also includes work on nature protection.

There are other smaller networks such as the PrespaNet. This network is composed from the Society for Protection of Prespa (SPP) in Greece, the Protection and Preservation of the Natural Environment in Albania (PPNEA) in Albania and the Macedonian Ecological Society (MES) in North Macedonia and aims to strengthen transboundary co-operation between NGOs and the Protected Area's Management Authorities for the integrated management and protection of Prespa Lakes basin.

In 2007, the Euro-Mediterranean University in Slovenia (EMUNI) was created with the support of the EU. This complements a second academic initiative, the Centre of Research and Studies for the Eastern Mediterranean (CREMO), led by the University of the Aegean. Combined, these two institutions have the potential to increase research on conservation and sustainable development in the Mediterranean Basin, among other issues.

There are some examples of networking at the national level, including the Federation of Environmental NGOs in Jordan. Created in 2014, this coalition brings together environmental and nature protection NGOs under one umbrella and provides a platform for cooperation and coordination between member NGOs. A similar initiative is the Palestinian Environmental NGOs Network (PENGON)[22], which bring together 16 NGOs around environmental issues, and it is registered as an NGO (Constantini *et al.* 2011).

In the Macaronesia sub-region, there is an intense cooperation among the Canaries, Madeira and the Azores, supported by EU programs. The Interreg–Mac initiative for the Macaronesian archipelagos includes Cabo Verde as third country, alongside Portugal and Spain.

8.8.3 Global organizations and networks

BirdLife International, a global network of national partner NGOs, is present in the region at two levels: the national partners; and three regional secretariats for Europe and Central Asia, Middle East and Africa. There are partners in all of the EU countries in the Mediterranean Basin, and 11 of the 16 countries covered by the ecosystem profile update, including all four Middle East countries, Cabo Verde, Egypt, Morocco, Tunisia, Albania, North Macedonia and Montenegro. There are several projects that have been coordinated among the different countries in the region, for example the MAVA-Foundation-funded Capacity Development for Flyway Conservation in the Mediterranean project, which ended in 2016, and the GEF-funded Migratory Soaring Birds project, which involves the four hotspot countries in the Middle East and Egypt.

The **Environmental Law Alliance Worldwide (ELAW)** is a global alliance of attorneys, scientists and other advocates who provide legal support to grassroots activists taking action for their local environment. Activities include providing advice through publications, training paralegals and bringing legal actions against corporations.

[22] PENGON is FoE Palestine (PENGON 2017).

In the Mediterranean Basin Hotspot, the organization has activities and partners in Egypt, France, Greece, Israel, Morocco, Slovenia, Spain and Türkiye.

The **Friends of the Earth (FoE)** network includes FoE Middle East, which is the only NGO with national branches in Jordan, Palestine and Israel, being active in climate change and environmental issues along the Dead Sea Rift Valley. There are partners in Albania, Bosnia and Herzegovina, North Macedonia and Palestine.

The **International Union for the Conservation of Nature (IUCN)** is an environmental network that counts as members government, non-government and Indigenous peoples' organisations from over 160 countries.In recent years, IUCN has seen an increase in the number of organizations joining in all countries around Mediterranean. In the countries covered by the ecosystem profile update, IUCN members are dominated by NGOs, with 96 NGOs in 15 of the 16 countries (most of them in Jordan and Lebanon), while governments are represented by only nine agencies in six countries and six state parties (Table 8.1). The IUCN Centre for Mediterranean Cooperation is a member-based organization structured around collaboration with members. It includes 14 governments and more than 140 NGOs in the Mediterranean, international organizations, and volunteer experts of the six IUCN Commissions. The center’s mission is to influence, encourage and assist Mediterranean societies to conserve and sustainably use the natural resources of the region and work with IUCN members, and to cooperate with all other agencies that share the objectives of IUCN.

Table 8.1 IUCN members in the hotspot countries covered by the updated ecosystem profile

Country	State members	Government agencies	National NGOs	Total
Albania	0	1	3	4
Bosnia-Herzegovina	0	0	1	1
Kosovo	1	0	0	1
North Macedonia	0	1	2	3
Montenegro	0	2	1	3
Balkans sub-region	**1**	**4**	**7**	**12**
Jordan	1	3	26	30
Lebanon	0	1	13	14
Palestine	0	0	5	5
Syria	0	0	1	1
Middle East sub-region	**1**	**4**	**45**	**50**
Algeria	1	0	2	3
Egypt*	0	1	5	6
Libya	0	0	3	3
Morocco	1	0	13	14
Tunisia	1	0	11	12
North Africa sub-region	**3**	**1**	**34**	**38**
Türkiye	1	0	8	9
Cabo Verde	0	0	2	2
TOTAL	**6**	**9**	**96**	**111**

*Note: * = The national NGO total for Egypt includes one NGO based in Egypt that works regionally.*

World Wide Fund for Nature (WWF) has country offices in six of the EU countries in the hotspot as well as in Türkiye. The WWF Mediterranean Program coordinates work in several countries across the Mediterranean. The WWF Tunisia, formerly known as Living

Planet Tunisia, is a registered organization in Tunisia, with activities covering North African countries.

The WWF Mediterranean Program focuses on the creation of new terrestrial protected areas, advocacy to prevent damaging hydropower projects and promotion of sustainable forest management through the FSC system. Focal sites in the hotspot include Karaburun MPA in Albania, Kas-Kevova MPA in Türkiye, and the Taza National Park MPA in Algeria. The Mediterranean Marine Initiative (MMI) brings together WWF offices and programs from across the region in a coordinated effort to bring the Mediterranean Sea back to health. Their work ranges from influencing government policy to working with fishing communities, from shaping business models to mobilising people.

The Nature Conservancy (TNC) is a global environmental organisation, established in 1951 in the United States of America (USA). It has been active in the Balkans since 2017, when it started collaboration with local CSOs, experts and governments, aimed at preserving region's most valuable rivers and promoting nature-friendly ways for transition to renewable energy. Building on the protection of the Krupa River (Croatia) and Zeta River (Montenegro), TNC helped build the United for Rivers partnership, supporting river protection initiatives across 13 rivers and five countries in the region (Bosnia and Herzegovina, Croatia, Montenegro, North Macedonia and Serbia). In 2024, the partnership protected three of the 13 target rivers (Mreznica and Tounjica in Croatia and Bistrica in Montenegro). It is now expanding its work to support management of these protected areas and developing sustainable finance mechanisms for conservation efforts across the region.

Table 8.2 summarises the number of grants given and NGOs supported since the inception of the CEPF Mediterranean Basin Hotspot programme in 2012.

Table 8.2 Number of grantees supported per country during phases I and II of CEPF investment

Country/Region	Phase I CSOs	Phase II CSOs	Number of CSOs supported in phase I or II
Albania	9	21	26
Algeria	4	3	6
Bosnia Herzegovina	12	11	22
Cabo Verde	4	8	11
Egypt	0	1	1
Jordan	5	5	10
Lebanon	6	11	13
Libya	2	6	6
Montenegro	7	8	12
Morocco	11	13	21
North Macedonia	6	11	17
Palestine	0	6	6
Tunisia	6	21	23
Regional institutions	11	8	17
Total	**83**	**133**	**191**

9. THREATS TO BIODIVERSITY IN THE HOTSPOT

This chapter presents an overview of the main threats to biodiversity and natural ecosystems in the hotspot. The main information sources include the IUCN Red List of Threatened Species, reports on KBAs (Darwall *et al.* 2014, Radford *et al.* 2011), published literature, and stakeholder inputs received through workshops and remote consultations. The subsections include the threats confronting specific species, sites and corridors listed in Chapter 5 on conservation outcomes, including threat actors.

The categorization of threats follows the IUCN Threat Classification Scheme 3.2 (IUCN 2016), which was used to maintain consistency among species, sites and corridors. This scheme was utilized to rank the threats that affect the threatened species (threat data are available on 1,256 of the 1,311 threatened species, including plants, invertebrates and vertebrates) occurring in the hotspot according to the IUCN Red List of Threatened Species (IUCN 2016b). The same scheme was also used for the ranking based on expert opinion through the stakeholder consultations. This was extensively reviewed during the preparation for phase II and remains largely valid. This chapter is, therefore, based on those earlier assessments with some updating.

9.1 Overview of key threats

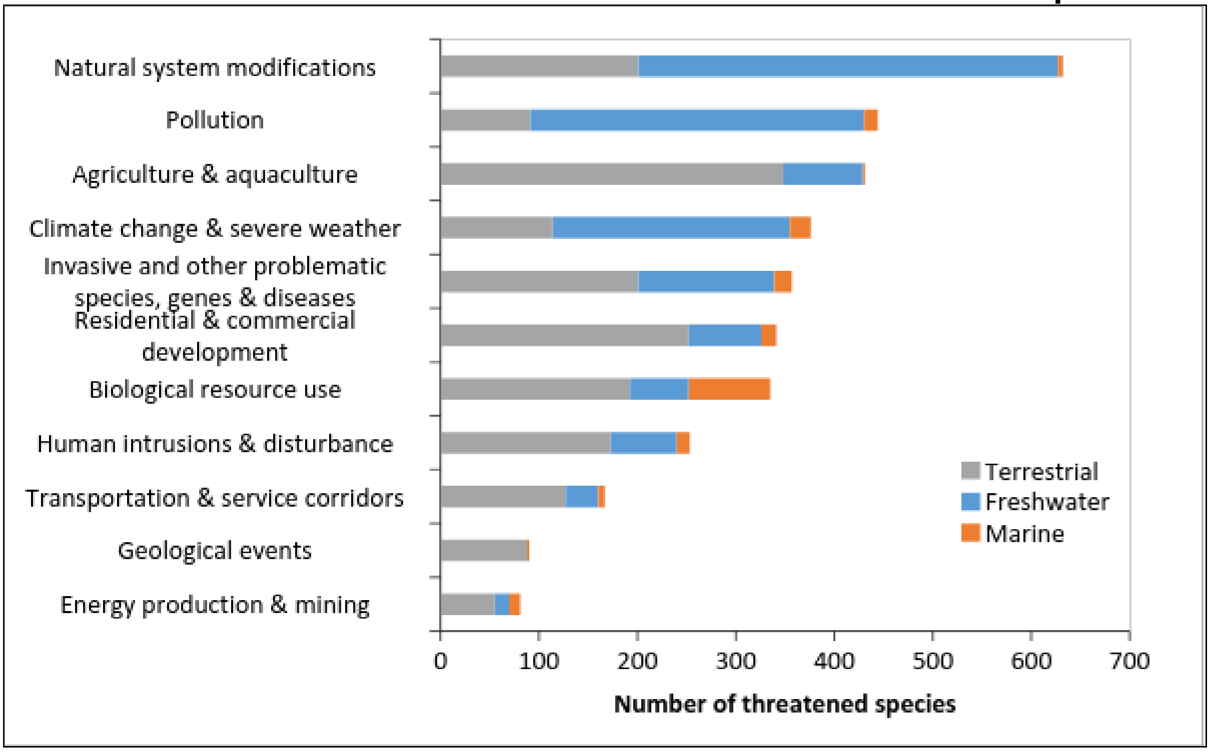
As reflected elsewhere in this document, the biodiversity of the Mediterranean Basin Hotspot is rich, unique and vulnerable. It is also one of the most densely inhabited regions of the world. While population density alone may not be a particularly good predictor of threat level, it is the human population in the Mediterranean Basin that is driving the main threats. Overall, the Mediterranean Basin Hotspot countries hold around 560 million inhabitants (2023), around 262 million of which live on the Mediterranean coast (Plan Bleu 2020). Further, the same coast is visited by up to 250 million tourists a year (Plan Bleu 2022).

This results in one of the heaviest pressures from visitors and residents on the remaining natural habitats encountered anywhere on earth. The prospects of short-term financial gain from tourism are often winning over the long-term security of biodiversity and maintenance of ecosystem services. Furthermore, some of the endemic taxa in the hotspot are confined to islands and small river catchments and have a narrow genetic base, reduced competitive abilities and limited dispersal opportunities, which increase their vulnerability.

Fortunately, most of the region’s continental biota have evolved alongside humans for thousands of years. There are many naturally occurring hazards, notably fires and droughts. This has led to the development of a level of natural resilience to various pressures, although this resilience is now being seriously tested. In Macaronesia, however, species evolved without the presence of many competitors, and, thus, suffered immensely after human colonization. Most of the recent extinctions in the Mediterranean Basin Hotspot have occurred in Macaronesia, and many threatened species occur there.

Activities associated with natural system modifications, pollution and agriculture are the threats affecting most of the threatened species in the hotspot (Figure 9.1). Terrestrial fauna is mainly threatened by changes in agriculture (both intensification and abandonment), urban development, natural system modifications (fires, land-use changes, etc.) and invasive species (Figure 9.2). In freshwater environments, natural system modifications (e.g., dams and water abstraction), pollution (e.g., fertilizers, pesticides and sedimentation), climate change (increased drought severity and unusually high river flows) and invasive species are the main threats (Figure 9.3). For the threatened fauna in marine environments, the main threats identified are overfishing (biological resource use), climate change and invasive species (Figure 9.4).

Figure 9.1 Threats affecting fauna and flora at risk of extinction in terrestrial, freshwater and marine environments in the Mediterranean Basin Hotspot



Note: Based on threat analyses available for 1,256 of 1,311 species classified in the categories CR, EN and VU on the 2016 IUCN Red List.

Figure 9.2 Threats affecting terrestrial fauna at risk of extinction

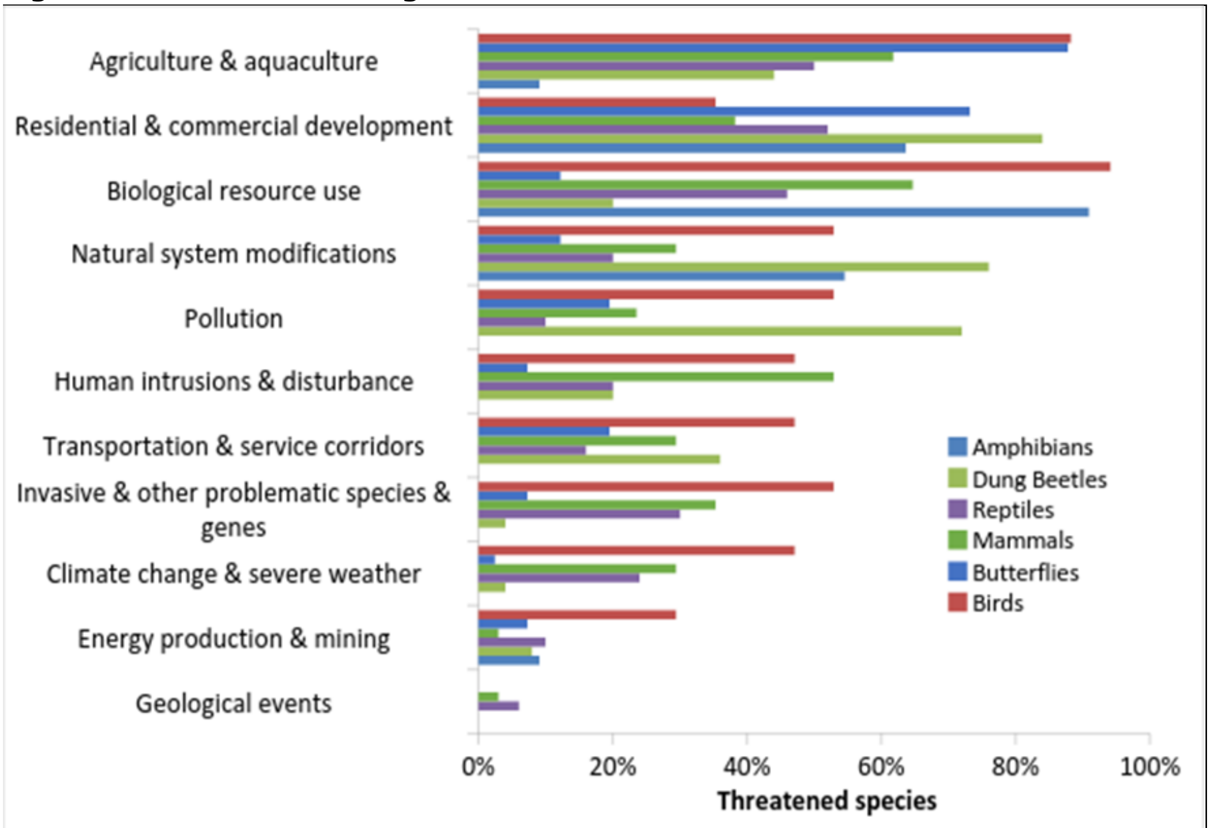


Figure 9.3 Threats affecting freshwater fauna threatened with extinction

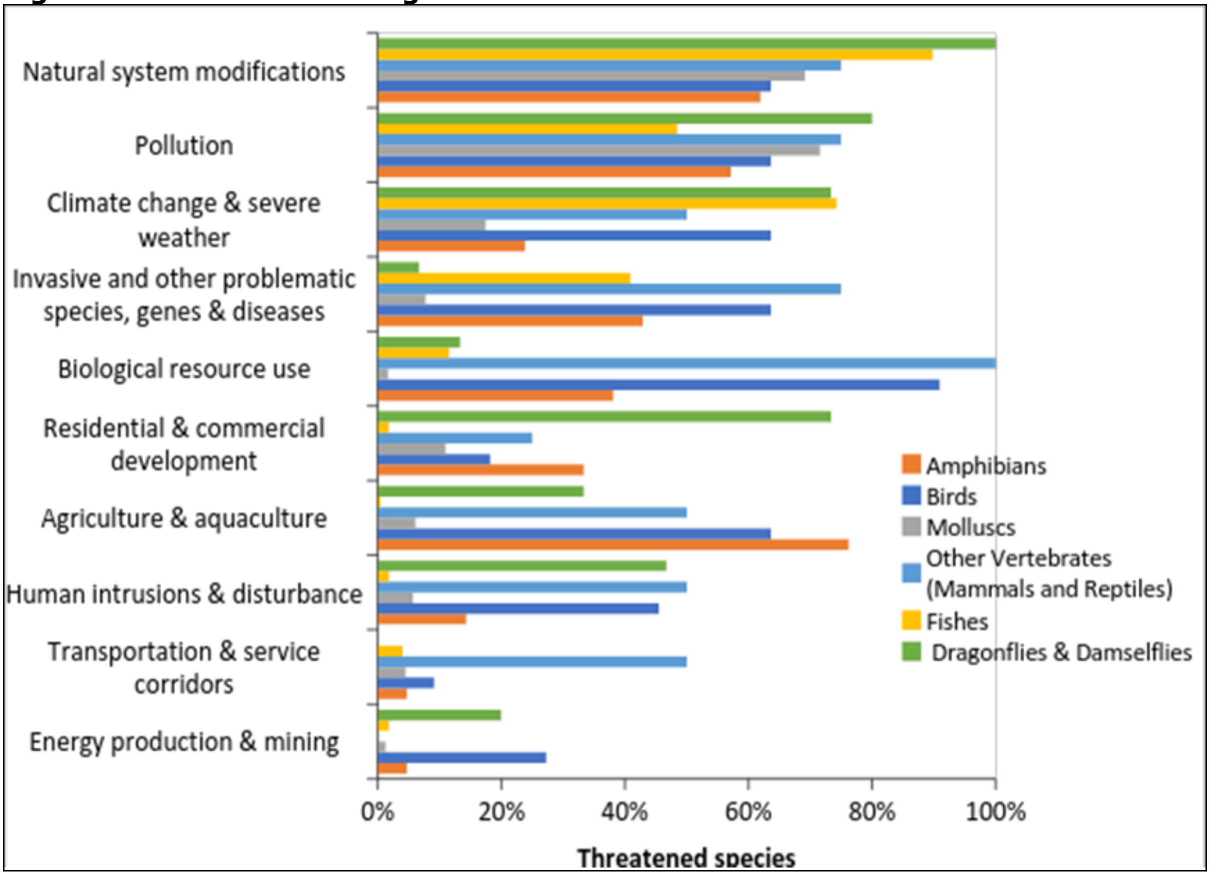


Figure 9.4 Threats affecting marine fauna threatened with extinction

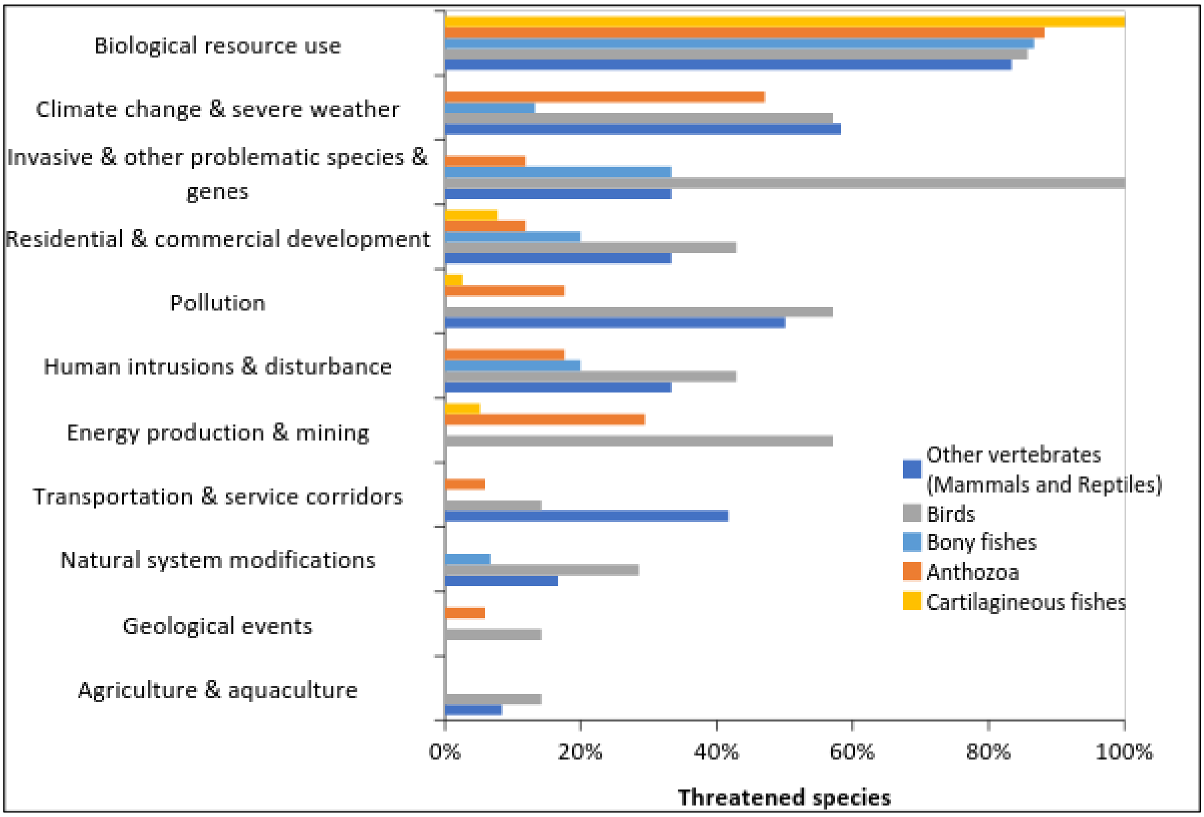
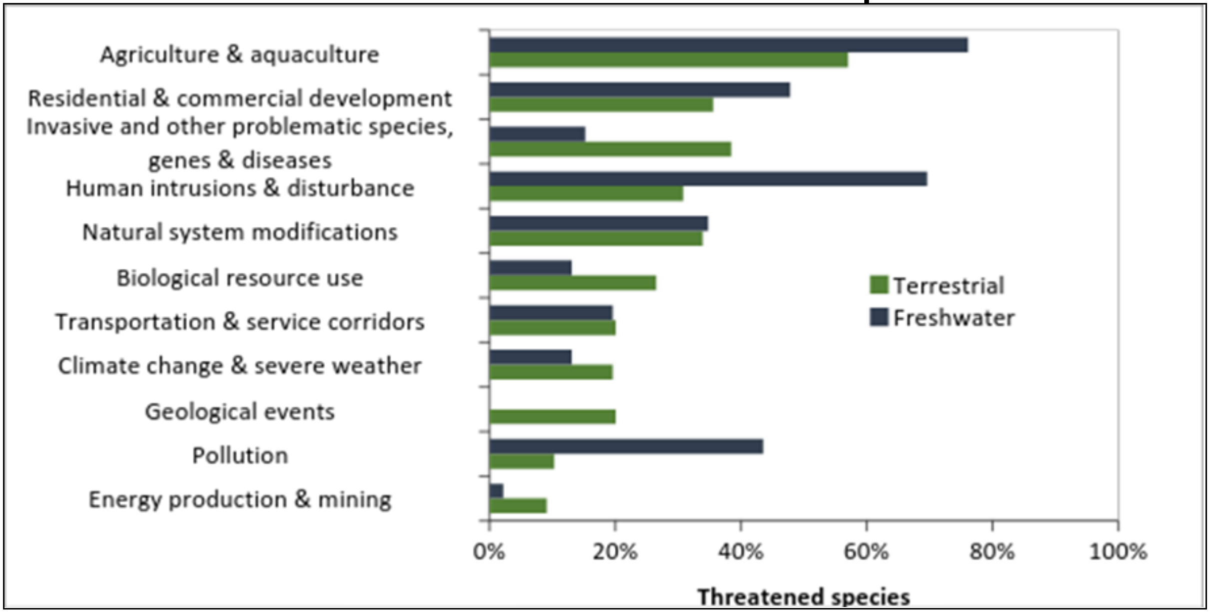


Figure 9.5 Drivers of threats affecting threatened flora in freshwater and terrestrial environments in the Mediterranean Basin Hotspot



Note: The 465 species considered threatened are those in categories CR, EN and VU in the 2016 IUCN Red List.

The main threats affecting Mediterranean flora are similar to those affecting fauna (Figure 9.5). Agriculture, often overgrazing, is the main threat affecting terrestrial and freshwater plants. Other important threats are invasive species (especially for terrestrial plants), human intrusion through recreational activities and urbanization, residential development and pollution (especially for freshwater plants), and natural system modifications, caused mainly by fires and livestock.

The key threats are described in detail below, ordered according to the number of species affected.

9.1.1 Natural system modifications

This category includes the actions that convert or degrade habitat, often with the objective of improving human welfare. It is associated with changes to natural processes such as fire, hydrology and sedimentation.

Pressure on water resources

Most experts agree that the physical, socioeconomic and environmental limits of supply-based water policies in the Mediterranean Basin have been reached. Most Mediterranean rivers experienced a significant reduction in their flow from approximately 25% to 70% between 1960 and 2000 (Ludwing *et al.* 2009). As a direct and indirect result of this, large areas of freshwater habitats in all parts of the Mediterranean Basin have been lost, degraded or fragmented, with a significant impact on biodiversity. For example, 32% of freshwater fishes in the Mediterranean Basin were reported to be threatened by dam construction (McAllister *et al.* 2001).

The total human population of Mediterranean countries is rising and is expected to increase from 466 million people in 2010 to 529 million people in 2025 (UNEP/MAP 2016). Thus, while only covering 2.6% of the freshwater resources, 7.4% of the world's population has to be supplied with water (MED-EUWI 2007).

Current levels of water extraction are leading to the reduction of groundwater reserves at an alarming rate. For example, between 2003 and 2009, the north-central Middle East lost 17.3 mm/yr in ground water height (equivalent to 91.3 km^3 in volume; Voss *et al.* 2013). The result of this has been reduced flows in rivers and wetlands, with some once-permanent rivers becoming intermittent or even totally dry. For example, the Qweik River, once the main source of water for the city of Aleppo in Syria, now only flows intermittently and the springs which fed it are dry (UN-ESCWA and BGR 2013). Many of the lakes in Central Anatolia (Türkiye) have dried out because of high levels of water extraction from their tributaries and from their aquifers, notable examples being Lakes Burdur, Eber and Akşehir, which are in a critical ecological condition as significant quantities of water are being extracted directly or retained by dams in their catchments (Smith *et al.* 2014).

Water policies are dominated by efforts to increase water supply and multiply the number of large water infrastructures. More than 500 large dams were built during the last century. Big transfer infrastructures are underway in Egypt and Libya, and many other projects are planned in Algeria, Morocco, Türkiye, Cyprus, Spain and Greece. Türkiye, which is already one of the world's most active dam building nations (International Rivers 2014), planned to build an additional 1,700 dams and hydroelectric power plants, on top of the 2,000 that already existed (GegenStrömung 2011). In the Balkans, where there is huge development pressure, poljes (karst lakes) are heavily impacted by ongoing alterations to hydrology due to hydropower development (Darwall *et al.* 2014). By 2022, 3,281 Hydropower Plants were planned in the Balkans, and over 1,000 came into operation between 2015 and 2022, most of them with a capacity under 10MW. These affected hundreds of kilometers of rivers and streams (Schwarz 2022).

Dams and their associated reservoirs impact freshwater biodiversity by blocking movement of migratory species up and down rivers, changing turbidity/sediment and dissolved oxygen levels to which species/ecosystems are adapted in the rivers, trapping silt in reservoirs which deprives downstream deltas and estuaries of maintenance materials and nutrients that help make them productive ecosystems, and diminishing or stopping normal river flooding in flood plains which are vital habitat for diverse river biotas during high-water periods (McAllister *et al.* 2001). Many important sites are being destroyed or threatened by news dams and irrigation projects in Türkiye. Another impact is that displaced human communities are often relocated to areas where they place additional pressure on natural habitats (Smith *et al.* 2014).

Ecosystem management in the catchments above dams is essential to reduce run-off and siltation, which leads to reduction in dam volume. To date, this aspect has not received sufficient attention, and many dams in the south and east of the region will lose a large share of their capacity due to siltation. As an example, in Algeria, reservoirs have already lost one-quarter of their original capacity (Benoit and Comeau 2005).

A number of mollusks and fishes in North Africa and eastern Mediterranean are already feared to have gone extinct, as the rivers where they occurred are now completely dry for parts of the year (previously they flowed year-round), due to a combination of climate change, increased water abstraction and construction of dams (Smith *et al.* 2014).

Water-intensive golf courses and lawns built as parts of tourism developments are common in the region, and contribute to erosion, pollution and sedimentation which threaten both the marine as well as terrestrial habitats.

In the Maghreb, large-scale riverine habitat destruction due to excessive water abstraction for domestic, industrial and agricultural use is a threat that has had serious impacts on the associated freshwater species (Garcia *et al.* 2010). In the eastern parts of the hotspot the widespread abstraction of water (primarily for agricultural irrigation), coupled with the damming of rivers (for hydropower and water storage), is compounded by increasing severity of droughts. This leads to reduced flows in rivers, in some cases leaving rivers and wetlands totally dry, and a reduction of groundwater at alarming rates (AQUASTAT 2009, Voss *et al.* 2013). This, in turn, leads to the disappearance of refuge pools and to the local extirpation (and extinction) of fishes. Not only does this unsustainable level of extraction threaten freshwater biodiversity but it also threatens the long-term water security of the region (UNEP 2008).

Fire and fire suppression
Natural disasters and extreme climatic events (forest fires, drought and storms) have always occurred in the Mediterranean Basin, but their frequency is expected to increase as a result of climate change. In the last 20 years, droughts have been severe in countries such as Morocco, Syria and Cabo Verde. Big floods (Bab el-Oued, Algiers, 2001) and forest fires (Spain, France, Italy and the Balkans) have caused increasing levels of damage to habitats and people.

The Mediterranean Basin is one of the most fire-prone regions of the world and has a history of forest fires devastating large areas. Climate change models indicate that the Mediterranean Basin will experience decreasing rainfall and increasing temperatures (Bates *et al.* 2008), which suggests that forest fires will be more frequent and higher impact. Forest fire destroys or degrades forest cover, and this, in turn, accelerates landslips on steep hillsides, flooding and soil erosion (see also Chapter 10).

To a certain extent, Mediterranean ecosystems are adapted to naturally occurring fires, resulting from lightning strikes or volcanic activity. Natural fires have been a driving force for evolutionary change. Many species of Mediterranean plants have evolved with fire and now depend on it. Consequently, fire is not only a threat in the region but also a critically important natural process in some systems and an important land management tool. However, the loss, fragmentation and degradation of natural habitats in the Mediterranean Basin, especially in the last 50 years, has reduced the resilience of the region's remaining biodiversity to forest fires, with species sometimes reduced to small and often isolated populations (many threatened species), which may lose virtually all of their range. The natural fire-return interval has decreased dramatically in the last century and may now be as little as five years in some areas (Trabaud and Prodon 2002). This can block successional processes, often leading to just a few shrub species dominating the landscape (Blondel and Aronson 1995).

Furthermore, 98% of fires in the Mediterranean Basin are started by people, either intentionally or accidentally. Frequent large fires are partly due to the widespread abandonment of traditional agriculture, grazing and forestry, which can lead to the growth of extensive areas of dense shrubland that is very susceptible to fire. Illegal and often uncontrolled burning is still used to produce fresh growth of vegetation for livestock grazing in some Mediterranean Basin countries. In Syria, fires are reported to be started deliberately to clear forest from land, which can then be used for agriculture. It is estimated that almost 1% of forested Mediterranean areas in the EU burn annually (San-Miguel-Ayanz *et al.* 2013).

Climate change will likely increase these risks. At warming levels of 1.5°C, 2°C and 3°C, the burnt area in Mediterranean Europe could increase by 40–54%, 62–87% and 96–187%, respectively (Turco *et al.* 2018), although changes are highly site dependent and also affected by management. Despite the increasing hazard, forest fires are considered to be decreasing in the European part of the basin, due to more effective fire management (Turco *et al.* 2016, 2017).

9.1.2 Pollution
The main sources of pollution in the Mediterranean Basin are sewage and wastewater from urban sources (often untreated or insufficiently treated), excessive pesticide and nutrient additives from agricultural and livestock activity (principally nitrogen and phosphorus, pesticides, fungicides and herbicides from non-point sources, and veterinary drugs such as antibiotics, anti-inflammatories and anti-parasitics), discharges and accidents involving heavy metals and oils from industrial facilities (also oil from marine

sources that washes ashore), toxic chemicals from mining operations, and dumping of solid waste from a variety of sources in wetlands, drainage channels, rivers and other wetlands.

The rapid and widespread intensification of agriculture in the hotspot over the last 30 years has been associated with a massive increase in the use of inorganic fertilizers, resulting in a widespread run-off. Nutrient pollution from sewage disposal is also a major problem, and with the growth in the population, pollutants directly discharged into the sea are likely to reach higher concentrations. In many countries, particularly in the south, only primary treatment is given to sewage.

The Mediterranean Sea is extremely susceptible to ship-related pollution, because 30% of international maritime freight traffic and some 20 to 25% of oil maritime transport transit through the Mediterranean Basin. Between 1977 and 2000, there were 156 oil spills. Significant progress has been achieved in combating marine pollution from ships: operational pollution from hydrocarbons decreased by a factor of 20 between 1985 and 2000, through stronger regulation, mainly the obligation to use separate ballast tanks. Emptying ballast waters into the sea is illegal, and yet is estimated at 100,000 to 150,000 tons per year (Plan Bleu 2006).

The Mediterranean Sea is the planet's most highly affected area in terms of marine litter, both as whole plastic items and as microplastics (Galgani *et al.* 2014). More than 730 tons of plastic enter the Mediterranean Sea every day (UNEP/MAP 2015). Marine litter has caused increasing mortality of wildlife, due to entanglement, ingestion and smothering, as well as causing problems harms due to hangers-on, hitch-hiking and alien species transportation (Gregory 2009).

Over 80% of landfills are uncontrolled in the south and east of the region. Municipal solid waste production per capita in the Mediterranean region has risen by 15 % over the last 10 years and it is estimated to reach almost 135 million tons by 2025. The amount of waste generated in coastal regions (294 kg per capita) is further higher than the national average (272 kg per capita) (MedIna, 2021, EEA, 2020). Bearing in mind the importance of wastewater as a pathway for waste leaking into the sea, a key challenge is that in the Mediterranean region, 21% of wastewater (25% in southern countries) undergoes only basic treatment, and less than 8% (1% in southern countries) undergoes tertiary treatment (UNEP/MAP 2017). Pollution is also recognized as having significant socioeconomic impacts in the region, including on human health.

The MAP has a protocol on pollution from land-based sources, and a strategic action plan to combat pollution, adopted in 1997, with further national plans. The EU has also strengthened its legal framework and set ambitious objectives for the protection of water resources. The EU Water Framework Directive aims at improving the state of coastal and freshwater bodies in Europe. The first management cycle to meet environmental objectives ended in 2015; the second management cycle includes a second river basin management plan, and first flood risk management plan is expected to be completed by 2027. Yet, considerable differences exist between EU member countries, which benefit from structural aids, and the developing countries to the south and east.

Freshwater ecosystems are the recipients of much land-based pollution, which impacts many species and causes eutrophication of both surface and ground waters. Water quality is also linked to soil pollution.

9.1.3 Agricultural intensification and land abandonment

Overgrazing, deforestation, forest fires and land management practices are the human actions that have triggered or intensified processes of land degradation and desertification in the Mediterranean (Pla Sentis 2003). The analysis for the Mediterranean threatened species confirms previous studies showing that biodiversity loss is linked to intensification of agricultural activities but also, in some places,abandonment of farming. Agricultural intensification is generally associated with high yields but also with significant changes in the natural environment. Abandonment generally implies the loss of cultivated landscapes and corresponding habitats (Maxwell *et al.* 2015, EEA 2015, Buttler *et al.* 2014).

Changes in land use and management are known to have significant detrimental impacts on biodiversity. Over recent decades, farmland birds across Europe have been lost due to changes in food abundance, availability of foraging and nesting habitats, and nesting success. These changes have been shown to be consequences of intensification of such practices as a move from spring to autumn sowing, increased agrochemical inputs, loss of non-cropped habitats, land drainage, a switch from hay to silage production and increased stocking densities. Land abandonment has also led to the loss of semi-natural grassland and forest (Laiolo *et al.* 2004, Donald *et al.* 2006, Wretenberg *et al.* 2006, Reif *et al.* 2008). Several bird species of agricultural and pastoral landscapes have shown a marked decline during the past decades. This negative trend has been related to agricultural intensification in some cases and to land abandonment in others (Fuller *et al.* 1995, Bignal and McCracken 1996, Tucker and Evans 1997, Burel *et al.* 1998, Chamberlain *et al.* 2000, Donald *et al.* 2006). A recent study showed that agricultural land abandonment in the Balkans has caused a decline in farmland birds and overall biodiversity, while forest-dwelling species increase, highlighting the need for targeted conservation efforts and management strategies to preserve traditional rural landscapes (Zakak *et al.* 2015).

Overgrazing has also significantly altered the vegetation of many areas, leading to degraded scrub vegetation. It continues to be a threat to native vegetation, especially on islands with significant numbers of free-roaming sheep and goats. In addition to its better-known impacts on terrestrial habitats, such as land degradation, soil erosion and changes in plant composition and regeneration capacity (Czeglédi and Radácsi 2005), overgrazing has been identified as one of the most important threats to wetland ecosystems, which are often utilized as a source of water and fodder for domestic livestock (Smith *et al.* 2014).

Agricultural intensification
Agricultural intensification has accelerated in the last 30 years with complex and detrimental effects on biodiversity (Buttler *et al.* 2010). Intensification is characterized by an increase in external inputs (nitrogen fertilization, pesticides, food supply, veterinary treatments, etc.), aimed to maximize yields (Chamberlain *et al.* 2000). Large amounts of these substances are washed into associated wetland ecosystems, leading to eutrophication (though nitrogen input in particular) and species decline. Intensification affects whole landscapes through simplification, homogenization, artificialization and abandonment.

In the Mediterranean countries, water withdrawal for the agricultural sector is about 193 km^3 per year, accounting for 64-69% of total water withdrawal (FAO 2016a, Malek and Verburg 2018). This ranges from very low levels in some Balkan countries to more than 80% in the countries with arid and semi-arid climates. Irrigation is essential for agricultural intensification in these drier areas but causes overexploitation of surface and groundwater, river pollution, wetland loss and degradation and saline intrusion in coastal aquifers. The abstraction of water and regulation of river flows has a notably high impact on many freshwater species as they become deprived of essential habitats. Irrigated surfaces in the Mediterranean countries doubled in 40 years, reaching 24 million ha in 2007 (Castilla *et al.* 2013). In Tunisia, the surface area irrigated increased by 64% in 35 years, reaching 400,000 ha in 2011 (Omrani and Ouessar 2011).

intensification of Mediterranean agriculture had been relatively low in the past compared to northern Europe, because of the prevalence of areas with unfavorable soils, precipitation and topography, in addition to socio-political constraints. Agricultural intensification in most EU Mediterranean countries is concentrated in the most accessible fertile irrigated lowlands, while the traditional, extensive systems in the inaccessible mountainous areas have gradually been abandoned because of their low economic competitiveness.

Large-scale clearance of land for agriculture is not a new phenomenon in the Mediterranean Basin, as it happened hundreds, in some cases thousands, of years ago. In North Africa, the transformation of forests into cropland and pastures for livestock, and wood use for charcoal, is one of the main causes of habitat degradation (Cuzin 2003, Beudels-Jamar *et al.* 2005) and the resulting increase in sediment run-off has wide-ranging impacts for downstream wetland habitats. In Tunisia, for example, annual land losses from land degradation processes (water and wind erosion, salinization, overgrazing) are estimated at 37,000 ha, of which 13,000 ha have suffered irreversible damage. Extensive areas of some deltas in the Mediterranean Basin have been lost for agricultural purposes (for example, Evros Delta in Greece, Caorle Lagoon in Italy). Freshwater habitats, such as deltas and wetlands, across the hotspot are particularly vulnerable, as they are often considered vacant or worthless land best converted to more productive uses, such as agriculture, urban expansion and industrial development.

Greenhouse cultivation is a growing sector worldwide, especially in warm, coastal areas. In some countries, the sector is developing without any type of spatial planning or organization, leading to the overexploitation and contamination of aquifers, and to the uncontrolled dumping of waste.

Land abandonment

Land abandonment threatens many important habitats that are managed for agriculture in a non-intensive or traditional way, such as steppes, montane grasslands, Iberian dehesas and Mediterranean shrublands. Abandoning farmland has resulted in a reduction of soil erosion, as the land becomes reclaimed by plants, but there is also an increasing incidence of fire and decreased habitat heterogeneity, changing the environment in which an important percentage of Mediterranean biodiversity has evolved (Sil et al., 2024). Detrimental effects of land abandonment are likely to be more delayed than the effects of intensification (Buttler *et al.* 2010).

During the last 100 years, traditional land uses have been abandoned over millions of hectares of non-intensive cultivation and pasture in the Mediterranean Basin (Beaufoy *et al.* 1994). Without the checks to succession provided by ploughing or grazing, the result, in the medium term, is often the replacement of these open, wildlife rich habitat mosaics by uniform secondary scrub habitats of more limited conservation value. Land abandonment may have differential impacts on ecological communities, depending on, for example, their biogeographic origin. For instance, Euro-Siberian birds may be favored by land abandonment and forest recovery, while Mediterranean species, preferring open landscapes and shrublands, are generally threatened (Suárez-Seoane *et al.* 2002).

9.1.4 Infrastructure and tourism development

The increasing population of the Mediterranean Basin is leading to intense pressure for new housing, office and associated transport and other infrastructure. This is especially severe in southern and eastern countries, where growth is most rapid and planning systems to protect areas of environmental value are less well formed.

While much of the local population growth is concentrated around existing cities, tourism development is very often focused in areas of high landscape and nature value close to the sea, all of which are considered points of appeal for visitors. Mediterranean tourism, mainly based on a mass seaside resort and seasonal model, has been seen as a driver of economic growth for the region. Nevertheless, the positive impacts of tourism and its key role in future development are matched by negative effects, including loss of biodiversity as a result of land-use management and the development of infrastructure and public services.

Urbanization is one of the principal and permanent results of tourism in a destination. Its actual effects depend on the intensity of the phenomenon and the land-use planning policies applied (Plan Bleu 2022). There are several areas in the Mediterranean with very low population levels that had very small built-up areas prior to the development of tourism but that experienced "urban explosion". At Martil on the Tetouan Coast (Morocco), for example, construction of residential areas around a golf course in the 1990s led to a multiplicity of construction projects along a coastline that was already saturated: only 12.5% of the coastline is still "natural" (Plan Bleu 2012). Urban areas have also increased in foothills within commutable distances to major cities, because of second home construction and the tourism and leisure industry.

Tourism often has irreversible effects on natural areas rich in biodiversity. These include the reduction in plant diversity and deterioration or destruction of coastal dunes by tourism infrastructure (for example, in Djerba in Tunisia, on the coast of Matrouh in Egypt and on the beaches of Tipasa in Algeria), and the drainage of wetlands, which is leading to a loss of habitat for migratory birds (Tetouan Coast) and many other aquatic species. Water-related leisure activities damage seagrass and coral reef ecosystems and affect populations of sea turtles and monk seals (e.g., at Alanya in Türkiye; Plan Bleu 2006).

9.1.5 Transport infrastructure and service corridors

In 2000, the Mediterranean Basin coastal strip had 70 million urban inhabitants, 584 coastal towns, 750 yacht harbors, 286 trade ports, 248 energy plants, 238 desalinization plants, 112 airports and numerous high-traffic roads (Plan Bleu 2006). Traffic growth outweighed population and economic growth in the Mediterranean by far between 1970 and 2000: 4.9% per year for passengers and 3.8% for freight (excluding maritime traffic). Transport represents the biggest share of energy use (31% in Northern Mediterranean countries, and 38% in in the South and East). Road transport accounts for more than 70% of the transport sector's energy use in Mediterranean countries, with private vehicles accounting for the highest share (Medener 2013). High growth in air transport (7.3%) is linked to tourism development. Maritime freight transport also registered significant growth (4% per year). Transit flows account for 40% of Mediterranean traffic (Plan Bleu 2006).

Both urbanization and the development of linear transportation infrastructures are causes of habitat fragmentation. Transport infrastructure disrupts the natural habitats that it crosses, splitting them into several distinct patches. Fragmentation has negative consequences for habitat selection, abundance and species diversity (van den Berg *et al.* 2001), and limits or disrupts migration and dispersal of individuals. Linear transport infrastructure can also cause direct animal mortality due to vehicle collisions, electrocutions and drownings of individuals attempting to cross (van der Berg *et al.* 2001, Muñoz *et al.* 2015, Godino *et al.* 2015).

Urban and transport infrastructure is a major cause of surface sealing/waterproofing, which increases susceptibility to floods. Even before the expected problem of sea-level rise, coasts were impacted by extensive costal engineering measures to protect land and property from inundation and or erosion. The construction of seawalls is common, and this is likely to increase in the future. One of the most important and wide-ranging impacts of such sea defenses is the disruption of natural geomorphological processes, and the protection of coasts in this way may exacerbate the problem of erosion and flood risk elsewhere.

More natural ways of managing flood risk and coastal change, known as Nature-based Solutions, are gradually becoming more common (see chapter 10). These offer ways of responding to climate and sea-level change in ways that are less environmentally damaging and often less expensive (e.g., UNEP 2020).

9.1.6 Biological resource use (harvesting, hunting, logging)
Threats from the use of wild biological resources include both deliberate and unintentional harvesting effects, as well as persecution or control of specific species. This category focuses on the effects of the intentional use of wild plants and animals by hunting, collection, killing, gathering, trapping, fishing, logging or harvesting, as well as on unintended impacts on on-targer species (e.g., bycatch, poisoning or habitat destruction by fishing techniques or harvesting methods). Direct mortality as consequence of these activities affects terrestrial and marine threatened species in the Mediterranean.

Illegal killing and unsustainable hunting
Hunting and its management have significant costs and benefits for biodiversity conservation, which makes this socio-economic activity highly controversial at both international and regional levels (Caro *et al.* 2015). In areas where low-intensity land management is threatened by replacement with intensive farming, or even non-agricultural use, hunting can give value to semi-natural habitats and so contribute to their preservation (Arroyo and Beja 2002). However, management of other wildlife to increase game for hunting, most importantly predator control and habitat management favoring specific species, occurs in some Mediterranean countries and may be detrimental to biodiversity of conservation concern. Predator control is mainly directed to small predators, like foxes, corvids and some mustelids, but, in some cases, the use of poisons to reduce populations of mammalian predators and corvids, causes the unintentional death of threatened raptors (BirdLife 2011, Cano *et al.* 2016). Some avian scavenger species, such as red kite (*Milvus milvus*), bearded vulture (*Gypaetus barbatus*), eastern imperial eagle (*Aquila heliaca*) and Spanish imperial eagle are seriously threatened by this problem (Arroyo and Beja 2002, BirdLife 2011, Cano *et al.* 2016).

The current decline in survival rates of some migratory birds including turtle doves seems to be related to excessive hunting and trapping pressures in Mediterranean countries. (Asteras *et al.* 2023, Brochet *et al.* 2016, CABS 2014, Emile *et al.* 2014). One study found that illegal killing caused 22% of known mortality (Serratosa *et al.* 2024). These are additional pressures on top of the degradation of breeding and wintering habitats and changes in climatic conditions (Brochet *et al.* 2016, Vickery *et al.* 2014, Eason *et al.* 2015). Such pressures are particularly high on islands, such as Malta, Cyprus and most of the Aegean Islands. As a result of intensive bird shooting in recent decades, Malta lost all of its breeding birds of prey: peregrine falcon (*Falco peregrinus*); common kestrel (*F. tinnunculus*); and barn owl (*Tyto alba*). Protection efforts have led to the return of some species since 2019, however.

It has been estimated that millions of migratory birds are illegally killed in the Mediterranean region every year for leisure, food and trade (Brochet, et. al. 2016; Emile et al. 2014; Eason et al. 2015; BirdLife 2015, 2016). In Syria, the use of glue sticks and mist nets to catch birds has also increased markedly to supply local and export markets for food. The Balkans, most Mediterranean islands, and coastal countries of the Middle East and North Africa remain regions of unabated hunting of migratory birds. In Türkiye, the Central Hunting Commission determines the hunting times and bag sizes annually. Hunting of globally threatened species, such as common pochard (*Aythya ferina*, VU) and European turtle dove (*Streptopelia turtur*, VU) is permitted, as it is of chamois (*Rupicapra rupicapra*), and mouflon (*Ovis gmelini*), even within wildlife development zones. During migration, hundreds of birds are killed as a leisure activity in bottlenecks such as the Amanos Mountains, Strandzha Mountains and Edremit Bay.

The unsustainable hunting and illegal killing of birds constitutes a considerable challenge for bird conservation efforts. Conversely, reduction in hunting of, for example, European turtle dove in the western Mediterranean in the last few years has led to an apparent recovery in populations. Some members of local communities in poorer areas might be reliant on bird hunting, so there is a need to develop sustainable livelihoods alongside preventative action (Blondel *et al.* 2010, Elhalawani 2016). In Syria, new hunting laws were introduced in 2023. Despite this, hunting is widespread and not enforced, and often linked to trade within the region.

Intergovernmental efforts to address illegal killing and cooperate internationally through the CMC *Intergovernmental Task Force on Illegal Killing, Taking and Trade of Migratory Birds in the Mediterranean* (MIKT) is making efforts to reduce the conservation impact of this issue. The Bern Convention Rome Strategic Plan 2020-2030 on *Eradicating Illegal Killing, Taking and Trade in Wild Birds in Europe and the Mediterranean Region* is also important.

Fishing
Marine ecosystems of the Mediterranean have been altered in many ways over the centuries (Bianchi and Morri 2000). Fishing activity was probably the first major human disturbance in coastal areas (Jackson *et al.* 2001). Moreover, the development of fishing technologies, overcapitalization in recent decades, and an increasing demand for marine resources, is placing intensive pressure on marine ecosystems. At the end of the last century, fishing pressures increased rapidly in the Mediterranean Sea, shifting from a primarily artisanal and coastal activity to intensive exploitation (Goñi *et al.* 2000). The current assessment from the northwestern Mediterranean suggests that demersal stocks are fully exploited or overexploited, while some pelagic stocks also show signs of overexploitation. Ninety-six percent or more of the Mediterranean bottom-living fish are overfished, and, for the middle-water stocks like sardine (*Sardina pilchardus*) and anchovy (*Engraulis encrasicolus*), the figure is 71% or more (EC 2015).

A recent report (FAO, 2023) suggests that fisheries management efforts have led to some reduction in pressure in many areas, with the overall level of overfished stocks dropping below 60% for the first recorded time. Stocks of European hake (*Merluccius merluccius*) in the Mediterranean, and common sole (*Solea solea*) in the Adriatic Sea, all covered under dedicated management plans, showed a reduction in overfishing, including a 77% reduction for common sole in the Adriatic Sea, which has now reached sustainable exploitation rates. Overall, however, fishing pressure in the Mediterranean Sea is still at double the rate considered sustainable (FAO 2023).

Fishing methods such as benthic trawling alter benthic habitats, modifying the structure and species composition of seagrasses and coraligenous ecosystems. Other fishing gears, such as longlines and driftnets, can result in significant bycatch of sea turtles, seabirds, sharks and cetaceans (Caminas *et al.* 2006, Tudela *et al.* 2005). Drift netting, once used widely throughout the Mediterranean, is now prohibited; however, illegal drift netting may still occur (EJF 2007).

9.1.7 Invasive species
Invasive alien species have been recognized as the second most significant cause of species disappearance at the global level, behind habitat loss and deterioration, affecting above all islands and isolated ecosystems. The movement of exotic species is a side-effect of the globalization of markets. It has raised the rate of introduction of new alien species everywhere, with harmful consequences for native biodiversity and natural community structure, functioning and stability (Genovesi and Shine 2004).

This problem is particularly important in the Mediterranean Sea, where more than 5% of marine species are now considered non-native species (Zenetos *et al.* 2012). The number of invasive species varies across the Mediterranean Basin, with the highest number of species (>700) recorded in the eastern basin, in the vicinity of the Suez Canal[23]. In the western basin, most species are introduced via maritime transport and aquaculture (Zenetos *et al.* 2012). Studies show that the vulnerability of an ecosystem to invasive species may also be related to its environmental status: polluted or physically degraded environments are more prone to invasions than pristine sites (De Castri *et al.* 2012, González-Moreno *et al.* 2016). A distinction should be made between species introduced by man and those spreading into the region 'naturally' as a result of changing climate and ocean characteristics, although both may have significant ecological impacts.

Even well managed protected areas suffer from the introduction and spread of invasive alien species (Otero *et al.* 2013). Alien species can cause very diverse effects at different locations or different times, sometimes with a strong invasive component and sometimes not. Non-native macroalgae (seaweeds), mollusks, crustaceans and fishes are particularly likely to become invasive in coastal environments.

Many freshwater species in the hotspot are threatened by alien invasive species. For example, in Algeria, Sahara killifish (*Aphanius saourensis*, CR) is affected by the introduction of eastern mosquitofish (*Gambusia holbrooki*), which is native to North America. Elsewhere in North Africa, the Moroccan endemic freshwater mussel *Anodonta pallaryi* (CR)is affected by the introduction of the molluscivorous Louisiana red crayfish (*Procambarus clarkia*), which is rapidly spreading through the Mediterranean Basin. Hybridisation is also a threat, such as for *Salmo macrostigma,* an endemic Algerian trout at risk from hybridisation with an introduced trout species. *Utricularia inflexa* is an example of an aquatic plant species threatened by competition with exotic plants.

In terrestrial environments, human-made habitats, such as industrial areas, arable land, parks and gardens, harbour most of the invasive alien plant species in the region. Riparian forests are also frequently invaded by alien trees, such as black locust (*Robinia pseudoacacia*), box elder (*Acer negundo*), Japanese honeysuckle (*Lonicera japonica*) and *Eucalyptus* spp. (Vlachogianni *et al.* 2013). Some terrestrial vertebrates and invertebrates have also been introduced and established in the Mediterranean Basin Hotspot. For example, ring-necked parakeet (*Psittacula krameri*), mitred parakeet (*Aratinga mitrata*) and monk parakeet (*Myiopsitta monachus*), which have established populations in Mediterranean countries, compete with native cavity breeders for nest sites, have the potential to act as disease carriers and can cause significant damage to crops.

Brown rat (*Rattus norvegicus*), which is well known for causing negative effects on native fauna, continues to be a threat across many Mediterranean islands. Locally distributed invasive alien mammals that are harmful for native species and habitats include coypu (*Myocastor coypus*) and small Indian mongoose (*Herpestes auropunctatus*).

Red-eared slider (*Trachemys scripta elegans*), a semi-aquatic turtle from North America, is an invasive species massively traded worldwide as a pet. It has been introduced in most European Mediterranean countries and has established free-living populations. Red-eared slider is a competitor of Mediterranean pond turtle (*Mauremys leprosa*, Vulnerable at the European level) and European pond turtle (*Emys orbicularis*).

9.1.8 Climate change and severe weather

This category includes the threats from long-term climatic changes (see Chapter 10), and other severe climatic or weather events that are outside of the natural range of variation, that can potentially can affect threatened species or ecosystems. Climate change can be manifested as long-term habitat changes (e.g., sea-level rise,

[23] This is called Lessepsian migration, and is overwhelmingly in favour of Red Sea species migrating to the Mediterranean Sea.

desertification, coral bleaching), droughts, temperature extremes (e.g., heat waves, oceanic temperature changes) and extreme precipitation and/or wind events (e.g., cyclones, dust-storms, erosion of beaches during storms).

The level of vulnerability of species and ecosystems to climate change is influenced by three main factors: (1) the degree to which their climatic environment has or will change relative to conditions under which they evolved; (2) the sensitivity of the ecosystem processes to the elements of climate which are changing; and (3) the degree to which the system can maintain its structure, composition and function in the presence of such change, either by tolerating the change or adapting to it (Settele *et al.* 2014).

The effects of climate change, including increased sea surface temperature and ocean acidification, are especially marked in the Mediterranean Sea (Diffenbaugh and Giorgi 2012, IPCC 2013, Lionello *et al.* 2012). For example, the increase in sea surface temperature is having a particularly strong impact on gorgonians and some other coral populations, and mass mortality events have occurred in recent years along the Mediterranean coast (Otero *et al.* in prep.).

Effects of global warming seem to be already occurring in long-distance migratory birds, which usually spend the winter in sub-Saharan Africa. For some of these species, populations now stay in the Mediterranean instead of crossing the Sahara. For example, some partial migrants, such as little egret (*Egretta garzetta*), have become sedentary, while little ringed plover (*Charadrius dubius*) and squacco heron (*Ardeola ralloides*) now winter in the Mediterranean, previously a stopover area on their migratory journey. The importance of Mediterranean wetlands could increase in the future, especially if Sahelian wetlands continue to degrade (Blondel *et al.* 2010).

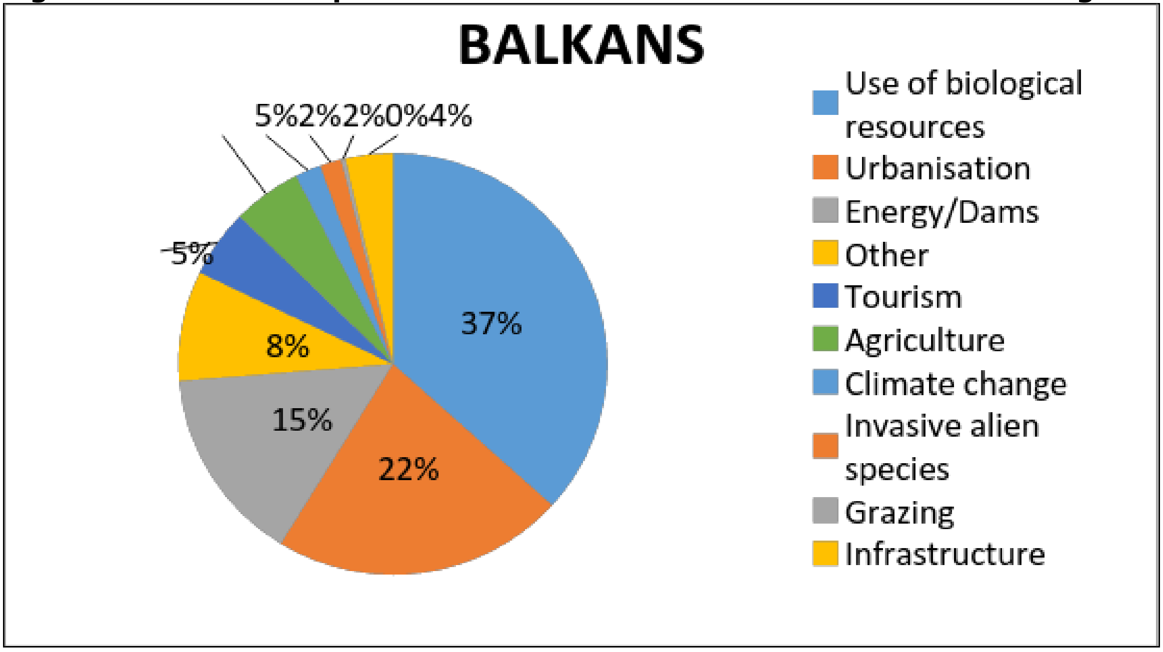
9.2 Threats at national and local levels

The consultation process for the preparation of the previous ecosystem profile included a questionnaire survey of national level informants which included specific questions about the threats to species and sites within the hotspot. This remains relevant.
The following points summarize the responses for national habitats and KBAs:

- Hunting, urbanization and tourism development are more or less universally identified throughout the basin (there is only one country for each of those threats that did not prioritise them).
- Climate change and its effects were not one of the main concerns in the Balkans but were very widely identified throughout Middle East and North Africa. However increased incidence of fires was one of the main threats in the Balkans, and this is highly likely to be linked to climate change.
- Invasive alien species were not prioritized (i.e., included in the top five threats) in the Balkans but were mentioned quite regularly in the other sub-regions.
- Agriculture/aquaculture-related threats featured more prominently in North Africa and Middle East than in the Balkans, where they were only properly addressed in North Macedonia, and mentioned in passing in Bosnia and Herzegovina.
- Pollution problems, either wastewater or solid waste, were more prominent in North Africa and Middle East, while in the Balkans this rarely got into top five threats. It is still perceived as a significant problem, but it was more commonly linked with urbanization and tourism pressures.
- Water management, especially dam building and abstraction of surface waters, is a more prominent concern in the Balkans than in the Middle East or North Africa, where the main challenge is ensuring water supply and avoiding losses of water to agriculture.

For an analysis of threats specifically to KBAs, workshop participants identified and ranked the three top threats to each KBA. The threats were scored from 1 to 3, and scores for each threat added up for each sub-region. Countries with more KBAs, and countries that provided more detail in their responses, therefore, had greater influence over the result. The exercise didn't include Syria, Kosovo and Cabo Verde.

Figure 9.6 Relative importance of threats to KBAs in the Balkans sub-region



In the Balkans (Figure 9.6) and Middle East sub-regions (Figure 9.7), the two main threats identified by participants were use of biological resources, and urbanisation. In both cases these two threats comprised more than half of all threats mentioned (59% in the Balkans and 52% in the Middle East). There was greater variation among other threats, with dams and renewable energy being given much higher priority in the Balkans than in the Middle East. Use of biological resources was also a significant threat in North Africa (Figure 9.8), where livestock grazing emerged as the most widespread threat, a category that does not appear in the other regions.

Figure 9.7 Relative importance of threats to KBAs in the Middle East sub-region

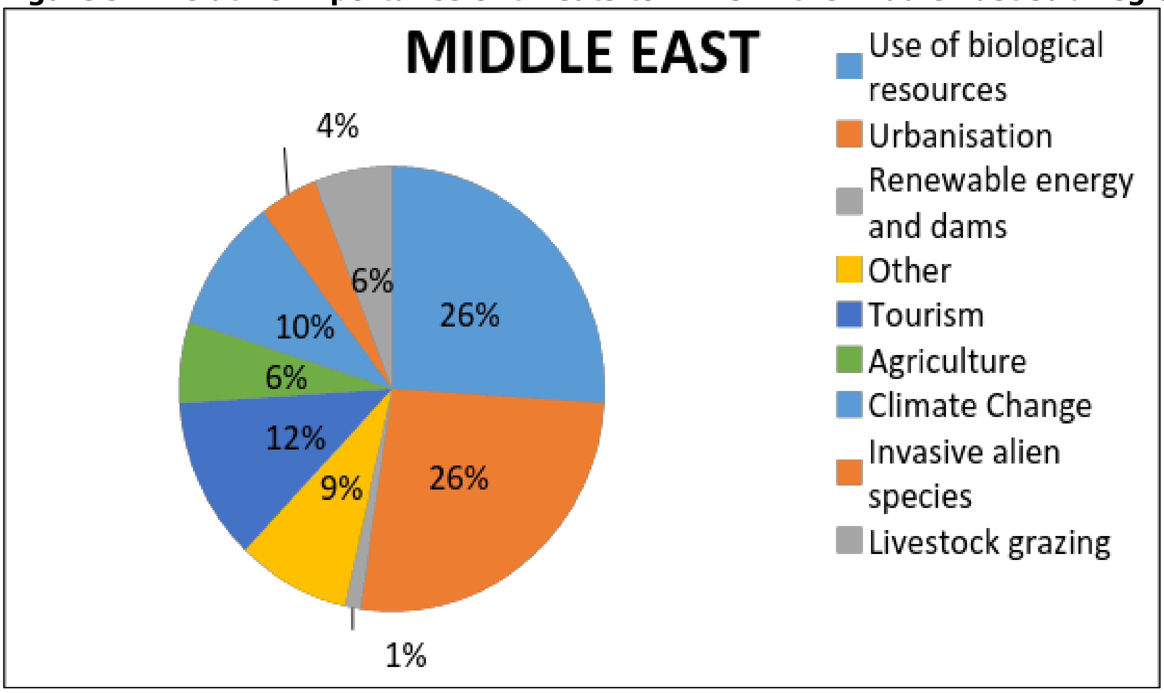
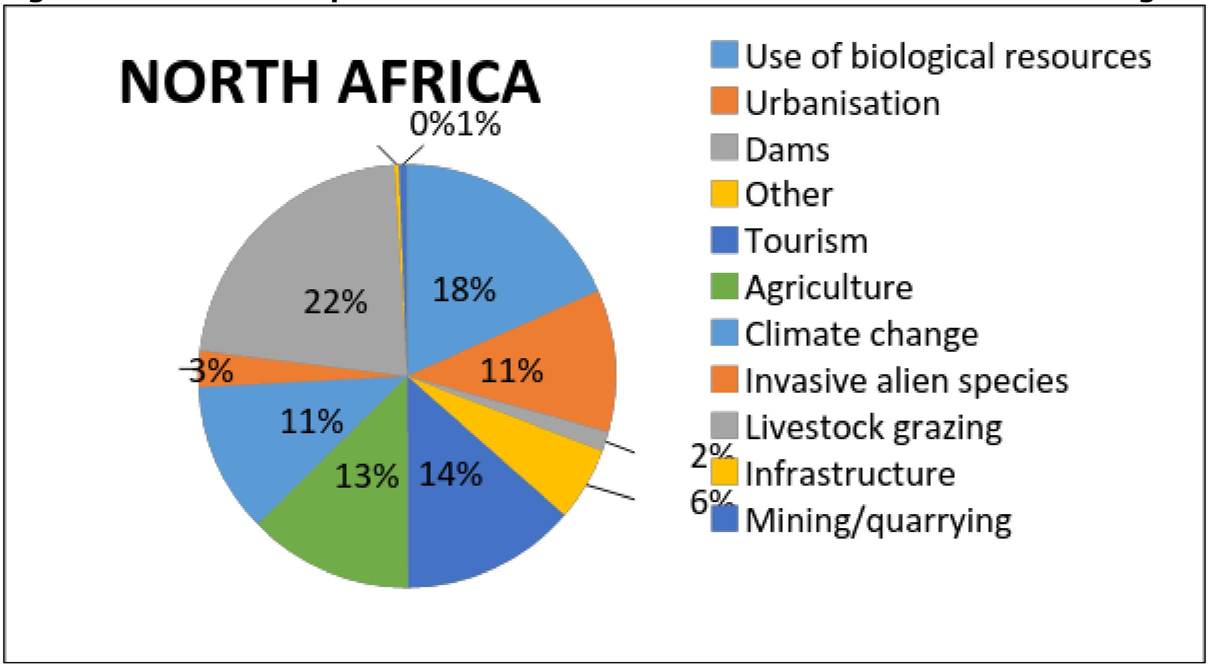
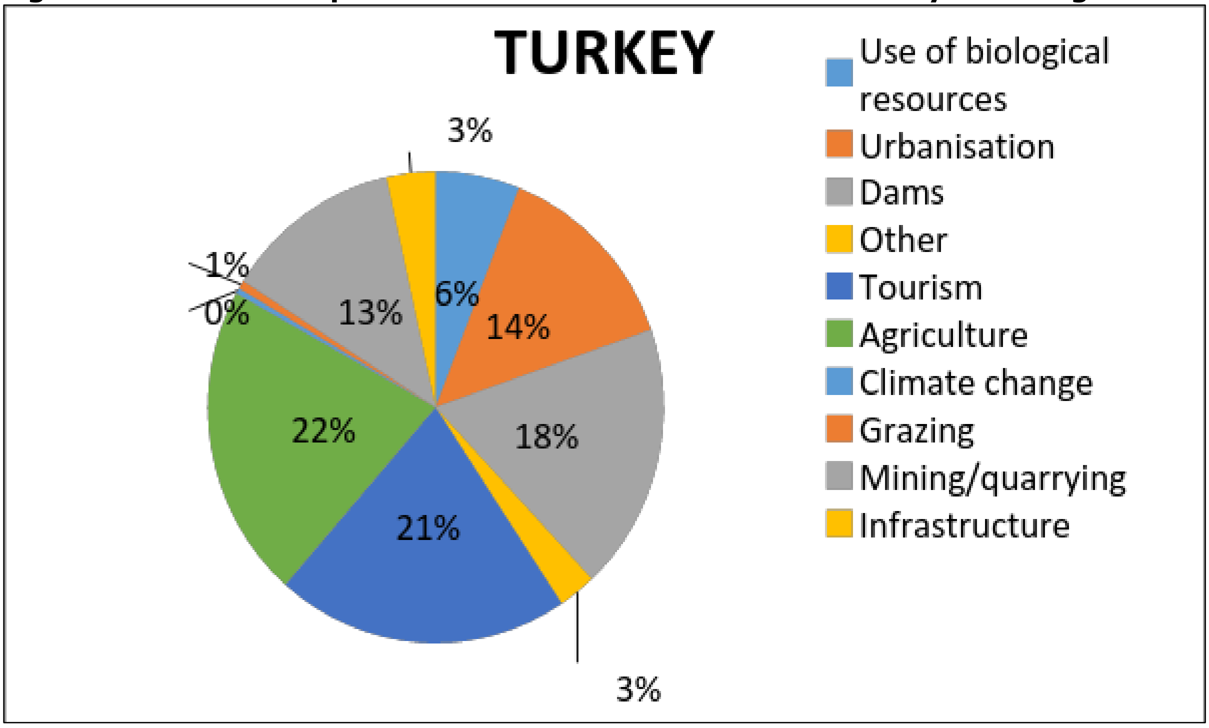


Figure 9.8 Relative importance of threats to KBAs in the North Africa sub-region



In Türkiye (Figure 9.9), tourism was ranked as the greatest threat, followed by agriculture and dams. Although invasive species were not mentioned among the first three threats for individual KBAs during the consultations and do not, therefore, appear in Figure 9.9, they represent an important, transversal threat in this country, in particular for freshwater ecosystems.

Figure 9.9 Relative importance of threats to KBAs in the Türkiye sub-region



9.3 Drivers of biodiversity loss and barriers to conservation action

This section describes the underlying causes of the main threats to biodiversity in the hotspot described in Sections 9.1 and 9.2. Closely linked to the drivers of threats to biodiversity are the major barriers to conservation action in the region, which are also included in this section. These refer to policy, socio-economic, financial and other factors that hinder or diminish the impact of conservation efforts in the region.

Direct drivers are habitat fragmentation, degradation and destruction caused by overexploitation of natural resources, rapid and large scale land use changes, physical modification of and water withdrawal from rivers, alteration of seabeds due to dredging, drilling and trawling, various types of pollution, including biological/microbial, chemical and sedimentation pollution, introduction of non-indigenous species, and unsustainable use/removal of wild living resources (e.g., hunting, fishing, logging).

The underlying causes of the threats outlined above are often deep rooted and complex. Many have their origins in regional and global economic trends, on-going demographic changes and the socio-political history of the region. They may be becoming further compounded by the unpredictable impacts of climate change. Based on the threat analysis, the main direct and indirect drivers of biodiversity loss and ecosystem service changes in the Mediterranean region can be identified. Indirect drivers include overpopulation, urbanization, coastal development and unsustainable modes of consumption, trade, and tourism.

9.3.1 Main drivers and root causes

Principal among these underlying root causes are increasing population, increasing material consumption and inequitable access to resources, policies and incentives that damage the environment, and under-valuation of ecosystem services. All these drivers can be either exacerbated or mitigated by public policies and institutional arrangements, at national, regional and international levels.

Population growth and movements

At a fundamental level, many trends affecting biodiversity and ecosystems in the Mediterranean Basin are a reflection of the ever-increasing number of people living (and visiting) there. Populations are still growing in the south and east of the region, although they have stabilized in many EU countries and are reducing in the Balkans as birthrates decline (Plan Bleu 2020).

The urban population in all riparian countries together grew from 94 million in 1950 (44% of total population) to 388 million in 2023 (69%), with the fastest growth in the south and east of the region (see Section 6.3.1). The very high urban growth rates do not equate with economic growth, and the technical and financial capacities of cities are limited. With the expansion of urban areas, the proliferation of informal housing (between 30 and 60% of the total) and the risk of instability have been accentuated. Urbanization leads to increased demands for natural resources, particularly for water and energy, and land for building, as well as resulting in land abandonment and local economic decline in rural areas.

Despite rural emigration, agricultural populations in the south and east of the region have continued to increase in absolute terms, reaching 71 million in 2000. Non-agricultural employment is still scarce, and agriculture still plays a decisive social and economic role. However, it is characterized by duality, where modern farming coexists with a mass of subsistence small farms, which are undergoing fragmentation. Rural poverty and disparities with cities are high, as shown by some indicators (population living under the poverty line, access to basic services, schooling and illiteracy rates). Considerable pressures are exerted on natural resources, causing deforestation, desertification, rapid silting-up of reservoirs, altered stream flows and irreversible biodiversity losses. Desertification affects 80% of arid and dry areas; pasturelands and rain-fed croplands are the most affected but irrigated land is also under threat. In spite of very restrictive EU migratory policies, migratory flows remain significant and most unlikely to dry up. It is estimated that 10 million people, 5 million of whom are from other Mediterranean Basin countries, are living in a Mediterranean Basin country which is not their own (see Section 6.3.1).

Rapid economic growth, increasing consumption and inequitable access to resources
Economic growth and ever-increasing consumption are one the main underlying causes of habitat loss and degradation, and overexploitation of plant and animal species. All countries in the region are, to varying degrees, pursuing market-oriented economic policies and export-led development strategies, on the promise of strong economic growth. This is especially notably in three critical sectors for biodiversity conservation: forestry; fisheries; and agriculture.

On both sides of the Mediterranean, economic growth has been lower than in other comparable regions worldwide (see Section 6.4.1). Economic growth has helped push poverty back, and improved human wellbeing. The sustainability of this growth is, however, in doubt. The Environmental Performance Index (EPI) is a measure of environmental performance of countries on high-priority environmental issues. Among the 20 indicators that comprise the EPI are air quality, forests, fisheries, and climate and energy. Table 9.2 presents the EPI index for the hotspot countries covered by the ecosystem profile update, with the scores of some of the most relevant indicators in the dataset, and the top end (Estonia) and bottom end (Vietnam) countries as a reference.

Table 9.2 EPI scores in 2024 for the hotspot countries covered by the ecosystem profile update

Country	EPI (0-100)	World Ranking (out of 178)	Biodiversity and Habitat	Fisheries	Agriculture	Water Resources
Albania	52.1	51	50.6	15.8	50.4	39.2
North Macedonia	50.0	60	52.8	74.7	46.7	41.9
Montenegro	47.6	72	42.1	47.1	43.0	44.1
Jordan	47.5	74	32.9	95.7	38.1	73.3
Tunisia	45.7	88	38.3	50.3	40.2	75.0
Bosnia-Herzegovina	45.6	89	45.7	89.9	52.3	23.0
Egypt	43.8	99	47.4	32.4	48.9	57.1
Algeria	41.9	110	33.0	51.6	46.7	55.9
Lebanon	40.1	124	24.1	96.2	50.6	47.3
Morocco	39.7	125	30.4	49.6	35.6	57.6
Cabo Verde	37.9	138	19.8	70.2	28.0	28.7
Türkiye	37.6	140	20.1	49.6	59.2	69.1

Source: 2024 Environmental Performance Index - Environmental Performance Index (yale.edu).

The Biodiversity and Habitat indicator is based on the protection of terrestrial and marine areas and species and stresses the need for increasing the protection of threatened species and habitats. The Fisheries indicator is based on the coastal shelf fishing pressure and fish stocks and confirms the importance of overexploitation of marine resources as one of the main causes of habitat loss and population declines. The Water resources indicator measures how well countries treat wastewater from households and industrial sources before releasing it back into the environment. The methodology and detailed findings indicate that countries with lower scores are more vulnerable to environmental risks, as well as lacking all the necessary institutional tools to respond to environmental threats.

None of the 12 countries covered by the ecosystem profile update with EPI values available were in the top 50 of the countries evaluated. Albania and North Macedonia showed the best EPI values (52.1 and 50.0), while Türkiye showed the lowest one (37.6). The previous threat analysis based on the IUCN Red List of threatened species (Section 9.1), is confirmed with EPI indicators showing that, for most of these countries, the scores for Biodiversity and Habitat were below average.

Governance
Governance systems include laws, treaties, policies, levels of transparency and corporate behaviour, and are responsible for the levels and impact of costs and benefits derived from natural resource use. Generally, governments in the Mediterranean Basin have followed the predominant (unsustainable) global economic model, through policies based on export-orientated development, and, in recent years, provision of services, especially in the tourism and financial sectors. These development policies have failed to integrate conservation and resource management considerations in a systematic and participatory way.

Associated with these policies have been economic incentives/subsidies, grants and financial arrangements to favored sectors, such as reduced tariffs on water and electricity, tax exemptions on investments and exports, subsidized prices on imported fertilizers and pesticides, and construction of transport and communication infrastructure to facilitate development, which have encouraged unsustainable natural resource extraction and environmental degradation. For instance, government policy in many Mediterranean Basin countries has been to expand tourism as a means of generating jobs and foreign exchange, and external investment has been actively pursued with developers frequently given favorable terms. Subsidies in the forestry and agriculture sectors have promoted increased production of a number of products linked to forest loss, including forest products and cash crops, and promoted agricultural intensification and the large-scale use of agrochemicals. Subsidies for tree planting have led to the afforestation of grasslands and other important non- forest habitats.

Such perverse incentives may be direct, for example tax write-offs, grants or low-interest loans, or indirect, for example low land rents, low labor costs, construction of "free" access roads and other infrastructure, or weak environmental protection regulations. In many cases, development projects are promoted and funded without taking account of their impact on biodiversity.

Undervaluation of ecosystem services
Although biodiversity has important cultural, spiritual, recreational and personal values, government policies frequently recognize natural resources only for their market value. Indeed, the fact that quality of life and health is dependent upon a complex range of ecological functions that provide clean air, pure water, fertile soils and other ecosystem services, is seldom even considered. The undervaluation of ecological services may be partly because dispersed services, such as carbon sequestration, although important globally, are of less significance to national governments, and partly because immediate gains from exploiting a natural resource are frequently more attractive to decision makers than long-term, theoretical benefits from its maintenance. Furthermore, many of the most important values of biodiversity may simply be unquantifiable (Martin-Lopez *et al.* 2016, Morán-Ordóñez, 2019).

9.3.2 Barriers to conservation action

Barriers to conservation action refer to policy, socio-economic, financial and other factors that form obstacles to or diminish the impact of conservation efforts current and potential. The barriers identified are closely linked to the drivers of threats.

Poor land-use planning. The quality of urban and rural planning is often of critical importance for achieving environmental sustainability. In the Mediterranean Basin, with dense coastal populations, inappropriate land-use decisions can have a more significant impact on the environment than in other regions. Land-use planning processes for agriculture, tourism, industry, forestry and urban development are still largely confined to their own sectors. At the level of individual projects, there is little consideration of impacts on other economic sectors or the environment. Strategic Environmental Assessment (SEA) is still not routinely undertaken in the Mediterranean Basin outside of the EU member countries, and the environmental costs of development are not generally incorporated into national accounts. Although the locations of many key biodiversity sites (including KBAs) and areas important for the delivery of ecosystem services have been identified through surveys and mapping exercises in recent years, this information is still not fully integrated into land-use planning processes. Consequently, ecologically important sites are still targeted for inappropriate developments.

Limited capacity and resources for biodiversity conservation. Although there has been significant progress in building institutional and individual capacity (in terms of staffing and financial resources) in biodiversity conservation, the lack of adequate capacity remains, and continues to be recognized, as a major barrier to achieving effective environmental management and sustainable development. The size of government environmental departments, in terms of manpower and financial resources allocated to them, is usually not enough to effectively manage the environmental issues they face, and skilled, trained and experienced staff are often overburdened, which means that issues may not receive the attention they need (particularly the case in the review of EIAs which often receive little more than cursory reviews by overburdened government staff).

Lack of awareness of the value of biodiversity and ecosystem services among decision makers and the general public. As well as lack of knowledge, there is low awareness and limited understanding among decision makers and the public, of the ecological, economic, social and cultural values of biodiversity, the costs of its loss and its critical importance to human health and well-being. Even in the developed countries of the European Mediterranean, the level of public awareness about local biodiversity is relatively low. Generally, government budgets for environmental awareness-raising are inadequate or non-existent.

Weak and ineffective policy and legislation to support biodiversity conservation. Biodiversity conservation legislation has improved markedly in many countries, and there has been good progress on updating and harmonizing environmental policy and legislation in recent years (especially within the EU and, more recently, the Balkan accession countries). However, this process is still incomplete: many environmental policies have basically remained top-down, corrective and regulatory instead of participatory, integrated and anticipatory, and have not been allocated the appropriate resources or inter-ministerial support. This is most critical in many of the southern and eastern countries covered under this profile update. Overall, the environment is still largely seen as a niche issue and chiefly the responsibility of the environmental agencies in government. This is reflected in the lack of integration of environmental objectives into broader sector policies and programs, which reflects poor understanding among decision makers in non-environment sectors of the linkages between biodiversity and ecosystem services on the one hand, and local livelihoods, employment and national economies on the other.

Lack of political support, vested interests and corruption. Although there have been a number of important regional environmental agreements, commitment among high-level decision makers is still not translated into the necessary political support for biodiversity conservation. Short-term, and frequently shifting, national economic and political interests often take precedence over long-term local social and environmental impacts. This lack of political will is evidenced by continuing permission for destructive developments in ecologically sensitive areas, usually the result of strong lobbying by vested economic interests, who argue that environmental protection costs and safeguards will reduce international competitiveness. These positions will not be challenged if there is little public pressure for national governments to fulfil their environmental promises. The public does not generally see the environment as a major political issue and other issues (jobs, the economy, health, etc.) are viewed as more important. This is partly a reflection of the absence of widespread public appreciation of the social and economic costs of environmental degradation, and the separation between those groups who damage the environment and those who pay the price (usually the poorer sectors of society but, ultimately, everyone). Consequently, NGOs have taken on a critical role of holding governments to account for the environmental consequences of their development policies.

Inadequate public participation in decision-making processes. Most recent national policy frameworks do include provisions for private sector and public stakeholder participation in environment and development decision-making. Although stakeholder participation is promoted under many regional and international initiatives in which Mediterranean Basin governments participate, government consultation processes in many countries have been criticized for being largely cosmetic, with involvement of public stakeholders only at the end of processes such as EIAs, when decisions have essentially already been made. There is a clear need to improve civil society participation in environmental decision making and governance.

Effective conservation, therefore, needs to tackle these underlying issues in order to reverse trends in biodiversity loss. Significant impacts on many of these drivers may be beyond the capacity and reach of civil society and of CEPF-supported projects. Nevertheless, some gains may be realistic, and even small projects can make a difference to local environmental quality, as well as to rural employment and incomes. Learning lessons from successful (and unsuccessful) projects can also help to inform governments on their future policy options and directions, and which interventions may be replicated and scaled up to achieve more significant shifts in mitigating some of these very serious problems.

10. CLIMATE CHANGE ASSESSMENT

10.1 Introduction

Changes in climate due to human activities have already impacted natural and human systems on all continents and across the oceans, and these impacts are projected to intensify. Studies project that climate change could become the leading cause of biodiversity loss and degradation this century (Mace et al. 2005, Thomas 2010, OECD 2016), with serious implications for the provision of ecosystem services and biodiversity-based livelihoods.

The Mediterranean Basin is particularly vulnerable to the effects of climate change. Specific observed and projected impacts for the region include a rise in temperature larger than the European average, raised sea levels and acidification in the ocean, a decrease in precipitation and increased risk of extreme events, forest fires, desertification and biodiversity loss.

Conservation in the Mediterranean Basin Hotspot must explicitly address the threat of climate change, enhancing ecosystem resilience and helping species to adapt to changing conditions. Restoring, conserving and sustainably managing ecosystems through Nature-based Solutions can also play a crucial role in mitigating climate change and protecting people from its impacts.

This chapter assesses the current and projected effects of climate change in the Mediterranean Basin Hotspot, provides an overview of the policy context and outlines potential mitigation and adaptation responses.

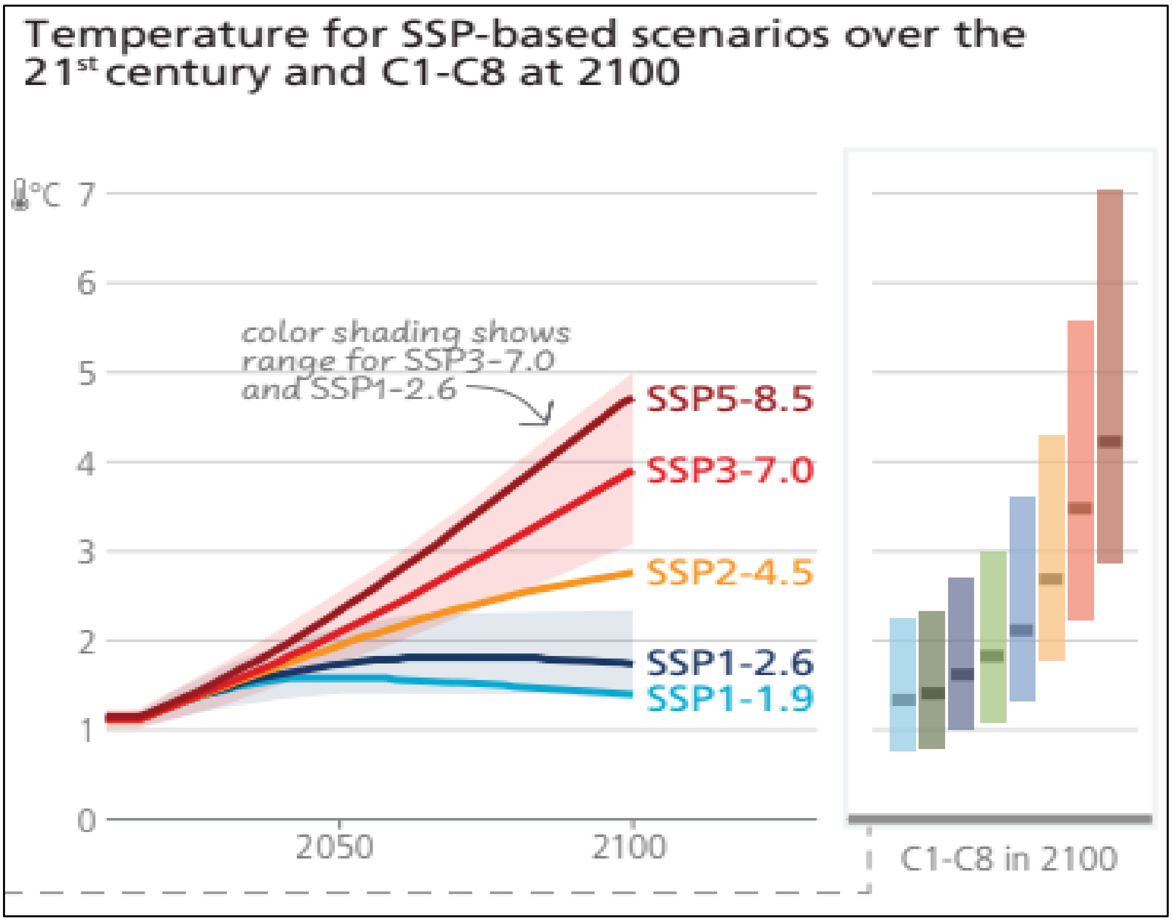
10.2 Overview of climate change

Greenhouse gases (GHG), such as carbon dioxide, methane and nitrous oxide, naturally occur in large quantities in the Earth's atmosphere. At pre-industrial concentrations, GHGs are important for maintaining the energy balance of the Earth's atmosphere, as they absorb solar radiation and heat the atmosphere of the Earth, working much like a greenhouse. The Earth's terrestrial and marine ecosystems form part of this balance, through their ability to absorb and sequester GHGs. The crux of anthropogenic climate change is that humans are emitting GHGs at a faster rate and beyond the capacity of natural GHG sinks. This alters the energy balance of the Earth's atmosphere, causing the global climate to deviate from expected natural patterns. While uncertainties remain on the exact scale of likely changes, there is increasing confidence about future projections, and increasing and alarming evidence that serious impacts are already being seen. The projections given in this chapter are considered to be all at medium or high confidence by the publications cited.

Driven by economic and population growth, GHG emissions have risen since the pre-industrial era to levels that are unprecedented in at least the last 800,000 years, with around half of the cumulative anthropogenic CO_2 emissions occurring in the last 40 years. Globally, the main drivers of GHG emissions by economic sector are: industry (29%); electricity and heating (23%); agriculture, forestry and other land-use (18%); and transport (16%) (Ritchie 2020). This recent rapid increase in GHG emissions has contributed to a likely range of human-caused global surface temperature increase between 1850–1900 and 2010–2019 of from 0.8 to 1.3°C, with a best estimate of 1.07°C. Global surface temperature has increased faster since 1970 than in any other 50-year period over at least the last 2000 years (IPCC 2023). Increases are generally higher over land (average estimate of 1.59°C) than over oceans (0.88°C).

Multiple lines of evidence lead to a strong, consistent and almost linear relationship between predicted future global temperatures and projected GHG emissions (IPCC 2023). The degree of predicted human-induced warming by the year 2100 varies widely, depending on both socio-economic development and climate policy, with scenarios ranging from 'business as usual', leading to 4°C or higher global warming, to stringent and rapid mitigation of GHG emissions, leading to 1.5-2°C warming (IPCC 2023, Figure 10.1). In the Paris Agreement under the UNFCCC, governments committed to keep global warming below 2°C above pre-industrial levels and to pursue efforts to hold warming to 1.5°C. To achieve this target and avoid widespread and irreversible impacts of future global warming, urgent action must be taken to mitigate GHG emissions, and to employ adaptation strategies, with much of the mitigating action required within the next decade (IPCC 2023).

Figure 10.1 IPCC 2023 predicted ranges of human-induced warming for given socio-economic induced GHG emission scenarios



10.2.1 Influence of ecosystem conversion and degradation on global climate

Agriculture, forestry and other land-use (AFOLU) accounts for close to 20% of all anthropogenic GHG emissions, with a significant proportion of this coming from the conversion and degradation of natural ecosystems. Forests, peatlands and wetlands not only store carbon as biomass, and as sequestered carbon in soils and sediments, they also take up carbon from the atmosphere, acting as vital carbon sinks. Globally, deforestation and forest degradation contribute between 12 and 20% of all carbon emissions, by releasing the carbon stored in biomass and soils (Van der Werf *et al.* 2009, Climate Focus 2019). Conversion of forests for agriculture not only destroys these sinks but it can also lead to emissions of more potent GHGs associated with agriculture, such as nitrous oxide (N_2O) and methane (CH_4), from fertilizer use and livestock respectively.

Ecosystem conversion and degradation, therefore, has a multifaceted impact on global climate.

10.2.2 Impact of climate change and human responses on biodiversity and ecosystem services

In the recent past, the main drivers of biodiversity loss have included ecosystem conversion (e.g., for agriculture, mining or infrastructure), over-exploitation (e.g., of forests and fish stocks) and invasive alien species. Climate change exacerbates and adds to these drivers. There is strong evidence that climate change has already impacted on biodiversity, and several lines of research suggest climate change could become the leading cause of extinction over the coming century (e.g., Mace et al. 2005, Thomas 2010).

As the Earth warms some species are shifting their ranges to track suitable climate. For example, bird populations are expected to shift northwards in Europe (Huntley *et al.* 2008), and montane biota are expected to shift to higher altitudes (Thuiller *et al.* 2005). However, the rate at which species are able to shift is slower than the predicted rate of climate change, making some species particularly vulnerable[24] to climate change (e.g., Foden *et al.* 2013). Climate change also disrupts interactions between predators, competitors and prey (Adamík and Král 2008) and phenology (e.g., migration and breeding; Møller et al. 2010). These and other effects have already led to population declines and are projected to worsen.

Already suffering from water stress (i.e., water withdrawal exceeding water renewal) and high inter-annual variability of their water resources, the countries in the Mediterranean Basin are likely to experience chronic water scarcity with per capita water availability falling below 500 to 1,000 m^3 per year (the threshold generally accepted for severe scarcity to water stress) in the near future. Other impacts of climate change include a significant reduction in river flow and river discharge amounting to the median reduction in runoff almost doubling from about 9% (likely range: 4.5-15.5%) for a 1.5°C warming to 17% (8-28%) for a 2°C warming (Cramer *et al.* 2018). In addition, the seasonal distribution of stream flows is very likely to change, resulting in earlier declines of high flows from snowmelt in spring, an intensification of low flows in summer and greater and more irregular discharge in winter.

Human responses to climate change could pose an equally significant threat, and could further degrade ecosystems and reduce vital ‘stepping stone’ habitats needed for species to shift to more equitable climates (Segan *et al.* 2015). The demand for irrigation water, which already represents between 50 and 90% of total water demand in Mediterranean countries (Cramer *et al.* 2018) is projected to increase by between 4 and 18% by the end of the century, as a result of climate change alone (for a 2°C and 5°C warming, respectively). These numbers are exacerbated by the projected growth in population (see above) and may result in water demands that are 22 and 74% higher, respectively, compared to present demands (Cramer *et al.* 2018).

Mitigation policies and projects, such as afforestation (IPCC 2007, Zanchi *et al.* 2007), bioenergy expansion (European Environment Agency Scientific Committee 2011, IPCC 2014), and the deployment of wind (Langston and Pullan 2003, Wang and Wang 2015), solar (Turney and Fthenakis 2011, Walston *et al.* 2016) and hydropower (Kumar *et al.* 2011, van der Winden *et al.* 2014) also pose a threat to biodiversity, if poorly planned and implemented.

Terrestrial ecosystems are impacted not only by direct consequences of climate change (warming, drought, etc.) but also by changes in land use and an increasing rate of

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[24] Vulnerability is defined by the IPCC as ‘the predisposition to be adversely affected’, with exposure, sensitivity and adaptability contributing in combination to vulnerability.

urbanization. Pollution, unsustainable tourism, overexploitation of resources and other practices (e.g., overgrazing, forest fires) add to the stress on these ecosystems. A warming climate and increasing numbers and intensities of droughts lead to a general increase in aridity and subsequent desertification of many Mediterranean terrestrial ecosystems. Among other effects, deserts are likely to expand in southern Spain and Portugal, in northern parts of Morocco, Algeria, Tunisia, Sicily, Cyprus, southern Türkiye and parts of Syria (Cramer *et al.* 2019).

Ecosystems provide important services to humans, such as provision of food, water, fuel and fiber, pollination and pest regulation for agriculture, and buffer communities against climate change hazards such as flooding, sea-level rise and erosion. Climate change, human responses to climate change and other pressures undermine the provision of these ecosystem services, threatening people's lives and wellbeing (Meller *et al.* 2015). Maintaining healthy, biodiverse ecosystems and restoring degraded ones can be an effective strategy for building resilience to climate change, securing the provision of ecosystem services and enabling communities to adapt.

10.3 Contribution of the Mediterranean CEPF countries to climate change

At a national scale, the majority of GHG emissions generated in the Mediterranean region are from the larger European economies, namely France, Italy and Spain, which together generated 58% of the basin's emissions in 2012. Considering just CEPF countries, the observed national emission levels are related to the size of a nation's economy as well as population size (Table 10.1, Figure 10.2).

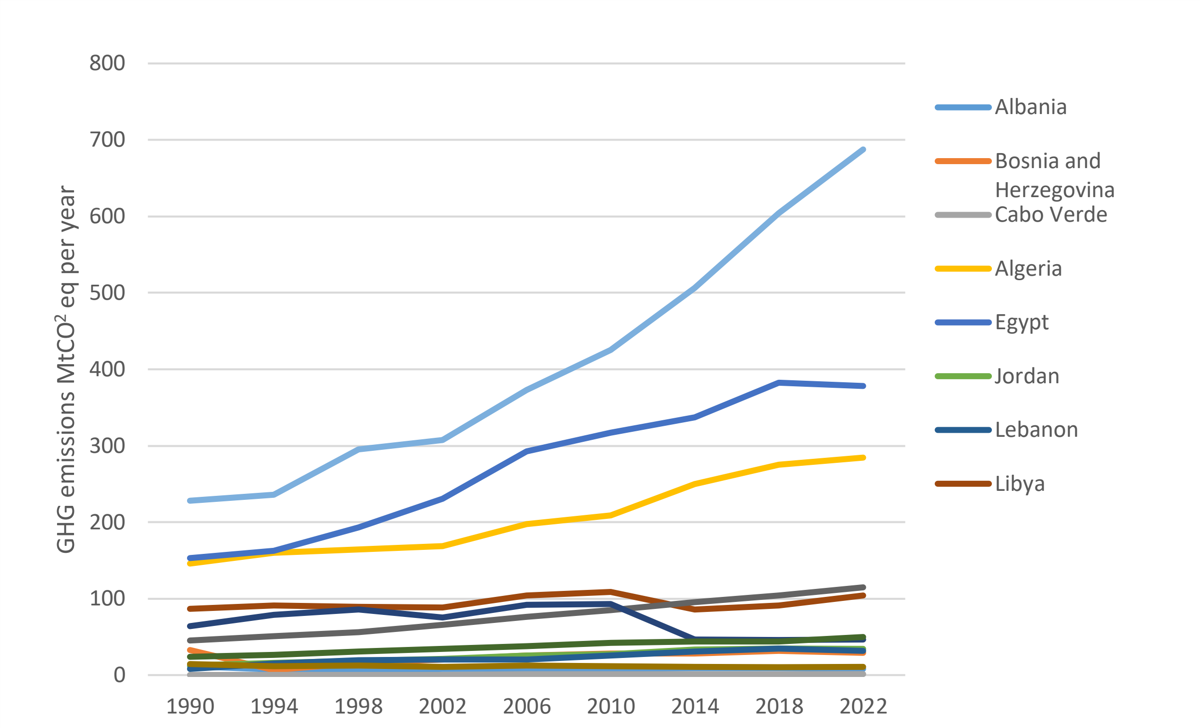
Table 10.1 Greenhouse gas emissions per country within the Mediterranean Basin Hotspot between 1990 and 2022 in MtCO$_2$e per year

Country	1990	1998	2006	2010	2018	2022
Albania	11.57	5.83	8.12	8.14	9.23	7.98
Bosnia and Herzegovina	32.79	15.75	25.42	28.46	32.00	29.32
Cabo Verde	0.23	0.34	0.92	1.02	1.12	1.30
Algeria	145.89	164.50	197.22	209.13	274.75	284.45
Egypt	153.02	193.53	292.43	317.04	382.44	377.78
Jordan	12.54	18.57	26.00	27.14	34.76	34.54
Lebanon	8.06	19.62	20.64	25.60	34.69	31.93
Libya	86.63	88.86	104.03	108.77	91.38	104.51
Morocco	45.25	56.25	76.14	84.72	104.43	114.77
North Macedonia	14.47	12.74	12.14	11.82	10.35	11.18
Syria	64.10	85.58	91.60	92.97	45.91	46.31
Tunisia	23.92	30.47	37.91	42.20	43.75	49.82
Türkiye	228.09	295.21	372.46	425.11	603.86	687.53

Data for Montenegro not available as formerly calculated with Serbia.

Southern and eastern Mediterranean countries tend to have lower GHG emissions per person but higher emissions per unit of economic growth, compared with more developed European nations in the region. There are notable anomalies, particularly for oil-producing nations, such as Libya, which have among the highest emissions per person. Here, the prevalence of a single polluting industry in a relatively small nation can significantly affect the emission profile of the entire nation. While output of oil and gas stalled during the 2010s due to political events, production is now rising again, and gas production may continue to increase in Algeria up until 2040. Greater economic efficiency per ton of emitted GHG in the more developed nations may be due to a shift toward importing more high emission products rather than producing the products within the country (Davis and Caldeira 2010, OME 2021).

Figure 10.2 Greenhouse gas emissions per country within the Mediterranean Basin Hotspot between 1990 and 2022



Notes: $MtCO_2e$ per year; GHG emissions, including those associated with land use change and forestry, are shown for a subset of countries eligible for CEPF support. Source: [EDGAR - The Emissions Database for Global Atmospheric Research]

As outlined by Ben Jannet Allal *et al.* (2016), while energy demand and consumption have been steadily increasing since the early 1970s, energy consumption is likely to double by 2040 in the southern Mediterranean countries. Over the same period, electricity consumption will triple, notably on account of the increased use of space cooling (air conditioning) and new electrical appliances. Since most current electricity production relies on hydrocarbons in the southern countries and hydrocarbons and nuclear energy in northern countries, the resultant carbon dioxide emissions are projected to increase by 45% for the whole region, and more than double that for the southern Mediterranean. However, emissions could be reduced by 30% in a proactive scenario and by 73% in a scenario aiming towards net zero. This would require 90% use of renewables in the north of the region and 70% use in the south (OME 2021).

With the impact of AFOLU on global climate and biodiversity, it is important to note that, according to the Food and Agriculture Organization of the United Nations (FAO), the majority of countries covered by the ecosystem profile update reported forestry and land-use as a net carbon sink between 1990 and 2015. This is not to say that further mitigation gains cannot be achieved in the AFOLU sector in these countries, nor that ecosystem conversion and degradation has not taken place; it only says that carbon sequestration was greater than carbon emissions. Nations that reported net positive emissions over the same period include Algeria, Albania and Morocco.

10.4 Climate change observations and projections for the Mediterranean Basin

10.4.1 Observed changes in temperature, precipitation and marine conditions

The Mediterranean Basin's climate is characterized by cold, wet winters and prolonged hot, dry summers (Giannakopoulos *et al.* 2005). Additionally, there is a strong northwest-southeast gradient in winter precipitation patterns across the eastern Mediterranean and Middle East. For example, Italy receives a lower proportion of its annual rainfall in the winter compared with Türkiye (Lelieveld *et al.* 2012).

In recent decades, there has been an increase in hot days (and a decrease in cool days) across the northern Mediterranean and an overall increase in dryness (IPCC 2014, Hoerling *et al.* 2011). At the same time, the southern Mediterranean has experienced annual and seasonal warming trends that are significantly beyond the range of changes due to natural variability (Barkhordarian *et al.* 2012), and areas such as the Atlas Mountains and the Algerian and Tunisian coasts have experienced a strong decrease in the amount of winter and early spring precipitation (Barkhordarian *et al.* 2013).

The Mediterranean Sea is characterized by a homogenous deep-water layer, below c.300 m depth, which remains at a constant temperature and salinity all year round. However, over the last decade, the temperature and salinity of this layer have risen significantly, year on year (Schroeder *et al.* 2016). Sea surface temperatures have also been changing, with an observed increase of almost 1°C since the 1980s (Vargas-Yáñez *et al.* 2010, Lionello 2012).

10.4.2 Projected changes in temperature, precipitation and marine conditions

There is significant agreement among climate models that, under all emissions scenarios, temperatures in the Mediterranean Basin will increase. Air and sea temperature and their extremes (notably heat waves) are likely to continue to increase by up to 20% more in the Mediterranean than the global average. The projected annual mean warming on land by 2100 is in the range of 0.9–5.6°C compared to the last two decades of the 20th century (Ali *et al.* 2022). The Balkans and Türkiye may experience the largest temperature increase (Lelieveld *et al.* 2012, Lelieveld *et al.* 2016). In effect, the region is expected to have an additional month of summer, with an increase in heatwave days and a decrease in frost nights (Giannakopoulos *et al.* 2009).

Projections for changes in precipitation are less robust than those for temperatures (Zittis *et al.* 2019). Climate change will lead to enhanced evapotranspiration and reduced rainfall (Cramer *et al.* 2018). Precipitation in the Mediterranean will likely decrease by 4–22%, under medium scenarios. Extremes are expected to increase, especially in the north of the region, and droughts will become more prevalent. This will likely result in substantial reductions of water availability by 2-15% for 2°C of warming. This represents one of the largest decreases in the world, which will result in significant increases in the length of meteorological dry spells. Given the already semi-arid to arid conditions of the southern and eastern rim countries of the basin, these projections will drastically enhance water scarcity for many communities and for terrestrial ecosystems already under significant stress.

The projected increase in the duration and intensity of heat waves/warm spells as a result of climate change in the Mediterranean (see above) will exacerbate the impacts of drought. A very dry soil stimulates the sensible heat flux, which can interact with the atmosphere, intensifying heat waves (e.g., Zittis *et al.* 2014). A decrease in soil moisture will lead to increased water stress and will affect natural vegetation and agricultural activities adversely. This will cause an increased demand for irrigation. Pumping water to satisfy this demand will result in the lowering of the water table. This, in turn, will reduce the water available for natural vegetation, thereby amplifying the above-mentioned effect and creating an environment where extreme droughts could thrive. According to Mariam *et al.* (2022), the water warming in Moroccan river ecosystems has been altered dramatically through the past four decades, which is deeply linked to water withdrawals linked to urban and agricultural development (Mariam *et al.* 2022).

While the overall amount of precipitation will decrease across the Mediterranean Basin, extreme rainstorms will likely also become more frequent, especially in northern countries. Aside from droughts, floods are and will likely remain the most dangerous meteorological hazards affecting Mediterranean countries. During the period from 1990 to 2006, flash floods in the Mediterranean region caused 4,566 deaths and total damage estimated at €29 billion (Llasat *et al.* 2010).

By the end of the century sea surface temperatures are predicted to rise by an average of 2.5°C relative to 2012 (Lionello 2012), with smaller but significant increases at deeper levels. The salinity of surface, intermediate and deep layers is expected to rise (Vargas-Yáñez *et al.* 2012), and acidity is likely to continue to increase due to CO_2 emissions.

The Mediterranean Sea level is projected to rise further during the coming decades, likely reaching 0.15–0.33 m in 2050 and 0.3–0.6 m by 2100, under low scenarios, and up to 1.1 m under high scenarios (relative to 1995–2014) (Ali *et al.* 2022). The process is irreversible at the scale of centuries to millennia. Coastal flood risks will increase in low-lying areas along 37% of the Mediterranean coastline that currently hosts 42 million people. The number of people exposed to sea level rise is projected to increase up to 2050, especially in the southern and eastern Mediterranean, and may reach up to 130% compared to present in 2100 (medium confidence). Coastal settlements, World Heritage Sites and ecosystems are at longer-term risk from sustained sea level rise over at least the coming three centuries (high confidence).

10.4.3 Biotic change in response to climate change

The projected warming and drying of the Mediterranean Basin as well as the increase in extreme climatic events are likely to have a significant effect on the biota of the region. In southern Europe, including the Mediterranean Basin, there is projected to be a great reduction in phylogenetic diversity of plant, bird and mammal assemblages, which will not be offset by gains expected in regions of high latitude or altitude, resulting in a trend towards homogenization across the continent (Alkemade *et al.* 2011, Thuiller *et al.* 2011). Based on a combination of pollen data and modelling, changes in Mediterranean biomes may exceed changes recorded over the last 10,000 years, with the highest emissions scenarios resulting in desert conditions across southern Spain, and Mediterranean vegetation replacing deciduous forests across the basin (Guoit and Cramer 2016). In this section, published studies are used to outline the effects of climate change, today and in the future, on different types of ecosystems. Most of this research has focused on the European component of the Mediterranean Basin (Thuiller *et al.* 2005), however, this information can provide valuable insights that are applicable to the development of climate change mitigation and adaptation ventures in the southern and eastern components of the basin.

Mountain ecosystems

Mountain ecosystems are among the most threatened of the Mediterranean Basin due to climate change (IPCC 2007, Kougioumoutzis *et al.* 2021). Already, a decrease in species richness has been reported on Mediterranean mountain tops, with plant species counts from 14 summits lower in 2008 than in 2001, probably due to rising temperatures and a decrease in water availability (Pauli *et al.* 2012), and a decline in butterfly species richness due to increasing aridity (Stefanescu *et al.* 2011). Mountain flora is predicted to change significantly with local plant species losses of up to 62% and turnover rates of 70% by 2080 (Thuiller *et al.* 2005).

Significant range shifts are expected for flora and fauna. Current species ranges and entire vegetation zones (tree line, alpine and nival zones) are predicted to shift to higher elevations, due to rising temperatures and greater aridity affecting lower elevations, resulting in certain floral and faunal communities being restricted to higher elevations (IPCC 2007). One specific example of declining mountain ecosystems comes from the Egyptian Sinai region, where a reduction in Sinai thyme (*Thymus decussatus*) flowers, due to rising temperatures and drought, is threatening Sinai baton blue (*Pseudophilotes sinaicus*, CR), the smallest butterfly in the world (Egypt NBSAP 2016). Another example comes from Sierra Nevada National Park, in the south of Spain, where the local observatory for global change has registered a common pattern of displacement towards higher altitudes in the different taxonomic groups of the area. This trend is also common in other Mediterranean mountain ranges (Zamora *et al.* 2015).

Forests

Forests play an important role as a carbon sink, which means that they absorb more carbon than they release. However, if the anticipated warming exceeds 2°C, forests may lose this role, especially during drought years (Cramer *et al.* 2019). Some species in Mediterranean forests are particularly vulnerable to climate change. Forest productivity has decreased and rates of mortality and defoliation have increased significantly in holm oak, a species that currently dominates Mediterranean forests. In arid and semi-arid countries of the eastern and southern Mediterranean, drought has increased tree mortality and has resulted in degradation and reduced distribution of entire forest ecosystems, such as Atlas cedar in Morocco or Algeria (Cramer *et al.* 2019). Tree mortality and forest decline due to severe drought events have already been observed in forest populations in Algeria (Kherchouche *et al.* 2012), Italy (Bertini *et al.* 2011, Giuggiola *et al.* 2010), Cyprus (Ministry of Agriculture, 2009) and Greece (Raftoyannis *et al.* 2008), a phenomenon which is increasing in mangnitude (Rebollo, 2024).

In the Mediterranean Basin, future risk of tree mortality is expected to increase with higher fire risk, longer fire seasons, and more frequent large, severe fires expected to result from increasing heat waves in combination with drought (Duguy *et al.* 2013). A significant increase in the extent and frequency of wildfires has been observed since the 1970s (Fernandes *et al.* 2010, Koutsias *et al.* 2012, Marques *et al.* 2011, Pausas and Fernández-Muñoz 2012). Exceptionally large fire events, triggered by extreme climate events, especially heat waves, have caused record maxima of burnt areas during the last decade (Cramer *et al.* 2018, Cramer *et al.* 2019). At warming levels of 1.5, 2 and 3°C, the burnt area in Mediterranean Europe could increase by 40–54%, 62–87% and 96–187%, respectively (Turco *et al.* 2018), although changes are highly site dependent and also affected by forest management regime. Despite increasing wildfire hazard, forest fires are generally decreasing in the European part of the basin, due to more effective fire management (Turco *et al.* 2016, Ali *et al.* 2022). However, this management comes at a cost. In Córdoba, Spain, for example, fire suppression costs have increased by 66–87% in a decade (Molina *et al.* 2019).

Climate change also affects tree growth rates, phenology and vulnerability to insect and pathogen damage, as well as the composition of animal and plant communities in forest systems with projected reduction in recruitment and net ecosystem production (NEP; i.e., carbon sequestration) rates (Sabaté *et al.* 2002). Even though a certain degree of 'CO_2 fertilization' is expected for Mediterranean forests, prolonged dry periods and droughts are expected to lead to a decrease in forest biomass (Sabaté *et al.* 2002).

Large range contractions are projected for several populations of *Pinus cembra* and *P. sylvestris* (Casalegno *et al.* 2010, Giuggiola *et al.* 2010), with range reduction or extinction of *Pinus mugo* and *Pedicularis ferdinandii*, and significant redistribution of *Crocus cvijicii* and *Quercus coccifera* (Republic of Macedonia 2014). For fir and cedar forests with their most southerly limits in Mediterranean countries, including Algeria, Bosnia and Herzegovina, Lebanon and Morocco, range contractions could result in the loss of coniferous habitats (Slimani *et al.* 2014, Bosnia and Herzegovina NBSAP 2016, Lebanon NBSAP 2016). Observation from Spain's Sierra Nevada National Park also show that vegetation is moving towards higher altitudes: with clear ascent of three species registered over a timeframe of 11 years (Zamora *et al.* 2015). Human impacts on the distribution of tree species may affect their ability to adapt to climate change (Del Barrio *et al.* 2006, Hemery *et al.* 2010).

While the observed and projected impacts of climate change are largely negative, some species may benefit. For example, the dominant Mediterranean tree species, holm oak, is projected to undergo a substantial range expansion under higher GHG emission scenarios (Cheaib *et al.* 2012), although, as mentioned above, it is also potentially subject to increased mortality. It is also projected that Mediterranean bat species found in forest ecosystems will benefit from warmer temperatures to the north, leading to an expansion in their range (Rebelo *et al.* 2010), and that rodents and their associated predators may increase across Lebanon (Lebanon NBSAP 2016).

Shrublands
The spatial distribution of shrublands in southern Europe has increased over the past few decades and is expected to continue increasing in future (Mouillot *et al.* 2002). Expansion of shrubland is expected to bring other ecosystem changes, such as expansion of greater white-toothed shrew (*Crocidura russula*), currently limited by colder climate conditions and lack of favourable shrub cover (Torre *et al.* 2014). In a similar manner to forest ecosystems, however, recruitment, nutrient cycling, NEP and associated carbon storage in biomass are expected to decrease, due to progressive drying and warming (IPCC 2007, Lloret *et al.* 2004). In one of the few empirical experiments on the effect of climate change on Mediterranean shrubland, predicted warming and drying reduced the abundance of emerging seedlings and respective species richness (Lloret *et al.* 2004, 2005), with a similar result reported for extreme drought conditions (Del Cacho and Lloret 2012). Future warming and drought responses are dependent on current conditions, with current cold, damp sites more strongly influenced by changes in temperature, and warm, dry sites being more responsive to changes in rainfall (Vicente-Serrano *et al.* 2012).

For shrublands, grassland and forests, the predicted increase in fire frequency coupled with an increase in extreme rainfall events is likely to lead to an increase in soil erosion for the region (Giannakopoulos *et al.* 2005, IPCC 2007, Mouillot *et al.* 2002).

Wetlands and coastal ecosystems
The Mediterranean Wetlands Observatory reports that nearly 50% of natural wetland surface area has disappeared since 1900 and remains in rapid decline. This trend is primarily due to direct human activity but is now being exacerbated by climate change, with increased risk of wetland loss if runoff decreases and the wetland dries out (Zacharias and Zamparas 2010). There has already been an observed decline in some freshwater macroinvertebrate, fish and mammal species, due to warming and decreased rainfall (Otero *et al.* 2011), and future distribution ranges of cool-water fish are projected to diminish (Buisson *et al.* 2010). Drusian spring minnow (*Pseudophoxinus drusensis*, EN) is a freshwater fish endemic to the northern part of the Jordan River in Syria. Its population crashed at the end of 1990s after a severe drought and has not recovered yet. The species is also threatened by high levels of water abstraction and pollution, and the introduction of invasive fish species (Galewski *et al.* 2021).

The IPCC (2023) predicts that mean global sea level will continue to rise and is very likely to exceed 0.6 m within this century. This rise will not be uniform across all regions, and the impacts will depend on coastal elevation, gradient and landforms. For example, Egypt has been identified as one of the top five countries in the world expected to be most severely impacted by sea level rise. The risk of submersion of coastal wetlands is expected to increase due to rising sea level. This will impact numerous species, including waterbirds that breed in these wetlands, stop over on migration or winter in large numbers. Biodiversity and ecosystem services would be exposed to degradation of wetland hydrology, which could affect 19–32% of localities under a 1.5–2°C increase (48–73% under higher warming), particularly in Spain, Portugal, Morocco and Algeria (Lefebvre *et al.* 2019).

Both inland and coastal wetlands are further threatened by human responses to increased sea level and flooding, and other climatic events. Responses, such as walls and embankments, will often be at the expense of converting or disrupting wetland ecosystems, especially in heavily urbanised coastal areas, where available land is at a premium (Ali *et al.* 2022).

Ocean acidification also poses a threat to marine and coastal systems, particularly those with organisms that form calcium carbonate structures. Observations performed near natural CO_2 vents in the Mediterranean Sea show that diversity, biomass, and trophic complexity of rocky shore communities will decrease at projected pH levels (Barry *et al.* 2011, Kroeker *et al.* 2011).

Marine ecosystems
Marine primary production is projected to decrease in the western and increase in the eastern Mediterranean Sea (Macias *et al.* 2015). The diversity of copepods (species that dominate the meso-zooplankton communities feeding Mediterranean fishes) is projected to decline over most of the Mediterranean, albeit with regional variation. Total marine biomass (and fishery potential) is projected to increase in the southeastern Mediterranean, whereas significant decreases are most likely in the west (Moullec *et al.* 2019).

The projected increase of marine heat waves in the Mediterranean Sea will add additional pressures to coastal and marine ecosystems (Ali *et al.* 2022). Warm-water fish species are expected to move northwards, while cold-water species will decline, and invasions of thermal-tolerant tropical species will increase (Lloret *et al.* 2015; Corrales *et al.* 2018). Fish species richness is predicted to increase in the eastern and decrease in the western Mediterranean by 2050. Out of 75 endemic fish species, 14 are projected to go extinct, almost all of them benthic and demersal species (Ben Rais Lasram *et al.* 2010). The abundance of small and medium-sized pelagic fish (e.g., European anchovy) is projected to decline by 15–33% by 2100 (Stergiou *et al.* 2016, Raybaud *et al.* 2017).

Heat waves will likely cause increasing mass mortality events of benthic species, mostly invertebrate organisms, such as corals, sponges, bivalves, ascidians and bryozoans, increasing the risks of abrupt collapse of populations of endemic species (Ali *et al.* 2022). More than 30 species in Mediterranean hard-bottom communities have been affected by mass-mortality events associated with unusual increases in seawater temperature along thousands of kilometres of coastline, mainly in the northwestern Mediterranean (Garrabou *et al.* 2009, Garrabou *et al.* 2021). Warming has been shown to severely reduce the metabolism of some Mediterranean coral species (Gori *et al.* 2016). Extensive bleaching of coralligenous organisms under exceptionally warm water temperatures have been reported almost every year since 1999. Even though recovery is possible, this process takes a long time and may be inhibited by more frequent heat waves or increasing acidity (Cramer *et al.* 2019).

Species distribution within the basins is also changing, with warm-water fish species, such as ornate wrasse (*Thalassoma pavo*), and coral species, such as *Astroides calycularis*, widening their ranges, and becoming more abundant in the north-west Mediterranean, resulting in 'tropicalization' of fauna and an overall poleward range shift in vegetated coastal habitats. The observed spread of invasive alien species originating in the Atlantic Ocean (Elkrwe *et al.* 2008, Katsanevakis *et al.* 2010), and the associated introduction of new microbial pathogens and diseases, have also been as a result of climate change (UNEP/MAP RAC/SPA 2010). Recent studies indicate that future rises in sea temperature will favour the spread of non-indigenous species, including the introduction of more Red Sea and tropical Atlantic species (Otero *et al.* 2013).

Favoured by increasing water temperature, the extent and intensity of jellyfish outbreaks have increased over the last several decades. Outbreaks of a purple-striped jellyfish, a planktonic predator of fish larvae and of their zooplankton prey have caused particularly adverse effects (Cramer *et al.* 2019). Acidification results in various adverse impacts on many pelagic and benthic organisms with calcareous body parts, such as corals, mussels, pteropods, sponges and coccolithophores. Modifications in species composition and shifts in abundance from assemblages dominated by calcifying species to non-calcifying species have been reported, even under moderate decreases in surface-water pH values (Cramer *et al.* 2019).

In summary, the observed shift in marine ecosystems since 1980 is projected to continue and intensify, resulting in very high risks for marine ecosystems between 1.5 and 2°C global warming levels.

10.5 Expected impacts on human populations and potential repercussions for ecosystems

Climate change poses both direct and indirect risks to human activities, such as agricultural productivity, health and infrastructure (Table 10.2). Many risks are mediated through ecosystems and are linked to degradation in ecosystem services. For example, wildfires exacerbated by dry conditions result in water catchment degradation, whereby increased soil erosion and faster runoff due to loss of tree cover causes silting of rivers and diminished water supplies (Duguy *et al.* 2013). Future increases in temperature are also expected to deplete fish stocks in the Mediterranean Sea, which will impact livelihoods and food provision across the region (Lacoue-Labarthe *et al.* 2016). Fisheries revenue may decrease by 15–30% by 2050 relative to 2000 under a high emissions scenario (Lam *et al.* 2016). Overall, reduced crop yields and fishery landings, combined with other factors, such as rapid population growth and urbanisation, increasing competition for water and changing lifestyles, will likely impact food security, particularly in North Africa and the Middle East (Jobbins and Henley 2015). Other sectors will also be impacted. Tourism revenues, for example, are projected to fall by up to 0.45% of GDP per year in the Mediterranean EU region by 2100 as a result of climate change (Barrios and Ibañez 2015), impacting jobs and livelihoods (Plan Bleu 2022, UfM 2018).

The way that humans manage climate risk and respond to climate impacts also has implications for biodiversity and ecosystems. As crop yields decrease due to projected warming and drying in the Mediterranean, the demand for water for irrigation is likely to increase and farming may move into new areas, further degrading ecosystems and reducing vital 'stepping stone' habitats needed for species to shift to more equitable climates (Ali *et al.* 2022, Segan *et al.* 2015).

Extreme weather events, drought, sea level rise and other climate change impacts are expected to lead to a significant increase in the scale of human migration and displacement, which could put further strain on natural resources in some areas of the Mediterranean. The Lebanon Environmental Assessment of the Syrian Conflict (2014), for example, found that the migration of refugees had direct impacts on ecosystems from settlements encroaching on environmentally sensitive areas, and indirect impacts from overexploitation of ground water resources, illegal felling of trees for fuel and waste disposal on open lands. Planned mitigation and adaptation responses in the region, such as the expansion of renewable energy sources, and relocation of settlements and agriculture, for example in Egypt, could also negatively affect biodiversity and ecosystems if they are not carefully planned (Government of Egypt NDC 2023).

Table 10.2 Potential human impacts and possible ecosystem adaptation responses

Climate change hazard	Predicted impact on human activity in the Mediterranean Basin		Global examples of ecosystem-based adaptation responses
Water scarcity	1. Agriculture	Significant reduction in crop yields with huge regional variations and likely mitigated by increases in land take and irrigation	Diversify agricultural systems using indigenous knowledge of crop varieties[c]
		Increased cost of irrigation	
		Vulnerability to pests and disease[b]	
	2. Energy	Disruption to hydro[d] and conventional power plants	Protection and maintenance of natural watershed systems[c]
		Increased demand from desalination plants[e]	
	3. Conflict	Deterioration in resource dependant livelihoods such as agriculture and pastoralism[e]	Maintaining grassland and rangeland[c]
Higher summer temperatures and increased heat waves	1. Agriculture	Increased risk of damage by wildfires[f]	Strategic management of shrublands and forests[c]
	2. Energy	Net increase in energy consumption from demand for summer cooling[g]	Green roofs to cool urban areas[h]
	3. Health	Increased heat related deaths and injuries[e]	Environmental management to reduce capacity of vectors[i]
		Change in the distribution and seasonal pattern of some human vector-born diseases[e]	
Sea level rise and coastal flooding	1. Agriculture	Salination of agricultural land and aquifers[j]	Maintaining reed beds and marshes as a buffer zone and natural flood defense[c]
		Coastal and delta erosion	
	2. Social	Migration of communities inland[k]	
Extreme precipitation events and inland flooding	1. Health	Loss of life[l]	
	2. Agriculture	Crop failure and loss of livestock[l]	Floodplain restoration and management[m]
		Soil erosion and reduction in fertility	
	3. Infrastructure	Damage to bridges, roads, railways and power lines[l]	Soil and water conservation
		Reservoir sedimentation causing reduction in hydropower production	

Notes: This table is based on [a]Ali *et al*. 2022, [b]Graux *et al.* (2011), [c]Colls *et al.* (2009), [d]López-Moreno *et al.* (2008), [e]IPCC (2023), [f]Flannigan *et al.* (2009), [g]Gill *et al.* (2007), [h]Campbell-Lendrum *et al.* (2005), [i]Shaltout *et al.* (2015), [j]Warner *et al.* (2010), [k]Llasat *et al.* (2010), [l]Kokpinar *et al.* (2010) and [m]Vogl *et al.* (2016).

10.6 Policy context

10.6.1 The Paris Climate Change Agreement

The Paris agreement, which entered into force in November 2016, is a key agreement under the UNFCCC and has been ratified by all of the hotspot countries covered by the ecosystem profile update, apart from Libya (who signed in 2016). Türkiye ratified the agreement in 2021. The agreement aims to keep global temperature rise this century well below 2ºC above pre-industrial levels (if possible, to limit temperature increase to 1.5ºC) and to strengthen the ability of countries to deal with the impacts of climate change.

Due to significant differences in their current and historical emissions, and in their financial, technical and institutional capacity to take action on climate change, the nations of the Mediterranean Basin Hotspot were in the past split into two categories under the UNFCCC and its Kyoto Protocol: northern Mediterranean countries located within the EU, as well as Türkiye, were treated as Annex 1 (industrialized) countries under the Kyoto Protocol, with clear emission reduction targets, while countries outside of the EU located in the eastern and southern Mediterranean Basin were treated as non-Annex 1 (developing) countries, with no emission reduction targets. The Paris Agreement does away with this bifurcated approach, requiring all nations to put forward mitigation pledges or 'nationally determined contributions' (NDCs), but continues to recognize the UNFCCC principle of 'common but differentiated responsibility' of countries.

Countries were required to submit preliminary or 'intended' NDCs (iNDCs) prior to the adoption of the Paris Agreement in December 2015, and to communicate their first NDC no later than when they submit their respective instrument of ratification, acceptance, approval or accession of the Paris Agreement. NDCs are to be updated or replaced every five years, with increasing ambition. The intended NDCs submitted by the nations of the Mediterranean Basin Hotspot differ in terms of comprehensiveness and ambition, partly reflecting the principle of common but differentiated responsibility. Most developing nations in the hotspot propose an unconditional mitigation target as well as a more ambitious mitigation target dependent on international support. Countries in the Mediterranean have also incorporated adaptation in their iNDCs.

The importance of ecosystems has gained increasing recognition under the UNFCCC in recent years. The preamble of the Paris Agreement, for instance, outlines the importance of ensuring 'ecological integrity' and 'the protection of biodiversity' for all climate action. Article 5 outlines the importance of sinks and reservoirs, such as forests for mitigation, while Article 7 recognizes the importance of sustainable management of natural resources in building the resilience of socioeconomic and ecological systems. These concepts are gradually being better understood and developed, and the role of ecosystems in building climate resilience is a major feature of the outcomes of recent Conferences of Parties to the UNFCCC (e.g., Malhi *et al.* 2020).

Of the 14 NDCs submitted by countries covered by the ecosystem profile update to date (all countries except Libya and Kosovo), 11 refer explicitly to ecosystems, mainly in the context of climate adaptation. Most references to ecosystems are fairly general and lack clear targets or details on what actions will be delivered. Some of the clearer and more ambitious targets include those of Morocco, which aims for renewal or afforestation of 100,000 ha per year by 2030, and Lebanon, which aims to protect 20% of land and sea for biodiversity and to implement programs for 50% of threatened species. Albania, Jordan, Palestine and Cabo Verde (on marine environment) also have some clear policies, with a focus on adaptation.

In addition to the NDCs, most countries have or are in the process of developing National Adaptation Plans (NAP). It is important that these recognize and address the role of biodiversity and ecosystem services in helping people adapt to climate change, the adaptation needs of biodiversity, and safeguards to avoid negative impacts on biodiversity and maladaptation. So far, five have been produced, in Albania, Bosnia and Herzegovina, Cabo Verde, Morocco and Palestine. In some cases, these contain more detail on ecosystems than the NDC. For example, Bosnia and Herzegovina's NDC contained little on ecosystems but the NAP has strong policies. North Macedonia's NAP has yet to appear but the NDC did state that ecosystem policies would be included in this document rather than the earlier publication.

10.6.2 CBD and other environmental agreements

The links between biodiversity and climate change are also addressed within other multilateral environmental agreements (MEAs) of which Mediterranean Basin Hotspot countries are signatories, as well as the 2030 Agenda for Sustainable Development adopted in 2015. Under the CBD, for instance, parties adopted Decision XII/20, which "encourages Parties and invites other governments and relevant organizations to promote and implement ecosystem-based approaches to climate change related activities and disaster risk reduction". Climate change is also entrenched in the Global Biodiversity Framework, with Target 8 committing countries to "minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions, including through nature-based solutions and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity".

At the 10th Conference of the Parties to the CBD, parties agreed to translate the CBD Strategic Plan into revised and updated national biodiversity strategies and action plans (NBSAPs). Twelve of the 16 Mediterranean countries covered by the ecosystem profile update have so far done this. Each of these NBSAPs includes references to the impacts of climate change on biodiversity and/or ecosystem services, and outlines actions to address these with varying degrees of specificity and comprehensiveness. Examples include Jordan, which has a strategic goal to enhance the national understanding of dryland ecosystems' benefits to national resilience to climate change, economic sustainability and local livelihoods, and North Macedonia, which has a national target to "integrate measures for climate change effects adaptation and mitigation and combat against desertification".

For countries preparing for EU accession, it is noteworthy that European leaders have agreed a package of measures setting binding GHG emission targets for member states from 2021-2030, with a long-term target of reducing emissions by 80 to 95% of 1990 levels by 2050. Of particular importance to the Mediterranean Basin Hotspot and the conservation of biodiversity and ecosystems services in the region, is that many of the recommended measures focus on land-use and the creation of an EU-wide 'super-grid' that includes solar energy partnerships with non-EU nations in the Mediterranean Basin.

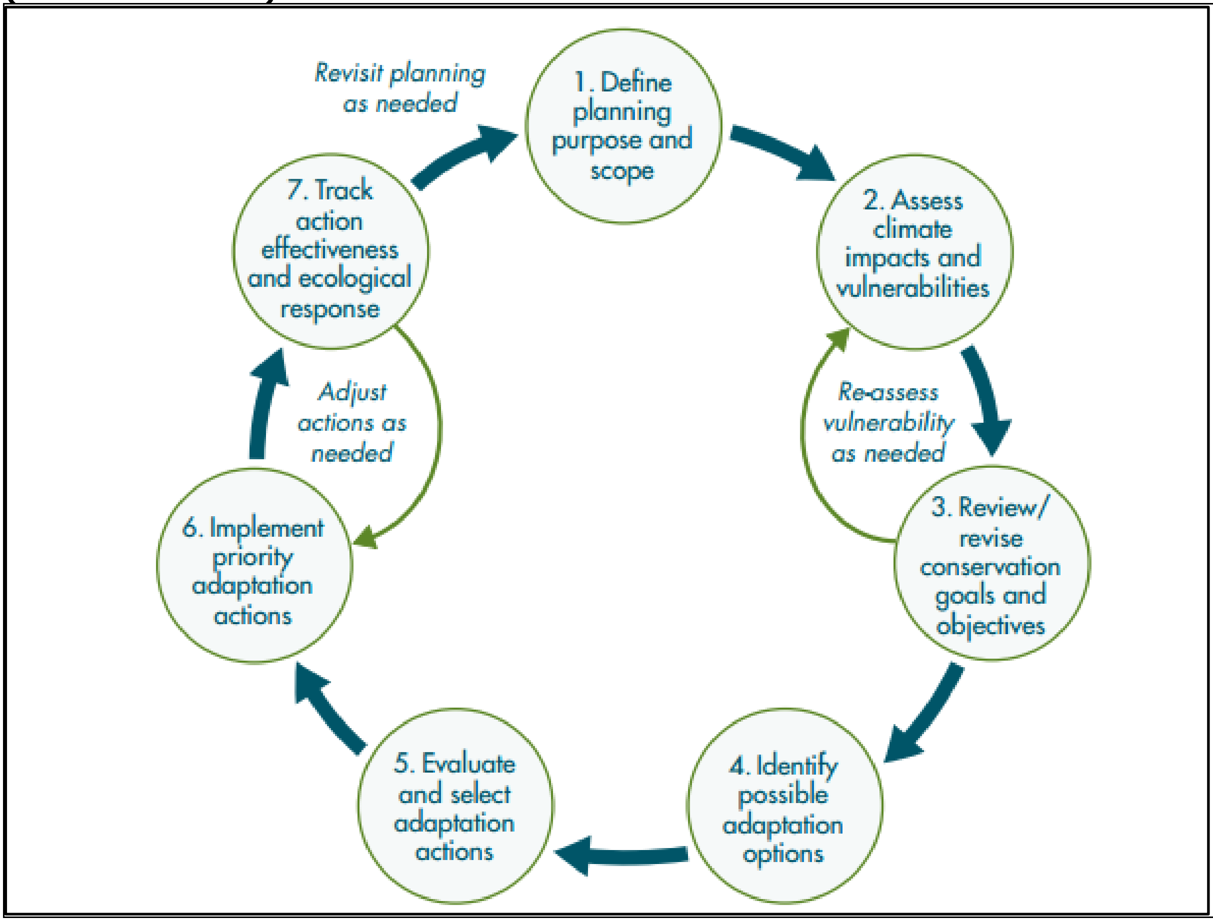
The legal framework set by the Protocols of the Barcelona Convention for the Mediterranean Sea also includes several climate-related policies and actions plans: the Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas; the Mediterranean Strategy for Sustainable Development (MSSD), which includes climate change mitigation and adaptation as one of its 7 Priority Fields of Action; the Ecosystem Approach; and the Strategic Action Programme for the Conservation of Biological Diversity and its updated plan and medium term goals on climate change issues. At their meeting in 2023, the contracting parties decided to establish a Regional Activity Centre on Climate Change hosted by Türkiye. They also endorsed the Summary for Policymakers of the Special Report on Climate and Environmental Coastal Risks by MedECC: a science-policy interface hosted by the Plan Bleu Regional Activity Centre in Marseille, France.

10.7 Developing a response

10.7.1 Delivering climate-smart conservation

Promoting the conservation of intact and functioning ecosystems will continue to be fundamental to conservation. However, traditional conservation practices and objectives may need to be revised to reflect changing conditions. Strategies will need to be flexible and to take account of uncertainty about the rate and magnitude of climate change and its impacts on species and ecosystem services. Monitoring will be critical to detect climate-induced shifts in species' ranges, assess the effectiveness of adaptation responses and inform adaptive management. Figure 10.3 outlines steps that can be taken to promote conservation responses that are climate smart. Additionally, the climate-smart conservation framework must include human responses to climate change which could impact biodiversity (Maxwell *et al.* 2015).

Figure 10.3 Schematic representing the stages of climate smart conservation (Stein *et al.* 2014)



10.7.2 Maintaining and enhancing protected area networks

The effective management of existing protected areas and the establishment of new ones will continue to be an important conservation response (Hole *et al.* 2009). At 30°C, 13–30% of the Mediterranean Natura 2000 protected area and 15–23% of Natura 2000 sites are projected to change towards more arid ecosystem types. However, the majority of sites will remain stable, acting as crucial refuges for Mediterranean biodiversity (Barredo *et al.* 2016). Countries are signed up to the Global Biodiversity Framework target to achieve 30% of land (and sea) under some form of protected status by 2030. Three countries (Albania, Montenegro and North Macedonia) have over 20% coverage according to the World Database on Protected Areas (see Chapter 7) but the majority are below 10% coverage. In the marine environment, the most recent figures indicate the total number of MPAs and OECMs covers around 8.3% of the Mediterranean Sea (MedPAN *et al.* 2023) but management effectiveness is still a major challenge for many sites.

There is an acute need for conservation planning to include the effects of climate change on species' ranges when identifying new sites for protection and managing existing protected areas and other KBAs. Although initial analyses have been undertaken for the northern Mediterranean Basin and Europe more specifically (Thuiller *et al.* 2005, Hannah *et al.* 2007; Pauli *et al.* 2012), little analysis has been completed for eastern and southern Mediterranean Basin countries.

10.7.3 Increasing connectivity and landscape resilience

As climate change forces many species to shift their distributions, improving connectivity among protected areas and other key sites can provide opportunities for species to migrate to more suitable climates and to ensure populations persist outside protected areas. Approaches may include stepping stones, corridors and matrices of suitable habitat across production landscapes. The European Green Belt, passing through Montenegro, North Macedonia, Albania and Türkiye, into central and northern Europe, for instance, could facilitate latitudinal shifts in species ranges. Many donors (including CEPF under Strategic Direction 3, see Chapter 13) are supporting work to encourage more landscape-scale thinking to enlarge, buffer and re-connect protected areas and KBAs. In some cases, there may be barriers to migration or species may have limited dispersal capacity, and targeted interventions such as captive breeding and, potentially, assisted colonization will be needed.

10.7.4 Ecosystem-based approaches for mitigation

Conserving and restoring ecosystems can be an effective way of reducing emissions and increasing the size of natural carbon sinks. Biennial National Reports submitted to the UNFCCC indicate that several Mediterranean Basin Hotspot countries have already taken steps to reduce emissions and increase carbon sinks through such measures. For instance, the Moroccan target for 100,000 ha per year of renewal or afforestation by 2030. Also, Bosnia and Herzegovina has adopted a Forest Genetic Resources Program for 2013-2025, for improved forest management and conservation.

While most efforts have focused on natural forests or forest plantations, other ecosystems such as *Posidonia* seagrass meadows, wetlands, grasslands and agro-ecosystems are also important for climate mitigation. It is estimated, for instance, that 343 billion tons of organic carbon is stored in grassland soils globally: approximately the same amount as is stored in the world’s forest biomass above the ground. It has been shown that soil carbon stocks can decline by up to 60% following the conversion of grasslands to agriculture (Guo and Gifford 2002). The Mediterranean Basin has one of the most severe problems of soil erosion anywhere (Ferreira *et al.* 2021). More work is happening in the past few years. For example, WWF has launched a major regional initiative to preserve *Posidonia* seagrass meadows, aiming to secure 7.5% of the remaining habitat by 2027. There is increasing attention to soil conservation, including through ecosystem protection. While further efforts are needed to realize the mitigation potential of non-forest ecosystems, important steps have been taken in the region, such as the inclusion of permanent grassland preservation in the EU’s Common Agricultural Policy, in an effort to preserve environmentally sensitive areas and to meet the EU’s targets for GHG emission reduction.

10.7.5 Ecosystem-based approaches for adaptation

Ecosystem-based approaches for adaptation refer to “the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change” (CBD 2009). They may include sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy that takes into account the multiple social, economic and cultural co-benefits for local communities. For example, through the Water Adaptation is Valuable to Everyone (WAVE) project (2008-2015), France promoted wetland preservation, tree planting, river restoration, rainwater collection and sustainable agriculture to reduce flooding and manage water resources sustainably. Elsewhere, through the GEF-funded project MENA-DELP, Algeria, Egypt, Jordan, Morocco and Tunisia are piloting an integrated approach to ecosystem management and climate change adaptation in desert ecosystems, which includes palm restoration, conservation of biodiversity and agrobiodiversity, and protected area management. UNEP/MAP has put together a Climate Change Adaptation Framework Decision to address the vulnerability and adaptation needs of Mediterranean marine and coastal regions, including the application of ecosystem-based approaches. Table 10.2 provides general examples of potential ecosystem-based responses to address projected climate vulnerability in the Mediterranean Basin.

These and other approaches have been increasingly branded and promoted as Nature-based Solutions. There is potential for implementing this approach in all Mediterranean ecosystems, through restoration and improving conservation of such ecosystems as forests, wetlands and seagrass meadows, which can also help communities to address the climate and biodiversity crisis and societal needs. Forests and other types of vegetation help lower air temperature in urban areas or stabilize slopes. Wetlands can regulate floods and sea level rise. Coastal vegetation and natural features, such as sand dunes and *Posidonia*-beach systems can provide protection against storm surges and strong winds. Agro-biodiversity practices can enhance food production. Nature-based Solutions also aim to generate local employment and new economic opportunities in a fair and equitable way. In some cases, they present an important alternative set of options when compared with traditional hard-build solutions, such as barriers and embankments, which are expensive, environmentally damaging and in some cases can only deflect rather than solve the problem (Plan Bleu 2022, MedECC 2020).

There is considerable potential to deliver ecosystem-based approaches to jointly deliver on both mitigation and adaptation, while supporting conservation and other sustainable development objectives. This will, however, require a much more integrated approach to policy making and implementation.

11. ASSESSMENT OF CURRENT CONSERVATION INVESTMENT

11.1 Introduction

This chapter reviews the availability of funding for conservation in the hotspot countries covered by the ecosystem profile update. Data are presented for the latest widely available year, 2022, unless otherwise stated. The use of reference periods (2014-2017 and 2018-2022) has been favored where possible, to reduce bias due to annual variations.

Funding is available for biodiversity conservation from national (governmental) sources, official development assistance from bilateral and multilateral donors, private foundations and philanthropies, and multidonor funds and initiatives. Data on the types and amounts of funding are patchy and inconsistent, and regional analysis is made difficult due to the diversity of situations among the 16 countries covered by the ecosystem profile update. Analysis of governmental support to biodiversity conservation could not be done systematically due to limited availability of data and heterogeneity of methodologies, which make comparison and aggregation impossible. Information about countries' policy commitments is provided in Chapter 7.

In the context of the GBF, the parties to the CBD have agreed to increase global biodiversity finance from circa US$100 billion per year to US$200 billion per year from all sources: domestic and international, public and private. As part of the agreement, donors also committed to increase international biodiversity finance from US$10 billion to US$20 billion by 2025, and US$30 billion by 2030. These ambitious targets still need to materialize in the Mediterranean Basin.

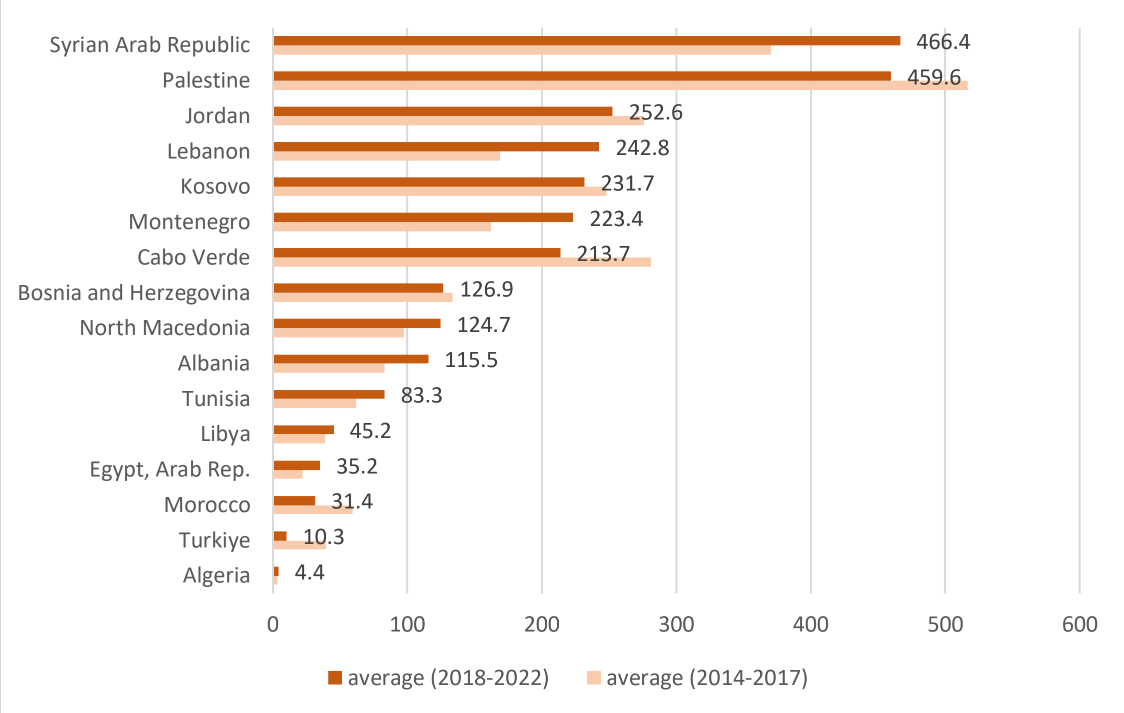
11.2 Official development assistance

11.2.1 Overall aid to hotspot countries

The countries of the Mediterranean Basin Hotspot covered by the update to the ecosystem profile received a net total of US$25 billion on average over the 2018-2022 period in official development assistance (ODA) from 29 bilateral donors and several World Bank, United Nations and regional development Bank sources. This represents about 11% of global development aid, down from about 15% during 2014-2017. The figure for the entire region hides large differences among countries, because Palestine and Syria together represented about one-third of the development aid to the region over the last decade, in response to the humanitarian and security situation. These two countries excepted, ODA to the region amounts to an average of US$14.32 billion per year (2018-2022), which is a figure comparable to that for the period 2014-2017 (US$13.67 billion) in current dollars.

Figure 11.1 shows level of ODA per capita, allowing for a better image of dependency of countries on international development aid. Three groups can be clearly identified, with Middle Eastern countries coming first, followed by Balkan countries (benefitting largely from EU support) and then North African ones. Morocco and Cabo Verde are the countries that experienced the largest decrease in terms of ODA (-44% and -20% respectively) between the two reference periods.

Figure 11.1 Official development assistance per capita in hotspot countries



Figures are US$ per year.

11.2.2 Bilateral support for biodiversity conservation

European Union (EU)

The EU positions itself as "the largest contributor to biodiversity-related ODA" (European Commission 2015). In 2012, the EU committed to the Hyderabad Commitment of the CBD of doubling biodiversity-related flows to developing countries by 2015. This unprecedent objective was achieved with an allocation of €1.05 billion for the 2014-2020 multiannual financial framework (MFF). The EU's 2030 Biodiversity Strategy, adopted in 2020, set up a comprehensive, systemic and ambitious long-term plan for protecting nature and reversing the degradation of ecosystems. Although mostly focused on domestic biodiversity (as a key pillar of the European Green Deal), it included the objective to elevate the level of EU ambition and mobilize all efforts for the good of the world's biodiversity and of EU leadership on international action for global biodiversity. The EU committed to increase resources for international biodiversity by 2030 as signatory of the GBF.

Outside of the nature conservation sector, the EU aims to 'biodiversity proof' its aid, ensuring that it does no harm and, where possible, contributes to global biodiversity conservation. However, an increasing share of development cooperation is delivered through budget support, rather direct project support, and integration of environment into budget support has been assessed as 'rather poor' (European Commission 2015), with few strategic environmental assessments carried out.

The structure of the international aid of the European Union has evolved since the last updated of the ecosystem profile, with the installation of the Neighbourhood, Development and International Cooperation Instrument (NDICI) - Global Europe: a new long-term budget instrument unifiying former instruments designed for geographical areas. Nevertheless, for the Mediterranean Basin Hotspot, programming and management of ODA remains divided among several policies and directorates general (see Table 11.1). A change is also expected in 2024, with split of the European Neighborhood and Enlargement Policies Directorate General into two, with one responsible for the cooperation with countries in the southern and eastern Mediterranean Basin.

Table 11.1 European Union cooperation instruments in the hotspot

Countries	Instrument	Directorate General	Estimated Allocation (2021-2017, € billion)
Cabo Verde	NIDCI Sub-Saharan Africa	International Partnerships (INTPA)	29.18
Balkans: Albania, Bosnia-Herzegovina, North Macedonia, Montenegro, Türkiye, Kosovo	Instrument for pre-accession assistance (IPA III)	European Neighborhood and Enlargement Policies (NEAR)	14.16
North Africa: Algeria, Egypt, Libya, Morocco, Tunisia Middle East: Jordan, Lebanon, Palestine, Syria	NIDCI Neighborhood	European Neighborhood and Enlargement Policies (NEAR)	19.32

To track down investment in relation to biodiversity, the analysis in this chapter made use of the EU Aid Explorer platform, which displays data provided by the EU institutions to the Organisation for Economic Co-operation and Development (OECD). Table 11.2 presents the total ODA from the EC and the European Investment Bank (EIB), and the budget allocated to biodiversity-related sectors[25], for the last two five-year periods for which data is available.

Table 11.2 European Union official development assistance to hotspot countries, total and for biodiversity-related sectors

	2013-2017			2018-2022		
Country	**Total ODA (EC+EIB, M€)**	**Biodiversity-related Sectors (M€)**		**Total ODA (EC+EIB, M€)**	**Biodiversity -related Sectors (M€)**	
Tunisia	1,960	27.6	1.4%	1,930	7.3	0.4%
Morocco	2,460	21.0	0.9%	1,980	34.0	1.7%
Syria	1,070			2,360		
Egypt	1,070	37.3	3.5%	1,670	19.5	1.2%
Palestine	1,760	0.2	0.0%	1,560	1.4	0.1%
Jordan	971	1.9	0.2%	1,130	37.8	3.3%
Lebanon	766	7.5	1.0%	919	5.9	0.6%
Libya				382		
Algeria	253	15.0	5.9%	252	6.0	2.4%
Total South/East	**10,310**	**110.5**	**1.1%**	**12,183**	**111.9**	**0.9%**
Albania	432	27.7	6.4%	880	0.34	0.0%
Bosnia Her.	1,141	12.7	1.1%	880	2.54	0.3%
North Mac.	654	5	0.8%	611	9.11	1.5%
Montenegro	377	3.5	0.9%	408	6.8	1.7%
Total Balkans	**2,604**	**49**	**1.9%**	**2,779**	**19**	**0.7%**
Cabo Verde	**116**	**1.25**	**1.1%**	**97.9**	**3.25**	**3.3%**
Grand Total	**13,030**	**161**	**1.2%**	**15,060**	**134**	**0.9%**

[25] The selected sectors are biodiversity, biosphere protection, environmental education, environmental policy, forestry development, forestry policy, site preservation and water resources conservation.

While countries such as Morocco and Cabo Verde have seen an increase in terms of biodiversity-related investment, the general trend is one of a decrease between the two periods, with percentage of aid related to biodiversity below 1% for both the Neighborhood South and East and the Balkans. The reporting of the EC to the OECD regarding the Sustainable Development Goals provides similar results, with a total of 1.2% of investment marked as contributing to Goals 14 and 15 (Life below Water and Life on Land) in the countries covered by in the profile update.

France

French assistance for biodiversity conservation is delivered through AFD and FFEM. AFD is one of the six main contributors of ODA to the hotspot countries covered by the ecosystem profile update, providing circa €200 million in grants and more than €1,050 million in loans annually (Table 11.3). AFD is mostly active in North Africa (except Libya and limited collaboration with Algeria) and the Middle East (Palestine, Jordan and Lebanon). Around half of these investments are broadly related to environmental issues (water and sanitation, energy, agriculture, etc.). Only 0.5% of the grant funds (and 2% of loans) are dedicated to the specific sector of 'Climate and Environment'.

Table 11.3 French official development assistance to hotspot countries, total and for "climate and environment"

	2018-2022		"Climate & Environment"	
	Grants	Loans	Grants	Loans
Albania	€ 3,500,000	€ 210,000,000	€ -	€ -
Algeria	€ 10,372,056	€ -	€ -	€ -
Cabo Verde	€ 425,000	€ -	€ -	€ -
Egypt	€ 45,365,000	€ 847,380,301	€ -	€ -
Jordan	€ 66,600,187	€ 596,000,000	€ -	€ -
Lebanon	€ 217,700,772	€ -	€ 650,479	€ -
Morocco	€ 96,774,656	€ 2,043,000,000	€ 4,280,000	€ 100,000,000
Palestine	€ 195,504,570	€ -	€ -	€ -
Tunisia	€ 155,948,895	€ 768,300,000	€ 304,400	€ -
Türkiye	€ 209,159,308	€ 1,216,650,000	€ -	€ -
	€ 1,001,350,444	**€ 5,681,330,301**	**€ 5,234,879**	**€ 100,000,000**

The figures in this table are totals over a five-year period (2018-2022).

In comparison with former phase of investment, the investment of AFD in the region as regards climate and environment has seen a decrease, with the end of cooperation on forestry with Türkiye, and no more projects on biosphere reserves or coastal zone management in Lebanon, Jordan or Algeria.

AFD's most important program in relation to biodiversity in the hotspot countries is undoubtedly the "Ghabati, Hayati" program in Morocco. This program supports Morocco's Forêts du Maroc 2020-2030 strategy, aiming to preserve biodiversity and foster sustainable economic development. Backed by a €100 million public policy loan from AFD and €3 million for capacity building, the program seeks to integrate climate change action into forest management, enhance biodiversity conservation, promote inclusive governance of protected areas, and deepen scientific knowledge of Moroccan forest ecosystems. Additionally, it focuses on reducing gender inequalities within forestry policies. The program targets large-scale reforestation, the protection of natural habitats and strengthening of Franco-Moroccan expertise exchange.

FFEM funds projects in the areas of climate change (both energy and land use related), international waters, biodiversity, land degradation and obsolete pesticides. In the Mediterranean Basin, FFEM has shifted over the last decade from supporting individual, site-based projects to supporting regional initiatives, acting as a catalyst for more ambitious programs. FFEM supported the Small-scale Initiatives Programme for Civil

Society Organisations in North Africa (PPI-OSCAN) and the MedFund. These initiatives are presented in further detail in Section 11.5.

Recent projects supported by FFEM to tackle biodiversity conservation challenges in the region include the following:
- The COGITO project, supported by AFD and FFEM between 2018 and 2023, aimed to strengthen marine conservation and sustainable development. It focused on promoting sustainable 'blue jobs' through conservation and innovative economic activities. The project included pilot initiatives in Tunisia, Morocco, Algeria, Türkiye, Lebanon and Albania.
- RESCOM, implemented by the Mediterranean Consortium for Biodiversity, and led by Tour du Valat, aims to strengthen the social and environmental resilience of vulnerable natural areas in the Mediterranean through the implementation of Nature-based Solutions and an integrated approach at the coastal territory level. It combines regional actions with concrete initiatives across five pilot sites in Albania, Morocco, Montenegro, Tunisia and Türkiye. FFEM provided €1.4 million in financing during 2023-2027, complemented by US$1 million from the MAVA Foundation.
- The CAIPIM project, implemented by Petites Iles de Méditerranées, will support environmental actions for a network of islands in the Mediterranean Sea and Macaronesia. Implementation is expected to begin in 2025.

Germany

According to the OECD Development Assistance Committee's (DAC), Germany is the second-largest development cooperation provider. Bilateral co-operation constitutes the bulk of German ODA under the overall lead of the Federal Ministry for Economic Cooperation and Development (BMZ). At the same time, the Federal Foreign Office oversees humanitarian aid, crisis prevention, stabilization and peace building (OECD DAC 2024). Germany's total ODA decreased in 2023, representing 0.79% of gross national income (GNI) (OECD 2024).

The data extracted from BMZ presented in Table 11.4 are based on commitments after 2018, until 2024. They do not consider funds disbursed during 2018-2022 based on earlier commitments. While not allowing for analysis of yearly investment in the region, they provide a snapshot at current trends and prospects for German ODA in the region.

Germany is the only bilateral donor to have investment in all the countries covered by the profile, although with great differences between countries, from €425,000 in Cabo Verde to €2.5 or €2.1 billion in Morocco and Jordan, respectively. Germany is also the main bilateral donor to Balkan countries. A large proportion of the amounts presented below are loans, managed by the KfW (about 80%), the grants and technical assistance being managed primarily by GiZ (15%), then German religious organizations and NGOs, mostly German or a few international. The overall development aid of Germany in the hotspot can be estimated at around €2 billion annually.

When analyzing the projects "contributing to the CBD", following markers used by BMZ, the amount of funding in the region is estimated at close to €125 million, roughly 20 million annually – less than 1% of the portfolio. Out of these, the projects with a specific focus on biodiversity are limited. Although reduced in proportion, the amount makes a significant contribution, particularly in the Balkans, Algeria or Tunisia. KfW is also a important contributor to Prespa-Orhid Nature Trust and to many global multilateral initiatives in favor of biodiversity.

One of the most important conservation initiatives in the region supported by Germany is the Protection of the Environment and Biodiversity in the Coastal Zones of Algeria Project. Supported by GIZ for a total of €6.9 million during 2019-2026, the project updated the National Strategy for Integrated Coastal Zone Management 2020-2030 and developed a budgeted action plan, which is now being implemented. The project also strengthens the organizational, entrepreneurial, and technical skills of resource users for the development of ecosystem services. It promotes marketing through contracts with the private sector. To improve the management of protected areas, the project is developing the skills of administrative staff and CSOs. As a result of the Algerian-German cooperation, Monts de l'Edough was declared a protected area at the beginning of September 2023, conferring protection on a section of coast and the land behind it. The project also focuses on identifying new coastal and marine protected areas, and on updating the status of existing protected areas.

Table 11.4 Germany official development assistance to hotspot countries, total and for biodiversity-related objectives

Country	Amount Committed (after 2018)	"Contributing to CBD objectives"	
Albania	€ 457,320,316	€ 23,820,000	5%
Algeria	€ 122,990,000	€ 15,900,000	13%
Bosnia and Hercegovina	€ 110,824,440	€ 10,266,845	9%
Cabo Verde	€ 425,544	€ -	-
Egypt	€ 795,357,890	€ 5,091,935	1%
Jordan	€ 2,166,931,110	€ 6,667,000	-
Kosovo	€ 265,098,808	€ 11,250,671	4%
Lebanon	€ 1,358,438,382	€ 3,150,000	0%
Libya	€ 158,379,882	€ -	-
Montenegro	€ 78,248,000	€ -	-
Morocco	€ 2,510,585,539	€ 5,700,000	0%
North Macedonia	€ 141,487,904	€ -	-
Palestine	€ 728,764,342	€ 1,550,000	0%
Syria	€ 229,113,071	€ -	-
Tunisia	€ 1,112,531,645	€ 37,504,966	3%
Türkiye	€ 506,310,174	€ 3,178,038	1%
	€ 10,742,807,048	**€ 124,079,455**	1%

Spain
After a decade of budget cuts, Spanish ODA increased steadily after 2015, and is now around US$4 billion annually, from a low US$1.5 billion in the mid-2010s. The 2023 Law on Cooperation for Sustainable Development and Global Solidarity gives legal status to the commitment to allocate 0.7% of GNI to ODA.

Spain stands out for the share of its ODA channelled through CSOs (58% in 2022). The official development agency, Agencia Española de Cooperación Internacional para el Desarrollo (AECID), manages only around 10% of ODA. The role of decentralized cooperation is also important. For instance, the Cooperació Catalana managed an annual budget of €92 million in 2023. Spain is also among the OECD DAC members with a high share of interventions that target gender equality as their principal or significant objective (43% in 2020-2021).

In line with its geographical priorities, Spain allocates most of its gross bilateral ODA to middle-income countries in Latin America and the Caribbean. Cooperation with North Africa and the Middle East represented about 16% of the budget managed by AECID in 2020: around €20 million. Funding in all countries was principally in the agriculture sector and on hunger, humanitarian aid and cultural cooperation. Cooperation in the environment sector remains limited[26].

United Kingdom (UK)
The UK's international cooperation architecture and policy evolved significantly in 2020, with the merger of the separate Department for International Development into the Foreign, Commonwealth and Development Office. UK development cooperation dedicates a high share to private sector instruments and to humanitarian aid to countries in fragile contexts. The UK's total ODA in 2023 increased to US$19 billion, representing 0.58% of GNI. Bilateral support to Mediterranean Basin countries remains limited in scope. Biodiversity conservation cooperation in the region is implemented mainly through the Darwin Initiative, which supports action through grants, mostly to UK-based NGOs or universities.

Recent and ongoing biodiversity conservation actions under the Darwin Initiative in the region include:

- Support to the work of the Global Diversity Foundation in the High Atlas landscapes of Morocco. Building on earlier initiatives on medicinal plants and restoration, the program now supports larger-scale regenerative agropastoral activities with more than 200 local cooperatives. The program benefitted from c.US$1.4 million during 2013-2022 and is currently implementing a US$1.25 million action plan for 2022-2027.
- Support to TRAFFIC to trial wild harvest improvement projects for sustainable wild plant trade in Morocco and Uzbekistan (US$260,000, 2023-2025).
- Support to the University of Bethlehem for biodiversity conservation and community development in Al-Makhrour Valley, Bethlehem, Palestine (US$375,000, 2018-2021).
- Support to Friends of Nature for marine conservation and coastal livelihood improvement through sustainable fishing in Lebanon (US$235,000, 2023-2025).
- Support to several projects in Cabo Verde, which is the country in the region with the most positive trend in investment under the Darwin Initiative. This investment is very complementary to CEPF investment in the country, with projects on sustainable fisheries (BirdLife International, US$750,000, 2022-2025), capacity building on marine biodiversity (University of Almeiro, US$260,000, 2023-2025) and endangered plants and grazing on Brava (Fauna & Flora, US$445,000, 2021-2024).

United States of America (USA)
The USA is one of the six main contributors of ODA to the hotspot countries covered by the ecosystem profile update and active in all countries. However, most of this funding goes to the Middle East sub-region, with a large proportion to humanitarian action and livelihoods. While the USA is among largest contributors of bilateral ODA for biodiversity globally, this funding focuses on tropical countries and does not include the Mediterranean Basin Hotspot. The latest USAID report on biodiversity shows no funding for any of Mediterranean Basin country[27]. The US Fish and Wildlife service does support sea turtle conservation projects in the hotspot, with specific attention to Cabo Verde.

Türkiye
Türkiye is a net provided of ODA since the mid-1980s, and now disburses more than many OECD DAC donors, and above the average ODA/GNI for DAC donors, to more than 120 countries (Hausmann and Lundsgaarde 2015). Turkish ODA amounted to US$6.1 billion in 2023, representing 0.6% of GNI (a figure that has decreased in the last few years due to the economic crisis in the country). Turkish ODA is used for assistance to fragile populations affected by conflict, emergencies and disasters, and for the health,

[26] Memoria AECID (2022), OECD (2024).
[27] U.S. Agency for International Development Report to Congress on Programs in Forestry and the Conservation of Biodiversity During Fiscal Year 2022: Results and Funding.

water and sanitation, education, and civil infrastructure. There is no support for biodiversity-focused projects.

11.2.3 Multilateral donor aid for biodiversity conservation

Global Environment Facility (GEF)

The GEF is a multi-donor fund, supported by 39 countries since its creation in 1991, whose objective is to make funding available to developing countries and countries with economies in transition to meet the objectives of international environmental conventions and agreements. The GEF-7 replenishment, covering 2018-2022, amounted to US$4.1 billion. The GEF is now in its eighth funding cycle (GEF-8; 2022-2026), with a total allocation of US$5.33 billion in pledged funding: an increase of more than 30 percent from GEF-7. The programming documents allocate 36% of these funds to biodiversity conservation.

In the Mediterranean Basin Hotspot, the resources allocated to each country (through the System for Transparent Allocation of Resources, STAR) increased by 22% between GEF-7 and GEF-8, with a total of US$137.25 million for GEF-8. Of this total, US$60.4 million was allocated to biodiversity conservation (Table 11.5)[28].

Table 11.5 GEF Star Allocations for GEF-7 (2018-2022) and GEF 8 (2022-2026)

	STAR allocation GEF 7	***Biodiversity***	**STAR allocation GEF 8**	***Biodiversity***
Albania	4	*2*	8.24	*3*
Algeria	9.71	*3.46*	12.25	*4.94*
Bosnia and Hercegovina	4	*2*	5.46	*3*
Cabo Verde	8.49	*6.28*	14.22	*9.57*
Egypt	11.77	*4.18*	14.25	*5.4*
Iraq	8.69	*2*	6.43	*3*
Jordan	6.63	*2*	8.85	*3*
Kosovo	-	-	-	-
Lebanon	5.5	*2*	7.89	*3*
Libya	4.89	*2*	5.8	*3*
Montenegro	4	*2*	6.29	*3*
Morocco	10.41	*3.48*	11.46	*4.88*
North Macedonia	5.18	*2*	6.74	*3*
Palestine	-	-	-	-
Syria	6.24	*2*	6.13	*3*
Tunisia	7.61	*2*	8.68	*3*
Türkiye	15.37	*4.53*	14.46	*5.64*
TOTAL	**112.49**	***41.93***	**137.15**	***60.43***

Figures in US$ million.

GEF biodiversity-related funding in the region focuses strongly on ecosystem- and landscape-level approaches to conservation and resource management. Other prominent themes are support for protected area networks and sites (the main focus in the Balkans subregion) and sustainable agriculture, water resource management, and forestry (the main focus in North Africa subregion). On top of country-level projects, the GEF supports several regional initiatives and institutions, notably through its International Waters program, such as the MedFund, the General Fisheries Commission for the Mediterranean and the RAC/SPA of the Barcelona Convention (see Chapter 8).

[28] 55th GEF Council Meeting, Initial GEF-7 Star Country Allocation, 2018; 63rd GEF Council Meeting, Initial GEF-8 Star Country Allocation, 2022

The GEF also supports civil society directly, via the Small Grants Program (SGP), which was implemented solely by UNDP until GEF 7, and which will be implemented by UNDP, CI/CEPF and FAO from GEF-8. There are currently SGPs in 11 of the 16 countries covered by the ecosystem profile update (UNDP 2024), while Bosnia and Herzegovina, Libya and Montenegro will join under GEF-8. Kosovo has never received support via the SGP, while the Syrian program closed in 2014. Projects in the biodiversity focal area comprise the majority of SGP grants in every country except Egypt, where climate change makes up the majority of grants.

World Bank

The World Bank is a major donor in the region, with activities in all countries except, currently, Algeria and Syria. Under the environment and resource management theme, 16 projects have been identified with a start date post-2017 in seven countries. The total World Bank contribution to these projects is close to US$2.6 billion, largely in the form of loans. These projects are presented in the table below. Overall, these projects relate to sustainable use of natural resources, with a large focus on agriculture and freshwater management. The theme of blue economy has emerged recently. There are no longer any projects related strictly to biodiversity (such as former support to protected area networks), and forestry remain a focal sector only in Türkiye, while it was an important sector in Albania, Bosnia and Herzegovina and Tunisia in the past period.

Table 11.6 Main World Bank projects related to biodiversity, 2017-2023

Theme	Country	Project title	Approve date	Close date	Budget loans ($M)	Budget grants ($M)
Blue economy	Albania	Clean and Resilient Environment for Blue Sea Project	2023	2030	80	
Agriculture	Albania	Climate Resilience and Agriculture Development Project	2023	2028	70	
Environment	Albania	Albania Environmental Services Project	2020	2020		2
Freshwater	Bosnia and Herzegovina	Sava and Drina Rivers Corridors Integrated Development Program Additional Financing	2023		40.5	
Blue economy	Cabo Verde	Resilient Tourism and Blue Economy Development in Cabo Verde	2022	2028	75	
Agriculture	Jordan	Agriculture Resilience, Value Chain Development and Innovation Program	2022	2029	95.6	29.4
Freshwater	Morocco	Morocco Water Security and Resilience Program	2023	2028	350	
Climate	Morocco	Morocco Climate Operation/ Support to the Nationally Determined Contribution	2023	2028	350	
Blue economy	Morocco	Accelerating Blue Economy Development in the Kingdom of Morocco	2023	2025		5
Blue economy	Morocco	Blue Economy Program for Results	2022	2027	350	
Freshwater	Morocco	Resilient and Sustainable Water in Agriculture	2022	2028	180	
Agriculture	Tunisia	Integrated Landscapes Management in Lagging Regions Project	2017	2024	100	
Forestry	Türkiye	Türkiye Climate Resilient Forests Project	2023	2029	400	
Agriculture	Türkiye	Türkiye Climate Smart and Competitive Agricultural Growth Project (TUCSAP)	2022	2028	341.3	
Agriculture	Türkiye	Türkiye Resilient Landscape Integration Project (TULIP)	2021	2028	135	

11.3 Private foundations and philanthropies

The landscape of private donors in the Mediterranean biodiversity hotspot has seen significant shift in recent years, largely driven by the winding down of the MAVA Foundation's operations. As MAVA has historically been one of the most influential funders in the region, its closure has created a gap in funding for conservation efforts. This shift is prompting the emergence of new donors and coalitions, while also encouraging existing organizations to reassess their funding strategies. In the Mediterranean Region, foundations play an instrumental role in supporting CSOs.

MAVA Foundation
The MAVA Foundation, a Swiss-based philanthropy, was the most important single-donor for conservation CSOs in the Mediterranean Basin Hotspot over the last decades. Established in 1994, the foundation ceased funding in 2022. During its 28 years of activities, it is estimated that the foundation contributed around US$460 million to conservation efforts in the Mediterranean Basin, with an annual budget that reached c.US$22 million between 2017 and 2022. The MAVA Foundation supported CEPF since the start of Phase I, contributing to the costs of ecosystem profile preparation and cofunding grant making to civil society.

Fondation Hans Wilsdorf
Created in 1945, Fondation Hans Wilsdorf is active in the fields of social action, education, culture, humanitarian action and the protection of animals and ecosystems. The foundation is focused on the Geneva region, although its support for animals and ecosystems protection has a worldwide focus. Over the last few years, the foundation has been accelerating its engagement in that field, working at the nexus of environmental and social issues. The foundation focuses on four ecosystems: coastal areas; forests; freshwater; and urban areas.

The Mediterranean is one of the priority regions for Fondation Hans Wilsdorf. It currently supports several key stakeholders there, including CSOs in the Balkans and Cabo Verde, amongst others. It also contributes to several regional initiatives, such as DIMFE and the Monk Seal Alliance. Fondation Hans Wilsdorf joined the CEPF partnership in 2023 as a global donor, with specific contributions for the Mediterranean Basin and Guinean Forests of West Africa Hotspots, and for a new program of work on organisational development.

Fondation Prince Albert II de Monaco
Established in 2006, Fondation Prince Albert II de Monaco focuses on three priority themes (climate change, biodiversity and water resources/desertification), in the Mediterranean, polar regions and least developed countries. Since 2008, the foundation has made grants totaling more than US$20 million for conservation in the Mediterranean Region, including around US$15 million for marine conservation research and MPAs. The foundation plays a pivotal role in regional initiatives, bringing together stakeholders to drive environmental action. Notably, the foundation was at the inception of the MedFund, for the financing of recurrent costs of MPAs, and DIMFE, which CEPF worked in partnership with during phase II.

Fondation Audemars-Watkins
Established in 2017 by Jasmine Audemars, Fondation Audemars-Watkins is a private philanthropic organization with a focus on environmental conservation. Its mission is to support initiatives both in Switzerland and internationally, particularly focusing on the preservation of oceans, freshwater ecosystems and forests. The foundation also promotes broader educational projects related to environmental conservation. It aims to foster projects that improve the health and resilience of critical ecosystems, thereby enhancing their ability to provide benefits to both people and nature. While acting

globally, Fondation Audemars-Watkins supports several organizations and initiatives in the Mediterranean Basin and has been a CEPF regional donor since 2022.

Sigrid Rausing Trust
The Sigrid Rausing Trust is a UK-based philanthropic foundation. It specializes on providing unrestricted funds to CSOs, allowing them to cover the cost of core staff and pursue their missions. In 2019-2020, the trust launched a program in the Mediterranean Basin, where it supports several leading organizations, including former CEPF grantees in Lebanon, Tunisia, North Macedonia and Montenegro. The trust also supports several regional initiatives, such as MedPAN and DIMFE. The trust is, however, gradually transitioning out of the Mediterranean Basin.

Mohamed bin Zayed Species Conservation Fund
The Mohamed bin Zayed Species Conservation Fund provides small grants for focused work addressing the conservation needs of threatened and important species. Since 2008, the fund has provided 73 grants worth US$611,128 in all hotspot countries apart from Libya and Jordan. The countries to receive the most grants were to Türkiye (17 projects, US$115,155) and Morocco (13 projects, US$ 111,800). Fourteen of the projects support by the fund were in the Balkans, mostly in Albania (8 projects, US$58,519).

Rufford Foundation
The Rufford Foundation supports early-career conservationists in developing countries through a small grants programme. Since 2000, Rufford has made 236 grants averaging about US$7,600 (US$1,793,500 in total) across the hotspot, with a focus on the Balkans (113 grants) and Türkiye (58 grants) but also Cabo Verde (10 grants), Egypt (19), Tunisia (11), Morocco (9) and Algeria (2). These grants have a strong emphasis on supporting research and conservation work for threatened species, groups and habitats, and are especially well suited for postgraduate students.

11.4 Multidonor funds and initiatives

The diverse donors, both public and private, presented in the preceding sections have established several funding mechanisms to strengthen collaboration and make funding accessible to civil society working in the field of biodiversity conservation in the region. The funds and initiatives below go beyond subgranting in the context of a specific project or program, with a focus on sustainability. This typically involves combining grant making with support for networking, capacity building and/or organizational development. These funds and initiatives have their own specific geographical focus or thematic approach.

Critical Ecosystem Partnership Fund (CEPF)
CEPF is one of the most important sources of biodiversity funding for CSOs in the hotspot. Since its first investment in the region in 2012, the CEPF investment program in the Mediterranean Basin has awarded more than 300 grants to over 170 different organizations in 14 countries, for a combined amount of more than US$24 million. Further information is presented in Chapter 3.

Oceans 5
Oceans 5 is an international funders' collaborative dedicated to stopping overfishing, establishing marine protected areas, and constraining offshore oil and gas development: three of the highest priorities identified by marine scientists around the world. Founded in 2011 by four partners, the group now includes 20 participants. In the Mediterranean Basin Hotspot, Oceans 5 is particularly active in Cabo Verde, with a US$1.6 million investment in three grants (two to local organizations). Although it supports several projects in the Mediterranean Sea, Oceans 5 currently provides no direct support to any

organization from North Africa or the Middle East. A similar gap can be seen with other initiatives working on marine conservation in the Mediterranean Sea, which have focused investment in EU members states, such as Adessium or Pew Bertarelli Ocean Legacy.

Prespa-Ohrid Nature Trust (PONT)
PONT is a transboundary conservation initiative dedicated to preserving the rich biodiversity and cultural heritage of the Prespa and Ohrid regions, which span parts of Albania, North Macedonia and Greece. Established in 2015, PONT provides long-term financial support to protected areas and environmental NGOs, focusing on sustainable conservation efforts. It aims to enhance the management of protected areas, safeguard key ecosystems and promote collaborative efforts between stakeholders across borders. The trust fund, which benefitted from CEPF support at the inception stage, was funded initially by the MAVA Foundation and KfW, with an endowment of US$11 million. CEPF collaborates regularly with PONT, through joint calls for proposals for conservation projects in the region.

Donor Initiative for Mediterranean Freshwater Ecosystems (DIMFE)
DIMFE is dedicated to conserving and restoring freshwater ecosystems in the Mediterranean Basin. DIMFE was created in 2021 by three founding members active in the region: the Aage V. Jensen Charity Foundation; the MAVA Foundation; and the Prince Albert II of Monaco Foundation. They were subsequently joined by Foundation Hans Wilsdorf in 2022 and the Sigrid Rausing Trust in 2023. Since inception, DIMFE has supported 16 projects in 10 countries, for a total amount of €5.7 million. In parallel, CEPF and DIMFE partnered in 2022 to cofund 12 small grants in favour of freshwater ecosystem preservation.

MedFund
The MedFund is an environmental trust fund based in Monaco and dedicated specifically to financing of MPAs in the Mediterranean. It was established in 2015, by the governments of France, Tunisia and Monaco, at the instigation of the Prince Albert II of Monaco Foundation. The fund is based partly on an innovative funding mechanism, which seeks to capitalize a substantial amount of funding, the regular proceeds of which will be sustainably reinvested in strengthening MPAs, particularly to support their recurrent costs over the long term. The MedFund has received financial support from the Prince Albert II of Monaco Foundation, the MAVA Foundation, the Pew-Bertarelli Ocean Legacy Project, the GEF, FFEM, AFD, the governments of Monaco and Spain, and a network of partner zoos and aquaria. Currently, the MedFund supports 20 beneficiary MPAs in nine Mediterranean countries, covering more than 9,100 km^2 of protected coastal and marine areas, and amounting to a cumulative commitment of €6 million up to 2028.

Small-scale Initiatives Programme for Civil Society Organisations in North Africa (PPI-OSCAN)
PPI-OSCAN is a program of the IUCN Centre for Mediterranean Cooperation (IUCN Med), launched in 2014 with the financial support of FFEM and the MAVA Foundation. Its goal is to strengthen civil society engagement in the conservation of biodiversity in North Africa, by providing financial support and capacity building to small and emerging (less than five years in existence) CSOs. The program operates across several North African countries, including Algeria, Egypt, Libya, Morocco and Tunisia, offering grants to grassroots initiatives that address biodiversity conservation. Additionally, PPI-OSCAN facilitates networking and knowledge sharing among CSOs, helping them to collaborate and exchange best practices. PPI-OSCAN supports projects in the entirety of the focal countries, investing beyond the boundaries of the Mediterranean Basin Hotspot (for example, in the Saharan areas of Morocco and Algeria). There have been three phases so far (2014-2017, 2018-2021 and 2022-2024), for a total investment of €7.0 million, which supported 110 projects. A fourth phase is being developed for 2025-2028.

Other initiatives
Since 2021, IUCN Med has launched a second program for CSOs, with the support of the Balearic government, called TransCap. This program focuses on projects addressing climate change and local livelihoods along the Mediterranean coast of Morocco and Tunisia. Eighteen projects and CSOs have been supported since 2021, for an overall investment of €505,492.

PPI-OSCAN and TransCap have shaped the new IUCN Strategy called '*Mubadarat'* (Arabic for 'Initiatives') to support CSOs in the Mediterranean. This strategy aims to foster collaboration with CSOs through various formats and approaches. The sub-granting scheme implemented through PPI-OSCAN and TransCap is among the delivery models foreseen through this strategy. CEPF and IUCN MED have regular collaborations, including exchanges during the selection of proposals and the follow-up of projects led by CSOs.

Several other initiatives issue calls for proposals, for limited amounts and scope, which could be accessed by local CSOs. Examples include the Supplementary Conservation Fund, established under the Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) in 2002, to support monitoring, research, training and projects related to cetacean conservation (maximum grants of €15,000). Another example is the Sustainable Small Islands Initiative (SMILO), which supports small projects on environmental issues, for organizations based on member islands of the network. The largest grants are in the range of €30,000, however.

11.5 Donor Coordination

The Mediterranean Donors Roundtable was established in 2013, under the auspices of the MAVA and Prince Albert II of Monaco Foundations. The rountable aims to provide a platform for sharing of strategies and plans for donors supporting civil society in the field of biodiversity conservation in the region. Members usually meet in person once per year, often piggybacking on another regional event. The roundtable has strengthened collaboration and exchanges over the last few years, for greater engagement of the donor community in the region. The roundtable initiated the Med Grant Tracker (www.med-grant-tracker.org), a collaborative platform with interactive accessible dataset on conservation project in the Mediterranean basin.

The current members are: Adessium Foundation; CEPF; Fondation Audemars Watkins; Fondation Didier and Martine Primat; Fondation Hans Wilsdorf; Fondation Prince Albert II de Monaco; Fondation Segré; FFEM; Fundación Biodiversidad (Spain); Oceans 5; Pew-Bertarelli Ocean Legacy; Sigrid Rausing Trust; and Thalassa Foundation (Greece). Several of these donors are also members of the CEPF Mediterranean Basin Advisory Committee (see Chapter 2), which provides another venue for exchange and collaboration.

The Mediterranean Donor Roundtable has shared data regarding its members' respective funding for civil society. This group of had provided US$78 million in grants for terrestrial biodiversity conservation projects in the hotspot between 2017 and 2024, out of which US$38 million was for the countries covered by the profile update. Of this total, 63% was provided by the MAVA Foundation, 31% by CEPF, and the remaining 6% by the Sigrid Rausing Trust and Fondation Prince Albert II de Monaco. Even if incomplete (PPI-OSCAN and GEF SGP funding should also be considered), this figure demonstrates the importance that the MAVA Foundation represented for the region, and the absolute need for mobilizing more international donors to support civil society there. It also shows that the available sources of funding for domestic CSOs are currently limited in scope and diversity.

11.6 Assessment of funding for conservation

11.6.1 General consideration on funding gaps for conservation

In the Mediterranean Basin Hotspot, biodiversity conservation remains severely underfunded, largely due to limited governmental prioritization. Non-EU countries in the region usually allocate insufficient budget resources to environmental protection. Protected area systems (a key pillar of conservation efforts) are structurally underfunded (with the partial exception of Jordan). In many countries, biodiversity is often overlooked in favor of economic development, which, in turn, fails to fully account the importance of biodiversity for ecosystem services and the potential for sustainable livelihoods.

Biodiversity-related ODA in the region appears to be gradually decreasing, following political priorities set up by most bilateral donor countries. What 'environmental' funding does exist is often direct climate issues which is vital but does not always directly or indirectly assist the emergencies facing nature. One exception is Morocco, which has launched an ambitious plan for a reform of forest and protected areas administration, with support from the international community, including AFD and the African Development Bank. In addition, some pre-accession funds in the Balkans are helping governments there to align policies with EU standards (e.g., Natura 2000).

As indicated in the preceding sections, the Mediterranean Basin receives little attention from international conservation foundations, which tend to prioritize other regions, particularly tropical areas. The perceived complexity and political instability of the Mediterranean region make it less attractive to these foundations.

While the private sector plays an important role and engages in conservation in some hotspots, it has not to date been very active in the Mediterranean basin (see also Chapter 6 and 8). Although tourism plays a major role in the Mediterranean economy and depends heavily on preserving natural landscapes, the sector is highly fragmented, making it difficult to channel resources toward biodiversity conservation. CSR initiatives, while promising, remain sporadic and underdeveloped.

Carbon finance, which is effective in many biodiversity-rich regions, also faces limitations in the Mediterranean Basin, due to the region's patchy, dry forests with low carbon storage potential. However, blue carbon initiatives, in marine and coastal ecosystems, may offer future funding opportunities.

What precedes demonstrates the crucial role that local CSOs play in advancing mobilization of funding for biodiversity conservation. CSOs act as critical agents for advocacy, influencing national and local governments to allocate specific funding and resources for conservation initiatives. They also engage with private businesses to foster partnerships that can enhance conservation efforts at the local level. Furthermore, CSOs are often at the forefront of pioneering climate funding mechanisms, which can bolster conservation financing through innovative approaches. The case for international support to local CSOs remains strong therefore, in order to advance towards ensuring sufficient funding for conservation.

CEPF's niche in prioritizing biodiversity conservation benefits through local civil society is one of the most effective mechanisms and is not currently matched by any other direct donor. It reinforces the impoprtance of developing the sector to be stronger, in particular in advocacy to promote the better funding of biodiversity, and in realsing those opportunities through effective fundraising and project development.

11.6.2 Current funding opportunities for domestic CSOs

The general considerations about funding allocation for biodiversity conservation in the region reflect on funding opportunities for CSOs. Although spearheading conservation efforts in the region, financial sustainability for these organizations and their initiatives has proven difficult to attain. National and subnational authorities rarely support CSOs directly, a reflection of the low priority given to conservation. Some initiatives, albeit timid, are nevertheless emerging in places including Morocco and the Balkans but remain very limited in scope.

As bilateral and multilateral donors reduce their support for conservation in the region, following national priorities, opportunities for CSOs to access funding from them diminish. Direct access to funding from these donors is also very difficult or impossible for most local and national CSOs, due to the complexity of the procedures involved, and because most funding is dedicated to governments.

There have been some inspiring examples of collaboration between CSOs and private sector actors, including some supported in the previous phase of CEPF investment. These efforts should be pursued, to encourage the private sector to engage in supporting conservation locally. Similarly, some opportunities for the use and scaling up of carbon finance are potential opportunities for NGOs, particularly in the context of MPAs. These represent, at present, options to complement funding but remain limited in scope in the medium term. Currently, therefore, CSOs are mostly relying on some combination of dedicated funding mechanisms (such as the GEF SGP, CEPF, PPI and PPI-OSCAN), and private foundations and philanthropies.

Resource mobilization in years to come will require strengthened collaboration among all donors and mechanisms in the region, to maximise impact, plus a coordinated effort to convince other organizations to contribute to this effort. In parallel, domestic CSOs need support to develop the necessary capacities to prepare, through partnerships, larger proposals and access more diverse sources of funding, allowing them to address the conservation challenges in the region.

12. CEPF NICHE FOR INVESTMENT

The definition of the CEPF niche for investment in the Mediterranean Basin Hotspot is guided by the global objective of providing rapid and flexible funding to civil society to act in areas where globally significant biodiversity is under the greatest threat, informed by experience gained during the first two CEPF investment phases (2012-2017 and 2017-2024). The niche is informed by the conservation outcomes defined in Chapter 5, the capacities and needs of CSOs reviewed in Chapter 8, the threats to biodiversity assessed in Chapter 9, the patterns and trends in conservation investment by other actors set out in Chapter 11, and the other thematic analyses presented in the profile.

The precise scope of the niche was informed by the experience of CEPF, the RIT and the CEPF Advisory Committee through the first two phases, an independent evaluation of lessons learned by the RIT in 2023[29], consultants' reviews, and consultations with grantees and other stakeholders during the update of the profile.

12.1 Eligible countries

CEPF support is available for conservation action within the Mediterranean Basin Hotspot in those countries that are signatories to the CBD and also World Bank client members, excluding *de facto* EU Member States and their territories and the independent countries of Mediterranean Europe (Andorra, Monaco, San Marino, etc.). The political and security situation in some countries also currently precludes effective grant making to civil society there, although this may change during the investment phase. Table 12.1 summarizes the eligibility of hotspot countries for CEPF support as of December 2024. CEPF will focus primarily on countries that benefitted from investment previously, and explore options to extend work in Kosovo, Iraq, Syria and Türkiye during the investment phase. Any extension would be subject to prior approval by the CEPF Donor Council.

Table 12.1 Eligibility of countries covered by the ecosystem profile update for CEPF support

Subregion	Country	Eligibility
Balkans	Albania	Eligible
	Bosnia and Herzegovina	Eligible
	Kosovo	Not currently eligible, not a signatory to the CBD
	North Macedonia	Eligible
	Montenegro	Eligible
Middle East	Iraq	Theoretically eligible (small area included in hotspot)
	Jordan	Eligible
	Lebanon	Eligible
	Palestine	Eligible
	Syria	Not currently eligible due to the political situation
North Africa	Algeria	Eligible
	Egypt	Eligible
	Libya	Eligible
	Morocco	Eligible
	Tunisia	Eligible
Macaronesia	Cabo Verde	Eligible

[29] https://www.cepf.net/resources/documents/mediterranean-basin-regional-implementation-team-evaluation

Türkiye	Türkiye	Eligible but no grant making during previous phases

12.2 Insights to inform strategy gained from previous phases

Important lessons have been learned from previous phases of CEPF investment relating to selection of thematic and geographical priorities, approaches to species, site and landscape-scale conservation, engagement of different actors, influencing policy and organizational development. The latter is reviewed in Chapter 8, while other wider lessons from previous phases appear in Chapter 3 and in relevant sections throughout the profile. This section focuses on insights gained from the five main thematic strategic directions for CEPF investment during phase II. These are used in Chapter 13 as part of the rationale for the new investment priorities, including on the role of the RIT in grant management, organizational development, and supporting regional networking.

12.2.1 Lessons learned from Strategic Direction 1 on coastal zones

The portfolio of grants supported under this strategic direction was broadly successful. Under both phases, most of the grants fell under the first investment priority on addressing threats to KBAs in the coastal zone. Projects focused on the conservation of globally threatened species and involving CSOs to improve site management. Several projects involved stakeholders' groups, such as fishermen and other natural resource users, and enhanced both their commitment to conservation and their livelihoods and wellbeing.

It was difficult to fully engage the private sector (Investment Priority 1.2), partly because levels of tourism development continued to be somewhat depressed, in particular due to the pandemic, and partly due to ongoing political instability in multiple countries. The tourism sector is also dispersed and, therefore, difficult to engage with at a strategic level. However, there was some success with the private sector, for example in Albania, where some damaging tourism infrastructure was prevented, and hunting levels were reduced. There were some examples of generating alternative livelihoods linked to tourism (see 12.3.2 below). Overall, projects supported under this investment priority were diverse, some with rather tenuous links to coastal zones.

Integrated Coastal Zone Management (ICZM) was the focus of Investment Priority 1.3 but it proved hard to engage local CSOs in this work, and only a few projects focused overtly on this. Beginning with a site-focused approach and using this as a platform for engagement with wider planning and policy issues was shown to be an effective way of approaching the issue. There were some encouraging linkages with government in North Africa, which included agreement for co-management of MPAs in Tunisia; such projects could evolve into wider planning initiatives. The need for opportunistic engagement in government-led processes that have their own timeline was not always compatible with the lead time for CEPF-funded projects. The most successful projects under this investment priority related to the establishment or management of MPAs, which then provided an 'anchor' for wider ICZM work and had more tangible impacts on biodiversity. Such opportunities may become more frequent as governments open up space for civil society. This calls for relatively small-scale funding, available quickly, to enable CSOs to take advantage of opportunities when they arise.

Several organizations, particularly in Cabo Verde and North Africa, expressed the view that CEPF should consider expanding into more overtly marine projects, while staying within the zone of national jurisdiction (normally 12 nautical miles from shore). This would enable work on a more extensive group of species (for example, threatened marine fish species) and also encourage CSOs to become engaged in identifying and helping to establish additional sites for MPAs or OECMs, noting that there is often funding available in the main Mediterranean zone to manage MPAs once established (although less so in Cabo Verde) but that there is a gap in resourcing the establishment of new ones. Often, however, different actors are involved in marine issues to the ones typically supported by CEPF, and there may be government restrictions, for example on owning and operating boats in North Africa. Civil society capacity varies greatly between countries. There is also a lack of the necessary integration between marine and terrestrial conservation, and between research and conservation action.

As always, there is a need to retain some flexibility when operating in such a varied set of ecosystems, for example among the Balkans, Libya and Cabo Verde. Where CEPF was able to focus on a specific set of issues, for example relating to MPAs or a certain group of species, there were greater opportunities to promote exchanges of experience among CSOs and form communities of practice. In the future, the definition of which projects could be funded under the 'coastal zone' investment should be clearer. Consultations indicated that coastal wetlands were a habitat which stood out as being of particular importance across the Mediterranean, and under the greatest threat.

12.2.2 Lessons learned from Strategic Direction 2 on freshwater ecosystems[30]

Most countries have gaps in biodiversity data for freshwater habitats, and so there was a strong focus on surveys and research. This generated important information about globally threatened species and sites. In some cases, data were effectively shared among stakeholders, namely relevant government bodies and other NGOs, and used for advocacy in favor of Ramsar sites and national protected areas (and Natura 2000 sites in the Balkans). Research also enabled assessment of IUCN status for many species and was used to develop conservation action plans, and for advocating for changes in spatial developments (reducing threats to biodiversity) and legislation. Such sharing and use of data did not always happen, and future programs should ensure that such practices are the norm. The development of formal and informal networks and partnerships at site level (including across borders where appropriate) seemed to be welcome and effective where it occurred.

Conservation action plans and other conservation measures offer a foundation for future conservation of species and their habitats. It is important to ensure that such plans and measures are adopted by relevant authorities, so their implementation is secured. While it may be too much to expect to achieve this within a single project, projects should have an action plan as a clear outcome that explains the pathways to its future implementation. CEPF should consider further support in future to secure implementation of these plans and also make provision for monitoring, to see if activities and impacts are indeed being achieved.

Raising awareness among local communities about the importance of freshwater ecosystems and the services they can provide was also an important achievement of many projects. Assessment of ecosystem services can demonstrate the alternatives to conventional development approaches, and this is a topic that, if carefully presented, can contribute to securing the support of local communities for conservation. Livelihoods of local communities were not influenced significantly during most projects' lifetime, although community representatives were sometimes involved in research and conservation actions. Activities to support new or alternative livelihoods based on biodiversity-friendly practices should be encouraged as part of future projects.

It was felt that the use of Catchment Management Zones brought limited additional value to freshwater ecosystem conservation, and the use of this term and of (usually larger) river basins might have brought confusion to grantees. It may be better, therefore, to ask applicants to focus on the recognized important freshwater areas themselves (primarily freshwater KBAs). Nevertheless, freshwater ecosystems will often

[30] Lessons learned were reviewed by Delić (2024).

require interventions outside of their immediate boundaries and in the wider catchment in order to safeguard their integrity. This may involve habitat enhancement, controls on erosion or pollution, and modifications to agriculture or other land use practices.

12.2.3 Lessons learned from Strategic Direction 3 on cultural landscapes[31]

This was a new strategic direction in phase II and focused mainly on the larger landscape corridors of the Middle East and North Africa, with the Eastern Adriatic and Southwest Balkans Corridor being added after the Mid-term Assessment. Take-up improved once guidance was developed and applicants had a clearer understanding of the aims of the strategic direction and what kinds of projects would be favored. There were some excellent examples of successful projects with both biodiversity benefits and enhancements to livelihoods, especially where traditional cultural land management practices were assisted or restored, bringing under restoration thousands of hectares of KBAs.

Projects funded in phase II, by their nature, were focused at the site and landscape level, rather than being focused on particular species. The main benefit to be expected was, therefore, the retention and gradual enhancement of habitats and ecosystems, and it was hard to identify changes in the status of individual species in the limited time spans of single projects. Any benefits seen may not be quickly or directly linked to the main species that are the qualifying criteria for KBAs or that are globally threatened. It may be possible to identify benefits to other species, which give interim indicators of success. For example, pollinators and some plants may respond quickly to environmental and human impacts and could be considered for use in this way, although care will be needed as they may require different conditions from the rarer species. Continuous monitoring will help to track progress and allow adaptation of strategies to maximize conservation benefits.

Successful projects to sustain cultural practices in these landscapes may need to be of longer duration and larger scale. It will certainly be worth considering the practicalities of larger-scale projects, where the pathways to success are clearer. However, it was noted that some very successful projects under this strategic direction were small grants where there were specific measures required to achieve an outcome, for example provision of drinking water facilities for livestock, communications infrastructure to enable pastoralists to continue to practice seasonal movements of their livestock and sustainable tourism infrastructure to diversify the livestock breeders livelihoods and make this activity more attractive for young people. More work is still needed to better understand the ways in which traditional practices impact biodiversity (positively or negatively) and, therefore, what actions will have the most beneficial outcomes for key species, as well as for the people engaged in the landscape. Small grants will also have a role in trialing work to more clearly understand solutions, which can then be scaled up.

This strategic direction was initially seen as somewhat separate from work in protected areas but there are many examples where communities live within or adjacent to national parks and other protected areas. Projects in protected areas had the advantage of providing a framework through which the work could be implemented, whereby there were better prospects for followup and monitoring by authorities. Shebenik National Park in Albania was one example of this. More often, however, projects lie outside protected areas. Here, applicants in phase III should look at the options to establish more informal means of establishing long term protection, for example through CCAs or OECMs. There are good examples of such management structures in the hotspot, including the *Hima* system in Lebanon and the *Agdal* system in Morocco.

The conservation problems that need to be addressed under Strategic Direction 3 vary significantly across the hotspot. In North Africa, landscapes are often becoming more

[31] Lessons learned were reviewed by Oviedo (2024).

intensively managed, while in the Balkans there are threats from abandonment of traditional management practices, which leads to the disappearance of semi-natural habitats such as nature rich pastures and meadows. Solutions will be varied and complex, therefore. Applicants will need to properly understand these dynamics and, where traditional skills are in decline, promote and offer relevant training to increase awareness and adoption of methods that respect and enhance natural and human resources. External advice may be needed, and applicants should also consider how to integrate traditional practice with modern technologies to optimize impacts.

CSOs have been shown to play a useful role in promoting better environmental outcomes in these landscapes. They are well placed also to: build capacity among local communities; help them to establish local structures and improve access to markets; and use media and other channels to raise awareness of issues and needs. They can advance the role of women and young people, build lasting skills, and promote gender equality and social inclusion.

During phase II, successful projects often promoted diversification of livelihoods that are in harmony with nature, such as ecotourism, organic agriculture and the sale of nature-based products. Some were able to assist the development of local small enterprises , or to propose the establishment of cooperatives. Enhancing agricultural value chains in projects was seen to be a good way to improve incomes, promote environmental sustainability, ensure food security, foster economic and social inclusion, and strengthen the resilience of rural communities. These additional measures can also make the difference between the associated farming systems remaining viable or not. However, this work is challenging, and projects need to set realistic expectations and always ensure that the links back to the protection of nature are understood and respected.

CEPF can only ever fund a limited number of projects under this strategic direction, yet the landscapes where more sustainable land management could benefit nature are vast. A goal of the program therefore should be to encourage replication of such work at a larger scale and an improvement in the policy environment to support cultural landscapes. Lessons learned and evidence should be used to advocate for stronger and more effective policies, more favorable regulatory and financial frameworks, access to markets and allocation of resources and financial and technical support, in partnership with decision-makers and donors. This is challenging at the project level, in particular in countries where such policy measures are normally decided in a top-down fashion.

CSOs, with the support of CEPF, can increase the prospects for some of this happening through multi-sector collaborations and by building a strong constituency of support with the local population and with national and provincial governments. Raising the profile of projects can also help to unlock access to new and emerging markets and other means of sustainable financing.

12.2.4 Lessons learned from Strategic Direction 4 on plant conservation

This new strategic direction (in phase II) was a great success, with a budget allocation that ended up being double that initially planned. A lot of focus in this phase was on training of young botanists and on improving knowledge through surveys and monitoring and publishing monitoring manuals and books on rare and endemic plant species. Compared to other strategic directions, fewer grantees were national NGOs, as, to date, many of these do not work much on botany, although more did become involved and should be further encouraged in future. International organizations specializing in botany were involved carrying in data collection and raising capacities of national NGOs.Morocco remains an important gap, with few applications for projects under the previous phase, even though it is rich in rare and threatened plants. Work in Algeria was constrained by financing challenges.

There were some excellent outcomes, such as the establishment of micro-reserves in Palestine and Lebanon, which could be replicated in future, although more work is needed on their long-term management and sustainability. There were very good outcomes on Cabo Verde, including projects on threatened species, involving mostly young and previously poorly trained botanists, and excellent collaboration between grantees. In Albania, an area of the habitat of the endemic and globally critically endangered Albanian tulip (*Tulipa albanica*, CR) was designated as a nature monument (IUCN Category III), and many young experts were trained in botany on projects, which also led to publications on endemic plants and many Red List assessments.

It proved hard to engage with some national authorities; working with provincial governments was often more successful. Future projects should ensure that there is a focus on action, and that research is more directed towards identifying remedial actions.

Post-project monitoring and evaluation will be necessary to keep track of results and impacts. More connection with plant associations in the subregions is necessary for knowledge exchange and sharing and for sustaining project activities. For many newly trained botanists, there is a lack of follow-up support or for opportunities to share experiences and gain further skills. Some tailormade networks would be useful, alongside exchange programs and communication materials. There is a need to access more of the good training opportunities that exist in the Mediterranean Basin, for example the network of Mediterranean Plant Conservation Centers - GENMEDA. Publication of results should be encouraged and could be assisted. There is also a lack of leaders in plant conservation, and addressing this would need slightly different activities.

Since the first ecosystem profile was written, an important effort by the botanical community, under the auspices of Plantlife International and the IUCN Mediterranean Plant Specialist Group (funded, in part, by CEPF), led to the identification of a set of IPAs, many of which are now KBAs, and to an improved understanding of threats facing plants. Nevertheless, the number of plants in the Mediterranean Basin is so huge that currently only around 15% of them have been assessed against the global Red List criteria, making it very likely that there are many threatened plant species that have not yet been RedListed at the international level. Crop Wild Relatives (CWR) and medicinal plants are also very important in the Mediterranean Basin and often threatened, for example by over-collecting. Other groups have also been neglected, for example non-vascular plants, and there is also a need for more work on protecting some tree species.

12.2.5 Lessons learned from Strategic Direction 5 on capacity building

In the hotspot, there is a large diversity of CSOs, including local, national and international associations, universities, private consultancy groups, etc. Some are concentrating their efforts on a single species or site, while others are expanding their actions to address more species and regions of intervention. Phases I and II demonstrated that CSOs can have an incredible impact on biodiversity conservation but also that the CSOs face considerable challenges. Many of them need CEPF support, not only to build their technical capacity but also with their structural and cultural organization, to give them resilience to anticipate and navigate difficult times in terms of funding, strategy, staff, etc. It is also hard for CSOs to remain independent from donors' strategies and decisions, which impact their own actions. Consequently, more efforts should be made to push for a shift of decision-making power to CSOs. Many national CEPF grantees have shown themselves to be capable of managing large grants and this needs to be replicated by other CSOs across the hotspot. To this end it is necessary to understand what is needed to create the required changes in an organization, and what support CEPF could offer that would facilitate these changes.

12.3 Strategic focus for the program, 2025 to 2030

12.3.1 Supporting local and national organizations in a regional context

The status of civil society in the Mediterranean Basin Hotspot has evolved in recent years. Civil society is increasingly diverse, influential and engaged in conservation at both site and policy levels in most countries across the hotspot. This is particularly the case in North Africa, where a new civil society has emerged in some countries, such as Tunisia, Morocco and Libya. However, limited internal capacity, inadequate funding and, in some cases, restrictive official policies and norms limit the ability of CSOs to take full advantage of opportunities and address the most urgent conservation needs (see Chapter 8). Funding for biodiversity conservation is limited: environmental funding through development aid budgets is less in the Mediterranean than elsewhere, both in terms of amount and share of financial flows, and mostly channeled through governmental institutions (see Chapter 11).

Access to funding for civil society actors working on biodiversity conservation is, therefore, extremely limited, with most support being provided by a small group of dedicated donors, including CEPF. This presents an opportunity for CEPF, as one of the most important supporters of civil society conservation action, but also a challenge in terms of identifying projects and organizations that can sustain the impacts of CEPF-funded grants. The first two phases demonstrated that such organizations exist in each country of the hotspot, and that adequate financial support, combined with technical support, has the potential to build stronger civil society constituencies able to tackle conservation issues at the local level.

The first two phases of CEPF investment in the hotspot demonstrated the importance of lessons learned and peer exchanges for enhancing organizational capacities and disseminating good practice. The commonalities of the threats and the shared cultural identity of Mediterranean society across the hotspot create important opportunities for regional collaboration, which CEPF is ideally positioned to catalyze. This includes 'north-south' exchanges among CSOs in eligible and non-eligible hotspot countries, and 'south-south' exchanges among CSOs in eligible countries. Examples include sharing lessons and facilitating learning among such groups as protected area managers, CSOs, land managers and decision-makers. Such activities are expensive, so CEPF will put much focus on exchanges within countries, while also identifying those subjects where wider regional interaction is most valuable. Efforts to promote such exchanges were disrupted in phase II by the pandemic but will be given renewed emphasis in phase III through specific activities incorporated into individual projects (with guidance from the RIT), as well as through dedicated grants at the regional level (see Strategic Direction 5, Chapter 13), with the objective of consolidating a nascent regional conservation community.

12.3.2 Strategic engagement with the private sector

Earlier phases of the CEPF investment in the Mediterranean Basin have provided limited examples of effective engagement between grantees and private sector actors. Phase I produced a number of engagements under the strategic direction on conservation of coastal zones, where the tourism industry is a major player. This included an eco-tourism project 'Flavors of Albania', which included training for (mainly) women in food production and boat operation; working with beekeepers in Montenegro; support to almond and olive producers in Morocco; and involving local businesses into an ecotourism trail in Tunisian wetlands.

During phase II, 11 initiatives were launched with private sector stakeholders (producers, processors and resellers) to promote more sustainable practices, such as: tourism and fisheries in Cabo Verde (restaurants using labelled products); infrastructure/energy in Bosnia and Herzegovina; canned/smoked mussels and sheep products in Morocco; olive oil in Lebanon; tourism and fisheries in Tunisia; fruits and pickles in Jordan; and sustainable tourism in Albania and Montenegro.

At least 21 initiatives with local communities included support to small businesses (ecotourism, agricultural products, fisheries). Eight small grants supported private sector

entities directly, to maintain biodiversity friendly traditional fishing activities around Zembra marine protected area. Finally, four cooperatives in Morocco and two Farmers Associations in Tunisia were created to enhance biodiversity-friendly activities.
These projects involved collaborative actions, such as joint promotion to increase the number of ecotourism visits, awareness raising of environmental problems and behaviors, aimed at both tourists and business managers, and financial support for management of specific areas or to address specific problems. The projects generally involved local companies that had a clear stake in the area and were relatively easier for grantees to contact and approach. National and, especially, multi-national companies proved far harder to engage than expected.

Key lessons for engagement with the private sector are: start at the local scale, with businesses that are rooted in the community and landscape; seek opportunities to promote the image of the industry/business at the same time as delivering conservation benefits; gather data that demonstrate to business the financial benefits of the action; and be more creative in seeking opportunities for in-kind support from business (meeting venues, assistance with transportation, etc).

CEPF will continue to explore options for links with global companies through its own networks and those of its donor partners and grantees while it is anticipated that grantees will continue to build on local linkages at the project level.

There is a growing market for fairtrade and sustainably produced goods, and achieving a higher price for these goods is one potential means to incentivize farmers and land managers to adopt biodiversity-friendly approaches. A review of the (limited) evidence base on the social and environmental impacts of eco-labelling (Blackman and Rivera 2010) shows that the expected price premium is not always achieved, and eco-labelling should, therefore, be combined with improved production, storage and marketing methods leading to better access to markets, which may be more important for producers. These ideas can be pursued under all strategic directions, but CEPF will also consider whether some bespoke grants can be used to further build these market solutions at the strategic level.

12.3.3 Building on local actions to achieve policy impacts

With the majority of CEPF-funded projects expected to focus on impacts at specific sites and their surrounding landscapes, there is a need for complementary actions to address the wider policy, funding and programmatic issues that affect the impact of these projects, as well as the potential for scaling up and wider adoption of successful approaches. As discussed, it has been challenging for grantees to address these issues at the project level, although there have been some notable successes. There are important roles for the RIT, conservation partners and grantees to play in addressing these wider issues. Specifically, the CEPF program will use the following approaches:

Work directly to facilitate links between grantees and decision-makers. Building on relationships established during earlier phases, CEPF and the RIT will help CEPF grantees to access key people in relevant provincial and national agencies. CEPF and the RIT will encourage the inclusion of policy components within individual projects where appropriate, and grantees should seek to engage key government stakeholders to attend relevant meetings, and to join site visits to see the work that has been done.

Contribute to partnerships and on-going processes of planning and reform.
There are multiple national and regional initiatives on environmental governance in the hotspot (see Chapters 6 and 10). CEPF will (where possible) work with partners, including World Bank country offices, EU delegations and national GEF focal points, to monitor these processes and ensure that grantees are aware of any opportunities to engage. Dedicated grants under Strategic Direction 5 can be used to empower local CSOs to engage with regional initiatives.

Promote the role and acceptance of the value of CSOs more generally. The level of openness towards CSOs, as expressed through official regulations and unofficial attitudes, varies widely across the countries of the hotspot (see Chapter 8). Promoting the value of civil society in contributing to sustainable development can make governments more receptive to CSOs' messages, and the public more likely to support these organizations. CEPF has a specific role to play in demonstrating how CSOs have supported positive environmental and social agendas in countries across the hotspot, including how they can assist governments in meeting obligations under international conventions, and in mobilizing public participation in environmental programs. Where there is still suspicion of the role of NGOs, emphasizing their ability to assist governments in policy and informing decision-making is likely to be the most effective way of building mutual trust.

12.3.4 Ensuring strategic focus for the program

There has always been a tension in the hotspot between selecting precise funding targets among the numerous conservation priorities, and the risk of further instability and insecurity in the region. The strategy proposed in this ecosystem profile addresses these challenges in the following ways:

Focus on a limited set of high priority sites. KBAs are sites of global importance, identified through a set of rigorous and consistent criteria. They represent a minimum set of sites that can protect the most important places for biodiversity. More sites will continue to be identified, in particular in the marine environment. CEPF also prioritizes some globally threatened species that may occur in KBAs but some of which are more widely dispersed or specialist in nature. In previous phases, CEPF prioritized a subset of KBAs, and these sites will continue to be supported where there are good projects proposed that build on earlier success. For phase III, priority corridors have been selected, and KBAs within those corridors will be prioritized for conservation action, with the objective to have clusters of projects addressing comparable conservation issues. Resources are, of course, limited, so CEPF and the RIT will be looking for the best projects, which have a clear vision of the conservation approaches that will work and stand the best chance of enhancing the status of the habitats and species most at risk.

Focus on site-based action but build on this to achieve policy impacts. A clear lesson from earlier phases was the effectiveness of local CSOs taking focused action at specific sites, often places where they had already had many years of engagement. These projects provide the best basis for learning lessons that can be followed up, scaled up and replicated elsewhere, and, therefore, provide evidence to inform decision-making and influence policymaking. Ensuring impacts on policy will require creative collaboration between more experienced NGOs and networks, and an open dialogue with authorities.

Spread risks geographically. Political change, economic uncertainty and instability are likely to continue to affect some countries in the hotspot. Spreading grant-making across eligible countries, and across a wider range of KBAs, with flexibility in terms of timing and focus for the calls for proposals, maximizes CEPF's ability to take advantage of these opportunities, while avoiding the risk of a large part of the portfolio failing because of political or security problems in particular countries. There may be opportunities to support CSOs in post-conflict situations over the six years of investment, if those places stabilize. Globally, CEPF has a long track record of supporting CSOs in post-conflict countries, where minimal funding can make a major difference to the resurgence of a CSO community and to integrating environmental concerns into plans for reconstruction and social and economic recovery. The risks and merits of any such engagement would be carefully considered.

Create opportunities for synergy among grants. During earlier phases, there were several examples of 'clustered' grant-making, where a set of grants was made to multiple CSOs with complementary skills to address the conservation of the same site. This might result in collaboration between, for example, a CSO carrying out field surveys, feeding into the development of management recommendations by a CSO specializing in advocacy, in turn informing the program of another CSO involved in community facilitation around the site. CEPF will continue to support this approach, including across international boundaries where there are KBAs that cross borders. CEPF also wishes to encourage joint projects, where appropriate, so that different skills can be brought into solving a problem. An example of this would be possible joint working between conservation and rural development CSOs, who between them might be well suited to tackling the challenges of larger landscape scale working with communities under Strategic Direction 3.

12.4 Background to the strategic directions

12.4.1 An ecosystem approach to Strategic Directions 1, 2 and 3

The investment strategy for phase I made a distinction between actions related to coastal zones (Strategic Direction 1), freshwater catchments (Strategic Direction 2) and specific sites/protected areas (Strategic Direction 3). This approach by ecosystem type and key biodiversity sites proved well adapted to CEPF grant-making and corresponded to the needs of CSOs. However, with many protected areas being coastal or including freshwater bodies, the distinction between Strategic Direction 3 and Strategic Directions 1 and 2 proved confusing to applicants and beneficiaries and challenging for CEPF to monitor impacts. For phase II, the focus was set on ecosystem types, keeping coastal and freshwater, while adding 'Cultural landscapes' (Strategic Direction 3), which operate across wider landscapes, where traditional land-use practices support conservation of biodiversity (in some cases, still within protected areas). Additionally, a new strategic direction was introduced specifically on plant conservation (Strategic Direction 4), recognizing that plant diversity forms the basis of the identification of the Mediterranean as a global biodiversity hotspot, and that there is often a lack of capacity and priority accorded to the specific needs of plants and plant communities in conservation planning.

Internal and external evaluations of the impacts of CEPF investment during phase II recognized that each of these four strategic directions had worked well, had been popular with grantees and applicants, and had filled gaps in the funding landscape facing CSOs in the Mediterranean. These four strategic directions are, therefore, retained for phase III, while making some adjustments to their focus and approaches.

CEPF will continue to support actions that directly improve the conservation status of KBAs, and other places holding important populations of globally threatened species. The focus on priority sites is important for ensuring that projects deliver concrete outcomes for conservation, based on positive relationships with specific stakeholder groups and administrative arrangements. This site focus does not preclude support for more catchment/corridor-scale or policy-focused work but emphasizes that such work should have clear benefits for site conservation and should be grounded in site-level experience.

The emphasis on site-based action is reinforced by one of the lessons from the first two phases, that, in many areas, CSOs do not initially have the requisite capacity, knowledge or legitimacy to address conservation challenges at the level of entire coastal zones, corridors or river basins, due to their complex, multi-stakeholder nature. It is also hard for stand-alone projects to secure policy changes beyond the local level. CSOs that began by successfully implementing concrete actions at the site level were better placed to get involved in larger-scale land-use planning processes and influence policy. They also had greater recognition of what wider changes are needed to resolve problems within the sites. CEPF will continue to support projects rooted in ground-level realities that should in turn provide local CSOs with the experience and legitimacy needed to engage effectively at larger scales. CEPF is also committed to supporting successful previous project achievements which require follow-up, replication or further scaling up.

CEPF would also like to do more to encourage dissemination of learning to governments and other stakeholders, national level CSO networks to collaborate on wider landscape scale changes, and more explicit links between project outcomes and the implementation of national level biodiversity policies and strategies.

The three priority ecosystem types for the third phase of CEPF investment in the Mediterranean Basin Hotspot are as follows:

Coastal and marine ecosystems. These include a diverse range of marine ecosystems, as well as beaches, wetlands, estuaries, coastal forests, and garrigue and maquis heathlands. These are among the most threatened ecosystems in the hotspot, due to intense pressure from economic development and population growth (see Chapter 9). Coastal ecosystems were a priority for CEPF investment in the first two phases, and stakeholders strongly recommended a continued focus here by CEPF, building on conservation gains to date. However, it is recognized that there are also gaps in support for wider marine conservation and a lack of knowledge and capacity to address issues in many countries. The waters of the Mediterranean represent 0.3% of the global oceans' volume but host 4-18% of the identified global marine species (UNEP/MAP and Plan Bleu 2020). Some projects to promote more sustainable fisheries and establish new MPAs were successful in phase II. CEPF does not have resources at anything like the scale necessary to solve all fisheries issues, so these efforts will need to be targeted where fishing is shown to have adverse impacts on threatened species, and where there is a clear role for civil society.

Of all aspects of the CEPF investment niche, marine conservation most obviously requires a high degree of regional collaboration, since there is such a high degree of habitat connectivity, which offers both threats and opportunities. The interrelations in terms of pollution, fishing and species distribution and movements mean that collaboration is essential. Marine biodiversity benefits from a number of regional initiatives, being on MPAs, fisheries management or species (e.g., sea turtles, monk seal) (see Chapters 7, 8 and 11). To date, much of the activity has focused on the northern coast within EU countries, creating a gap for addressing regional issues. This is particularly the case for MPAs, which are very few in the south and east (see Chapter 7), and for collaborative work with local fishermen.

CEPF would like to expand these activities, recognizing that many more areas warrant formal or informal protection, and that civil society is well placed to promote this. There are also many threatened species facing imminent threats, and efforts to date have been focused on only a small number of the more charismatic and better-known animals.

Freshwater ecosystems. Large numbers of single-site and locally endemic threatened species have been identified from the hotspot's rivers, lakes and cave systems. More than two-thirds of the assessed Critically Endangered animal species found in the hotspot are freshwater species (Chapter 5). Freshwater systems tend to be underrepresented in protected area systems (or not well protected even within those areas) but are highly threatened in a region where fresh water is the most critical ecological resource and anticipated to be most severely affected by climate change. Freshwater ecosystems were a priority during the first two phases, and the consultation process for the update of the ecosystem profile strongly endorsed continued CEPF support for their conservation.

Agricultural and cultural landscapes. The unique human history of the hotspot means that many of the threatened species found there are dependent on anthropogenic habitats maintained by cultural management practices, such as extensive grazing and nature friendly cultivation. This creates an alignment between biodiversity conservation and the maintenance of traditional resource management systems, something that conventional protected areas do not necessarily deliver effectively. Cultural practices persist, particularly in mountainous areas where land-use changes and industrialization have been less intense. There are increasing pressures on such systems across the region, however, which can take opposite trajectories. While some landscapes are facing pressure for increasing intensification, habitat loss and overgrazing, others may face abandonment and loss of the management practices which sustained them. Phase II of CEPF investment in the Mediterranean hotspot initially focused on four corridors where cultural practices are known to be an important component of land use management; parts of the Balkans and the Rif were later added. Many of these will continue to be appropriate areas for such projects and CEPF will sustain effort in these corridors.

12.4.2 Conservation of plants and plant communities

The Mediterranean Basin Hotspot is defined by the number of endemic plant species in the hotspot. The hotspot is exceptional both for its diversity of plants and for the high degree of threat they face (see Chapters 4 and 9). Thirty-five percent of the globally threatened species in the hotspot and 44% of the Critically Endangered species are plants (see Chapter 5). Moreover, only around 15% of Mediterranean plants have been assessed for their status (whereas most vertebrates have been).

The level of threat faced by plants and the lack of attention given to their specific conservation needs justifies an explicit focus on this group. Moreover, it is not safe to assume that an investment strategy concentrating only on existing KBAs will address their conservation needs, because, given the current state of knowledge on the Mediterranean flora (in terms of distribution and threat assessment), many potentially important sites for plant conservation are not included in the KBAs identified to date (a situation that CEPF support during phase II has improved somewhat). Resources continue to be limited for the plant conservation community (see Chapter 11), and there is still a lack of capacity and few conservation CSOs who engage in plant conservation. CEPF will continue to support research and training to build levels of knowledge and expertise but wants to ensure that this knowledge is used to stimulate conservation actions for a greater number of highly threatened plants and plant communities, increasing the strength of the botanical community in the region and increasing the emphasis on protection and active management for plants within KBAs and other critical sites. The Plant Expert Group, a group of experts in botany led by the IUCN Mediterranean Plant Expert group, proposed that new (plant) KBAs still need to be identified and the boundaries of existing KBAs extended and adapted if necessary.

12.4.3 Organisational development of Mediterranean civil society

There is a clear rationale for CEPF to continue to focus support to local and national civil society, with the objective of strengthening the capacities of individual organizations and fostering the emergence of a conservation community in the eligible countries. Granting to international organizations will be limited to actions that either require specific expertise not yet available in the eligible countries or have the main objective of transferring skills and capacities to local or national partners.

CEPF will support actions that build the capacity of civil society and lead to the emergence of strong effective organizations and a cadre of conservation leaders. Self-identification of capacity-building and organizational development needs by grantees is an integral part of the CEPF grant-making process, with the RIT having primary responsibility for working with grantees to provide support. Experience from earlier phases (and investments in other hotspots) supports the principle that capacity building at the individual level works well when it is integrated into project implementation, which allows newly acquired skills and knowledge to be applied directly to addressing issues faced by the grantee. However, in tphase III of its investment in the Mediterranean Basin hospot, CEPF also wishes to take a more comprehensive approach to assisting in the wider development of CSOs and will select a limited number of organizations who wish to receive broader input to their development.

CEPF will support conservation action designed to achieve sustainability. Sustaining the impact of small grants is a major challenge and needs to be addressed at the planning stage. Likely pathways for sustainability include: follow up grants from CEPF and other donors; integrating conservation functions into the organizational agendas of government, community or private sector entities; establishing long-term funding mechanisms; and linking benefits (e.g., rights to use resources by stakeholders) to actions needed to conserve resources (e.g., policing illegal extraction) with an independent system for monitoring (see Chapter 14 for more details).

13. CEPF INVESTMENT STRATEGY AND PROGRAMMATIC FOCUS, 2025-2030

As outlined in Chapter 12, CEPF support to conservation action in the Mediterranean Basin Hotspot will continue to focus on three priority ecosystems (coastal, freshwater and cultural landscapes) and on plants. Following the capacity built among CSOs in earlier phases, there will be an increased emphasis on strengthening capacities and on organizational development, to move successful organizations along the pathway to sustainability. CEPF wishes to grow civil society's effectiveness, by encouraging networking and collaboration at national and regional scales. CEPF also wants to encourage projects that achieve a more effective level of protection for sites and species. This may include formal protected areas, especially in the marine environment, where a gap was identified in the capacity and resources available to establish new MPAs. However, there are also many opportunities to move sites towards other forms of protection via CCAs or OECMs, to contribute to Mediterranean countries' efforts in meeting Target 3 of the Global Biodiversity Framework (the so-called "30x30 target").

Table 13.1 summarizes the strategic directions and investment priorities that make up the CEPF investment strategy. These are further described in following sections.

Table 13.1 Strategic Directions and Investment Priorities for CEPF in the Mediterranean Basin Hotspot, 2025-2030

Strategic Directions	Investment Priorities
1. Support local partnerships for conservation of globally important coastal biodiversity $ 4,500,000	1.1. Support involvement of civil society in the management of Marine Protected Areas and realize opportunities to establish new ones
	1.2. Advance the protection, restoration and improved management of coastal wetlands, with the participation of local stakeholders
2. Promote the values of freshwater ecosystems and advance their protection, restoration and improved management $ 3,200,000	2.1. Document and promote recognition of the freshwater biodiversity and ecosystem service values of Key Biodiversity Areas
	2.2. Advance protection, restoration and improved management of important sites for freshwater biodiversity, with the participation of local stakeholders
3. Promote traditional land-use practices that maintain biodiversity in priority corridors $ 3,750,000	3.1. Support traditional resource managers to follow land management practices that maintain biodiversity in mountain landscapes
	3.2. Document and promote traditional land-use practices and Other Effective area-based Conservation Measures among local and national governments
4. Strengthen the engagement of civil society to support conservation of threatened plants and plant communities $ 2,200,000	4.1. Build the capacity of the botanical community to increase knowledge and skills and engage in applied conservation of threatened plants
	4.2. Secure better implementation of plant conservation in the management of protected areas
	4.3. Take innovative actions for conservation of threatened plants, working with landowners and land users

Strategic Directions	Investment Priorities
	4.4. Improve conservation efforts for wild crop relatives, medicinal plants and other wild plants of economic and cultural value
5. Facilitate the development of a robust and resilient community of conservation Civil Society Organizations (CSOs) $ 1,000,000	5.1. Provide support to targeted conservation CSOs engaged in a process of organizational development
	5.2. Enhance the collective strength and ability of conservation CSOs at national and regional levels
6. Provide strategic leadership and effective coordination of conservation investment through a regional implementation team $ 2,750,000	6.1. Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile
TOTAL BUDGET $ 17,400,000	

Underpinning these strategic directions are a number of cross-cutting priorities, which applicants will be asked to consider and incorporate into their project designs where relevant.

On capacity building and development of organizations

A. Building civil society capacity to contribute to the implementation and improvement of national and local policy and legislation. This will include applied training in policy and advocacy, and engagement with government.
B. Building civil society capacity at all levels, from individuals to organizations to the sector as a whole. Capacity building for local community groups and cooperatives is also important; CEPF expects projects to consider this where relevant, to ensure long-term sustainability.
C. Promoting gender equality and empowerment. Gender is a critical factor in many conservation and natural resource management decisions at local and national level, as well as for social justice. CEPF expects grantees to look for opportunities to mainstream gender issues into their organizations and their work, and to ensure that women's perspectives are considered when planning and implementing projects.
D. Incorporating education and awareness actions that contribute to project objectives and promote necessary changes in consumer and producer behaviour.

On sites and species conservation

E. Maintaining a strong focus on conservation and management of KBAs as a key conservation tool, resolving or lessening threats, and moving them towards more effective levels of protection – being through protected areas or other forms of conservation measures. Where previous projects have been successful, CEPF will be open to supporting further work at the same sites, to consolidate and scale up achievements.
F. Improving the status of globally threatened species and ecosystems in the hotspot. Beyond Strategic Direction 4, with its explicit focus on plants, CEPF expects all site-level projects to focus on the needs of globally threatened species, and to improve their populations and status where possible. Priorities for action will be those species listed as globally threatened (i.e., Critically Endangered, Endangered or Vulnerable) on the IUCN Red List, as well as species that meet the criteria for globally threatened but have not yet been formally assessed using the IUCN Red List methodology. CEPF also encourages work on lesser-known species, especially among plants.

G. Ensuring that all data collected through research and surveys are well managed and accessible to everyone, and that existing and new data are used to inform conservation action. All species targeted by CEPF projects should undergo a Red List assessment (or reassessment, if the previous assessment is more than 10 years old) and be included in the IUCN Red List. Grantees are encouraged to submit any scientific papers prepared with support from CEPF grants to open-access journals.
H. Addressing threats to Key Biodiversity Areas (KBAs) at source. While KBAs remain CEPF's core tool for identifying priorities for site conservation, consideration will be given to projects that seek to address issues emanating from outside KBA boundaries, such as threats to a wetland coming from upstream.
I. Restoring degraded ecosystems in and around KBAs. CEPF will consider supporting efforts to restore areas inside or outside existing and potential KBA boundaries that, once restored, will contribute to their function. Such activities can be very costly, so preference will be given to projects that offer good value for money, either because the issue can be resolved fairly easily, or where good restoration practice can be demonstrated and show the potential for scaling up by other agencies or donors.

On climate change mitigation and adaptation

J. Ensuring that all projects take account of the implications of climate change and, where possible, contribute to climate resilience and adaptation.
K. Building climate resilience and adapting to the effects of climate change. So-called 'nature-based solutions' can be designed into projects and can also offer social and economic benefits. These are further discussed in Chapter 10.

On portfolio development and management

L. Collaborating with organizations or individuals with different skills, including those whose remit is broader than nature conservation alone. This includes integrating individual projects into local, national or regional networks.
M. Integrating projects and promoting collaboration among organizations, particularly through encouraging clusters of projects (under one or more strategic directions) working in the same corridor or KBA.
N. Considering long-term sustainability from early project design onwards. CEPF encourages projects that aim to build on the successes and lessons of projects supported under earlier phases of investment by CEPF and other donors.
O. Involving private sector in projects, where appropriate. CEPF is especially keen to support projects that develop locally owned enterprises or cooperatives that support site conservation and local communities, as well as those that help to improve access to markets and value of such products.
P. Monitoring of the impact of projects, establishing clear baselines and explaining how progress will be measured. Projects should be committed to the reporting and dissemination of lessons learned from the design, implementation of and follow up to projects.

Strategic Direction 1. Support local partnerships for conservation of globally important coastal biodiversity

Main focus, justification and impact

This strategic direction addresses some of the most threatened sites and ecosystems in the hotspot: those in coastal zones. Coastal ecosystems are under increasing pressure from human population growth and migration, the growth of tourism, and associated urbanization and pressure on land and water resources (Chapter 9). The specific threats in coastal zones are: (1) direct over-exploitation of biodiversity (over-exploitation of coastal woodlands, over-fishing, intensive hunting of migratory birds, collection of plants, etc.); (2) direct damage to sites through conversion of coastal habitats to intensive agricultural land, building land, tourism and infrastructure, as well as mineral extraction and invasive fishing techniques; and (3) actions that take place outside key sites but impact them, such as abstraction of water, dumping of solid waste and water pollution.

Based on the lessons learned from earlier phases, the CEPF investment strategy for the third phase makes the following shifts of emphasis:

- Support more work in marine areas within national jurisdictions, recognizing the important threats in these areas, the importance of increasing the number of new MPAs, and the need to build more capacity among CSOs to foster their engagement in conservation;
- Give more emphasis to coastal wetlands, which are highly diverse habitats that have seen their original extent dramatically reduced and face increasing threats across the Mediterranean.

The investment priorities under this strategic direction have been designed to support local partners engaged in other regional conservation actions, among them the MedFund, the Mediterranean Alliance for Wetlands, MedPAN and the RAC/SPA (Chapter 8).

Geographic focus
The KBA identification process in the marine realm is still far from complete in the Mediterranean Basin. Currently, "marine" KBAs are mostly extensions of KBAs primarily assessed for their terrestrial biodiversity or centered on existing MPAs for which data are available. As such, at the time of this profile update, KBAs cannot be used as a prioritization tool for Investment Priority 1.1, which aims at supporting identification and establishment of new MPAs. Similarly, Investment Priority 1.2 on coastal wetlands is expected to respond to emerging threats and support protection and restoration when opportunities arise; considering the rarity and global importance of Mediterranean coastal wetlands, setting predetermined priorities would prove counterproductive.
This strategic direction will be open for all coastal areas throughout the hotspot that meet KBA criteria, even if the official recognition as a KBA has not been secured yet. In some cases, if data are not yet available, initial activities will focus on assessing the biodiversity value of the site, as a prerequisite for further action. This will be particularly important for sites supported under Investment Priority 1.2, to ensure that any work on promotion of new MPAs supported by CEPF takes place in areas of global importance.
The list of coastal KBAs in eligible countries is provided as Annex 2.1, for information.

Investment Priority 1.1 Support involvement of civil society in the management of Marine Protected Areas and realize opportunities to establish new ones
Coastal and marine ecosystems in the hotspot, including protected areas, are often used for activities like fishing, agriculture and hunting. Other resources, such as sand and gravel, may also be extracted, and there are non-exploitative activities, like recreation, that impact habitats and species.

This investment priority will focus on negotiating improvements to management regimes by enhancing planning, raising awareness and enforcing agreed-upon rules. At the same time, projects should aim to improve the conservation status of sites that are not already designated as MPAs. This could involve moving towards formal MPA designation or adopting alternative mechanisms, such as community conservation areas or seasonal/permanent no-take zones. Where feasible, these efforts will promote sustainable use and may introduce new practices that increase the value of sites to local stakeholders, encouraging better management.

Such work is complementary to other regional initiatives, such as the MedFund, which supports recurrent costs of existing MPAs, or MedPAN, which promotes networking and coordination among MPAs and MPA managers.

As noted above, eligible sites for this Investment priority will be KBAs with a marine portion, anywhere in the Mediterranean Hotspot, as well as sites that meet the KBA criteria but have not been officially recognized yet. Specific attention will be given to sites that are not yet supported by other international donors or initiatives, with the objective of extending the network of sites benefitting from local conservation action.

Actions eligible to be supported under this investment priority include:

- Building common visions for the management of sites and supporting the establishment of negotiated agreements with local users and relevant stakeholders on natural resources management, allowing for the preservation of the key elements of biodiversity.
- Strengthening and expanding protected area designations. There are important opportunities for CSOs to contribute to improved management planning and implementation, especially strengthening consultation and collaboration with local stakeholders. Where sites are unprotected, working with local stakeholders to encourage the government to establish new protected areas or OECMs for protection will be encouraged.
- Supporting pilot activities with local resource-users to demonstrate the value of alternative practices, contributing to the preservation of key elements of biodiversity, for example by promoting improved fishing practices, sustainable harvesting, or improved practices of recreational activities (i.e., kayaking, diving, etc.).
- Supporting site-based activities with local stakeholders for conservation of globally threatened species, and ensuring these local actions contribute to regional efforts.
- Supporting enforcement of existing laws against hunting/harvesting of globally threatened species, working with the authorities to document, report, and encourage action against damaging illegal activities.
- Strengthening local resource management institutions including the CSOs and local community institutions. Examples include fisher co-operatives, grazers co-operatives, or village committees but might also include protected area management agencies or the private sector.

Investment Priority 1.2 Advance the protection, restoration and improved management of coastal wetlands, with the participation of local stakeholders

While most coastal ecosystems are threatened, coastal wetlands have one of the highest rates of loss of all habitats and are under a high degree of continued stress in all areas. This is often due to infrastructure development and land use associated with tourism, expanding agriculture or urbanization, recreational land use, or management challenges associated with climate change. In some cases, neglect or abandonment may exacerbate impacts or provide opportunities for ecosystem restoration. The value of coastal wetlands, both for nature but also as potential nature-based solutions for regulation of water, control of flooding or prevention of erosion, are still underappreciated.

Actions under this investment priority may be carried out in conjunction with ones under Investment Priority 1.1, and may include efforts to establish or expand protected areas or to collaborate with public and private sector actors to promote conservation as part of ensuring a healthy natural environment.

This investment priority has been designed to support local partners' engagement in other regional initiatives, such as the MedWet and the Mediterranean Alliance for Wetlands, in particular through expanding their participation in the Red Alert and Green Light initiatives. Projects will also be supportive of the efforts under the Ramsar convention (Chapter 7).

Actions eligible to be supported under this investment priority include:

- Documenting site values and communicating impacts of threats to decision makers to influence planning (including input to development plans and Environmental Impact Assessments (EIAs) for proposed developments) and practices (dumping of waste, land conversion, etc.), in conjunction with the Red Alert initiative of the Mediterranean Alliance for Wetlands where appropriate.
- Forming consortia and networks with others to engage in government-led coastal zone planning and management initiatives, for example through presenting data, raising awareness of opportunities and monitoring of policy implementation.
- Improving protection and management of sites, including as part of community development schemes, or wider environmental projects, such as flood and erosion protection, or sustainable local enterprises.
- Implementing parts of wider management plans which improve the long-term management, viability and sustainability of coastal wetlands, in particular to build upon preparatory planning work under the Green Light protocol of the Mediterranean Alliance for Wetlands.
- Trialing or implementing the restoration of areas of current or former coastal wetlands, in order to improve the natural value of such ecosystems and the overall extent and quality of the wetland complex.

Strategic Direction 2. Promote the values of freshwater ecosystems and advance their protection, restoration and improved management

Main focus, justification and impact

Nearly one-third of the Critically Endangered species assessed in the hotspot are freshwater animals and plants (Chapter 5). They occur in a wide range of freshwater ecosystems, including rivers, lakes, karst cave systems and ephemeral dryland water courses. The need for fresh water for agriculture and human consumption, especially in North Africa and the Middle East, is one of the most persuasive reasons for the sustainable management of natural resources. Nevertheless, the hotspot’s freshwater ecosystems are poorly represented in national protected area networks, they are under pressure from over-use and pollution, and the species that live in them suffer from over-exploitation and disturbance (see Chapters 4 and 9). Moreover, climate change is likely to make these problems worse (see Chapter 10).

Some of the actions required to address these problems are national or international in scale and cannot be tackled effectively by CSOs alone. CEPF investments in the first two phases showed, however, that CSOs can be effective when working at defined sites and with relevant authorities, such as protected area management agencies, or agencies charged with river basin management or water resource conservation. Once sustainable use of water resources is agreed, there can be strong alignment between the needs of threatened biodiversity and human development (e.g., for adequate supplies of clean water).

In response to the lessons learned from earlier phases, Investment Priority 2.1 will continue to address the need for improved knowledge on important sites for freshwater biodiversity in and around KBAs, using this as an opportunity to build capacity for research and conservation action on freshwater organisms: an area in which clear gaps in capacity were recognized during consultations. Beyond that, Investment Priority 2.2 will focus on site-based action, working with local stakeholders to mitigate threats to KBAs and their constituent species. This investment priority will aim to enhance the management of freshwater ecosystems, by improving their protection status where possible but also by ensuring existing protected areas give higher priority to freshwater ecosystems that occur within their boundaries. This will include seeking and taking opportunities to restore degraded ecosystems within and connected to KBAs.

Geographic focus
The assessment of freshwater biodiversity in the Mediterranean Basin led by IUCN in 2016 (see Chapter 3) led to identification of priority catchment management zones in the region, showing that some parts of the hotspot have a specific responsibility for preservation of threatened freshwater biodiversity. Within eligible countries, most of these zones at located in six conservation corridors, which will be the focus of CEPF intervention (Table 13.2, Map 13.1). KBAs with significant representation of freshwater ecosystems that are located within these corridors will be considered priority sites for CEPF investment under this strategic direction. As noted above, projects may work in the wider catchment beyond the KBA boundary, either because this is necessary to maintain the integrity and value of the KBA, or because there is an opportunity to restore areas beyond the existing boundary. Project proposals should explain the relevance of any actions in the wider catchment to the integrity of the KBA.

Table 13.2 Corridors prioritized for CEPF support under Strategic Direction 2

Corridor	Eligible Countries	Corridor area (km^2)	# of priority KBAs, SD2
Orontes Valley and Levantine Mountains	Türkiye*, Syria*, Lebanon, Jordan, Palestine	38,433	33
The Atlas Mountains	Morocco	106,691	21
The Rif Mountains	Morocco	15,488	10
The Dorsal and Tellian Atlas	Tunisia, Algeria	82,633	48
Eastern Adriatic	Bosnia and Herzegovina, Montenegro	23,402	14
Southwest Balkans	Albania, North Macedonia, Montenegro, Kosovo*	37,808	51

**No investment currently foreseen in these countries for this Strategic direction*

Nevertheless, data analysis also shows that freshwater biodiversity is still poorly known in many parts of the hotspot, possibly leading to bias in terms of priority setting and limiting ability for conservation action. Although many projects supported by CEPF in the previous phase helped reduce this knowledge gap, consultations conducted during the update of the ecosystem profile demonstrated that this need is still there. Also, emerging threats at sites important for freshwater biodiversity may call for urgent actions to document the value of places that were not considered threatened and prioritized previously. For this reason, Investment Priority 2.1, on research and assessment, will be open to other KBAs in the region with objective to reduce this gap.

Priority sites for CEPF investment under Strategic Direction 2 are presented in Annex 2.

Figure 13.1: Map of Priority Corridors for Strategic Directions 2 and 3

Investment Priority 2.1 Document and promote recognition of the freshwater biodiversity and ecosystem service values of Key Biodiversity Areas

Information on the distribution, population and threat status of freshwater biodiversity within KBAs remains, in many cases, inadequate to allow identification of the most urgent sites for conservation action, or to act as a baseline against which to evaluate improvements. In addition, the biological, social and economic values of ecosystem services from intact water catchments are poorly understood and not widely appreciated by decision makers. CEPF will support grantees to collect this information but will require such preparatory work to be clearly linked to subsequent conservation action.

Undertaking joint research can also be a basis for working with other CSOs, local stakeholders and government agencies, to strengthen or develop collaborative relationships that can form the basis for joint action to address challenges to freshwater conservation at KBAs. At transboundary sites, it will often be advantageous to plan this across national borders, and to work closely with national and international decision-making bodies.

Actions that are eligible to be funded under this investment priority include the following:

- Undertaking field surveys to establish the distribution of and baseline population estimates for key freshwater taxa at KBAs, and to identify threats to these populations.
- Establishing partnerships for research, communication and promotion of action for conservation of KBAs and developing action plans and other jointly agreed conservation measures.
- Conducting bio-physical and economic analyses and modelling to establish the links between sites and species, and ecosystem services and hydrological and land use factors influencing the wider catchment. This may involve modelling of the economic

and social values of water catchment ecosystem services. Such studies should be clearly linked to practical implementation of their findings.
- Undertaking technical and specific threat-based research studies that seek to strengthen the impact of inputs to land-use planners.
- Documenting the biodiversity or ecosystem value of sites under imminent threat and communicating the results to relevant authorities and the general public to raise awareness about their values.
- Communicating research findings to decision makers and the local public (especially water users, for example), to ensure reduction of threats to water quality and freshwater biodiversity.

Investment Priority 2.2 Advance protection, restoration and improved management of important sites for freshwater biodiversity, with the participation of local stakeholders

CSOs supported by CEPF grants are most likely to be able to take direct conservation action at specific sites, where working with management agencies or local stakeholders can change behavior, reduce the impact of specific threats, or exploit opportunities for enhancing management, protection or restoration. These threats may be the result of proposed infrastructure, which may cause direct habitat loss and/or indirect impacts through changed flow regimes and land use patterns. Threats may be more insidious and cumulative, for example through pollution, deforestation in the catchment, or the impacts of climate change.

Many projects can follow a proactive agenda to achieve better outcomes for priority sites, rather than being reactive to external threats. KBAs may not be directly threatened but may be degraded or in need of additional measures to achieve their potential both for conservation of biodiversity and provision of ecosystem services. There may be opportunities to progress towards additional formal or informal protected areas, including CCAs or OECMs, or to strengthen freshwater elements of management plans within existing protected areas. There may also be priority sites with important populations of threatened species that could be further recovered by targeted measures. Although the most appropriate level for direct action by CSOs is at clearly defined sites, the connectivity of freshwater systems makes it highly likely that some action may also be needed at the catchment or river basin level to address these threats or opportunities, especially from upstream infrastructure or issues relating to improving water quality (e.g., from nutrient pollution, agriculture and forestry run-off, sewage disposal, etc.), water volume and flow and disturbance to habitat (e.g., straightening and deepening of river beds, drainage of wetlands, gravel mining, etc.). This will involve influencing those actors from government and/or the private sector who are involved with or have the authority to influence these issues.

Examples of actions that might be funded under this investment priority include:
- Strengthening or establishing protected areas (formal or informal) for freshwater biodiversity and ecosystems, working with local stakeholders, including user groups and local government agencies. This may include contributing to management planning, supporting mechanisms for collaborative management, and site monitoring.
- Interacting with land-use planning systems, including hydrological planning and EIA, where active intervention is needed to influence decision makers.
- Undertaking policy and related advocacy to improve proactive land-use planning across the wider catchments where KBAs are situated, so as to secure better catchment-wide decision making
- Networking and awareness raising to inform, and then influence, the actions of local authorities, government agencies or private sector responsible for management of wider catchments where KBAs are situated, supporting them to carry out their role more effectively with the assistance of improved data and expertise.

- Monitoring and encouraging enforcement of sustainable hunting and harvesting practices, working with user groups and local authorities to control excessive hunting/fishing and harvesting pressure.
- Restoring and enhancing freshwater ecosystems, with a focus on maintaining or expanding the conditions required by populations of threatened species. Restoration may include, but not be limited to, removal of encroaching invasive or successional vegetation from water courses and marshes, re-planting of riverbanks and marginal vegetation, and management of water levels to re-instate natural flood cycles.
- Encouraging the adoption of more sustainable practices for natural resource use, especially where it impacts threatened biodiversity. This could include formation or strengthening of local groups involved in the management of specific resources (user groups, village-based groups, etc.) or negotiation of resource-management agreements.

Strategic Direction 3. Promote traditional land-use practices that maintain biodiversity in priority corridors

Main focus, justification and impact
Mediterranean biodiversity has evolved with human land-use practices over several thousand years, to the extent that many of the most threatened terrestrial species in the hotspot are dependent on habitats that are maintained through continuing human interventions for agriculture, seasonal grazing or harvesting of wild products (see Chapter 4). The species and habitats that depend on these anthropogenic systems can become threatened when an established management system is abandoned and vegetation succession occurs, when traditional sustainable practices change and cause degradation and erosion (e.g., over-grazing), or when intensive agricultural and land use practices, including the use of irrigation and agrochemicals, replace traditional practices and eliminate the opportunity for wild biodiversity to co-exist with agricultural systems (see Chapter 9). Under this strategic direction, CEPF will support CSOs to work with local community land managers and local enterprises to pioneer innovative ways to sustain certain elements of traditional land-use practices that are important for threatened biodiversity. CEPF will focus its work primarily upon ecosystems where pastoral management with extensive grazing of livestock has been a key component of land management. CEPF will support work in and around KBAs that contain such systems, as well as work in wider corridors, where supporting such management can be demonstrated to protect the integrity of one or more KBAs.

CEPF will focus on landscapes where grazing is a key component of the management of the landscapes and in maintaining biodiversity but also an important economic and cultural activity for communities (Investment Priority 3.1). Supporting more sustainable grazing management practices is expected not only to conserve threatened biodiversity but also to preserve natural capital necessary for local livelihoods, through reduction of erosion or preservation of water quality and availability. Improved grazing management also contributes to the protection and sustainability of Mediterranean forests, which are threatened by poor regeneration due to overgrazing, while well managed grazing can help reduce the incidence of wildfires: a growing threat related to climate change (Chapters 9 and 10). The most important landscapes threatened by inappropriate grazing regimes in the Mediterranean Basin are in the uplands, justifying the selection of the priority corridors in Table 13.3. Preserving mountain landscapes is essential for enabling plants and associated species to adapt and migrate along altitudinal gradients, tracking cooler habitats, as lower ones become inhospitable due to climate change (Chapter 10).

Based on lessons learned during phase II, CEPF wants to actively promote the role of traditional land users, by trialing solutions and innovations, sharing experiences and promoting lessons and successes widely to government, local communities and donor agencies. It is intended that these projects will share more in common, and that practitioners can form a community of interest in sharing their experiences and in encouraging their further replication and upscaling, in particular in the context of OECMs (Investment Priority 3.2).

Geographic focus
Traditional management practices in cultural landscapes survive throughout the region, often in places affected by emigration, marginalization and rural poverty. In many rural areas, evolution of agriculture practices has led to an homogenization of habitats and species, which would be difficult to reverse in the short term. To maximize the value of projects in demonstrating innovative approaches to land management that can benefit biodiversity conservation, CEPF will prioritize projects that have potential for making a difference to globally threatened biodiversity, and, therefore, favor projects centered on Key Biodiversity Areas and with impacts on threatened species. Projects may extend beyond the strict boundaries of KBAs, to follow a landscape approach and take into account ecological connectivity.

Six corridors were selected where elements of traditional management systems are still the main land use and that have a high percentage of land covered by KBAs, allowing for the maintenance of ecological connectivity at the landscape scale (Table 13.3, Figure 13.1). Within these corridors, CEPF will prioritize KBAs above 500 meters of elevation, as presented in Annex 2.

Within each of these corridors, applicants can propose sites where the conservation of biodiversity within or in the vicinity of one or more KBAs depends on the continuation of traditional management practices, where these practices are changing but where an intervention to support the maintenance of traditional practices appears feasible. The focus of this strategic direction is primarily on upland grazing landscapes where the traditional practice has been to manage the landscape through extensive grazing that safeguards biodiversity values while providing secure and sustainable income and employment.

Table 13.3 Corridors prioritized for CEPF support under Strategic Direction 3 and number of KBAs prioritized

Corridor	Eligible Countries	Corridor area (km^2)	# of priority KBAs, SD3
Orontes Valley and Levantine Mountains	Türkiye*, Syria*, Lebanon, Jordan, Palestine	38,433	29
The Atlas Mountains	Morocco	106,691	19
The Rif Mountains	Morocco	15,488	3
The Dorsal and Tellian Atlas	Tunisia, Algeria	82,633	35
Eastern Adriatic	Bosnia and Herzegovina, Montenegro, Kosovo*	23,402	7
Southwest Balkans	Albania, North Macedonia, Montenegro	37,808	37

**No investment currently foreseen in these countries for this Strategic direction*

Feasibility is indicated by factors, including:
- There is security of access to the land/resource (or it can be secured without competition with a major alternative land use that has powerful economic and political backing), and the individuals or groups that directly use the resource are also the people who make decisions about its management.
- Customary knowledge and skills for resource management still exist within the community.

- There is an opportunity to engage a private sector actor (e.g., a buyer or processor of produce) who can support the marketing of products, or to form local associations or enterprises that can facilitate this.
- There is an opportunity to cluster a series of grants, for example around a large KBA or a series of KBAs, allowing collaboration and experience sharing within similar social and environmental contexts.
- The presence of a longer-term source of support that could sustain activities into the long term (e.g., a donor funded or government scheme, or an institution such as a protected area management agency with a budget); recognizing that participatory community processes can be slow, and that a single grant may only be able to initiate the process.

Some of the landscapes where this strategic direction is relevant are in protected areas where traditional agro-silvi-pastoral practices still exist (i.e., IUCN categories V and VI). There may be opportunities for CSOs to work with protected area managers and local resource users to establish collaborative management systems that promote traditional resource management as a way to maintain biodiversity while contributing to local livelihoods.

Investment Priority 3.1 Support traditional resource managers to follow land management practices that maintain biodiversity in mountain landscapes

The core of this strategic direction is working with traditional resource managers to enable them to enhance their livelihoods through maintaining biodiversity-rich traditional practices. Across the Mediterranean Basin, this most frequently involves actions involving the grazing of livestock, which has maintained a range of open habitats for centuries. As well as maintaining open areas, these practices also have a strong interrelationship with the regeneration and good management of Mediterranean forests, and are important in mitigating and adapting to the effects of climate change.

This investment priority will prioritize these practices, as it will enable a focus for lessons to be learned, supportive policies to be promoted, and communities of practice to be developed. These practices are changing, often for socio-economic reasons, but the dynamics are different in different areas. Both the intensification and abandonment of livestock grazing can be damaging. The intention is to ensure livestock levels and management practices are compatible with maintenance of the valuable habitats, in and around KBAs. While grazing management is often key in these landscapes, it also goes along with other agricultural practices that are beneficial to the diversity of habitats and species, due to the mosaic features of the area. They are also key for the diversification of incomes. Therefore, projects may include activities to sustain and improve these agricultural practices. The key will be to enable resource users to increase their income, through improvements to processing and marketing of products, including through certification and labelling, as well as exploring opportunities such as payment for environmental services or access to government support. Use of innovative techniques and tools will be promoted, as long as they support the sustainability of traditional land-use practices.

CEPF is particularly keen to support projects that have features that can be scaled up and potentially replicated elsewhere, so that lessons from this work can be used to expand the fund’s reach and impact.

Actions eligible to be funded under this investment priority include:

- Facilitating agreements among resource users to maintain traditional management systems in and around KBAs. Agreements should be based on participatory assessment of the specific traditional practices that are essential for maintenance of threatened biodiversity and ecosystem functions within the landscape, and the threats/changes to them, leading to agreement on the action that will be taken by resource users.

- Implementing priority actions that will support continuity of these systems. These will vary but may include infrastructure (e.g., water tanks), access agreements or promotional actions.
- Providing information and advice to resource users to enable them to improve their income while retaining the essential elements of traditional management systems.
- Strengthening the capacity of local management institutions, including for management of economic activity (e.g., processing and marketing co-operatives), distribution of benefits and internal rules for management of resources, with care for enhancing gender equality at the local level.
- Negotiating stronger rights and permissions needed to ensure that customary resource managers have security of access to resources and, where necessary, the right to exclude others (including, for example, the ability to call on village or local government authorities to help tackle activities that undermine the sustainability of resource management, such as illegal grazing or logging).
- Working with private sector actors and resource users to establish markets for certified or sustainable products from traditional management of biodiversity-rich systems, including market research, development of business plans and marketing of products.
- Catalyzing the formation of partnerships that can bring specialist skills in, for example, community facilitations, institution building and marketing.
- Working with local resource users to protect, manage and enhance populations of threatened species within traditionally managed landscapes (e.g., physical protection of biodiversity by fencing, signing, creation of firebreaks, maintenance of suitable habitat through clearance of successional and invasive species, management of water levels, planting of food plants, prevention of direct persecution of threatened species).
- Organizing visits and exchanges that enable local community representatives to learn from projects elsewhere that have demonstrated successful approaches.
- Supporting initiatives aimed to influence policy-makers to implement policy, legal
- Enable local resource users to work through coalitions or alliances to influence private sector actors and governments to stop and avoid interventions that might be damaging to the landscapes – e.g. conversion to intensive agriculture or forestry.

Investment Priority 3.2 Document and promote traditional land-use practices and Other Effective area-based Conservation Measures among local and national governments

While resource users and managers will be the main beneficiaries of projects under Investment Priority 3.1, it is also important to promote the importance of and rationale for traditional, biodiversity-friendly practices among a wider group of actors, and to promote longer term initiatives to sustain, expand and replicate successful projects. CEPF can only ever fund projects in a small proportion of these very large corridors, and yet greater ambition is needed if such areas are to contribute meaningfully to biodiversity goals, and to support rural populations living and working there. Investment Priority 3.2 will promote learning and understanding of these conservation and rural development linkages at local, national and international scales. The longer-term objective is to encourage the establishment of support programs and networks to maintain these cultural landscapes. Locally and immediately, CEPF will encourage successful projects to seek to formalize achievements through progressing towards an appropriate designation for the land. While this could be a formal protected area designation (IUCN Categories V or VI), it would more usually be some form of OECM, such as CCAs or the traditional local systems that exist in some parts of the hotspot.

Actions eligible to be funded under this investment priority include:

- Assessing the economic, cultural and historic value of traditional systems, documenting changes and impacts, and disseminating information to local leaders and decision makers to build constituencies of support.

- Communicating to local and national government officials about the economic and social values of maintaining traditional practices (e.g., for employment, ecosystem services, production of local produce and maintenance of cultural landscapes that may be the basis for tourism) and encouraging them to take appropriate financial, policy or legislative measures to protect and support traditional management regimes.
- Negotiating for the strengthening and formalization of successful cultural management measures through designation as some type of protected area or OECM.
- Networking and sharing of lessons and experiences, with the aim of building alliances of traditional resource managers across landscapes (e.g., among several villages around a KBA or among KBAs) and raising the interest of decision makers across the hotspot.
- Collaborating with private sector partners in existing or potential trade chains for products from traditional resource use, to introduce the use of sustainability and/or biodiversity-friendly criteria and methods as a basis for trade.
- Working with private sector partners to explore markets and options for certification and valorization of traditional products that contribute to preserving biodiversity.

Applicants will be encouraged to ensure that they have an adequate range of expertise to implement these complex projects. Options may include joint applications from conservation and rural development organizations or hiring of technical experts from appropriate disciplines.

Strategic Direction 4. Strengthen the engagement of civil society to support conservation of threatened plants and plant communities

Main focus, justification and impact
The Mediterranean Basin Hotspot is defined on the basis of an exceptionally high number of endemic plants, coupled with a loss of more than 70 percent of the original vegetation. While plants will benefit along with other species from CEPF investments under Strategic Directions 1, 2 and 3, the level of threat and the lack of attention to the specific conservation needs of plants to date justify a separate strategic direction focused on this group. In addition to supporting direct action for the conservation of plants, projects under this strategic direction will also contribute to strengthening the botanical knowledge and skills of scientists, conservationists and land managers within the region. The aim is to increase the proportion of plants that have been formally assessed against the IUCN Red List criteria.

The limited range and very specific habitat requirements of some threatened plants means that their conservation can be tackled effectively by local CSOs working on the ground with limited resources, often in partnership with protected areas managers or local landowners.

Over the last decade, an important effort by the botanical community (funded, in part, by CEPF), under the auspices of the IUCN Mediterranean Plant Specialist Group, led to the identification of a set of Important Plant Areas (IPAs) later recognized as KBAs for some of them, and improved understanding of threats facing plants. Nevertheless, the number of plants in the Mediterranean Basin is so huge that only around 15 percent of them have been assessed against the IUCN Red List criteria, making it very likely that there are many threatened plant species that have not yet been recognized at the global or regional level.

Thematic focus

Given the above, this strategic direction focuses on sites comprising priority plant species, defined as:

- Plant species in threat categories Critically Endangered (CR), Endangered (EN) or Vulnerable (VU) on the IUCN Global Red List
- Plant species that have not yet been assessed on the Global Red List, but that are included on regional red lists or would qualify for global CR, EN or VU status according to the IUCN Red List criteria.
- Site-restricted endemics (SRE), which include:
    - Taxa occurring in only one site (and nowhere else in the world) or
    - Extent of occurrence less than 100 km^2 or
    - Area of occupancy less than 10 km^2.

Priority will be given to projects that:

- Demonstrate that they are focused on one or several priority species or are addressing a priority need for the conservation of plants (e.g., surveys of under-surveyed plants or plant communities (such as non-vascular plants), or population assessments of potentially threatened species).
- Demonstrate that they will lead directly to action for the conservation of priority plant species as defined above.
- Include, where possible, a significant component on capacity building for plant conservation, for either the project implementers or their local partners (e.g., community resource users or protected areas managers).
- Complement other projects (funded by CEPF or not) working at site/landscape level, therefore creating synergies between plant conservation community and other conservation actors.
- Address the conservation of sites where there is a demonstrable need for funding and opportunity for success.

Investment Priority 4.1 Build the capacity of the botanical community to increase knowledge and skills and engage in applied conservation of threatened plants

One of the challenges in continuing the process of identifying important KBAs for plants, assessing the conservation status of plants, and taking action for their conservation is the limited number of people in the region with the necessary botanical skills. CEPF will support projects that have a strong element of developing practical botanical skills, including survey, *in situ* or *ex situ* conservation, provided that it enables the protection, reintroduction or reinforcement of populations of threatened species. This will involve working with traditional educational institutions (botanical gardens, universities, research institutes, etc.), as well as working to improve the skills of other groups with the potential to contribute to plant conservation, including protected area managers, members of voluntary societies and land managers. CEPF is particularly keen to increase capacity in countries where major gaps have been identified as regards the size and capacity of the botanical community, such as Morocco, Libya, Algeria and Cabo Verde. CEPF is also keen to support work on lesser-known plant groups, including non-vascular plants, which are currently less studied and protected.

Actions under this investment priority might include:

- Building capacity in plant survey, identification skills, and applied conservation knowledge, including training-for-trainers to enable replication.
- Producing/translating materials into local languages, online and physical guides to support survey work.
- Networking and developing mechanisms for sharing information (e.g., on the status of plant led KBAs, review of existing site boundaries and the identification of new sites).
- Developing and implementing conservation action plans and other management proposals or initiatives.

- Documenting biodiversity value of sites important for plant conservation under emerging threats, and communicating the results to authorities and general public to raise awareness and prevent damages
- Promoting conservation measures that focus on threatened plant and their habitats, rather than just individual species.

Investment Priority 4.2 Secure better implementation of plant conservation in the management of protected areas

Populations of threatened plants are often located within protected areas but are still threatened because management (or lack thereof) does not address their specific conservation needs. This is, in part, due to a lack of knowledge, skills and experience among practitioners.

Actions under this investment priority may include:

- Conducting surveys and conservation assessments of threatened plant populations and their habitats within protected areas.
- Working with protected area managers to identify threats and potential solutions and introducing specific actions for the preservation of threatened plants and their habitats in the management plans for protected areas.
- Undertaking management of habitats, including attention to the management of specific sites within protected areas, to ensure suitable conditions for the maintenance and recovery of threatened plants.
- Working with protected area managers and other resource users (e.g., grazers under collaborative management regimes) to accommodate the requirements of threatened plants.

Investment Priority 4.3 Take innovative actions for conservation of threatened plants, working with landowners and land users

Many threatened plant populations survive in managed landscapes, outside of protected areas, and are potentially threatened by changes in land use practices. This investment priority will seek to protect these populations and create the enabling conditions for population recovery where needed. This may entail creating a formal or informal protected area, or coming to an agreement with landowners or land users relating to specific management actions to improve the conservation status of plants. This may also entail working with national or local government agencies and public institutions, private landowners, and community groups.

Potential actions under this investment priority include:

- Working with land managers, landowners and land users to identify threats and promote improved management plans and practices to preserve threatened plant populations.
- Establishing 'micro-reserves', where appropriate management, with negotiated sustainable practices, is introduced to ensure the survival of threatened plant species.
- Encouraging the passing of local regulations to protect micro-reserves/sites for threatened plants and control exploitation and other important threats.
- Raising awareness of local governments on threatened species on communal lands and engaging them in adapting their management practices for preservation of plant populations.
- Promoting integration of results into national conservation planning exercises, working with national authorities and sharing information to ensure plant conservation is fully considered in national regulations and conservation planning.

Investment Priority 4.4 Improve conservation efforts for wild crop relatives, medicinal plants and other wild plants of economic and cultural value

The Mediterranean Basin has a long cultural history of using a wide range of native plant species for culinary and medicinal uses, and, in some cases, creating domestic varieties of the wild species. These include a wide range of herbs, vegetables, fruits and trees. The Mediterranean Basin is also very rich in Crop Wild Relatives (CWR) native to the region. Overall, European and Mediterranean flora revealed that approximately 80 percent of the species in the region are CWR and other species of socio-economic importance (Kell *et al.* 2008) While many species are still widespread and continue to form a part of traditional Mediterranean diets, others have become very scarce and are threatened by over-collection, as well as habitat loss and the other threats facing all plant species.

The conservation of CWR is important, particularly as a reservoir of genes that can help improve the resistance of cultivated plants to climate change and other human-induced impacts. Several large organizations, including the Food & Agriculture Organization (FAO), agronomy institutes and research centres, and TRAFFIC, have worked for a long time on this topic, particularly on assessment, genetic research and promotion. Nevertheless, the topic is rarely embraced by local CSOs, and conservation projects with local communities remain few. The conservation of CWR can, thus, also form compelling stories, which can raise awareness of wider land-use change and conservation issues. This investment priority will seek to achieve concrete conservation action at the local level, and raise awareness of the cultural history and conservation needs of CWR, framed within the context of wider environmental issues. CEPF will only support conservation action for priority plants species that fulfil the criteria listed above.

Potential actions under this investment priority include:

- Conducting status assessments of useful plants and CWR, and development of plans or proposals identifying conservation needs and necessary actions.
- Undertaking management of habitats to ensure suitable conditions for the maintenance and recovery of threatened plants of cultural use and importance.
- Raising understanding and awareness of the cultural and conservation importance of communities of these plants and placing them in the context of wider conservation priorities and actions.
- Working with traditional users and practitioners to improve knowledge of the uses and design management options for sustainable collection.
- Working with communities to set up sustainable management and harvesting plans, so as to reduce both legal and illegal exploitation.
- Supporting design, adoption or promotion of regulations for the sustainable collection of CWR, ensuring that harvesting does not endanger plant populations.

Strategic Direction 5. Facilitate the development of a robust and resilient community of conservation Civil Society Organizations (CSOs)

Main focus, justification and impact

Environmental civil society is increasingly active in the Mediterranean Basin, and CEPF believes in CSOs as strong and credible stakeholders to reach sustainable biodiversity conservation impacts. Nevertheless, CSOs are facing organizational challenges that they often struggle to deal with.

There is a need among CSOs to focus on organizational resilience and sustainability, achieved through, among other things, a well defined strategy and clear mission, sound operational policies and procedures, and good governance. Developing a strong foundation for securing core funding, maintaining a stable and engaged team, ensuring a transparent and effective organizational structure, and strengthening leadership skills are also priorities. Additionally, there is an opportunity to capitalize on learnings and enhance the sharing of values across teams to promote a unified culture. In that sense, focusing on the organizational development of these CSOs is a key element for a stronger civil society, to ensure that CSOs are able to support conservation action in an efficient and sustainable manner.

The efficiency and resilience of civil society also goes beyond the strengths of individual organizations. Ecological science demonstrates that ecosystems are more resilient, adaptable and productive when they are diverse, with a full range of ecological functions and relationships in place. A parallel can be drawn with conservation communities, and CEPF believes that collective action and strengthening of networks and partnerships is key to make civil society, as a whole, stronger and better able to tackle conservation challenges.

These partnership efforts also need, sometimes, to go beyond civil society. In the region it is particularly important that conservation organizations demonstrate to authorities that their role is important for achieving their targets and fulfilling their international commitments (Chapter 8). This calls for collective action.

This strategic direction will support specific actions along the two paths of (1) organizational development for individual CSOs, and (2) collective action and partnerships. These two approaches have much in common and serve each other. Working together and learning through peer experience contributes to individual organizations' development; and stronger organizations can contribute more to the collective efforts.

Investment Priority 5.1 Provide support to targeted conservation CSOs engaged in a process of organizational development

As each CSO has its own trajectory, specifically linked to its history, the socio-political context in which it evolves, and its members, it is necessary that the support for CSOs be specific to the needs and motivations of their members. Thus, the notion of organizational change requires a commitment on the part of the CSO, which will be an essential prerequisite for any support from CEPF. Some organizations may already have clear ideas on how to improve their organizational capacities, while others may be still on their way, and need support to identify issues and areas for improvement. Change should not be forced by CEPF, and the timing of support should be well thought out by the organization. The preferred contractual arrangement with CEPF will, therefore, be a grant by invitation, usually to a current or former CEPF grantee organization. This commitment will be translated into an initial organizational diagnosis and an action plan, where this has not already been done by the CSO.

This preliminary stage will make it possible to specify the needs of the targeted organization and to have a point of comparison at the start of the support. CEPF, the RIT or an external expert/entity may play the role of facilitator. The action plan will be a guide but additional activities may be introduced as the work progresses.

For the implementation of the action plan, it would be preferable for expert support to be provided over the medium term rather than very short periods, to gain greater trust and understanding of the realities of the CSO and to monitor the implementation of lessons learned or new measures. This support may be provided either in parallel with a field project linked to another strategic direction, or independently. The CSOs may, subject to agreement with CEPF, involve organizational experts to assist them with this work.

This investment priority will enable CSOs to receive individual support for specific organizational change needs identified in advance. The pillars targeted will be (i) strategic, (ii) organizational, (iii) technical and (iv) cultural (i.e., what makes the identity of the CSO, what motivates the team).

Actions eligible to be funded under this investment priority include:

- Hiring experts to support the elaboration of planning and management documents, such as a strategic plan, communication plan, manual of procedures, gender policy and plan, etc.

- Buying equipment essential to achieving the CSO's objectives, such as furniture, computers, vehicles, field equipment, etc.
- Recruiting employees who are not included in specific project budgets but who can contribute to the development of the organization (fundraising or communications experts, etc.).
- Hiring experts/coaches in team management, psychology, team wellbeing, team commitment (employees, volunteers, board of directors), etc.
- Recruiting experts/coaches to reinforce board members on their roles and responsibilities.
- Organizing team retreats and collective reflection workshops on strategies, team cohesion, etc.
- Hiring thematic experts/coaches to provide training and/or guidance on communication, ecological monitoring, administrative management, etc.
- Carrying out studies on sustainable financing opportunities for the organization.
- Hiring experts/coaches in organizational change.

Investment Priority 5.2 Enhance the collective strength and ability of conservation CSOs at national and regional levels

This investment priority will focus on enhancing collective efforts among CSOs to promote both mutual learning and network dynamics aimed at conserving biodiversity. It could be an opportunity for CSOs to raise a common Mediterranean conservation agenda, or to advance as a group towards shared objectives. There are also existing networks of CSOs in the Mediterranean Basin that aim to promote exchanges of expertise among their members, and which CEPF may support in order to upscale or strengthen actions undertaken via the other strategic directions.

Actions eligible to be funded under this investment priority include:

- Organizing or supporting experience-sharing events and exchange visits, or fostering attendance of participants from CEPF eligible countries at regional events.
- Supporting the structures and functioning of networks, at national or regional levels, particularly where coordination is needed to reach conservation goals (i.e., marine species like sea turtles or marine mammals, or to address common threats).
- Supporting groups of organizations to prepare joint proposals or launch common fundraising activities, with the objective to facilitate access to larger projects or programs that are currently out of reach for national organizations.
- Hiring advocacy experts/coaches to increase the visibility of CSO actions in a region.
- Supporting more experienced CSOs to mentor less experienced CSOs.
- Organizing webinars among grantees and external stakeholders to foster collaboration, coordination and learning.
- Supporting the establishment and functioning of national networks to support strengthened decision making and information on biodiversity (on revision of KBAs, support to NBSAP process, etc.)
- Establishing groups of organizations to work on specific topics, and undertake surveys, studies or assessments that are beneficial for decision makers and implementers, at the level of countries or more widely across the hotspot.
- Facilitating communities of practice with cohorts of organizations discussing regularly their lessons learned and with experts facilitating specific workshops. In these exchanges, subjects related to the cultural aspects of CSO development will be important, such as the qualities of good leadership, team cohesion, conflict management, psychology (burn-out), governance, transparency, etc.

Strategic Direction 6. Provide strategic leadership and effective coordination of conservation investment through a regional implementation team

Main focus, justification and impact

In every hotspot approved for investment, CEPF works with a regional implementation team or RIT to convert the plans in the ecosystem profile into a cohesive portfolio of grants that exceeds in impact the sum of its parts. The RIT will consist of one or more CSOs active in conservation in the hotspot. The RIT will be selected by the CEPF Donor Council based on approved terms of reference. The team will operate in a transparent and open manner, consistent with CEPF's mission and all provisions of the CEPF Operational Manual. Organizations that are members of the RIT will not be eligible to apply for other CEPF grants within the same hotspot. Applications for grants from formal affiliates of those organizations that have an independent board of directors will be accepted, subject to additional external review.

The role of the RIT will remain central to the operation of the grants programme and will continue to seek to collate and integrate experiences from site-level work in order to promote replication and scaling up and achieve policy impacts (see Chapter 12) and sustainability (see Chapter 15).

Investment Priority 6.1 Support a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile

The RIT will provide strategic leadership and local knowledge to build a broad constituency of civil society groups working across institutional and political boundaries toward achieving the conservation goals described in the ecosystem profile. It will implement a number of functions, as set out in the terms of reference, including.

- Act as an extension service to assist civil society groups in designing, implementing, and replicating successful conservation activities.
- Review all grant applications and manage external reviews with technical experts and advisory committees.
- Award small grants up to an agreed threshold amount and decide jointly with the CEPF Secretariat on all other applications.
- Lead the monitoring and evaluation of individual projects using standard tools, site visits, and meetings with grantees, and assist the CEPF Secretariat in portfolio-level monitoring and evaluation.
- Build the institutional capacity of grantees to ensure efficient and effective project implementation.
- Widely communicate CEPF objectives, opportunities to apply for grants, lessons learned, and results.

The RIT will directly support strategic development of the grant portfolio and contribute, in its own right, to the achievement of critical conservation results that yield portfolio-wide benefits. Such activities may include facilitating learning exchanges among grantees and other stakeholders, identifying leveraging opportunities at the grant or portfolio level, or collaborating with other donors to align support to CSOs and their conservation projects.

In line with the overall CEPF investment niche, capacity building and organizational development will be at the core of the RIT's role, as per Strategic Direction 5. The RIT, together with CEPF, will be responsible for ensuring that grantees have the institutional and individual capacity needed to design and implement conservation projects that contribute to the overall investment strategy. The RIT will also have a role in communicating about CEPF's focus on organizational development, publicizing the opportunity, and supporting CEPF to identify organizations to receive organizational development grants. Experience has shown that capacity building efforts are essential to ensuring good projects that are integrated into a wider hotspot strategy and a common conservation vision. The added emphasis on organizational development aims to increase the resilience and sustainability of CEPF's investment on all levels.

14. RESULTS FRAMEWORK

The result framework uses primarily CEPF Global Indicators (GI) to set targets for the investment in the hotspot. Additional Portfolio Indicators (PI) are introduced to set target and monitor impacts specific impacts that are not covered by the global indicators.

The objective for the portfolio is to support 140 projects (50 Large Grants, 90 Small Grants) over a 6-year investment period, for at least 100 individual civil society organizations, 90% of which being local organizations.

PILLAR 1: BIODIVERSITY

Our goal: Improve the status of globally significant biodiversity in critical ecosystems within hotspots.

		SD1	SD2	SD3	SD4	**Overall Objective**	***Means of verification***
GI-B1	Number of globally threatened species benefiting from conservation action.					**60 species**	*Grantee reports*
GI-B2	Number of hectares of Key Biodiversity Areas with improved management.	50,000 ha	100,000 ha	450,000 ha		**600,000 ha**	*Grantee reports*
GI-B3	Number of hectares of protected areas created and/or expanded.	22,000 ha	2,000 ha	3,000 ha	3,000 ha	**30,000 ha**	*Grantee reports, Official documents*
GI-B4	Number of hectares of production landscapes with strengthened management of biodiversity.	70,000 ha		900,000 ha		**970,000 ha**	*Grantee reports*
GI-B5	Number of protected areas with improved management.	12	8	5		**25**	*METTs (or alike tool)*
GI-B6	Number of hectares of terrestrial forest, terrestrial non-forest,	200 ha	500 ha	15,000 ha		**15,700 ha**	*Grantee reports*

	freshwater and coastal marine areas brought under restoration.						
PI-B1	Number of emerging threats to sites avoided through CSO engagement.	5	5		2	**12**	*Grantee reports*
PI-B2	Number of hectares in the process of being protected (with files submitted to authorities)	30,000 ha				**30,000 ha**	*Grantee reports, Preparatory Reports submitted to authorities*
PI-B3	Number of sites with improved knowledge of biodiversity.	15	10	10	15	**50**	*Grantee reports*
PI-B4	Number of ha recognized under the OECM.					**20,000 ha**	*Grantee reports*
PI-B5	Number of protected areas with better implementation of plant conservation in management.					**15**	*Grantee reports*

PILLAR 2: CIVIL SOCIETY

Our goal: Strengthen the capacity of civil society to be effective as environmental stewards and advocates for the conservation of globally significant biodiversity.

GI-CS1	Number of CEPF grantees with improved institutional capacity.	**80 (80% of local CEPF grantees)**	*CSTT (or alike monitoring tool)*
GI-CS2	Number of CEPF grantees with improved understanding of and commitment to gender issues.	**90 (90% of local CEPF grantees)**	*GTT*

GI-CS3	Number of networks and partnerships that have been created and/or strengthened.	**15 networks (among which at least 5 transboundary / regional)**	*Grantee reports*
PI-CS1	Number of organizations engaged in an organizational development process	**40**	*CEPF report*
PI-CS2	Number of CEPF grantees that have made significant progress towards their own organizational development goals at the end of the investment phase	**20**	*Specific survey at mid-term and at the end of investment phase*
PI-CS3	Number of countries with enhanced collective CSO capacities.	**10**	*Collective civil society assessment*

PILLAR 3: HUMAN WELL-BEING

Our goal: Improve the well-being of people living in and dependent on critical ecosystems within hotspots.

		SD1	SD2	SD3	SD4	**Overall Objective**	Means of verification
GI-HW1	Number of people (male/female) receiving structured training					**2,500 (at least 50% female)**	*Grantee reports*
GI-HW2	Number of people (male/female) receiving non-cash benefits other than structured training	40,000	10,000	100,000		**150,000 (at least 50% female)**	*Grantee reports*
GI-HW3	Number of people (male/female) receiving cash benefits (e.g. increased income from employment, increased income from livelihood activities, etc.)	500		1500		**2,000 (at least 50% female)**	*Grantee reports*
GI-HW4	Number of projects promoting nature-based solutions to combat climate change.					**50**	*CEPF Secretariat analysis of portfolio*

PI-HW1	Number of communities adopting/sustaining traditional land management benefitting biodiversity			30		**30**	*Grantee reports*
PI-HW2	Number of young scientists (male/female) trained on biodiversity conservation (MSc/PhD)	5	10	5	30	**50 (at least 50% female)**	*Grantee reports*

PILLAR 4: ENABLING CONDITIONS FOR CONSERVATION

Our goal: Establish the conditions needed for the conservation of globally significant biodiversity.

		SD1	SD2	SD3	SD4	**Overall Objective**	*Means of verification*
GI-EC1	Number of laws, regulations, and policies with conservation provisions that have been enacted or amended		2	2		**4**	*Grantee reports, Official documents*
GI-EC2	Number of companies that adopt biodiversity-friendly practices	2	3	3	2	**10**	*Grantee reports*
PI-EC1	Number of municipalities engaged in preserving biodiversity, demonstrated by municipal decrees, creation of municipal reserves etc.	5	2	10	10	**27**	*Grantee reports, Official documents*

15. SUSTAINABILITY

This profile incorporates sustainability as a principle into its strategic directions in order to ensure the long-term survival of viable ecosystems which the life in the Mediterranean Basin depends on. Based on experience from the first two phases of investment, the new investment strategy will need to place more emphasis on strengthening civil society, encourage multi-stakeholder approaches, and build synergies between the CEPF strategy and other funding sources in the region. We intend to build the capacity of institutions, support projects which achieve long term conservation solutions, and encourage replication of the work across a wider area, based on lessons learned from our investments.

15.1 Sustainability in the context of CEPF investment

When developing and implementing projects we hope that potential or active CEPF grantees will consider the issue of sustainability in all its aspects. The ultimate objective should be to start projects which, after investment for a period of time, stand the best prospects to be able to continue independently from external funding and support (Manten 2023). There is extensive literature on this subject and this section is merely an introduction to some of the issues that should be assessed.

Financial sustainability tends to be the main focus for effort as it is the most obvious factor. As far as possible projects should concentrate their budget on items which help to establish work on the ground and set in place structures and systems which can then continue. This might include surveys and research, capital equipment, start-up costs, training and promotion. Where ongoing operational costs are included then CSOs should consider when and how these costs can be covered independently of time-limited external funding. This might be through alternative project funds in the medium term but eventually will need to either cease to be a cost or be covered by longer term core funding or by income generating activities of some kind.

Institutional sustainability is critical at all levels. The implementing organization of course needs to consider both its own long-term governance and health, and this will be an increasing focus for CEPF (see below and also chapter 13). However, most projects will eventually be vested in the control and/or ownership of local communities and associated CSOs, cooperatives or enterprises. These entities in turn must be viable and will require their own organizational development and longer term sustainability planning. Where projects intend for this to be the case then such local capacity building should be an important element of the project plan and budget.

Social, political and economic sustainability is important to the design of projects. Testing the proposed conservation activity or intervention against these realities should be part of routine project development. Apparently appropriate interventions which have worked successfully in one place can often be an attractive and successful approach, but project developers should always assess whether they will be socially and politically acceptable, and whether they have the potential to be economically viable. For example, attempts to support traditional cultural practices such as extensive agriculture are an important objective of this profile (especially under SD3) but will likely only work if the proposals are acceptable to local communities and political leaders and if, following the intervention, the activity can be shown to give a level of benefits that will enable people to adopt it.

Environmental sustainability is an obvious objective of this program and should be an outcome of all projects that it supports. However, project developers should be cognizant of the wider environmental impacts of their project interventions and seek to minimize them whenever possible. Of course, it is vital that all projects understand the likely impacts of proposed activities and have a good level of certainty that they will have their desired effect and not have any unacceptable side effects on other species or ecosystems. For example, it may be necessary to travel long distances in the early stages of a project in order to, for example train local people or establish monitoring systems. However, it may not be environmentally acceptable to continue to make such journeys to implement routine activities which could much better be undertaken by local people, with appropriate support.

15.2 CSO capacity as a basis for sustainability

The coastal and marine (SD1) and freshwater (SD2) strategic directions support integrated approaches, as it is now clear how important multilateral partnerships between NGOs, as well as long-term cooperation between civil society, governments and, where possible, the corporate sector, are in the delivery of concrete and long-term conservation actions. The role of CSOs in enabling local communities to manage areas for biodiversity within traditional management systems (SD3) which reflects CEPF's understanding that local intervention is key for sustainability. We will encourage collaborations between different civil society groups bringing different but complementary skills, for example between national NGOs and local CSOs, or between conservation and rural development NGOs.

The CEPF investment in the Mediterranean Basin Hotspot in the past decade has contributed significantly to the growth of civil society, both at the level of individual organizations, and through the sector as a whole. This is evidenced by the improved delivery of projects, and by feedback via the Civil Society Tracking Tool (CSTT). Much of our work to date has focused on building the skills of individuals to undertake work related to the delivery of the granted projects, for example technical skills such as plant identification, survey skills or advocacy. This approach has been successful. In phase two in particular we started to offer support upon request for wider aspects of organizational development, for example to help develop an organizational strategic plan, or improve skills in institutional fundraising.

While there is clear evidence of progress, civil society in most countries is still relatively weak and fragile, and overly dependent on project based and other limited income sources. In the next phase CEPF aims to take a more systematic approach to organizational development to help improve the long-term effectiveness for civil society. This is outlined in detail under strategic direction 5 in Chapter 13 above. We will engage with selected grantees who wish to be involved in understanding their main organizational objectives and assist them in meeting them. The strengthening of civil society will continue to be a focus across all strategic directions, and will still include technical support where needed, especially where there is a need to enhance capacity for example in plant conservation and marine conservation. As well as bespoke support to CSOs and the CSO sector, SD5 will also support exchanges of experience and knowledge sharing at national and regional levels, so that best practices can be replicated throughout the hotspot and a wider network of experts is established.

We hope that CSOs will ultimately be in a position to influence those political decisions which have a major impact on natural resources. Mainstreaming biodiversity conservation and ecosystem services into all levels of decision making and development planning is a key approach that will strengthen institutional and financial sustainability of CEPF's investment in the region. While our focus is on civil society, we hope that through our work the capacity of government institutions can also be assisted. We are particularly keen to demonstrate the achievements and lessons of our work to local and national government so that they can consider how to scale up and replicate successes, via the strengthening of policy support, and through catalyzing the availability of additional government or donor funds.

15.3 Alignment between CEPF funding and other sources of support

There are already several funding resources contributing to conservation in the Mediterranean Basin. The CEPF funding fills gaps in those areas where essential activities are not being undertaken at the moment and complements larger funding support from multilateral and bilateral sources to government agencies in the region. The donor community showed great interest in the CEPF investment strategy in the first phase, as efforts were made to identify areas of common interest and to align strategies. The Advisory Committee played a key role in this and opened doors to portfolio and project level support.

Multiple CEPF-granted projects were also co-funded by other donors as complementing activities were identified. This collaboration of donors should continue into the third phase of investment and continue to widen networks and strengthen results. We hope that other donors will use this ecosystem profile to help to identify their own priorities for investment, and that both small and large donors might help our grantees to continue and scale up successful elements beyond the period of CEPF granting.

15.4 The role of the RIT in delivering sustainability

The RIT's contribution to the sustainability of the impact of the CEPF program overall encompasses grant selection and management as well as their role in establishing linkages between the program and government decision-makers and regional processes. In phase III we anticipate that the RIT will also directly or indirectly support a number of CSOs with advancing their organizational development.

Through its grant management, the RIT will contribute to sustainability by considering potential project's relevance in the local political and cultural setting, and alignment with national priorities and commitments under international conventions. Through its regional networking role, the RIT is expected to be aware of other funding opportunities and relevant programs, and to be proactive in ensuring that grantees are involved, including through sharing information on the CEPF program with other donors.

In its role making linkages to government, CEPF and the RIT will assist grantees to draw the attention of decision-makers to their project results and lessons, and to demonstrate the ways that they can contribute to government agendas. The RIT will also support the creation of linkages between grantees and private sector entities.

The RIT will contribute to securing additional and continuing funding for projects initiated under the CEPF program, including working with partners on innovative financing mechanisms.

REFERENCES

Abdul Malak, D. *et al.* (2011) *Overview of the Conservation Status of the Marine Fishes of the Mediterranean Sea*. Gland, Switzerland and Malaga, Spain: IUCN pp.61.

Abelló, P., Carbonell, A. and Torres, P. (2002) *Biogeography of epibenthic crustaceans on the shelf and upper slope off the Iberian Peninsula Mediterranean coasts: Implications for the establishment of natural management areas.* Scientia Marina 66: pp.183–198.

Adam (2011) *International Project of ornithological tourism in protected areas in the Mediterranean Basin*.

Adamík, P., Král, M., (2008) *Climate‐and resource‐driven long‐term changes in dormice populations negatively affect hole‐nesting songbirds.* Journal of Zoology 275: pp. 209-215.

AIFM (2016) *Who we are,* International Association of Mediterranean Forests, aifm.org/en

Al Shouf Cedar Society (2015). Enhancing Sustainable Livelihood and Promoting Community Management of Shouf Biosphere Reserve. Project report to CEPF.

Ali, E., W. Cramer, J. Carnicer, E. Georgopoulou, N.J.M. Hilmi, G. Le Cozannet, and P. Lionello, 2022: Cross-Chapter Paper 4: Mediterranean Region. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 2233–2272, doi:10.1017/9781009325844.021.

Alkemade, R., Bakkenes, M., Eickhout, B. (2011) *Towards a general relationship between climate change and biodiversity: an example for plant species in Europe*. Regional Environmental Change 11: pp.143-150.

AQUASTAT (2009) *Asi-Orontes Basin.* Aquastat. Food and Agricultural Organisation. http://www.fao.org/nr/water/aquastat/basins/asiorontes/index.stm

Arafeh-Dalmau et al., (2023) *Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected area* One Earth 6, 1523–1541 Elsevier Inc. https://doi.org/10.1016/j.oneear.2023.10.002

Arca, B., Pellizzaro, G., Duce, P., Salis, M., Bacciu, V., Spano, D., Ager, A., Finney, M., (2010) *Climate change impact on fire probability and severity in Mediterranean areas.*

Arca, B., Pellizzaro, G., Duce, P., Salis, M., Bacciu, V., Spano, D., Ager, A., Finney, M., Scoccimarro, E. (2012) Potential changes in fire probability and severity under climate change scenarios in Mediterranean areas. Modelling Fire Behaviour and Risk, pp.92-98.

Arroyo, B., Beja. P. (2002) *Impact of hunting management practices on biodiversity.* Technical report, Deliverable no 7. Reconciling gamebird hunting and biodiversity (reghab) Project.

Asteras *et.al.* (2023). Acoustic monitoring confirms significant poaching pressure on European Turtle Doves during Spring migration across the Ionian Islands, Greece. Animals 68012be3c178afa197a404ad0ea9a6772788d91d

Aurlle D. et al (2022) Biodiversity, climate change, and adaptation in the Mediterranean.In Ecosphere published by Wiley Periodicals LLC on behalf of The Ecological Society of America. https://doi.org/10.1002/ecs2.3915

Avramoski, O. (2004) The Politics of Watershed Management in the Ohrid and Prespa Region. BALWOIS.
Baletto, E., and Casale, A. (1991) *Mediterranean insect conservation.* In Collins, N. M., and Thomas, J. A. (eds.). The Conservation of Insects and their Habitats, Academic Press, London: pp.121–142.
Bangash, R. F., Passuello, A., Sanchez-Canales, M., Terrado, M., López, A., Elorza, F. J., and Schuhmacher, M. (2013) *Ecosystem services in Mediterranean river basin: climate change impact on water provisioning and erosion control.* Science of the Total Environment, 458: pp.246-255.
Barkhordarian, A., Bhend, J., von Storch, H. (2012) *Consistency of observed near surface temperature trends with climate change projections over the Mediterranean region.* Climate Dynamics 38: pp.1695-1702.
Barkhordarian, A., von Storch, H., Bhend, J. (2013) *The expectation of future precipitation change over the Mediterranean region is different from what we observe*. Climate Dynamics 40: pp. 225-244.
Barredo, J.I., Caudullo, G. and Dosio, A. (2016) *Mediterranean habitat loss under future climate conditions: Assessing impacts on the Natura 2000 protected area network*. Applied Geography, 75: pp.83–92.
Barrios, S., Ibañez, J. N. (2015) *Time is of the essence: adaptation of tourism demand to climate change in Europe.* Climate Change 132, 4: pp.645-660.
Barry, J.P., Widdicombe, S., Hall-Spencer, J.M. (2011) *Effects of ocean acidification on marine biodiversity and ecosystem function.*Ocean acidification: pp.192-209.
Bates, B.C., Z.W. Kundzewicz, S. Wu and J.P. Palutikof, (Eds.) (2008) *Climate Change and Water.* Technical Paper of the Intergovernmental Panel on Climate Change, Intergovernmental Panel on Climate Change Secretariat, Geneva: pp. 210.
Beaufoy, G., Baldock, D. Clark, J. (1994) *The Nature of Farming: Low-Intensity Farming Systems in Nine European Countries.* Institute for European Environmental Policy, London.
Ben Jannet Allal, H.;L. Guarrera;S. Karbuz; E. Menichetti; B. Lescoeur; H. El Agrebi; H. Harrouch; D. Campana; F. Greaume; C. Bedes; C. Bolinches; T. Meraud; D. Tappero; D. Bosseboeuf; B. Lechevin; H. Abaach; M. Damasiotis; M. Darras; M. Hajjaji; A. Keramane; E. Khalfallah; A. Mourtada and N. Osman, Mediterranean energy transition: 2040 scenario Executive summary, France, INIS-FR--16-0968, 40 pp., 2016. http://inis.iaea.org/search/search.aspx?orig_q=RN:47106375
Benoit, G. Comeau, A. (2005) *A Sustainable Future for the Mediterranean: The Blue Plan's Environment and Development Outlook*. Earthscan, London., UK: pp. 464
Ben Rais Lasram, F., et al., 2010: The Mediterranean Sea as a 'cul-de-sac' for endemic fishes facing climate change. Glob. Change Biol., 16(12), 3233– 3245, doi:10.1111/j.1365-2486.2010.02224.x.
Bertini, G., Amoriello, T., Fabbio, G., Piovosi, M., (2011) *Forest growth and climate change: Evidences from the ICP-forests intensive monitoring in Italy.* iForest-Biogeosciences and Forestry 4:262.
Beudels-Jamar, R. C., P. Devillers, R.M. Lafontaine, J. Devillers-Terschueren and M.-O. Beudels. (2005) *Les Antilopes Sahélo-Sahariennes. Statut et Perspectives. Rapport sur l'état de conservation des six Antilopes Sahélo-Sahariennes.* Action Concertée CMS ASS. 2 ème édition. CMS Technical Series Publication N° 10. UNEP/CMS Secretariat, Bonn, Allemagne.
Bianchi, C.N. and Morri, C. (2000) *Marine biodiversity of the Mediterranean Sea: situation, problems and prospects for future research*. Marine Pollution Bulletin 40 (5): pp. 367 – 376.
Bignal, E.M. and McCracken, D.I. (1996b) *Low-intensity farming systems in the conservation of the countryside.* Journal of Applied Ecology, 33: pp.413424.
Birben, U. (2019) The effectiveness of Protected Areas in Biodiversity Conservation: The Case of Turkey. CERNE, v. 25, n. 4, p.424-438.

BirdLife International (2011) Review of the Illegal Killing and Trapping of Birds in Europe. A report by the BirdLife partnership for the European Conference on Illegal Killing of Birds, 6-8 July 2011. Cambridge, UK: BirdLife International.
BirdLife International (2016) *The Killing*. BirdLife International, Cambridge: pp. 27.
BirdLife International (2015) *Assessing the scope and scale of illegal killing and taking of birds in the Mediterranean, and establishing a basis for systematic monitoring.* BirdLife International, Cambridge.
BirdLife International (2016) Assessing the scope and scale of illegal killing and taking of birds in the Mediterranean. Downloaded from https://datazone.birdlife.org/sowb/casestudy/assessing-the-scope-and-scale-of-illegal-killing-and-taking-of-birds-in-the-mediterranean
BirdLife International (2014) *Summary of National Hunting Regulations.* BirdLife International, Cambridge.
Blackman, A. and Rivera, J. (2010) *The evidence base for environmental and socioeconomic impacts of "sustainable" certification.* Washington, DC: Resources for the Future.
Blondel, J., Aronson, J., Bodiou, J-Y., Boeuf, G. (2010) *The Mediterranean Region. Biological Diversity in Space and Time*. Second Edition. Oxford University Press. Wiltshire.
Blondel, J., Aronson, J. (1995) *Biodiversity and ecosystem function in the Mediterranean basin: Human and non-human determinants*. In: Davis, G.W. and Richardson, D.M. (eds), Mediterranean-Type ecosystems: The function of biodiversity. Springer-Verlag, Amsterdam: pp 43-119.
Blue Plan (2008) *United Nations Environment Programme. Mediterranean Action Plan.* The Blue Plan´s sustainable development outlook for the Mediterranean. Blue Plan – Regional Activity Centre.
BMUB (2016) *International Climate Initiative (Internationale Klimaschutzinitiative (IKI).* Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Germany. international-climate-initiative.com/en/projects/projects/
BMZ (2008) *Foundations, Priorities and Future Outlook of German Development Policy regarding the Middle East and North Africa Region (Strategies 168).* Federal Ministry for Economic Cooperation and Development (BMZ), Germany.
BMZ and BMUB (2016) *Committed to Biodiversity: Germany's International Cooperation in Support of the Convention on Biological Diversity for Sustainable Development.* Federal Ministry for Economic Cooperation and Development (BMZ) and Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Germany.
Bodroža, D. and Lazić, M. (2021) Economic Impact of the COVID-19 Pandemic on Western Balkan Countries DOI: 10.28934/ea.21.54.2.pp30-40
Bonn Duarte, M.C., Rego, F, Romeiras, M.M., and Moreira, I. (2008) *Plant species richness in the* Cabo Verde *Islands: Eco-geographical determinants.* Biodiversity and Conservation, 17(3): pp.453-466.
Borges, P. A. V., Cunha, R., Gabriel, R., Martins, A. F., Silva, L., Vieira, V., . . . Pinto, N. (2005). Description of the terrestrial Azorean biodiversity. In P. A. V. Borges, R. Cunha, R. Gabriel, A. M. F. Martins, L. Silva, and V. Vieira (Eds.), A list of the terrestrial fauna (Mollusca and Arthropoda) and flora (Bryophyta, Pteridophyta and Spermatophyta) from the Azores (pp. pp. 21-68). Horta, Angra do Heroísmo and Ponta Delgada: Direcção Regional de Ambiente and Universidade dos Açores.
Borghesi, S. and Mazzarano, M. (2023) *The green transition in Mediterranean countries: challenges and perspectives*. In: IEMed Mediterranean Yearbook 2023.
Box, E.O., and Fujiwara, K. (2015) *Warm-Temperate Deciduous Forests around the Northern Hemisphere.* Springer Verlag, Switzerland.
Brochet, A-L (*and 50 co- authors)* (2016) Preliminary assessment of the scope and scale of illegal killing and taking of birds in the Mediterranean. Bird Conservation International 26:1-28.

Buisson, L., Grenouillet, G., Casajus, N., Lek, S. (2010) *Predicting the potential impacts of climate change on stream fish assemblages, Community ecology of stream fishes: concepts, approaches, and techniques.* American Fisheries Society, Symposium. Citeseer: pp. 327-346.

Burel F, Baudry J, Butet A, Clergeau P, Delettre Y, Le Coeur D, Dubs F, Morvan N, Paillat G, Petit S, Thenail C, Brunel E and Lefeuvre J (1998) *Comparative biodiversity along a gradient of agricultural landscapes*. Acta Oecologica 19(1): 47–60

Buttler, S. J., Boccaccio, L. Gregory, R. D., Vorisek,P. Norris, K. (2014) *Quantifying the impact of land-use change to European farmland bird populations.* Agriculture, Ecosystems and Environment. 137: 348–357.

Byfield, A., Atay, S., Ozhatay, N. (2005) *National report "Important Plant Areas in Türkiye: 122 Key Turkish Botanical Sites*"

Caminas, J.A., Baez, J.C., Valeiras, X., Real, R. (2006) *Differential loggerhead by-catch and direct mortality due to surface longlines according to boat strata and gear type*. Scientia Marina 70(4):661–665.

Campbell-Lendrum, D., Molyneux, D., Amerasinghe, F., Davies, C., Fletcher, E., Schofield, C., Hougard, J.-M., Polson, K., Sinkins, S. (2005) *Chapter 12. Ecosystems and vector borne disease control, Millenium Ecosystem Assessment.* Island Press.

Cano C., De la Bodega D., Ayerza P., and Mínguez E. (2016) *El veneno en España: Evolución del envenenamiento de fauna silvestre (1992-2013*). WWF y SEO/BirdLife, Madrid

Caro J, Delibes-Mateos M, Viñuela J *et al.* (2015) *Improving decision- making for sustainable hunting: regulatory mechanisms of hunting pressure in red-legged partridge*. Sustainable Science 10:479–489.

Cartes, J.E., Maynou, F., Sarda, F., Company, J.B., Lloris, D., Tudela, S. (2004) *The Mediterranean deep-sea ecosystems: an overview of their diversity, structure, functioning and anthropogenic impacts,* The Mediterranean deep-sea ecosystems: an overview of their diversity, structure, functioning and anthropogenic impacts, with a proposal for conservation. pp. 9-38. Ed. By WWF/IUCN, IUCN Centre for Mediterranean Cooperation, Malaga and WFF Mediterranean Programme, Rome, pp. 64.

Casalegno, S., Amatulli, G., Camia, A., Nelson, A., Pekkarinen, A., (2010) *Vulnerability of Pinus cembra L. in the Alps and the Carpathian mountains under present and future climates.* Forest Ecology and Management 259, pp. 750-761.

Castilla-Beltrán, A. et al (2021) Effects of Holocene climate change, volcanism and mass migration on the ecosystem of a small, dry island (Brava, Cabo Verde) https://doi.org/10.1111/jbi.14084

CBD. (2009) Ad Hoc Technical Expert Group: Climate Change and Biodiversity.

CEPF (2015) *Long-Term Strategic Vision for Graduating Civil Society from CEPF Support in the Balkan, Mediterranean Basin Biodiversity Hotspot*, Mojmir Mrak, Milan Ruzic, for CEPF

CEPF (2015) *Mediterranean Basin Biodiversity Hotspot. Mid-term Assessment for Phase 1.*

CEPF (2016) *Update on Impact on Biodiversity of the Mediterranean Portfolio*

CEPF (2017) *Mediterranean Basin Biodiversity Hotspot. Phase 2 Ecosystem Profile*

CEPF (2020) *Mediterranean Basin Biodiversity Hotspot. Mid-term Assessment for Phase 2.*

CEPF (2024) *Mediterranean Basin Biodiversity Hotspot. Final Assessment for Phase 2.*

CEPF (2024) *Evaluation of Lessons Learned in Relation to the Regional Implementation Team for the Mediterranean Basin Biodiversity Hotspot, Paul Buckley for CEPF.*

Chamberlain, D. E., Fuller, R. J., Bunce, R. G. H., Duckworth, J. C., Shrubb, M. (2000) *Changes in the abundance of farmland birds in relation to the timing of agricultural intensification in England and Wales*. Journal of Applied Ecology. 37: pp.771–788.

Chatty, D. (Ed.) (2006) Nomadic societies in the Middle East and North Africa: entering the 21st century (81). Brill.
Cheaib, A., Badeau, V., Boe, J., Chuine, I., Delire, C., Dufrêne, E., François, C., Gritti, E.S., Legay, M., Pagé, C., (2012) *Climate change impacts on tree ranges: model intercomparison facilitates understanding and quantification of uncertainty.* Ecology letters 15, pp. 533-544.
Christe, C., Kozlowski, G., Frey, D., Bétrisey, S., Maharramova, E., Garfì, G., Pirintsos, S. and Naciri Y. (2014) *Footprints of past intensive diversification and structuring in the genus Zelkova (Ulmaceae) in south-western Eurasia.* Journal of Biogeography, 41: pp.1081-1093.
CKSK (2018) Civil Society Review issue 3 - Unraveling "Civil Society:" Policy, Dependency Networks, and Tamed Discontent. Reflections from Lebanon and Palestine, Civil Society Knowledge Center, 2018
Climate Focus/NYDF Assessment Partners (2019). Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress. New York Declaration on Forests Five-Year Assessment Report. Available at: https://forestdeclaration.org/images/uploads/resource/2019NYDFReport.pdf
Coad, L., Leverington, F., Knights, K., Geldmann, J., Eassom, A., Kapos, V., Kingston, N., de Lima, M., Zamora, C., Cuardros, I., Nolte, C., Burgess, N.D., and Hockings, M. (2015) Measuring impact of protected area management interventions: current and future use of the Global Database of Protected Area Management Effectiveness. Phil. Trans. R. Soc. B, 370(1681): 20140281.
CoE (2015) Updated list of officially nominated candidate Emerald sites. T-PVS/PA 14.
CoE (2016) The Emerald Network: A tool for the protection of European natural habitats. Council of Europe.
Coll M, Piroddi C, Steenbeek J, *et al.* (2010) *The Biodiversity of the Mediterranean Sea: Estimates, Patterns, and Threats.* Bograd SJ, ed. PLoS ONE, 5(8): e11842.
Colls, A., SAsh, N., Ikkala, N. (2009) *Ecosystem-based Adaptation: A natural response to climate change*. Gland, Switzerland: IUCN.
Compés-López, R., García-Álvarez-Coque, J. M., and Azcárate, T. G. (2013) EU-Mediterranean relations in the field of agriculture. Policy Paper, 91.
Constantini, G., Atamneh, J., Ayesh, K. and Al Husseini, F. (2011) *Mapping Study of Civil Society Organisations in the occupied Palestinian territory.* Final Report. Framework Contract Commission.
Cork Quality Council (2016) *Cork Quality Council, About us.* Cork Quality Council. www.corkqc.com
Corrales, X., et al., 2018: Future scenarios of marine resources and ecosystem conditions in the Eastern Mediterranean under the impacts of fishing, alien species and sea warming. Sci. Rep., 8(1), 14284, doi:10.1038/s41598-018-32666-x.
Cosandey, C., Andréassian, V., Martin, C., Didon-Lescot, J. F., Lavabre, J., Folton, N., and Richard, D. (2005) *The hydrological impact of the Mediterranean forest: a review of French research.* Journal of Hydrology, 301(1): pp. 235-249.
Council of Europe (2024) Stigmatisation of Non-Governmental Organisations in Europe. Expert Council On NGO Law Conf/Exp(2024)1
Cox, N., Chanson, J. and Stuart, S (2006) *The Status and Distribution of Reptiles and Amphibians of the Mediterranean Basin*. IUCN, Gland, Switzerland and Cambridge, UK: pp. 42.
Cramer, W.; J. Guiot; M. Fader; J. Garrabou; J.-P. Gattuso; A. Iglesias; M. A. Lange; P. Lionello; M. C. Llasat; S. Paz; J. Peñuelas; M. Snoussi; A. Toreti; M. N. Tsimplis and E. Xoplaki,"Climate change and interconnected risks to sustainable development in the Mediterranean." Nature Climate Change, 8 (11), 972-980, 2018, doi: 10.1038/s41558-018-0299-2.
Cramer, W.;J. Guiot and K. Marini, Risks associated to climate and environmental changes in the Mediterranean region – A preliminary assessment by the MedECC Network Sciencepolicy interface, MedECC, Marseille, France, 36 pp., 2019

Croitoru, L. (2007) *Valuing the non-timber forest products in the Mediterranean region.* Ecological Economics, 63(4): pp.768-775.

Cuzin, F. (2003) *Les grands mammifères du Maroc méridional (Haut Atlas, Anti Atlas et Sahara): Distribution, Ecologie et Conservation. Ph.D.* Thesis, Laboratoire de Biogéographie et Ecologie des Vertèbrés, Ecole Pratique des Hautes Etudes, Université Montpellier II.

Czeglédi L., Radácsi, A. (2005) *Overutilization of pastures by livestock.* Grassland Studies 2005/3: pp. 29-35.

Danovaro, R. *et al.* (2010) *Deep-Sea Biodiversity in the Mediterranean Sea: The Known, the Unknown, and the Unknowable.* PLoS ONE 5(8).

Darwall, W., Carrizo, S., Numa, C., Barrios, V., Freyhof, J. and Smith, K. (Eds) (2014) *Freshwater Key Biodiversity Areas in the Mediterranean Basin Hotspot: Informing species conservation and development planning in freshwater ecosystems*. Cambridge, UK and Malaga, Spain: IUCN.

Davenport, R., Neuer, S., Helmke, P., Pérez-Marrero, J. And Llinas, O. (2002) *Primary productivity in the northern Canary Islands region as inferred from SeaWiFS imagery.* Deep-Sea Research Part II, 49: pp. 3481-3496.

Davis, S.J., Caldeira, K. (2010) *Consumption-based accounting of CO2 emissions.* Proceedings of the National Academy of Sciences 107: pp.5687-5692.

Del Barrio, G., Harrison, P., Berry, P., Butt, N., Sanjuan, M., Pearson, R., Dawson, T. (2006) *Integrating multiple modelling approaches to predict the potential impacts of climate change on species' distributions in contrasting regions: comparison and implications for policy.* Environmental Science and Policy 9: pp. 129-147.

Del Cacho, M., Lloret, F. (2012) *Resilience of Mediterranean shrubland to a severe drought episode: the role of seed bank and seedling emergence.* Plant Biology 14: pp. 458-466.

Delić, D. (2024). Evaluation of Impact and Lessons Learned from CEPF Investment in Freshwater Biodiversity in the Mediterranean Basin. Internal report to CEPF. June 2024.

Di Castri, F. (1981) *Mediterranean-type shrublands of the world*. In Di Castri, F. *et al.* (eds), *Mediterranean-type Shrublands*. Elsevier, Amsterdam: pp. 1-52

Di Castri, F., Hansen, A. J., and Debussche, M. (Eds.). (2012) *Biological invasions in Europe and the Mediterranean Basin*, Springer Science and Business Media, 65.

Di Franco, A., Bodilis, P., Piante, C., Di Carlo, G., Thiriet, P., Francour, P., and Guidetti, P. (2014) *Fishermen engagement, a key element to the success of artisanal fisheries management in Mediterranean marine protected areas.* WWF-France.

Diffenbaugh, N. S., Giorgi, F. (2012) *Climate change hotspots in the CMIP5 global climate model ensemble*. Climatic Change, 114: pp. 813-822

Donald, P.F., Sanderson, F.J., Burfield, I.J., van Bommel, F.P.J. (2006) *Further evidence of continent-wide impacts of agricultural intensification on European farmland birds, 1990–2000*. Agriculture, Ecosystems and Environment 116: pp.189–196.

Duguy, B., Paula, S., Pausas, J.G., Alloza, J.A., Gimeno, T., Vallejo, R.V. (2013) *Effects of climate and extreme events on wildfire regime and their ecological impacts, Regional Assessment of Climate Change in the Mediterranean.* Springer: pp. 101-134.

Dury, M., Hambuckers, A., Warnant, P., Henrot, A., Favre, E., Ouberdous, M., François, L. (2011) *Responses of European forest ecosystems to 21st century climate: assessing changes in interannual variability and fire intensity.* iForest-Biogeosciences and Forestry 4, 82.

Eason, P., Rabia, B., Attum, O. (2015) *Hunting of migratory birds in North Sinai, Egypt. Bird Conservation Internationa*l.

ECRAN (2016)*About Us.* Environment and Climate Regional Accession Network.www.ecranetwork.org/

EEA (2008) *Europe´s biodiversity – biogeographical regions and seas.* Biogeographical regions in Europe. The Macaronesian region – volcanic islands in the ocean. Final draft. European Environment Agency.

EEA (2015) *Mediterranean Sea Region: Briefing*. European Environment Agencyeea.europa.eu/soer-2015/countries/mediterranean/#figure-2-water-exploitation-index-for-renewable-freshwater-resou
EEA-UNEP/MAP (2014) *Horizon 2020 Mediterranean Report.* EEA-UNEP/MAP joint report.
EJF (2007) Illegal Driftnetting in the Mediterranean, Environmental Justice Foundation, London, UK
Elhalawani, S. (2016) *Hunting and Illegal killing of birds along the Mediterranean coast of Egypt: a socioeconomic study.* Technical report to Nature Conservation and Birdlife International.
Elkrwe, H.M. *et al.* (2008) *The first record of Percnon gibbesi (H. Milne Edwards, 1853) (Crustacea: Decapoda: Plagusiidae) from the southern rim of the Mediterranean.* Aquatic Invasions, 3(2): pp.243–245.
Emile, W., Noor, N., Dereliev, S. (2014) *Plan of Action to Address Bird Trapping along the Mediterranean Coasts of Egypt and Libya*. Bonn, Germany.
EUNPI (2016) *Towards an ecologically representative and efficiently managed network of Mediterranean Marine Protected Areas.* EU Neighborhood Info Centre News Service. www.enpi-info.eu/mainmed.php?id=879andid_type=10
EuroMed Rights (2021) The Rise and Impact of Government-Organised NonGovernmental Organisations (GoNGOs): another tool of repression of independent civil society. Brussels, Belgium.
European Commission (2013) *Overview of CAP reform 2014-2020.* Agricultural policy perspectives brief, 5.
European Commission (2015) *Mid-term Review of the EU Biodiversity Strategy to 2020. EU Assessment of Progress in Implementing the EU Biodiversity Strategy to 2020.* Report from the Commission to the European Parliament and the Council: pp 39-40.
European Commission (2015a) *Ecopotential: Improving future ecosystem benefits through earth observations.* CORDIS – Community Research and Development Information Service. cordis.europa.eu/project/rcn/196809_en.html
European Commission (2015b) *Consolidating the European Research Area on biodiversity and ecosystem services.* CORDIS – Community Research and Development Information Service. cordis.europa.eu/project/rcn/193909_en.html
European Commission (2015c) *Marine Ecosystem Restoration in Changing European Seas.* CORDIS – Community Research and Development Information Service. cordis.europa.eu/project/rcn/203265_en.html
European Environment Agency Scientific Committee (2011) *Opinion of the EEA Scientific Committee on Greenhouse Gas Accounting in Relation to Bioenergy.*
Fader M, Giupponi C, Burak S, Dakhlaoui H, Koutroulis A, Lange MA, Llasat MC, Pulido-Velazquez D, Sanz-Cobeña A 2020 Water. In: Climate and Environmental Change in the Mediterranean Basin – Current Situation and Risks for the Future. First Mediterranean Assessment Report [Cramer W, Guiot J, Marini K (eds.)] Union for the Mediterranean, Plan Bleu, UNEP/MAP, Marseille, France, 57pp.
FAO (2003a) *Trends in oceanic captures and clustering of large marine ecosystems*—2 studies based on the FAO capture database. FAO fisheries technical paper No 435, pp 71.
FAO (2003b) *Fisheries Management- 2. The Ecosystem Approach to Fisheries.* FAO Technical Guidelines for Responsible Fisheries. No. 4 Suppl. 2. FAO, Rome.
FAO. 2023. *The State of Mediterranean and Black Sea Fisheries 2023 – Special edition*. General Fisheries Commission for the Mediterranean. Rome. https://doi.org/10.4060/cc8888en
FAO. 2022. The State of Mediterranean and Black Sea Fisheries 2022. General Fisheries Commission for the Mediterranean. Rome. https://doi.org/10.4060/cc3370e
Farrugio, H. (2013) *Current situation of small-scale fisheries in the Mediterranean and Black Sea: strategies and methodologies for an effective analysis of the sector.* In Report of the First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea: pp. 27-30.

Fernandes, P.M., Luz, A., Loureiro, C. (2010) *Changes in wildfire severity from maritime pine woodland to contiguous forest types in the mountains of northwestern Portugal.* Forest Ecology and Management 260: pp. 883-892.

C.S.S. Ferreira, C.S.S., S. Seifollahi-Aghmiuni, G. Destouni et al (2021) Soil degradation in the European Mediterranean region : Processes, status and consequences. Science of the Total Environment 805 2022 150106.

FFEM (2016a) *Albanie.* Fonds Français Pour L'Environnement Mondial. carte.afd.fr/ffem/fr/pays/albanie/

FFEM (2016b) *Small-Scale Initiatives projects news.* Fonds Français Pour L'Environnement Mondial. ffem.fr/lang/en/accueil-FFEM/PPI/News_PPI-SSI-programme

Flannigan, M.D., Krawchuk, M.A., de Groot, W.J., Wotton, B.M., Gowman, L.M.(2009) *Implications of changing climate for global wildland fire. International journal of wildland fire* 18: pp. 483-507.

Foden, W.B., Butchart, S.H., Stuart, S.N., Vié, J.-C., Akçakaya, H.R., Angulo, A., DeVantier, L.M., Gutsche, A., Turak, E., Cao, L. (2013) *Identifying the world's most climate change vulnerable species: a systematic trait-based assessment of all birds, amphibians and corals.* PloS ONE 8, e65427.

Fuller, R.J., Gregory, R.D., Gibbons, D.W., Marchant, J.H., Wilson, J.D., Baillie, S.R., Carter, N. (1995) *Population declines and range contractions among lowland farmland birds in Britain.* Conservation Biology. 9: pp.1425–1441.

Gabrié C., Lagabrielle E., Bissery C., Crochelet E., Meola B., Webster C., Claudet J., Chassanite A., Marinesque S., Robert P., Goutx M., Quod C (2012) The Status of Marine Protected Areas in the Mediterranean Sea 2012. MedPAN and RAC/SPA. Ed: MedPAN Collection: pp.256.

Galgani, F., Claro, F., Depledge, M., and Fossi, C. (2014) *Monitoring the impact of litter in large vertebrates in the Mediterranean Sea within the European Marine Strategy Framework Directive (MSFD): Constraints, specificities and recommendations*. Marine Environmental Research, 100, 3-9.

García, N., Cuttelod, A. and Abdul Malak, D. (2010) *The Status and Distribution of Freshwater Biodiversity in Northern Africa*. Gland, Switzerland, Cambridge, UK, and Malaga, Spain: IUCN, 2010.

Garrabou, J., Coma, R., Bensoussan, N., Bally, M., Chevaldonné, P., Cigliano, M., Díaz, D., Harmelin, J.-G., Gambi, M.C., Kersting, D. (2009) *Mass mortality in Northwestern Mediterranean rocky benthic communities: effects of the 2003 heat wave*. Global Change Biology 15: pp.1090-1103.

Garrabou, J., et al., 2021: Sliding toward the collapse of Mediterranean coastal marine rocky ecosystems. In: Ecosystem Collapse and Climate Change [Canadell, J.G. and R.B. Jackson(eds.)]. Springer International Publishing, Cham, pp. 291–324. ISBN 978-3030713300

GEF (2016) *Participants.* Global Environment Facility. thegef.org/partners/participants

GEF (2016a) *Project database*. Global Environment Facility. thegef.org/projects

GegenStrömung (2011) *Dam construction in Türkiye and its impact on economic, cultural and social rights.* Parallel report in response to the Initial Report by the Republic of Türkiye on the Implementation of the International Covenant on Economic, Social and Cultural Rights.

Genovesi, P., and Shine, C. (2004) *European strategy on invasive alien species*. Convention on the Conservation of European Wildlife and Habitats (Bern Convention) (No. 18-137). Council of Europe.

GGF (2016) *About the Fund.* Green for Growth Fund. www.ggf.lu/about-green-for-growth-fund/

Giannakopoulos, C., Bindi, M., Moriondo, M., LeSager, P., Tin, T. (2005) *Climate change impacts in the Mediterranean resulting from a 2 C global temperature rise.* WWF report, Gland Switzerland.

Giannakopoulos, C., Le Sager, P., Bindi, M., Moriondo, M., Kostopoulou, E., Goodess, C. (2009) *Climatic changes and associated impacts in the Mediterranean resulting from a 2 C global warming.* Global and Planetary Change 68: pp. 209-224.

Gill, S.E., Handley, J.F., Ennos, A.R., Pauleit, S. (2007) *Adapting cities for climate change: the role of the green infrastructure.* Built environment 33: pp. 115-133.
Giuggiola, A., Kuster, T., Saha, S. (2010) *Drought-induced mortality of Scots pines at the southern limits of its distribution in Europe: causes and consequences.* iForest-Biogeosciences and Forestry 3:pp.95-97.
Global Footprint Network (2015) *Mediterranean societies thrive in the era of decreasing resources*
Global Footprint Network (2016) *Ecological wealth of nations.* Global Footprint Network: Advancing the Science of Sustainability footprintnetwork.org/ecological_footprint_nations/
Gobierno de Canarias (2016)*Banco de Datos de Biodiversidad de Canarias www.biodiversidadcanarias.es*
Godino, A., Garrido, J.R., El Khamlichi, R., Burón, D., Machado, C., Amezian, M., Irizi, A., Numa, C., Barrios, V. (2015) *Identificación de mortalidad por electrocución de aves rapaces en el sudoeste de Marruecos.* Málaga, España: UICN: pp.76.
Goñi, R., Polunin, N.V.C.and Planes, S. (2000) *The Mediterranean: marine protected areas and the recovery of a large marine ecosystem.* Environmental Conservation 27: pp.95–97
Gori, A., et al., 2016: Physiological response of the cold-water coral Desmophyllum dianthus to thermal stress and ocean acidification. PeerJ, 4, e1606, doi:10.7717/peerj.1606
González-Moreno, P. Pino, J., Cózar, A., García-de-Lomas, J. and Vilà, M. (2016) *The effects of landscape history and time-lags on plant invasion in Mediterranean coastal habitats.* Biol Invasions.
Government of Egypt (2023) Egypt's 2nd Nationally Determined Contributions.
Graux, A.-I., Gaurut, M., Agabriel, J., Baumont, R., Delagarde, R., Delaby, L., Soussana, J.-F. (2011) *Development of the Pasture Simulation Model for assessing livestock production under climate change.* Agriculture, Ecosystems and Environment 144: pp. 69-91.
Gregory, M.R. (2009) *Environmental implications of plastic debris in marine settings – entanglement, ingestion, smothering, hangers-on, hitch-hiking, and alien invasions.* Philosophical Transactions of the Royal Society B 364: pp.2013-2026.
Guarino, R., Giusso del Galdo, G. and Pignatti, S. (2005) *The Mediterranean dwarf shrubs: origin and adaptive radiation.* Annali di Botanica5: pp.93-101.
Guiot, J. and Cramer, W. (2016) *Climate change , the Paris Agreement thresholds and Mediterranean ecosystems.* , 354(6311): pp.4528–4532.
Guo, L.B. and Gifford, R.M. (2002) *Soil carbon stocks and land use change: a meta analysis. Global change biology,* 8(4): pp.345–360.
Hannah, L. *et al.* (2007) *Protected area needs in a changing climate. Frontiers in Ecology and the Environment*, 5(3): pp.131–138.
Hausmann and Lundsgaarde (2015) *Turley's Role in Development Cooperation*. United Nations University Centre for Policy Research.
Hemery, G., Clark, J., Aldinger, E., Claessens, H., Malvolti, M., O'connor, E., Raftoyannis, Y., Savill, P., Brus, R., (2010) *Growing scattered broadleaved tree species in Europe in a changing climate: a review of risks and opportunities*. Forestry 83: pp. 65-81.
Hima Fund (2010) *About Us: The Hima Fund.* Hima Fund. www.himafund.org/
Hoerling, M. *et al.* (2012) *On the increased frequency of mediterranean drought.*Journal of Climate, 25(6): pp.2146–2161.
Hofrichter, R. (2001) *Das Mittelmeer: Fauna, Flora, Ökologie – Band. I: Allgemeiner Teil (Sav Biologie)*. Spektrum Akademischer Verlag, Heildeberg, Germany.
Hole, D.G. *et al.* (2009) *Projected impacts of climate change on a continent‐wide protected area network.*Ecology Letters, 12(5): pp.420–431.
Horwath (2015) *Study on Tourism Sector Involvement in Financing Marine Protected Areas of the Mediterranean.* Horwath Consulting Ltd., study sponsored by CEPF.
Huntley, B., Collingham, Y.C., Willis, S.G., Green, R.E. (2008) *Potential impacts of climatic change on European breeding birds.* PloS ONE 3, e1439.

Hurrell, S. (2014) Cross-border cooperation with CEPF for Lake Skadar and its pelicans, birdlife.com
ICNL (2013) *Civil Freedom Monitor: Egypt.* International Center for Not-for-Profit Law. icnl.org/research/monitor/egypt
ICNL (2013a) *Civil Freedom Monitor: Jordan.* International Center for Not-for-Profit Law. icnl.org/research/monitor/jordan
ICNL (2013b) *Civil Freedom Monitor: Lebanon.* International Center for Not-for-Profit Law. icnl.org/research/monitor/lebanon
ICNL (2013c) *Civil Freedom Monitor: Palestine.* International Center for Not-for-Profit Law. icnl.org/research/monitor/palestine
ICNL (2016) *Global Trends in NGO Law: A quarterly review of NGO legal trends around the world.* International Center for Not-for-Profit Law, 7:3.
Iglesias, A., Garrote, L., Quiroga, S., Moneo, M. (2012) *A regional comparison of the effects of climate change on agricultural crops in Europe.* Climatic change 112:pp. 29-46.
IEP (2016) *Quantifying Peace and its Benefits: Global Peace Index.* Institute for Economics and Peace static.visionofhumanity.org/sites/default/files/GPI%202016%20Report_2.pdf
Instituto de Meteorología de Portugal and AEMET (2012) *Atlas climático de los archipiélagos de Canarias, Madeira y Azores. Temperatura del aire y precipitación (1971-2000).* AEMET, Ministerio de Agricultura, Alimentación y Medio Ambiente.
International Rivers (2016) *Türkiye.* internationalrivers.org/campaigns/Türkiye
IOM (2016) Mediterranean Update, Migration Flows Europe: Arrivals and Fatalities. International Organisation for Migration.
IPBES (2018a) : The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia. Rounsevell, M., Fischer, M., Torre-Marin Rando, A. and Mader, A. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 892 pages.
IPBES (2018b): The IPBES regional assessment report on biodiversity and ecosystem services for Africa. Archer, E. Dziba, L., Mulongoy, K. J., Maoela, M. A., and Walters, M. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 492 pages. http://doi.org/10.5281/zenodo.3236177
IPBES (2018c): Summary for policymakers of the regional assessment report on biodiversity and ecosystem services for Asia and the Pacific of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. M. Karki, S. Senaratna Sellamuttu, S. Okayasu, W. Suzuki, L. A. Acosta, Y. Alhafedh, J. A. Anticamara, A. G. Ausseil, K. Davies, A. Gasparatos, H. Gundimeda, I. Faridah-Hanum, R. Kohsaka, R. Kumar, S. Managi, N. Wu, A. Rajvanshi, G. S. Rawat, P. Riordan, S. Sharma, A. Virk, C. Wang, T. Yahara and Y. C. Youn (eds.). IPBES secretariat, Bonn, Germany. 41 pages.
IPCC (2007) *Climate Change 2007: Synthesis Report Fourth Assessment Report of the Intergovernmental Panel on Climate Change.*
IPCC (2013) *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, United Kingdom and New York.
IPCC (2014) *Climate Change 2014: Synthesis Report Fifth Assessment Report of the Intergovernmental Panel on Climate Change.*
IPCC (2023) Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115, doi: 10.59327/IPCC/AR6-978929169164
Isendahl N, Schmidt G (*2006*) *Drought in the Mediterranean*. *WWF* Policy Proposals,*WWF* Report, Madrid.

IUCN (2016)a *A Global Standard for the Identification of Key Biodiversity Areas*.
IUCN (2016)b *The IUCN Red List of Threatened Species. Version 2016-2*. www.iucnredlist.org.
Jackson, J.B., Kirby, M.X., Berger, W.H., Bjorndal, K.A. and Bots-ford, L.W. (2001) *Historical overfishing and the recent collapse of coastal ecosystems*. Science, 293: pp. 629–637.
Jobbins, G. and G. Henley, 2015: Food in an Uncertain Future: the Impacts of Climate Change on Food Security and Nutrition in the Middle East and North Africa. Overseas Development Institute / World Food Programme, https://www.preventionweb.net/files/46974_46974odiwfpimpactofcconfnsinmena201. pdf.
Juffe-Bignoli D. and Darwall W.R.T (eds.) (2012) *Assessment of the socio-economic value of freshwater species for the northern African region*. Gland, Switzerland and Málaga, Spain: IUCN. IV: pp. 84.
Katsanevakis, S. *et al.* (2010) *Vulnerability of marine habitats to the invasive green alga Caulerpa racemosa var. cylindracea within a marine protected area.*Marine environmental research, 70(2): pp.210–218.
KEPA/KINP (2016) The list of protected areas, ammk-rks.net/repository/docs/Zonat_e_Mbrojtura_2016__veb_AMMK.pdf
Kherchouche *et al.* (2012) *Impact of Droughts on Cedrus atlantica Forests Dieback in the Aurès (Algeria)*, Journal of Life Sciences 6: pp.1262-1269
Kokpinar, M., Kumcu, Y., Sakarya, A., Gogus, M. (2010) *Reservoir sedimentation in the Demirköprü Dam, Türkiye,* River Flow: pp. 6.
Komendantova, N. and A. Patt. (2011) Could corruption pose a barrier to the roll-out of renewable energy in North Africa? Sweeney, G., Dobson, R., Despota, K., and Zinnbauer, D. Global Corruption Report: Climate Change: pp. 188-193.
Kougioumoutzis, K.; Kokkoris, I.P.; Strid, A.; Raus, T.; Dimopoulos, P. (2021) Climate-Change Impacts on the Southernmost Mediterranean Arctic-Alpine Plant Populations. *Sustainability* **2021**, *13*, 13778. https://doi.org/10.3390/su132413778
Koutsias, N., Arianoutsou, M., Kallimanis, A.S., Mallinis, G., Halley, J.M., Dimopoulos, P. (2012) *Where did the fires burn in Peloponnisos, Greece the summer of 2007? Evidence for a synergy of fuel and weather.* Agricultural and Forest Meteorology 156: pp. 41-53.
Kroeker, K.J., Micheli, F., Gambi, M.C., Martz, T.R. (2011) *Divergent ecosystem responses within a benthic marine community to ocean acidification.* Proceedings of the National Academy of Sciences 108: pp. 14515-14520.
Kumar, A., Schei, T., Ahenkorah, A., Caceres Rodriguesz, R., Devernay, J.-M., Freitas, M., Hall, D., Killingtveit, A., Liu, Z. (2011) *Hyropower, IPCC special report on renewable energy sources and climate change mitigation,* Cambridge, United Kingdom and New York, NY, USA.
Lacoue-Labarthe, T. *et al.* (2016) *Impacts of ocean acidification in a warming Mediterranean Sea: An overview.* Regional Studies in Marine Science, 5: pp.1–11.
Laiolo, P., Dondero, F., Ciliento, E., Rolando, A. (2004) *Con- sequences of pastoral abandonment for the structure and diversity of alpine avifauna.* J. Appl. Ecol. 41: pp. 294–304.
Lam, V.W.Y., W.W.L. Cheung, G. Reygondeau and U.R. Sumaila, 2016: Projected change in global fisheries revenues under climate change. Sci. Rep., 6(1), 32607, doi:10.1038/srep32607.
Lange M.A. (2020) Climate change in the Mediterranean : Environmental oimpacts and extreme evenets. Energy, Environment and Water Research Center The Cyprus InstituteClimate Change in the Mediterranean: Environmental Impacts and Extreme Events : IEMed
Langhammer, F. P., Bakarr, M. I., Bennun, L. A., Brooks, T. M., Clay, R. P., Darwall, W., *et al.*(2007) *Identification and gap analysis of key biodiversity areas: Targets for*

comprehensive protected area systems. In P. Valentine, ed., Best Practice Protected Area Guideline Series No. 15. Gland, Switzerland: IUCN.

Langston, R., Pullan, J. (2003) *Windfarms and birds: an analysis of the effects of wind farms on birds, and guidance on environmental criteria and site selection issues,* BirdLife International to the Council of Europe, Bern Convention. birdlife.org/eu/pdfs/BirdLife_Bern_windfarms. pdf

Lejeusne, C. *et al.* (2010) *Climate change effects on a miniature ocean: the highly diverse, highly impacted Mediterranean Sea.*Trends in Ecology and Evolution, 25(4): pp.250–260.

Lelieveld, J. *et al.* (2012) *Climate change and impacts in the Eastern Mediterranean and the Middle East.* Climatic Change, 114(3–4): pp.667–687.

Lelieveld, J. *et al.* (2016) *Strongly increasing heat extremes in the Middle East and North Africa (MENA) in the 21st century.*Climatic Change, 137(1–2): pp.245–260.

Lengyel, A. (2010) *Forest Policy Experiences on Private Forestry Development in Selected South East European Countries.* in Support of Good Governance, 75.

Lionello, P (Ed) (2012) *The climate of the Mediterranean region: From the past to the future.* Elsevier Edit. pp.584.

Llasat, M., Llasat-Botija, M., Prat, M., Porcú, F., Price, C., Mugnai, A., Lagouvardos, K., Kotroni, V., Katsanos, D., Michaelides, S. (2010) *High-impact floods and flash floods in Mediterranean countries: the FLASH preliminary database*. Advances in Geosciences 23:pp. 47-55.

Llorens, P., Poch, R., Latron, J., and Gallart, F. (1997) *Rainfall interception by a Pinus sylvestris forest patch overgrown in a Mediterranean mountainous abandoned area*. Monitoring design and results down to the event scale. Journal of hydrology, 199(3): pp. 331-345.

Lloret, F., Penuelas, J., Estiarte, M. (2004) *Experimental evidence of reduced diversity of seedlings due to climate modification in a Mediterranean-type community.* Global Change Biology 10: pp.248-258.

Lloret, F., Peñuelas, J., Estiarte, M. (2005) *Effects of vegetation canopy and climate on seedling establishment in Mediterranean shrubland*. Journal of Vegetation Science 16: pp. 67-76.

Lloret, J., et al., 2015: How a multidisciplinary approach involving ethnoecology, biology and fisheries can help explain the spatio-temporal changes in marine fish abundance resulting from climate change. Glob. Ecol. Biogeogr., 24(4), 448–461, doi:10.1111/geb.12276

López-Moreno, J., Beniston, M., García-Ruiz, J. (2008) *Environmental change and water management in the Pyrenees: facts and future perspectives for Mediterranean mountains.* Global and Planetary Change 61: pp.300-312.

Ludwig W, Dumont E, Meybeck M, Heussner S. River discharges of water and nutrients to the Mediterranean and Black Sea: Major drivers for ecosystem changes during past and future decades? Progress in Oceanography. 2009;80(3-4):199-217. doi:10.1016/j.pocean.2009.02.001

Mace, G., Masundire, H., Baillie, J., Ricketts, T., Brooks, T., Hoffmann, M., Stuart, S., Balmford, A., Purvis, A., Reyers, B., Wang, J., Revenga, C., Kennedy, E., Naeem, S., Alkemade, R., Allnutt, T., Bakarr, M., Bond, W., Chanson, J., Cox, N., Fonseca, G., Hilton-Taylor, C., Loucks, C., Rodrigues, A., Sechrest, W., Stattersfield, A., Janse van Rensburg, B., Whiteman, C., Abell, R., Cokeliss, Z., Lamoreux, J., Pereira, H.M., Thonell, J., Williams, P. (2005) *Chapter 4. Biodiversity*, Millenium Ecosystem Assessment. Island Press.

Macias, D.M., E. Garcia-Gorriz and A. Stips, 2015: Productivity changes in the Mediterranean Sea for the twenty-first century in response to changes in the regional atmospheric forcing. Front. Mar. Sci., 2(79), doi:10.3389/fmars.2015.00079.

Malhi Y, Franklin J, SeddonN, Solan M, Turner MG, Field CB, Knowlton N. (2020) Climate change and ecosystems: threats, opportunities and solutions. Phil. Trans. R. Soc B 375: 20190104 http://dx.doi.org/10.1098/rstb.2019.0104

Mansourian, S. (2012) Natural Resource Governance in North Africa: Challenges and Opportunities. IUCN Social Policy Unit and IUCN Mediterranean Programme.
Manten (2023) How to design sustainable conservation projects and programmes: Think Ahead Rufford Foundation ICCB-2023-sustainability-training-report.pdf (conservationleadershipprogramme.org)
Mariam Z, Dakki M, El Hassouni M, Himmi O (2022) Environmental changes in a mediterranean river (Upper Sebou, Morocco) between 1981 and 2017. Nat Environ Pollut Technol 21:837–850
Marques, S., Borges, J.G., Garcia-Gonzalo, J., Moreira, F., Carreiras, J., Oliveira, M., Cantarinha, A., Botequim, B., Pereira, J. (2011) *Characterization of wildfires in Portugal.* European Journal of Forest Research 130: pp.775-784.
Martín-López, Berta & Oteros-Rozas, Elisa & Cohen-Shacham, Emmanuelle & Santos-Martin, Fernando & Nieto-Romero, Marta & Carvalho-Santos, Claudia & González, José & Garcia Llorente, Marina & Klass, Keren & Geijzendorffer, I.R. & Montes, Carlos & Cramer, Wolfgang. (2016). Ecosystem services supplied by Mediterranean Basin ecosystems.
MAVA (2016) *MAVA Strategy 2016-2022: Summary*. MAVA Fondation Pour La Nature.
MAVA (2016a) *MAVA Strategy 2016-2022: Mediterranean Basin Programme.* MAVA Fondation Pour La Nature.
MAVA (2016b) *List of Projects.* MAVA Fondation Pour La Nature. en.mava-foundation.org/what-we-fund/list-of-projects/mediterranean-basin/
Maxwell, S.L. *et al.* (2015) *Integrating human responses to climate change into conservation vulnerability assessments and adaptation planning*. Annals of the New York Academy of Sciences, 1355(1): pp.98–116.
McAllister, Don E.; Craig, John F.; Davidson, Nick; Delany, Simon; Seddon, Mary. (2001) *Biodiversity Impacts of Large Dams, Background Paper Nr. 1.* Prepared for International Union for Conservation of Nature and Natural Resources, United National Environmental Programme.
Médail F. (2016) *Plant biodiversity and vegetation on Mediterranean islands in the face of global change.* Thiébault S. and Moatti J.-P. (eds.), The Mediterranean region under climate change. A scientific update. IRD Éditions, Marseille : pp. 363-376.
Médail, F. and Diadema, K. (2009) *Glacial refugia influence plant diversity patterns in the Mediterranean Basin.* Journal of Biogeography, 36: pp.1333-1345.
Médail, F. and Quézel, P. (1997) *Hot-Spots Analysis for Conservation of Plant Biodiversity in the Mediterranean Basin.* Annals of the Missouri Botanical Garden 84:pp.112-127
Médail, F. and Quézel, P. (1999) *Biodiversity Hotspots in the Mediterranean Basin: Setting Global Conservation Priorities.* Conservation Biology 13:pp.1510-1513.
MedECC (2020) Climate and Environmental Change in the Mediterranean Basin – Current Situation and Risks for the Future. First Mediterranean Assessment Report [Cramer, W., Guiot, J., Marini, K. (eds.)] Union for the Mediterranean, Plan Bleu, UNEP/MAP, Marseille, France, 632pp, ISBN 978-2-9577416-0-1, doi: 10.5281/zenodo.4768833.
MEDFORVAL (2016) *The Forest Clusters for the MEDFORVAL Network.* High ecological value Mediterranean forests network. medforval.aifm.org/en
MedIna (2021). Zero Waste In The Mediterranean: A guide on developing a zero waste strategy for local municipalities in the region.
Mediterranean Wetlands Observatory (2012) *Mediterranean Wetlands Outlook – Synthesis for decision makers.* Tour du Valat, France: pp.72.
MedPAN and UNEP/MAP-RAC/SPA (2023). The 2020 Status of Marine Protected Areas in the Mediterranean. By Neveu R., Ganot D., Ducarme F., El Asmi S, Kheriji A. and Gallon S. Ed UNEP/MAP-RAC/SPA & MedPAN. Tunis 147 pages+Annexes
Meeus, J. (1995) *Landspcapes*. In: Bordeau, P., Stanners, D. (Eds.) Europe's environment Copenhagen: The Dobris Assessment. European Environment Agency: pp. 172-189.

Meller, L., Thuiller, W., Pironon, S., Barbet-Massin, M., Hof, A., Cabeza, M., (2015) *Balance between climate change mitigation benefits and land use impacts of bioenergy: conservation implications for European birds.* GCB Bioenergy 7: pp.741-751.
Millennium Ecosystem Assessment (2005) *Ecosystems and human well-being: synthesis.* Washington, DC: Island Press.
Millot, C. and Taupier-Letage, I (2005) *Circulation in the Mediterranean Sea. The handbook of Environmental Chemistry (The Natural Environment and the Biological Cycles)*, Springer-Verlag Editor.
Mitchell-Thomé, R. C. (1976) *Geology of the Middle Atlantic Islands*. Beiträge zur regionalen Geologie der Erde, Band 12.
Mittermeier, R.A., Robles Gil, P., Hoffman, M., Pilgrim, J., Brooks, T., Mittermeier, C.G., Lamoreux, J., da Fonseca, G.A.B. (2004) *Hotspots Revisited*. CEMEX, Mexico City.
Molina, J.R., A. González-Cabán and F. Rodríguez y Silva, 2019: Potential effects of climate change on fire behavior, economic susceptibility and suppression costs in Mediterranean ecosystems: Córdoba Province, Spain. Forests, 10(8), 679, doi:10.3390/f10080679.
Møller, A., Saino, N., Adamík, P., Ambrosini, R., Antonov, A., Campobello, D., Stokke, B., Fossøy, F., Lehikoinen, E., Martin-Vivaldi, M., (2010) *Rapid change in host use of the common cuckoo Cuculus canorus linked to climate change.* Proceedings of the Royal Society of London B: Biological Sciences.
Monciatti, M., Marcu, A., Demirkol, K.,Yarayan,N.Y. and Vollmer, A. (2022) A policy vision roadmap for civil society. EU-Turkey Climate Policy Dialogue.
Montmollin, B., Strahm, W. (2005) *The Top 50 Mediterranean Island Plants: Wild plants at the brink of extinction, and what is needed to save them*. Gland and Cambridge: IUCN/SSC Mediterranean Islands Plant Specialist Group IUCN.
Morán-Ordóñez A, Roces-Díaz JV, Otsu K, Ameztegui A, Coll L, Lefevre F, Retana J, Brotons L (2019) The use of scenarios and models to evaluate the future of nature values and ecosystem services in Mediterranean forests. Reg. Environ. Chang., 19, 415–428. doi:10.1007/s10113-018-1408-5
Mouillot, F., Rambal, S., Joffre, R. (2002) *Simulating climate change impacts on fire frequency and vegetation dynamics in a Mediterranean‐type ecosystem*. Global Change Biology 8: pp. 423-437.
Moullec, F., et al., 2019: An end-to-end model reveals losers and winners in a warming Mediterranean Sea. Front. Mar. Sci., 6(345), doi:10.3389/ fmars.2019.00345.
Muñoz, P.T., Torres, F.P., Megías, A.G. (2015) Effects of roads on insects: a review. Biodiversity and Conservation, 24,659.
Myers, N., Mittermeier, R. A., Mittermeier, C. G., da Fonseca, G. A. B., Kent, J. (2000) Biodiversity hotspots for conservation priorities. Nature 403: 853-858. doi:10.1038/35002501
Navarro LM, Pereira HM. (2012) *Rewilding abandoned landscapes in Europe*. Ecosystems 15: pp.900–912.
Neugarten, R. A., Honzak, M., Carret, P., Koenig, K., Andriamaro, L., Cano, C. A., Grantham, H. S., Hole, D., Daniel, J., McKinnon, M., Rosalohery, A., Steininger, M., Wright, T. M. and Turner, W. R. (2016) Rapid Assessment of Ecosystem Service Co-Benefits of Biodiversity Protected Areas in Madagascar. PLoS ONE 11(12): e0168575. doi:10.1371/journal.pone.0168575
Numa, C. *et al.* (in prep). *Overview of the conservation status of Mediterranean dung beetles*. IUCN, Malaga, Spain.
Numa, C., van Swaay, C., Wynhoff, I., Wiemers, M., Barrios, V., Allen, D., Sayer, C., López Munguira, M., Balletto, E.,Benyamini, D., Beshkov, S., Bonelli, S., Caruana, R., Dapporto, L., Franeta, F., Garcia-Pereira, Karaçetin, E., Katbeh-Bader, A.,Maes, D., Micevski, N., Miller, R., Monteiro, E., Moulai, R., Nieto, A., Pamperis, L., Pe'er, G., Power, A., Šašić, M., Thompson, K.,Tzirkalli, E., Verovnik, R., Warren, M. and Welch, H. (2016) *The status and distribution of Mediterranean butterflies*. IUCN, Malaga, Spain, pp.32.

Numa, C., Tonelli, M., Lobo, J.M., Verdú, J.R., Lumaret, J.-P., Sánchez-Piñero, F., Ruiz, J.L., Dellacasa, M., Ziani, S., Arriaga, A., Cabrero, F., Labidi, I., Barrios, V., Şenyüz, Y. and Anlaş, S. (2020). The conservation status and distribution of Mediterranean dung beetles. Gland, Switzerland and Málaga, Spain: IUCN.

OECD (2016) *OECD DAC Statistics - Biodiversity-related Official Development Assistance.* Organisation for Economic Co-operation and Development.

OME (Observatoire Méditerranéen de l'Energie) (2021) *The Mediterranean Energy Perspectives to 2050.* Observatoire Méditerranéen de l'Energie. Paris, France.

Omran i N., Ouessar M. (2011) *Lesson s learned from the Tunisian national water policy: the case of the rehabilitation of oases*. In: Junier S., El Mou jabber M., Trisorio-Liuzzi G., Tigrek S., Serneguet, M., Choukr-Allah R., Shatanawi M., Rodríguez R. (Eds.). Dialogues on Mediterranean water challenges: Rational water use, water price versus value and lessons learned from the European Water Framework Directive. CIHEAM, pp.7 1 -83

Osornio, J.P., I. Schumacher and K. Despota. Measuring, reporting and verification of NAMAs and their support. Sweeney, G., Dobson, R., Despota, K., and Zinnbauer, D. Global Corruption Report: Climate Change: pp. 120-129.

Otero, M.M., Numa, C., Bo, M., Orejas, C., Garrabou, J., Cerrano, C., Kružic´, P., Antoniadou, C., Aguilar, R., Kipson, S., Linares, C., Terrón-Sigler, A., Brossard, J., Kersting, D., Casado-Amezúa, P., García, S., Goffredo, S., Ocaña, O., Caroselli, E., Maldonado, M., Bavestrello, G., Cattaneo-Vietti, R. and Özalp, B. (2017). Overview of the conservation status of Mediterranean anthozoans. IUCN, Malaga, Spain. x + 73 ppOtero, I., Boada, M., Badia, A., Pla, E., Vayreda, J., Sabaté, S., Gracia, C.A., Peñuelas, J. (2011) *Loss of water availability and stream biodiversity under land abandonment and climate change in a Mediterranean catchment (Olzinelles, NE Spain)*. Land Use Policy 28: pp.207-218.

Otero, M. *et al.* (2013) *Monitoring Marine Invasive Species in Mediterranean Marine Protected Areas (MPAs): A strategy and practical guide for managers*. Malaga, Spain: IUCN, pp.136.

Oviedo, G. (2024) Evaluation of Impact and Lessons Learned from CEPF Investment in Cultural Landscapes in the Mediterranean Basin. Internal report to CEPF. July 2024.

Papamichael, I., Voukkali, I. and Zorpas, A. (2022) Mediterranean: main environmental issues and concernsEuro-Mediterranean Journal for Environmental Integration (2022) 7:477–481 https://doi.org/10.1007/s41207-022-00336-0

Partners Albania for Change and Development (2019) Capacity and needs assessment for civil society organisations in Albania. Tirana.

Patarnello, T., Volckaert, F. A. M. J. and Castilho, R. (2007) *Pillars of Hercules: is the Atlantic–Mediterranean transition a phylogeographical break?* Molecular Ecology 16: pp.4426-4444.

Pauli, H., Gottfried, M., Dullinger, S., Abdaladze, O., Akhalkatsi, M., Alonso, J.L.B., Coldea, G., Dick, J., Erschbamer, B., Calzado, R.F. (2012) *Recent plant diversity changes on Europe's mountain summits.* Science 336: pp.353-355.

Pausas, J.G., Fernández-Muñoz, S. (2012) *Fire regime changes in the Western Mediterranean Basin: from fuel-limited to drought-driven fire regime.* Climatic change 110: pp. 215-226.

Petrović, N., and Čabaravdić, A. (2010) *Outlook for the Formation of Private Forest Owners' Associations in the Western Balkan Region*. in Support of Good Governance: pp.63.

Pimm, S. L., Jenkins, C. N., Abell, R., Brooks, T. M., Gittleman, J. L., Joppa, L. N., ... & Sexton, J. O. (2014). The biodiversity of species and their rates of extinction, distribution, and protection. *Science*, 344(6187), 1246752. DOI: 10.1126/science.1246752 https://pubmed.ncbi.nlm.nih.gov/24876501/

Pla Sentis, I. (2003) *Desertification processes in the Mediterranean region*. In: Kepner, W.G., Rubio, J. L., Mouat, D. A., Pedrazzini, F. Desertification in the

Mediterranean Region. A Security Issue: Proceedings of the NATO Mediterranean dialogue workshop. Valencia, Spain Springer.
Plan Bleu (2006) A Sustainable Future for the Mediterranean. Earthscan: London
Plan Bleu (2020): Demographic trends and outlook in the Mediterranean. Plan Bleu Notes No. 318
Plan Bleu (2022) Nature-Based Solutions (NbS) in Mediterranean Coastal Zones. Technical Factsheet.
Pons, A., and Quézel, P. (1985) *The history of the flora and vegetation and past and present human disturbance in the Mediterranean region.* In C. Gomez-Campo (ed.), Plant Conservation in the Mediterranean Area, Geobotany 7. Dr. W. Junk Publishers, Dordrecht: pp. 25–43.
PRCM (2015) About *Us.* Regional Partnership for Coastal and Marine conservation in western Africa (PRCM). www.prcmarine.org/en
Pulla *et al.*(2013) *Mapping the distribution of forest ownership in Europe.* European Forest Institute, Central European Regional Office and the Observatory for European Forests – Eficent-Oef. EFI Technical Report 88.
Quézel, P. (1985) *Definition of the Mediterranean region and origin of its flora,* Gomez-Campo PlantConservation in the Mediterranean Area, Dr. W. Junk Publishers, Dordrecht, pp. 9–24.
Quézel, P. and Médail, F. (2003) *Ecologie et biogéographie des forêts du bassin méditerranéen.* Elsevier (Collection Environnement), Paris, pp.573.
Quézel, P., Médail, F., Loisel, R. and Barbero, M. (1999) *Biodiversité et conservation des essences forestières du bassin méditerranéen*. Unasylva 197:pp. 21-28.
RAC/SPA, UNEP-MAP (2010) *The Mediterranean Sea Biodiversity: state of the ecosystems, pressures, impacts and future priorities.*
Račinska, I., Barratt, L. and Marouli, C. (2015) *LIFE and Land Stewardship. Current status, challenges and opportunities*. Report to the European Commission.
Rackham, O. (2008) *Holocene history of Mediterranean island landscapes.* In: Vogiatzakis, I.N., Pungetti, G. and Mannion, A.M. Mediterranean island landscapes. Natural and cultural approaches. Landscape series, Volume 9. Springer, New York, pp. 36-60.
Radford, E.A. and Odé, B. (eds.). (2009) *Conserving Important Plant Areas; investing in the Green Gold of South East Europe.* Plantlife International, Salisbury.
Radford. E.A., Catullo, G. and de Montmollin, B. (2011) *Important Plant Areas of the south east Mediterranean region: priority sites for conservation.* IUCN, Gland, Switzerland and Málaga, Spain: IUCN. VIII, pp 108.
Raftoyannis, Y., Spanos, I., Radoglou, K. (2008) *The decline of Greek fir (Abies cephalonica Loudon): relationships with root condition.* Plant Biosystems 142: pp.386-390.
Raybaud, V., M. Bacha, R. Amara and G. Beaugrand, 2017: Forecasting climate-driven changes in the geographical range of the European anchovy (Engraulis encrasicolus). ICES J. Mar. Sci., 74(5), 1288–1299, doi:10.1093/icesjms/fsx003
Rebelo, H., Tarroso, P., Jones, G. (2010) *Predicted impact of climate change on European bats in relation to their biogeographic patterns.* Global Change Biology 16: pp. 561-576.
Rebollo, P., Moreno-Fernández, D., Cruz-Alonso, V. *et al.* (2024) Recent increase in tree damage and mortality and their spatial dependence on drought intensity in Mediterranean forests. *Landsc Ecol* 39, 38
Regional ecosystem profile – Macaronesian Region (2016) EU outermost Regions and Overseas Countries and Territories, Luise Madruga, Francisco Wallenstein, Jose Manuel N. Azevedo. BEST, Service contract 07.0307.2013/666363/SER/B2, European Commission, 233 p + 10 Appendices
Reichstein, M., Bahn, M., Ciais, P., Frank, D., Mahecha, M.D., Seneviratne, S.I., Zscheischler, J., Beer, C., Buchmann, N., Frank, D.C. (2013) *Climate extremes and the carbon cycle.* Nature 500: pp. 287-295.

Reif, J., Vorísek, P., Stastny, K., Bejcek, V., Petr, J. (2008) *Agricultural intensification and farmland birds: new insights from a central European country*. Ibis 150: pp.596–605.

Republic of Macedonia (2014). Third national communication on climate change. Report to UNFCC. Ministry of Environment and Physical Planning. Skopje.

Reyes-Betancort, J.A., Santos Guerra, A., Guma, I.R., Humphries, C.J. and Carine, M.A. (2008) *Diversity, rarity and the evolution and conservation of the Canary Islands endemic flora.* Anales del Jardín Botánico de Madrid, 65(1):pp. 25-45.

Riccaboni, A., Sachs, J., Cresti, S., Gigliotti, M., Pulselli, R.M. (2020): Sustainable Development in the Mediterranean. Report 2020. Transformations to achieve the Sustainable Development Goals. Siena: Sustainable Development Solutions Network Mediterranean (SDSN Mediterranean)

Riservato, E. *et al.* (2009) *The Status and Distribution of Dragonflies of the Mediterranean Basin.* Gland, Switzerland and Malaga, Spain: IUCN, pp.33.

Ritchie, H. (2020) - "Sector by sector: where do global greenhouse gas emissions come from?" Published online at OurWorldinData.org. Retrieved from: 'https://ourworldindata.org/ghg-emissions-by-sector'

Rivas-Martinez, S. et al (2017). Geobotanical survey of Cabo Verde Islands (West Africa). International Journal of Geobotanical Research 7: 1-103. https://www.researchgate.net/publication/323295756

Rodríguez-Rodríguez, D. and Abdul Malak, D. (2022) An assessment of marine biodiversity protection in the Mediterranean Sea: a threatened global biodiversity hotspot, Interreg Med Biodiversity Protection project.

Romeiras, M. M., Catarino, S., Gomes, I., Fernandes, Cl., Costa, J. C., Caujapè-Castells, J and Duarte M. C. (2016) *IUCN Red List assessment of the* Cabo Verde *endemic flora: toward a global strategy for plant conservation in Macaronesia.* Botanical Journal of the Linnean Society, 180: pp. 413-425

Sabaté, S., Gracia, C.A., Sánchez, A. (2002) *Likely effects of climate change on growth of Quercus ilex, Pinus halepensis, Pinus pinaster, Pinus sylvestris and Fagus sylvatica forests in the Mediterranean region.* Forest Ecology and Management 162: pp. 23-37.

Salim, Mudhafar & Rahim, Mariwan & Bachmann, Anna & Ararat, Korsh & Raza, Hana. (2018). Key Biodiversity Areas in Iraq.

San-Miguel-Ayanz, J., Moreno, J.M., Camia, A. (2013) *Analysis of large fires in European Mediterranean landscapes: lessons learned and perspectives.* Forest Ecology and Management 294: pp.11-22.

Sardà, M. Canals, M., Tselepides, A., Tursi, A. (2004) An Introduction to Mediterranean Deep Sea Biology. Scientia Marina 68 (December 2004).

Schroeder, K. *et al.* (2016) *Abrupt climate shift in the Western Mediterranean Sea.* Scientific reports, 6: pp.23009.

Schröter, D., Cramer, W., Leemans, R., Prentice, I. C., Araújo, M. B., Arnell, N. W., and Anne, C. (2005) *Ecosystem service supply and vulnerability to global change in Europe.* Science, 310(5752): pp. 1333-1337.

Schwarz, U., 2022. Hydropower Projects on Balkan Rivers – 2022 Update. RiverWatch & EuroNatur, Vienna/Radolfzell, 37 pp.

Seddon, M. B., Kebapçı, Ü. Lopes-Lima, M., van Damme, D. and Smith, K. G. (2014) *Freshwater molluscs*. In: Smith, K.G., Barrios, V., Darwall, W.R .T. and Numa, C. (Eds.), The status and distribution of freshwater biodiversity in the Eastern Mediterranean, IUCN,Gland,Switzerland and Cambridge,UK: pp 43-55

Segan, D.B., Hole, D.G., Donatti, C.I., Zganjar, C., Martin, S., Butchart, S.H., Watson, J.E. (2015) *Considering the impact of climate change on human communities significantly alters the outcome of species and site‐based vulnerability assessments.* Diversity and Distributions 21: pp.1101-1111.

Seidl, A. (2014) *Cultural ecosystem services and economic development: World Heritage and early efforts at tourism in Albania*. Ecosystem Services, 10: pp. 164-171.

SEO/BirdLife (2014) *Manual SEO/BirdLife de Buenas Prácticas Ambientales en Turismo Pesquero.* Sociedad Española de Ornitología, Madrid.

Sérgio, C., M. Sim-Sim, S. Fontinha and R. Figueira (2008) *List of bryophytes.* In: Borges, P. A. V., C. Abreu, A. M. F. Aguiar, P. Carvalho, R. Jardim, I. Melo, P. Oliveira, C. Sérgio, A. R. M. Serrano and P. Vieira (eds.). A list of the terrestrial fungi, flora and fauna of Madeira and Selvagens archipelagos. Direcção Regional do Ambiente da Madeira and Universidade dos Açores, Funchal and Angra do Heroísmo, pp. 143–156.

Serratosa J. et al (2024) Tracking data highlight the importance of human-induced mortality for large migratory birds at a flyway scale, Biological Conservation, Volume 293, 110525, ISSN 0006-3207 https://doi.org/10.1016/j.biocon.2024.110525.

Settele, J., R. Scholes, R. Betts, S. Bunn, P. Leadley, D. Nepstad, J.T. Overpeck, and M.A. Taboada. (2014) *Terrestrial and Inland Water Systems.* In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field CB, Barros VR, Dokken DJ, Mach KJ, Mastrandrea MD, Bilir TE, Chatterjee M, Ebi KL, Estrada YO, Genova RC, Girma B, Kissel ES, Levy AN, MacCracken S, Mastrandrea PR, White LL (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 271-359.

SGP (2012) *About Us.* SGP The GEF Small Grants Programme. sgp.undp.org/

Shaltout, M., Tonbol, K., Omstedt, A. (2015) *Sea-level change and projected future flooding along the Egyptian Mediterranean coast.* Oceanologia 57: pp. 293-307.

Sil, Â., Azevedo, J.C., Fernandes, P.M. *et al.* Will fire-smart landscape management buffer the effects of climate and land-use changes on fire regimes?. *Ecol Process* 13, 57 (2024)

Sirami, C, Nespoulous, A, Cheylan, JP, Marty, P, Hvenegaard, GT, Geniez, P., Schatz, B. and Martin, J-L. (2010) *Long-term anthropogenic and ecological dynamics of a Mediterranean landscape: Impacts on multiple taxa.* Landscape and Urban Planning 96: pp.214–223.

Slimani, S., Derridj, A. and Gutierrez, E. (2014) *Ecological response of Cedrus atlantica to climate variability in the Massif of Guetiane (Algeria).*Forest Systems, 23(3): pp.448–460.

Sloan, S., Jenkins, Cl, Joppa, L. N., Gaveau, D. L.A., Laurance, W. F. (2014) *Remaining natural vegetation in the global biodiversity hotspots.* Biological Conservation 177: pp.12-24.

Smith, K. G. and Darwall, W. R.T (2006) *The Status and Distribution of Freshwater Fish Endemic to the Mediterranean Basin.* IUCN, Gland, Switzerland and Cambridge, UK. pp. 34.

Smith, K.G., Barrios, V., Darwall, W.R .T. and Numa, C. (Editors) (2014) *The status and distribution of freshwater biodiversity in the Eastern Mediterranean*. Cambridge, UK, Malaga, Spain and Gland, Switzerland: IUCN, pp.132.

Sociedade Caboverdiana de Zoologia. Cabo Verde. Dossier. scvz.org/CVerdes_Infos.pdf

Solarte, G., Castaño, L. M., Arena, H., and Chiossone, T. (2008) Global corruption report 2008: corruption in the water sector. Cambridge University Press, Cambridge. Water Integrity Network, Berlín. Transparency International, Berlin.

Spalding, M.D., Fox, H.E., Allen, G.R., Davidson, N., Ferdaña, Z.A., Finlayson, M., Halpern, B.S., Jorge, M.A., Lombana, A., Lourie, S.A., Martin, K.D., McManus, E., Molnar,J.,Recchia C.A. and Robertson, J. (2007) *Marine Ecoregions of the World: A bioregionalization of Coastal and Shelf Areas.* BioScience. 57 (7): pp.573-583.

Speight, M. C. D. (1989) *Saproxylic invertebrates and their conservation.* Nature and Environment Series 46, Council of Europe, Strasbourg.

Stefanescu, C., Carnicer, J., Penuelas, J. (2011) *Determinants of species richness in generalist and specialist Mediterranean butterflies: the negative synergistic forces of climate and habitat change.* Ecography 34: pp. 353-363.

Stein *et al.* (2014) *Climate-smart conservation: putting adaptation principles into practise*. National Wildlife Federation.

Stergiou, K.I., et al., 2016: Trends in productivity and biomass yields in the Mediterranean Sea Large Marine Ecosystem during climate change. Environ. Dev., 17, 57–74, doi:10.1016/j.envdev.2015.09.001.

Suárez-Seoane, S., Osborne, P. E., Baudry, B. (2002) *Responses of birds of different biogeographic origins and habitat requirements to agricultural land abandonment in northern Spain*. Biological Conservation 105: pp.333-344.

Tabit-Aoul, M. (2011) Environment and Sustainable Development in the Maghreb. The Environment and the Middle East Regional and International Cooperation Volume 3: pp. 20-26.

TCCA (2013) *Annual Report.* Turkish Cooperation and Coordination Agency (TCCA), T.R. Prime Ministry, Ankara, Türkiye.

Temple, H.J. and Cuttelod, A. (2009) *The Status and Distribution of Mediterranean Mammals*. Gland, Switzerland and Cambridge, UK: IUCN, pp.32.

Terrado, M., Acuña, V., Ennaanay, D., Tallis, H., and Sabater, S. (2014) *Impact of climate extremes on hydrological ecosystem services in a heavily humanized Mediterranean basin.* Ecological Indicators, 37: pp.199-209.

The Nature Conservancy (2011-2013) maps.tnc.org/gis_data.html

Thomas, C.D. (2010) *Climate, climate change and range boundaries.* Diversity and Distributions 16: pp.488-495.

Thuiller, W., Lavergne, S., Roquet, C., Boulangeat, I., Lafourcade, B., Araujo, M.B. (2011) *Consequences of climate change on the tree of life in Europe.* Nature 470: pp.531-534.

Thuiller, W., Lavorel, S., Araújo, M.B., Sykes, M.T., Prentice, I.C. (2005) *Climate change threats to plant diversity in Europe.* Proceedings of the National Academy of Sciences of the united States of America 102: pp. 8245-8250.

Torre, I., Díaz, M., Arrizabalaga, A. (2014) *Additive effects of climate and vegetation structure on the altitudinal distribution of greater white-toothed shrews Crocidura russula in a Mediterranean mountain range.* Acta theriologica 59: pp. 139-147.

Trabaud, L., Prodon, R. (2002) *Fire in Biological Processes*. Backhuys Publishers, Leiden.

Transparency International (2016) Corruption Perception Index 2015. Results. Berlin: Transparency International.

Tucker, G. M., Evans, M. I. (1997) *Habitats for Birds in Europe: A Conservation strategy for the wider environment*. BirdLife International, Cambridge.

Tudela, S., Kai, K.A., Maynou, F., El Andalossi, M. and Guglielmi, P. (2005) *Driftnet fishing and biodiversity conservation: the case study of the large-scale Moroccan driftnet fleet operating in the Alboran Sea (SW Mediterranean).* Biological Conservation 121: pp. 65–78.

Turco, M., et al., 2016: Decreasing fires in Mediterranean Europe. Plos One, 11(3), e150663, doi:10.1371/journal.pone.0150663.

Turco, M., et al., 2018: Exacerbated fires in Mediterranean Europe due to anthropogenic warming projected with non-stationary climate-fire models. Nat. Commun., 9(1), 3821, doi:10.1038/s41467-018-06358-z.

Turco, M., et al., 2017: On the key role of droughts in the dynamics of summer fires in Mediterranean Europe. Sci. Rep., 7(1), 81, doi:10.1038/s41598-017- 00116-9.

Turney, D., Fthenakis, V. (2011) *Environmental impacts from the installation and operation of large-scale solar power plants.* Renewable and Sustainable Energy Reviews 15, pp. 3261-3270.

UAE Interact (2016) *Foreign Aid. UAE Interact.* uaeinteract.com/government/development_aid.asp

UfM (2018). Climate change impact on the tourism sector in the southern Mediterranean. https://ufmsecretariat.org/wp-content/uploads/2018/11/UfMReport_ClimateChangeAndTourism.pdf

UNDP (2015) *United National Development Programme Human Development Report.* undp.org/content/undp/en/home/librarypage/hdr/2015-human-development-report/

UNEP (2008) *Vital Water Graphics – An Overview of the State of the World's Fresh and Marine Waters.* 2nd Edition. UNEP, Nairobi, Kenya.
United Nations Environment Programme (2020). The Economics of Nature-based Solutions: Current Status and Future Priorities. United Nations Environment Programme Nairobi.
UNEP-MAP RAC/SPA (2010) The Mediterranean Sea Biodiversity: state of ecosystems, pressures, impacts and future priorities. RAC/SPA: Tunis
UNEP (2012) State of the Mediterranean marine and coastal environment.
UNEP (2016) Mediterranean strategy for sustainable development 2016.
UNEP/MAP. (2015). Marine Litter Assessment in the Mediterranean 2015. Athens, Greece: UNEP/MAP. ISBN No: 978-92-807- 3564-2.
UNEP/MAP. (2017). 2017 Mediterranean Quality Status Report (QSR). Retrieved from https://www.medqsr.org
United Nations Environment Programme/Mediterranean Action Plan and Plan Bleu (2020). State of the Environment and Development in the Mediterranean. Nairobi.
UNESCO (2016) International Centre on Mediterranean Biosphere Reserves. Ecological Sciences for Sustainable Development. United Nations Educational, Scientific and Cultural Organisation. unesco.org/new/en/natural-sciences/environment/ecological-sciences/unesco-mab-category-ii-centres/international-centre-on-mediterranean-biosphere-reserves/
UN-ESCWA and BGR (2013) *Inventory of Shared Water Resources in Western Asia, Technical Report. United Nations Economic and Social Commission for Western Asia*; Bundesanstalt für Geowissenschaften und Rohstoffe, Beirut
UNHCR (2016) Refugees/Migrants Response – Mediterranean. UNHCR: United Nations Refugee Agency. data.unhcr.org/mediterranean/regional.php
USAID (2014) *The USAID Biodiversity Policy.* U.S. Agency for International Development. Washington, DC.
USAID (2016) *Biodiversity Conservation and Forestry Programs: Fiscal Year 2015 results and funding*. U.S. Agency for International Development. Washington, DC.
USAID (2016) *Where we work - Interactive map.* U.S. Agency for International Development. Washington, DC. map.usaid.gov/
USAID (2018) Kosovo Biodiversity Analysis Foreign Assistance Act 119. DAI Global.
USAID (2020) 2019 Civil Society Organization Sustainability Index: Albania
Ustaoglu, S., Okumus, I. (2004) *The sturgeons: fragile species need conservation.* Turkish Journal of Fisheries and Aquatic Sciences 4:pp. 49–57.
van den Berg LJ, Bullock JM, Clarke RT, Langston RH, Rose RJ. (2001) *Territory selection by the Dartford warbler (Sylvia undata) in Dorset, England: the role of vegetation type, habitat fragmentation and population size*. Biological Conservation, 101: pp.217–28.
Van der Werf, G.R., Morton, D.C., DeFries, R.S., Olivier, J.G., Kasibhatla, P.S., Jackson, R.B., Collatz, G.J., Randerson, J.T. (2009) *CO2 emissions from forest loss.* Nature geoscience 2: pp. 737-738.
van der Winden, J., van Vliet, F., Rein, C., Lane, B. (2014) *Renewable Energy Technology Deployment and Migratory Species: an Overview,* commissioned by: International Renewable Energy Agency, Convention on Migratory Species, African-Eurasian Waterbird Agreement and Birdlife International, UNDP/GEF/Birdlife MSB project.
Vargas-Yáñez, M., Mallard E., Rixen M., Zunino P., García-Martínez M.C. and F. Moya, (2012)*The effect of interpolation methods in temperature and salinity trends in the Western Mediterranean.* Mediterranean Marine Science, 13(1): pp. 118-125.
Vargas-Yáñez, M., Moya F., García-Martínez M.C., Tel E., Zunino P., Plaza F., Salat J., Pascual J., López- Jurado J.L. and M. Serra (2010) *Climate change in the Western Mediterranean Sea 1900–2008*. J. Marine Systems, 82: pp. 171-176.
Verlaque, R., F. Médail, P. Quézel, and J. F. Babinot (1997) *Endémisme végétal et paléogéographie dans le bassin méditerranéen*. Geobios, Mémoire spécial 21:pp.159–166.

Verma AK, Prakash S (2022). *Microplastics as an emerging threat to the fresh water fishes: A review*. International Journal of Biological Innovations, 4(2): 368-374. https://doi.org/10.46505/IJBI.2022.4212

Vicente-Serrano, S.M., Zouber, A., Lasanta, T., Pueyo, Y. (2012) *Dryness is accelerating degradation of vulnerable shrublands in semiarid Mediterranean environments*. Ecological Monographs 82: pp.407-428.

Vickery, J. A., S. R. Ewing, K. W. Smith, D. J. Pain, F. Bairlein, J. Škorpilová, and R. D. Gregory (2014) *The Decline of Afro-Palaearctic Migrants and an Assessment of Potential Causes.*Ibis 156: pp.1–22.

Vlachogianni, T., Vogrin, M., Scoullos, M. (2013) *Aliens in the Mediterranean*. MIO-ECSDE. 19 pp.

Vogl, A.L., Dennedy-Frank, P.J., Wolny, S., Johnson, J.A., Hamel, P., Narain, U., Vaidya, A. (2016) *Managing forest ecosystem services for hydropower production.* Environmental Science and Policy 61, pp.221-229.

Voss, K. A., Famiglietti, Lo, M.H., de Linage, C., Rodell, M., Swenson, S. C. (2013) *Groundwater depletion in the Middle East from GRACE with implications for transboundary water management in the Tigris-Euphrates-Western Iran region Water Resources Research* 49: pp.904–914.

Walston, L.J., Rollins, K.E., LaGory, K.E., Smith, K.P., Meyers, S.A. (2016) *A preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States.* Renewable Energy 92: pp.405-414.

Wang, S., Wang, S. (2015) *Impacts of wind energy on environment: A review*. Renewable and Sustainable Energy Reviews 49: pp.437-443.

Warner, K., Hamza, M., Oliver-Smith, A., Renaud, F., Julca, A. (2010) *Climate change, environmental degradation and migration.* Natural Hazards 55: pp.689-715.

WCPA (2001) North Africa and Middle East, Key issues in North Africa/Middle East. World Commission on Protected Areas grida.no/geo/GEO/Geo-2-102.htm

WDPA (2016) World Data Base for Protected Areas. Protected Planet. protectedplanet.net

Wilhelm, Paul G. (2002) International Validation of the Corruption Perceptions Index: Implications for Business Ethics and Entrepreneurship Education. Journal of Business Ethics. Springer Netherlands. 35 (3): pp.177–189.

Williams, J. (2013) *Exploring the onset of high-impact mega-fires through a forest land management prism.* Forest Ecology and Management 294:pp. 4-10.

World Bank (2016a) *Net ODA received per capita (current US$).* World Bank Group. data.worldbank.org/indicator/DT.ODA.ODAT.PC.ZS

World Bank (2016b) *World Bank Development Indicators*. World Bank
Countries | Data (worldbank.org)

World Bank (2024) Invigorating growth. Western Ballkans Regular Economic Report No.25 Spring 2024.

World Bank (2024a) Country Climate Development Reports Available for Albania, Bosnia and Herzegovina, Egypt, Jordan, Lebanon, Montenegro, Morocco, North Macedonia, Tunisia, Türkiye. Country Climate and Development Reports (CCDRs) (worldbank.org)

World Bank (2024b) Western Balkans Regular Economic report.Wretenberg, J., Lindstrom, A.K.E., Svensson, S., Thierfelder, T., Part, T. (2006) *Population trends of farmland birds in Sweden and England: similar trends but different patterns of agricultural intensification.* Journal of Applied Ecology 43: pp.1110–1120.

WWF (2006) *WildFinder: Online database of species distributions,* World Wildlife Fund for Nature worldwildlife.org/science/wildfinder

WWF (2016) *Ecoregions,* World Wildlife Fund for Nature www.worldwildlife.org/biomes.

WWF and IUCN (2004). *The Mediterranean deep-sea ecosystems: an overview of their diversity, structure, functioning and anthropogenic impacts, with a proposal for conservation*. IUCN Centre for Mediterranean Cooperation, Malaga and WFF Mediterranean Programme, Rome, pp. 64.

Zacharias, I., Zamparas, M. (2010) *Mediterranean temporary ponds. A disappearing ecosystem.* Biodiversity and Conservation 19: pp. 3827-3834.
Zakkak, S., Radovic, A., Nikolov, S., Shumka, S., Kakalis, L. and Kati, V. (2015) Assessing the effect of agricultural land abandonment on bird communities in southern-eastern Europe, Journal of Environmental Management, Volume 164, 2015, Pages 171-179. https://doi.org/10.1016/j.jenvman.2015.09.005.
Zamora, R., Pérez-Luque, A.J., Bonet, F.J., Barea-Azcón, J.M. y Aspizua, R. (2015) *La huella del cambio global en Sierra Nevada: Retos para la conservación.* Consejería de Medio Ambiente y Ordenación del Territorio. Junta de Andalucía, pp. 208.
Zanchi, G., Thiel, D., Green, T., Linder, M. (2007) *Afforestation in Europe*, in: MEACAP (Ed.).
Zenetos A, Gofas, S., Morri, C., Rosso, A., Violanti, D., Garcia Raso, J.E., Cinar, M.E., Almogi-Labin, A., Ates, A. S., Azzurro, E., Ballesteros, E., Bianchi, C.N., Bilecenoglu, M., Gambi, M.C., Giangrande, A., Gravili, C., Hyams-Kaphzan, O., Karachle, P.K., Katsanevakis, S. *et al.* (2012) *Alien species in the Mediterranean Sea by 2012. A contribution to the application of European Union's Marine Strategy Framework Directive (MSFD). Part 2.* Introduction trends and pathways. Mediterranean Marine Science.
Zittis, G.; P. Hadjinicolaou; M. Klangidou; Y. Proestos and J. Lelieveld, "A multi-model, multi-scenario, and multi-domain analysis of regional climate projections for the Mediterranean." Regional Environmental Change, 2019, doi: 10.1007/s10113-019-01565-w

ANNEXES

Annex 1: Species Outcomes

Species outcomes are all the globally threatened species recorded from the hotspot. Marine fishes, invertebrates and plants are not included. The on-line annex includes non-threatened Data Deficient and endemic species, as well as all marine species with an IUCN assessment.

Species	IUCN Red List	Endemic	Priority
Amphibians			
Alytes dickhilleni	VU	Yes	
Alytes muletensis	VU	Yes	
Bombina pachypus	EN	No	
Calotriton arnoldi	CR	Yes	1
Chioglossa lusitanica	VU	No	
Euproctus platycephalus	EN	Yes	2
Hyla heinzsteinitzi	CR	Yes	1
Latonia nigriventer	CR	Yes	1
Lyciasalamandra antalyana	EN	Yes	2
Lyciasalamandra atifi	EN	Yes	2
Lyciasalamandra billae	CR	Yes	1
Lyciasalamandra fazilae	EN	Yes	2
Lyciasalamandra flavimembris	EN	Yes	2
Lyciasalamandra helverseni	VU	Yes	
Lyciasalamandra luschani	VU	Yes	
Neurergus strauchii	VU	No	
Pelobates varaldii	EN	Yes	2
Pelophylax cerigensis	CR	Yes	1
Pelophylax cretensis	EN	Yes	2
Pelophylax epeiroticus	VU	Yes	
Pelophylax shqipericus	EN	Yes	2
Pleurodeles nebulosus	VU	Yes	
Pleurodeles poireti	EN	Yes	2
Proteus anguinus	VU	No	
Rana holtzi	CR	Yes	1
Rana latastei	VU	No	
Rana tavasensis	EN	Yes	2
Salamandra algira	VU	Yes	
Speleomantes flavus	VU	Yes	
Speleomantes genei	VU	Yes	
Speleomantes sarrabusensis	VU	Yes	
Speleomantes supramontis	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Birds			
Acrocephalus brevipennis	EN	Yes	2
Acrocephalus paludicola	VU	No	
Alauda razae	CR	Yes	1
Anser erythropus	VU	No	
Aquila adalberti	VU	Yes	
Aquila heliaca	VU	No	
Aquila nipalensis	EN	No	
Aythya ferina	VU	No	
Branta ruficollis	VU	No	
Chlamydotis macqueenii	VU	No	
Chlamydotis undulata	VU	No	
Clanga clanga	VU	No	
Clangula hyemalis	VU	No	
Falco cherrug	EN	No	
Fratercula arctica	VU	No	
Geronticus eremita	CR	Yes	1
Hydrobates monteiroi	VU	Yes	
Marmaronetta angustirostris	VU	No	
Melanitta fusca	VU	No	
Neophron percnopterus	EN	No	
Numenius tenuirostris	CR	No	2
Otis tarda	VU	No	
Oxyura leucocephala	EN	No	
Pelecanus crispus	VU	No	
Podiceps auritus	VU	No	
Pterodroma deserta	VU	Yes	
Pterodroma madeira	EN	No	
Puffinus mauretanicus	CR	Yes	1
Puffinus yelkouan	VU	Yes	
Pyrrhula murina	EN	Yes	2
Serinus syriacus	VU	Yes	
Sitta ledanti	EN	Yes	2
Sitta whiteheadi	VU	Yes	

Species	IUCN Red List	Endemic	Priority
Streptopelia turtur	VU	No	
Vanellus gregarius	CR	No	2
Butterflies			
Arethusana aksouali	EN	Yes	2
Coenonympha orientalis	VU	No	
Gonepteryx cleobule	VU	Yes	
Gonepteryx maderensis	EN	Yes	2
Hipparchia bacchus	VU	Yes	
Hipparchia christenseni	EN	Yes	2
Hipparchia sbordonii	EN	Yes	2
Hipparchia tilosi	VU	Yes	
Lasiommata meadewaldoi	EN	Yes	2
Lycaena ottomana	VU	No	
Maniola halicarnassus	EN	Yes	2
Pararge xiphia	EN	Yes	2
Parnassius apollo	VU	No	
Pieris cheiranthi	EN	Yes	2
Pieris segonzaci	VU	Yes	
Plebejus vogelii	EN	Yes	2
Plebejus zullichi	EN	Yes	2
Polyommatus bollandi	CR	Yes	1
Polyommatus dama	EN	No	
Polyommatus golgus	VU	Yes	
Polyommatus iphicarmon	VU	Yes	
Polyommatus lycius	VU	Yes	
Polyommatus theresiae	EN	Yes	2
Pseudochazara amymone	EN	Yes	2
Pseudochazara orestes	VU	No	
Pseudophilotes fatma	EN	Yes	2
Pyrgus cirsii	VU	No	
Dragonflies and Damselflies			
Boyeria cretensis	EN	Yes	2
Brachythemis fuscopalliata	VU	No	
Calopteryx exul	EN	Yes	2
Calopteryx hyalina	EN	Yes	2
Calopteryx syriaca	EN	Yes	2
Ceriagrion georgifreyi	VU	Yes	
Coenagrion intermedium	VU	Yes	
Cordulegaster helladica	EN	Yes	2
Gomphus lucasii	VU	Yes	
Macromia splendens	VU	No	
Onychogomphus assimilis	VU	No	

Species	IUCN Red List	Endemic	Priority
Onychogomphus flexuosus	VU	No	
Onychogomphus macrodon	VU	Yes	
Pyrrhosoma elisabethae	CR	Yes	1
Somatochlora borisi	VU	No	
Dung beetles			
Ahermodontus ambrosi	EN	yes	2
Ceratophyus martinezi	EN	no	
Ceratophyus rossii	EN	yes	2
Heptaulacus gadetinus	EN	yes	2
Nimbus anyerae	EN	yes	2
Onthophagus albarracinus	VU	yes	
Scarabaeus semipunctatus	VU	yes	
Thorectes balearicus	EN	yes	2
Thorectes baraudi	EN	yes	2
Thorectes castillanus	EN	yes	2
Thorectes catalonicus	EN	yes	2
Thorectes chersinus	EN	no	
Thorectes coiffaiti	EN	yes	2
Thorectes coloni	CR	yes	1
Thorectes distinctus	EN	yes	2
Thorectes hernandezi	EN	yes	2
Thorectes hispanus	EN	yes	2
Thorectes punctatissimus	EN	no	
Thorectes punctatolineatus	EN	yes	2
Thorectes puncticollis	EN	No	
Thorectes sardous	EN	yes	2
Thorectes valencianus	VU	yes	
Thorectes variolipennis	EN	yes	2
Typhaeus hiostius	EN	yes	2
Typhaeus momus	EN	yes	2
Freshwater crabs and shrimps			
Potamon bileki	VU	No	
Freshwater fishes			
Acanthobrama centisquama	CR	No	2
Acanthobrama telavivensis	VU	Yes	
Acanthobrama tricolor	CR	Yes	1
Achondrostoma arcasii	VU	No	
Achondrostoma occidentale	EN	Yes	2
Achondrostoma salmantinum	EN	Yes	2
Acipenser gueldenstaedtii	CR	No	2
Acipenser naccarii	CR	No	2
Acipenser stellatus	CR	No	2

Species	IUCN Red List	Endemic	Priority
Acipenser sturio	CR	No	2
Alburnoides ohridanus	VU	Yes	
Alburnoides prespensis	VU	Yes	
Alburnus albidus	VU	Yes	
Alburnus attalus	EN	Yes	2
Alburnus baliki	EN	Yes	2
Alburnus battalgilae	VU	Yes	
Alburnus belvica	VU	Yes	
Alburnus carinatus	EN	Yes	2
Alburnus demiri	VU	Yes	
Alburnus macedonicus	CR	Yes	1
Alburnus nasreddini	CR	Yes	1
Alburnus orontis	VU	No	
Alburnus qalilus	EN	Yes	2
Alburnus vistonicus	CR	Yes	1
Alburnus volviticus	EN	Yes	2
Alosa macedonica	VU	Yes	
Alosa sp. nov. "Skadar"'	VU	Yes	
Alosa vistonica	CR	Yes	1
Anaecypris hispanica	EN	Yes	2
Anguilla anguilla	CR	No	2
Aphanius almiriensis	CR	Yes	1
Aphanius baeticus	EN	Yes	2
Aphanius danfordii	CR	Yes	1
Aphanius iberus	EN	Yes	2
Aphanius sirhani	CR	Yes	1
Aphanius sureyanus	EN	Yes	2
Aphanius transgrediens	CR	Yes	1
Aulopyge huegelii	EN	No	
Barbatula eregliensis	CR	No	2
Barbatula samantica	EN	No	
Barbatula tschaiyssuensis	EN	Yes	2
Barbus caninus	EN	No	
Barbus euboicus	CR	Yes	1
Barbus grypus	VU	No	
Barbus haasi	VU	No	
Barbus steindachneri	VU	Yes	
Barbus harterti	VU	Yes	
Barbus issenensis	VU	Yes	
Barbus ksibi	VU	Yes	
Barbus paytonii	VU	Yes	
Barbus reinii	VU	Yes	
Capoeta antalyensis	VU	Yes	
Capoeta barroisi	EN	Yes	2
Capoeta mauricii	EN	No	
Capoeta pestai	CR	Yes	1
Carasobarbus kosswigi	VU	No	
Chondrostoma beysehirense	EN	No	
Chondrostoma fahirae	EN	Yes	2
Chondrostoma holmwoodii	VU	Yes	
Chondrostoma kinzelbachi	EN	No	
Chondrostoma knerii	VU	No	
Chondrostoma meandrense	VU	Yes	
Chondrostoma phoxinus	EN	Yes	2
Chondrostoma prespense	VU	Yes	
Chondrostoma soetta	EN	No	
Clupeonella abrau	CR	No	2
Cobitis arachthosensis	EN	Yes	2
Cobitis battalgili	EN	Yes	2
Cobitis calderoni	EN	No	
Cobitis dalmatina	VU	Yes	
Cobitis evreni	EN	Yes	2
Cobitis hellenica	EN	Yes	2
Cobitis illyrica	CR	Yes	1
Cobitis kellei	CR	Yes	1
Cobitis levantina	EN	No	
Cobitis meridionalis	VU	Yes	
Cobitis narentana	VU	Yes	
Cobitis paludica	VU	No	
Cobitis phrygica	EN	Yes	2
Cobitis puncticulata	EN	No	
Cobitis punctilineata	VU	Yes	
Cobitis stephanidisi	CR	Yes	1
Cobitis trichonica	EN	Yes	2
Cobitis turcica	EN	No	
Cobitis vettonica	EN	Yes	2
Cobitis zanandreai	VU	Yes	
Cobitis maroccana	VU	Yes	
Cottus petiti	VU	Yes	
Cottus rondeleti	CR	Yes	1
Cottus scaturigo	VU	Yes	
Crossocheilus klatti	EN	Yes	2
Cyprinus carpio	VU	No	
Delminichthys adspersus	VU	No	
Delminichthys ghetaldii	VU	No	
Economidichthys trichonis	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Eudontomyzon hellenicus	CR	Yes	1
Garra ghorensis	EN	No	
Gobio feraeensis	VU	Yes	
Gobio gymnostethus	CR	No	2
Gobio hettitorum	CR	No	2
Gobio intermedius	EN	Yes	2
Gobio maeandricus	EN	Yes	2
Gobio microlepidotus	VU	No	
Gobio ohridanus	VU	Yes	
Gobio skadarensis	EN	Yes	2
Haplochromis flaviijosephi	VU	Yes	
Haplochromis desfontainii	EN	No	
Hemigrammocapoeta kemali	EN	No	
Hucho hucho	EN	No	
Huso huso	CR	No	2
Iberochondrostoma almacai	CR	Yes	1
Iberochondrostoma lemmingii	VU	Yes	
Iberochondrostoma lusitanicus	CR	Yes	1
Iberochondrostoma oretanum	CR	Yes	1
Iberocypris alburnoides	VU	Yes	
Iberocypris palaciosi	CR	Yes	1
Knipowitschia croatica	VU	No	
Knipowitschia ephesi	CR	Yes	1
Knipowitschia mermere	VU	Yes	
Knipowitschia milleri	CR	Yes	1
Knipowitschia mrakovcici	CR	Yes	1
Knipowitschia radovici	VU	Yes	
Knipowitschia thessala	EN	Yes	2
Ladigesocypris ghigii	VU	Yes	
Luciobarbus comizo	VU	Yes	
Luciobarbus esocinus	VU	No	
Luciobarbus graecus	EN	Yes	2
Luciobarbus guiraonis	VU	Yes	
Luciobarbus kottelati	VU	Yes	
Luciobarbus longiceps	EN	Yes	2
Luciobarbus microcephalus	VU	Yes	
Luciobarbus steindachneri	VU	Yes	
Luciobarbus subquincunciatus	CR	No	2
Luciobarbus xanthopterus	VU	No	
Mesopotamichthys sharpeyi	VU	No	
Nemacheilus dori	CR	Yes	1
Nemacheilus jordanicus	EN	Yes	2
Nemacheilus pantheroides	EN	Yes	2
Nemacheilus sp. nov.	EN	Yes	2
Oxynoemacheilus anatolicus	EN	Yes	2
Oxynoemacheilus eregliensis	VU	No	
Oxynoemacheilus galilaeus	CR	Yes	1
Oxynoemacheilus germencicus	VU	Yes	
Oxynoemacheilus hamwii	EN	Yes	2
Oxynoemacheilus mesudae	EN	Yes	2
Oxynoemacheilus panthera	EN	Yes	2
Oxynoemacheilus phoxinoides	CR	Yes	1
Oxynoemacheilus pindus	VU	Yes	
Oxynoemacheilus seyhanensis	CR	No	2
Oxynoemacheilus seyhanicola	EN	Yes	2
Oxynoemacheilus simavica	CR	Yes	1
Oxynoemacheilus tigris	CR	Yes	1
Padogobius nigricans	VU	Yes	
Parachondrostoma arrigonis	CR	Yes	1
Parachondrostoma toxostoma	VU	No	
Parachondrostoma turiense	EN	Yes	2
Pelasgus epiroticus	CR	Yes	1
Pelasgus laconicus	CR	Yes	1
Pelasgus prespensis	EN	Yes	2
Phoxinellus alepidotus	EN	No	
Phoxinellus dalmaticus	CR	Yes	1
Phoxinellus pseudalepidotus	VU	Yes	
Phoxinus strymonicus	EN	Yes	2
Pseudochondrostoma duriense	VU	No	
Pseudochondrostoma willkommii	VU	Yes	
Pseudophoxinus alii	EN	Yes	2
Pseudophoxinus anatolicus	EN	No	
Pseudophoxinus antalyae	VU	Yes	
Pseudophoxinus crassus	EN	No	
Pseudophoxinus drusensis	EN	Yes	2
Pseudophoxinus egridiri	EN	Yes	2
Pseudophoxinus elizavetae	CR	Yes	1
Pseudophoxinus evliyae	EN	Yes	2
Pseudophoxinus fahrettini	EN	Yes	2
Pseudophoxinus hasani	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Pseudophoxinus hittitorum	EN	Yes	2
Pseudophoxinus maeandri	EN	Yes	2
Pseudophoxinus maeandricus	CR	Yes	1
Pseudophoxinus ninae	CR	Yes	1
Pseudophoxinus syriacus	CR	Yes	1
Pseudophoxinus zekayi	VU	Yes	
Pseudophoxinus punicus	EN	Yes	2
Pungitius hellenicus	CR	Yes	1
Romanogobio benacensis	EN	No	
Rutilus panosi	VU	Yes	
Rutilus prespensis	VU	Yes	
Rutilus ylikiensis	EN	Yes	2
Salaria economidisi	CR	Yes	1
Salmo fibreni	VU	Yes	
Salmo obtusirostris	EN	No	
Salmo ohridanus	VU	Yes	
Salmo pelagonicus	VU	No	
Salmo peristericus	EN	Yes	2
Salmo platycephalus	CR	Yes	1
Salmo akairos	VU	Yes	
Scardinius elmaliensis	EN	Yes	2
Scardinius graecus	CR	Yes	1
Scardinius scardafa	CR	Yes	1
Seminemacheilus ispartensis	VU	Yes	
Squalius aradensis	VU	Yes	
Squalius carinus	EN	Yes	2
Squalius castellanus	EN	Yes	2
Squalius cephaloides	VU	Yes	
Squalius janae	VU	Yes	
Squalius keadicus	EN	Yes	2
Squalius kosswigi	EN	Yes	2
Squalius lucumonis	EN	Yes	2
Squalius malacitanus	EN	Yes	2
Squalius microlepis	EN	Yes	2
Squalius moreoticus	EN	Yes	2
Squalius recurvirostris	VU	No	
Squalius sp. nov. 'Evia'	CR	Yes	1
Squalius svallize	VU	No	
Squalius tenellus	EN	No	
Squalius torgalensis	EN	Yes	2
Squalius valentinus	VU	Yes	
Telestes beoticus	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Telestes metohiensis	VU	No	
Telestes turskyi	CR	Yes	1
Tristramella simonis	VU	Yes	
Tropidophoxinellus spartiaticus	VU	Yes	
Valencia hispanica	CR	Yes	1
Valencia letourneuxi	CR	Yes	1
Zingel asper	CR	No	2
Freshwater mollusks			
Acroloxus egirdirensis	VU	Yes	
Acroloxus improvisus	VU	Yes	
Acroloxus macedonicus	CR	Yes	1
Acroloxus tetensi	VU	Yes	
Alzoniella cornucopia	VU	Yes	
Alzoniella edmundi	EN	Yes	2
Alzoniella fabrianensis	VU	Yes	
Alzoniella finalina	EN	Yes	2
Alzoniella galaica	CR	No	2
Alzoniella lunensis	VU	Yes	
Ancylus lapicidus	EN	Yes	2
Ancylus scalariformis	VU	Yes	
Ancylus tapirulus	EN	Yes	2
Anodonta lucasi	CR	Yes	1
Anodonta pallaryi	CR	Yes	1
Anodonta pseudodopsis	EN	No	
Arganiella wolfi	VU	Yes	
Attebania bernasconii	CR	Yes	1
Belgrandia alcoaensis	CR	Yes	1
Belgrandia bonelliana	CR	Yes	1
Belgrandia gibberula	VU	Yes	
Belgrandia latina	VU	Yes	
Belgrandia lusitanica	EN	Yes	2
Belgrandia moitessieri	CR	Yes	1
Belgrandia silviae	VU	Yes	
Belgrandia sp. nov. 'wiwanensis'	VU	Yes	
Belgrandia torifera	VU	No	
Belgrandia varica	CR	Yes	1
Belgrandiella crucis	VU	No	
Belgrandiella edessana	VU	Yes	
Belgrandiella schleschi	VU	No	
Belgrandiella sp. nov. 'ramdanii'	CR	Yes	1
Belgrandiella superior	VU	No	

Species	IUCN Red List	Endemic	Priority
Belgrandiella zermanica	VU	Yes	
Bithynia badiella	VU	No	
Bithynia cettinensis	VU	Yes	
Bithynia graeca	VU	Yes	
Bithynia kastorias	CR	Yes	1
Bithynia kobialkai	VU	Yes	
Bithynia pesicii	EN	Yes	2
Bithynia prespensis	EN	Yes	2
Bithynia pseudemmericia	VU	Yes	
Bithynia quintanai	VU	Yes	
Bithynia skadarskii	EN	Yes	2
Bithynia zeta	EN	Yes	2
Boetersiella davisi	VU	Yes	
Boetersiella sturmi	EN	Yes	2
Bracenica spiridoni	EN	Yes	2
Bythinella cebennensis	VU	Yes	
Bythinella eurystoma	VU	Yes	
Bythinella eutrepha	CR	Yes	1
Bythinella galerae	VU	Yes	
Bythinella ginolensis	VU	No	
Bythinella occasiuncula	VU	Yes	
Bythinella roubionensis	VU	Yes	
Bythinella sp. nov. 'tiznitensis'	CR	Yes	1
Bythinella turca	CR	Yes	1
Bythiospeum klemmi	EN	Yes	2
Bythiospeum rasini	VU	Yes	
Congeria kusceri	VU	Yes	
Costellina turrita	CR	Yes	1
Dalmatella sketi	CR	Yes	1
Daphniola exigua	EN	Yes	2
Daphniola louisi	CR	Yes	1
Dianella schlickumi	CR	Yes	1
Dianella thiesseana	CR	Yes	1
Dreissena blanci	VU	Yes	
Emmericia expansilabris	VU	No	
Emmericia ventricosa	VU	No	
Falsipyrgula barroisi	EN	Yes	2
Falsipyrgula beysehirana	CR	No	2
Falsipyrgula pfeiferi	EN	Yes	2
Ginaia munda	VU	Yes	
Giustia bodoni	EN	Yes	2
Giustia costata	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Giustia gofasi	EN	Yes	2
Giustia janai	EN	Yes	2
Giustia mellalensis	CR	Yes	1
Giustia midarensis	EN	Yes	2
Giustia saidai	CR	Yes	1
Giustia sp. nov. 'meskiensis'	EN	No	
Gocea ohridana	CR	Yes	1
Graecoanatolica brevis	CR	Yes	1
Graecoanatolica conica	CR	Yes	1
Graecoanatolica kocapinarica	VU	Yes	
Graecoanatolica lacustristurca	EN	No	
Graecoanatolica pamphylica	EN	Yes	2
Graecoanatolica tenuis	VU	Yes	
Graecoanatolica vegorriticola	CR	Yes	1
Graecorientalia vrissiana	CR	Yes	1
Graziana cezairensis	EN	Yes	2
Graziana provincialis	EN	Yes	2
Graziana trinitatis	EN	Yes	2
Guadiella andalucesis	VU	Yes	
Guadiella arconadae	VU	Yes	
Guadiella ramosae	VU	Yes	
Gyraulus albidus	VU	Yes	
Gyraulus argaeicus	VU	Yes	
Gyraulus bekaensis	VU	Yes	
Gyraulus crenophilus	EN	Yes	2
Gyraulus fontinalis	EN	Yes	2
Gyraulus ioanis	CR	Yes	1
Gyraulus meierbrooki	EN	Yes	2
Gyraulus nedyalkovi	VU	Yes	
Gyraulus pamphylicus	VU	Yes	
Gyraulus shasi	CR	Yes	1
Gyraulus stankovici	EN	Yes	2
Gyraulus trapezoides	EN	Yes	2
Hadziella deminuta	VU	No	
Hadziella sketi	VU	Yes	
Hauffenia edlingeri	CR	Yes	1
Hauffenia jadertina	EN	Yes	2
Heideella knidirii	EN	Yes	2
Heideella sp. nov. 'boulali'	EN	Yes	2
Heideella sp. nov. 'kerdouensis'	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Heideella sp. n. 'makhfamanensis'	CR	Yes	1
Heideella sp. nov. 'salahi'	EN	Yes	2
Heideella sp. nov. 'valai'	CR	Yes	1
Heleobia foxianensis	EN	Yes	2
Heleobia galilaea	VU	Yes	
Heleobia tritonum	CR	Yes	1
Henrigirardia wienini	CR	Yes	1
Heraultiella exilis	VU	Yes	
Horatia macedonica	VU	No	
Horatia novoselensis	VU	Yes	
Horatia sp. nov. 'aghbalensis'	EN	Yes	2
Horatia sp. nov. 'haasei'	EN	Yes	2
Hydrobia anatolica	CR	Yes	1
Hydrobia maroccana	EN	Yes	2
Hydrobia djerbaensis	VU	Yes	
Iberhoratia gatoa	VU	Yes	
Iberhoratia morenoi	VU	Yes	
Iglica bagliviaeformis	EN	No	
Iglica elongata	VU	Yes	
Iglica sidariensis	VU	Yes	
Iglica soussensis	CR	Yes	1
Iglica tellinii	VU	No	
Iglica wolfischeri	CR	Yes	1
Islamia anatolica	CR	Yes	1
Islamia bendidis	CR	Yes	1
Islamia bomangiana	VU	Yes	
Islamia bunarbasa	CR	Yes	1
Islamia cianensis	VU	Yes	
Islamia epirana	VU	Yes	
Islamia graeca	CR	Yes	1
Islamia hadei	CR	Yes	1
Islamia henrici	EN	Yes	2
Islamia lagari	VU	Yes	
Islamia pallida	EN	Yes	2
Islamia pseudorientalica	CR	Yes	1
Islamia trichoniana	CR	Yes	1
Islamia zermanica	CR	Yes	1
Kirelia carinata	CR	No	2
Kirelia murtici	CR	Yes	1
Lanzaia kotlusae	VU	Yes	
Lanzaia skradinensis	CR	Yes	1
Lanzaia vjetrenicae	VU	Yes	

Species	IUCN Red List	Endemic	Priority
Leguminaia saulcyi	CR	Yes	1
Lyhnidia gjorgjevici	EN	Yes	2
Lyhnidia hadzii	CR	Yes	1
Lyhnidia karamani	CR	Yes	1
Lyhnidia stankovici	CR	Yes	1
Lymnaea maroccana	EN	Yes	2
Malaprespia albanica	CR	Yes	1
Margaritifera auricularia	CR	No	2
Margaritifera homsensis	EN	Yes	2
Margaritifera margaritifera	EN	No	
Margaritifera marocana	CR	Yes	1
Maroccopsis agadirensis	EN	Yes	2
Melanopsis ammonis	CR	No	2
Melanopsis brevicula	CR	Yes	1
Melanopsis chlorotica	CR	Yes	1
Melanopsis dircaena	EN	Yes	2
Melanopsis etrusca	EN	Yes	2
Melanopsis germaini	CR	Yes	1
Melanopsis infracincta	CR	No	2
Melanopsis letourneuxi	EN	Yes	2
Melanopsis magnifica	EN	Yes	2
Melanopsis mourebeyensis	EN	Yes	2
Melanopsis pachya	CR	Yes	1
Melanopsis penchinati	CR	Yes	1
Melanopsis saharica	CR	No	2
Melanopsis scalaris	EN	Yes	2
Melanopsis subgraellsiana	VU	Yes	
Mercuria meridionalis	EN	Yes	2
Mercuria sp. nov. 'mirlheftensis'	EN	Yes	2
Mercuria punica	CR	No	2
Microcondylaea bonellii	VU	No	
Micropyrgula stankovici	VU	Yes	
Moitessieria calloti	VU	Yes	
Moitessieria foui	VU	Yes	
Moitessieria guadelopensis	VU	Yes	
Moitessieria juvenisanguis	VU	Yes	
Moitessieria lludrigaensis	VU	Yes	
Moitessieria massoti	VU	Yes	
Moitessieria mugae	VU	Yes	
Narentiana vjetrenicae	EN	Yes	2
Neofossarulus stankovici	VU	Yes	
Ohridohauffenia depressa	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Ohridohauffenia minuta	CR	Yes	1
Ohridohauffenia rotonda	EN	Yes	2
Ohridohauffenia sanctinaumi	EN	Yes	2
Ohridohoratia carinata	EN	Yes	2
Ohridohoratia polinskii	VU	Yes	
Ohrigocea karevi	EN	Yes	2
Ohrigocea miladinovorum	EN	Yes	2
Ohrigocea ornata	EN	Yes	2
Ohrigocea samuili	EN	Yes	2
Ohrigocea stankovici	EN	Yes	2
Palacanthilhiopsis margritae	VU	Yes	
Palacanthilhiopsis vervierii	VU	Yes	
Paladilhia gloeeri	EN	Yes	2
Paladilhia jamblussensis	VU	No	
Paladilhia roselloi	VU	Yes	
Paladilhia umbilicata	VU	Yes	
Paladilhiopsis janinensis	CR	Yes	1
Paladilhiopsis neaaugustensis	CR	Yes	1
Paladilhiopsis thessalica	VU	Yes	
Palaospeum bessoni	VU	No	
Parabythinella graeca	CR	Yes	1
Parabythinella macedonica	EN	Yes	2
Parabythinella malaprespensis	CR	Yes	1
Pezzolia radapalladis	EN	No	
Pisidium edlaueri	EN	Yes	2
Pisidium maasseni	EN	Yes	2
Plagigeyeria deformata	EN	Yes	2
Plagigeyeria gladilini	VU	No	
Plagigeyeria montenigrina	CR	Yes	1
Plagigeyeria stochi	VU	No	
Plagigeyeria tribunicae	CR	Yes	1
Plagigeyeria zetaprotogona	EN	No	
Planorbis macedonicus	EN	Yes	2
Planorbis presbensis	VU	Yes	
Potomida littoralis	EN	No	
Prespolitorea malaprespensis	CR	Yes	1
Prespolitorea valvataeformis	CR	Yes	1
Pseudamnicola chia	VU	Yes	
Pseudamnicola gasulli	VU	Yes	
Pseudamnicola geldiayana	EN	Yes	2
Pseudamnicola hydrobiopsis	VU	Yes	
Pseudamnicola intranodosa	VU	Yes	
Pseudamnicola leprevieri	CR	Yes	1
Pseudamnicola lucensis	EN	Yes	2
Pseudamnicola malickyi	VU	Yes	
Pseudamnicola meluzzii	VU	Yes	
Pseudamnicola pallaryi	CR	Yes	1
Pseudamnicola pieperi	VU	Yes	
Pseudamnicola pisolinus	VU	Yes	
Pseudamnicola solitaria	EN	No	
Pseudanodonta complanata	VU	No	
Pseudobithynia ambrakis	VU	Yes	
Pseudobithynia euboeensis	CR	Yes	1
Pseudobithynia falniowskii	CR	Yes	1
Pseudobithynia kathrinae	CR	Yes	1
Pseudobithynia kirka	VU	Yes	
Pseudobithynia levantica	EN	Yes	2
Pseudobithynia panetolis	CR	Yes	1
Pseudobithynia trichonis	EN	Yes	2
Pseudohoratia brusinae	VU	Yes	
Pseudohoratia lacustris	VU	Yes	
Pseudohoratia ochridana	VU	Yes	
Pseudoislamia balcanica	CR	Yes	1
Pyrgohydrobia grochmalickii	VU	Yes	
Pyrgohydrobia jablanicensis	CR	Yes	1
Pyrgohydrobia prespaensis	EN	Yes	2
Pyrgohydrobia sanctinaumi	VU	Yes	
Radix pinteri	EN	Yes	2
Radix skutaris	EN	Yes	2
Radomaniola callosa	VU	No	
Radomaniola elongata	CR	Yes	1
Radomaniola lacustris	CR	Yes	1
Salenthydrobia ferrerii	EN	Yes	2
Sardohoratia islamioides	EN	Yes	2
Sardohoratia sulcata	CR	Yes	1
Saxurinator brandti	VU	No	
Saxurinator labiatus	CR	No	2
Saxurinator montenegrinus	EN	No	
Saxurinator orthodoxus	CR	Yes	1
Saxurinator sketi	EN	No	
Spathogyna fezi	EN	Yes	2
Spiralix corsica	CR	Yes	1
Spiralix gloriae	VU	Yes	
Spiralix pequenoensis	VU	Yes	

Species	IUCN Red List	Endemic	Priority
Spiralix valenciana	EN	Yes	2
Stankovicia baicaliiformis	CR	Yes	1
Stankovicia pavlovici	VU	Yes	
Stankovicia wagneri	VU	Yes	
Strugia ohridana	VU	Yes	
Tanousia zrmanjae	CR	No	2
Tarraconia gasulli	CR	Yes	1
Tarraconia rolani	EN	Yes	2
Tefennia tefennica	VU	Yes	
Theodoxus altenai	CR	Yes	1
Theodoxus baeticus	CR	Yes	1
Theodoxus marteli	VU	Yes	
Theodoxus numidicus	VU	Yes	
Theodoxus subterrelictus	EN	No	
Theodoxus valentinus	CR	Yes	1
Trachyochridia filocincta	CR	Yes	1
Trichonia trichonica	CR	Yes	1
Turcorientalia hohenackeri	VU	No	
Unio crassus	EN	No	
Unio durieui	EN	Yes	2
Unio foucauldianus	CR	Yes	1
Unio terminalis	VU	No	
Unio tumidiformis	VU	Yes	
Valvata hirsutecostata	VU	Yes	
Valvata klemmi	EN	Yes	2
Valvata montenegrina	EN	Yes	2
Valvata relicta	VU	Yes	
Vinodolia fiumana	EN	No	
Vinodolia fluviatilis	EN	No	
Vinodolia gluhodolica	EN	Yes	2
Vinodolia hadouphylax	CR	Yes	1
Vinodolia lacustris	CR	Yes	1
Vinodolia matjasici	CR	Yes	1
Vinodolia scutarica	EN	Yes	2
Xestopyrgula dybowskii	VU	Yes	
Zaumia kusceri	CR	Yes	1
Zaumia sanctizaumi	CR	Yes	1
Mammals			
Allactaga tetradactyla	VU	No	
Ammotragus lervia	VU	No	
Arvicola sapidus	VU	No	
Capra aegagrus	VU	No	
Capra nubiana	VU	No	

Species	IUCN Red List	Endemic	Priority
Crocidura canariensis	EN	Yes	2
Crocidura zimmermanni	VU	Yes	
Dama mesopotamica	EN	No	
Dinaromys bogdanovi	VU	No	
Galemys pyrenaicus	VU	No	
Gazella cuvieri	EN	Yes	2
Gazella dorcas	VU	No	
Gazella gazella	VU	No	
Gazella leptoceros	EN	No	
Gerbillus hesperinus	EN	Yes	2
Gerbillus hoogstraali	VU	Yes	
Lepus corsicanus	VU	Yes	
Lynx pardinus	EN	Yes	2
Macaca sylvanus	EN	Yes	2
Meriones sacramenti	VU	No	
Mesocricetus auratus	VU	Yes	
Monachus monachus	EN	No	
Mustela lutreola	CR	No	2
Myomimus roachi	VU	No	
Myotis capaccinii	VU	No	
Nanger dama	CR	No	2
Nyctalus azoreum	EN	Yes	2
Oryx leucoryx	VU	No	
Ovis orientalis	VU	No	
Panthera pardus	VU	No	
Pipistrellus maderensis	EN	Yes	2
Plecotus sardus	VU	Yes	
Plecotus teneriffae	EN	Yes	2
Rhinolophus mehelyi	VU	No	
Spermophilus citellus	VU	No	
Vormela peregusna	VU	No	
Plants			
Abies nebrodensis	CR	Yes	1
Abies numidica	CR	Yes	1
Abies pinsapo	EN	Yes	2
Acis nicaeensis	EN	Yes	2
Aconitum corsicum	VU	Yes	
Adenocarpus ombriosus	EN	Yes	2
Aeonium balsamiferum	VU	Yes	
Aeonium gomerense	EN	Yes	2
Aeonium saundersii	VU	Yes	
Aethionema retsina	CR	Yes	1
Aichryson dumosum	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Aldrovanda vesiculosa	EN	No	
Allium corsicum	CR	Yes	1
Allium exaltatum	VU	Yes	
Allium pardoi	VU	Yes	
Allium pseudoalbidum	EN	No	
Allium pyrenaicum	VU	Yes	
Allium schmitzii	VU	Yes	
Alyssum pyrenaicum	VU	Yes	
Amsonia orientalis	CR	Yes	1
Anacamptis boryi	VU	No	
Anacyclus pyrethrum	VU	No	
Anagyris latifolia	EN	Yes	2
Anchusa crispa	EN	Yes	2
Androcymbium psammophilum	VU	Yes	
Androcymbium rechingeri	EN	Yes	2
Andryala crithmifolia	CR	Yes	1
Anthemis glaberrima	CR	Yes	1
Antirrhinum charidemi	CR	Yes	1
Antirrhinum lopesianum	EN	Yes	2
Apium bermejoi	CR	Yes	1
Aquilegia barbaricina	CR	Yes	1
Aquilegia nuragica	CR	Yes	1
Arabis kennedyae	CR	Yes	1
Arbutus canariensis	VU	Yes	
Arbutus pavarii	VU	Yes	
Arenaria bolosii	CR	Yes	1
Arenaria nevadensis	CR	Yes	1
Argyranthemum lidii	EN	Yes	2
Argyranthemum thalassophilum	EN	Yes	2
Argyranthemum winteri	CR	Yes	1
Armeria berlengensis	CR	Yes	1
Armeria helodes	CR	No	2
Armeria pseudarmeria	EN	Yes	2
Armeria sampaioi	VU	Yes	
Armeria soleirolii	EN	Yes	2
Artemisia granatensis	EN	Yes	2
Artemisia insipida	CR	No	2
Artemisia molinieri	VU	No	
Arum purpureospathum	VU	Yes	
Asparagus arborescens	VU	Yes	
Asparagus fallax	EN	Yes	2
Asparagus nesiotes	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Asparagus plocamoides	VU	Yes	
Asphodelus bento-rainhae	VU	Yes	
Aster sorrentinii	EN	Yes	2
Astragalus drupaceus	EN	Yes	2
Astragalus maritimus	CR	Yes	1
Astragalus tremolsianus	CR	Yes	1
Astragalus verrucosus	CR	Yes	1
Asyneuma giganteum	VU	Yes	
Athamanta cortiana	CR	Yes	1
Atractylis arbuscula	EN	Yes	2
Atractylis preauxiana	EN	Yes	2
Azorina vidalii	EN	Yes	2
Bassia saxicola	EN	Yes	2
Bellevalia webbiana	EN	Yes	2
Bencomia brachystachya	CR	Yes	1
Bencomia exstipulata	VU	Yes	
Bencomia sphaerocarpa	CR	Yes	1
Beta nana	VU	Yes	
Beta patula	CR	Yes	1
Biscutella rotgesii	CR	Yes	1
Biscutella vincentina	VU	Yes	
Bolboschoenus grandispicus	VU	No	
Borderea chouardii	CR	Yes	1
Brassica glabrescens	VU	No	
Brassica hilarionis	EN	Yes	2
Brassica macrocarpa	CR	Yes	1
Brimeura duvigneaudii	CR	Yes	1
Bupleurum capillare	VU	Yes	
Bupleurum dianthifolium	CR	Yes	1
Bupleurum elatum	CR	Yes	1
Bupleurum handiense	EN	Yes	2
Bupleurum kakiskalae	CR	Yes	1
Calamagrostis parsana	EN	No	
Calendula maritima	CR	Yes	1
Callitriche mathezii	EN	Yes	2
Callitriche pulchra	CR	Yes	1
Campanula mairei	VU	No	
Campanula sabatia	VU	Yes	
Canariothamnus hermosae	VU	Yes	
Carex fissirostris	EN	Yes	2
Carlina diae	EN	Yes	2
Carthamus balearicus	VU	Yes	
Carum asinorum	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Carum lacuum	VU	No	
Cedrus atlantica	EN	Yes	2
Cedrus libani	VU	Yes	
Centaurea akamantis	CR	Yes	1
Centaurea corensis	CR	Yes	1
Centaurea corymbosa	VU	Yes	
Centaurea gadorensis	VU	Yes	
Centaurea gymnocarpa	EN	Yes	2
Centaurea heldreichii	CR	Yes	1
Centaurea horrida	EN	Yes	2
Centaurea immanuelis-loewii	VU	No	
Centaurea kalambakensis	VU	Yes	
Centaurea niederi	VU	Yes	
Centaurea peucedanifolia	VU	Yes	
Centaurea princeps	EN	Yes	2
Centaurea pulvinata	VU	Yes	
Centranthus amazonum	CR	Yes	1
Centranthus trinervis	EN	Yes	2
Cephalanthera cucullata	EN	Yes	2
Cerastium dinaricum	VU	Yes	
Cerastium sventenii	EN	Yes	2
Chaerophyllum karsianum	CR	Yes	1
Chaerophyllum posofianum	CR	Yes	1
Chamaemeles coriacea	VU	Yes	
Cheirolophus crassifolius	CR	Yes	1
Cheirolophus duranii	CR	Yes	1
Cheirolophus falcisectus	EN	Yes	2
Cheirolophus ghomerythus	EN	Yes	2
Cheirolophus junonianus	EN	Yes	2
Cheirolophus massonianus	EN	Yes	2
Cheirolophus metlesicsii	CR	Yes	1
Cheirolophus santos-abreui	CR	Yes	1
Cheirolophus satarataensis	VU	Yes	
Cheirolophus tagananensis	VU	Yes	
Cicer canariense	EN	Yes	2
Cicer graecum	EN	Yes	2
Cirsium ducellieri	VU	Yes	
Cistus chinamadensis	EN	Yes	2
Clinopodium libanoticum	EN	Yes	2
Coincya rupestris	EN	Yes	2
Colchicum corsicum	VU	Yes	
Consolida samia	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Convolvulus argyrothamnos	CR	Yes	1
Convolvulus durandoi	CR	Yes	1
Convolvulus fernandesii	VU	Yes	
Convolvulus lopezsocasii	EN	Yes	2
Convolvulus massonii	VU	Yes	
Coronopus navasii	CR	Yes	1
Crambe arborea	VU	Yes	
Crambe feuillei	CR	Yes	1
Crambe gomerae	VU	Yes	
Crambe laevigata	EN	Yes	2
Crambe microcarpa	EN	Yes	2
Crambe pritzelii	EN	Yes	2
Crambe scaberrima	VU	Yes	
Crambe scoparia	EN	Yes	2
Crambe sventenii	CR	Yes	1
Crambe tamadabensis	CR	Yes	1
Crambe wildpretii	CR	Yes	1
Cremnophyton lanfrancoi	CR	Yes	1
Crepis crocifolia	EN	Yes	2
Crepis granatensis	EN	Yes	2
Crocus cyprius	VU	Yes	
Crocus hartmannianus	VU	Yes	
Cupressus dupreziana	EN	No	
Cyperus cyprius	VU	Yes	
Cytisus aeolicus	CR	Yes	1
Dactylorhiza kalopissii	EN	Yes	2
Dactylorhiza maurusia	EN	Yes	2
Damasonium polyspermum	VU	Yes	
Daphne rodriguezii	VU	Yes	
Delphinium caseyi	CR	Yes	1
Dendriopoterium pulidoi	VU	Yes	
Dianthus morisianus	CR	Yes	1
Diplotaxis siettiana	CR	Yes	1
Diplotaxis vicentina	CR	Yes	1
Dorycnium spectabile	EN	Yes	2
Dracaena draco	VU	No	
Echium acanthocarpum	CR	Yes	1
Echium callithyrsum	VU	Yes	
Echium gentianoides	VU	Yes	
Echium handiense	CR	Yes	1
Echium pininana	EN	Yes	2
Epilobium numidicum	CR	Yes	1
Epipactis greuteri	EN	No	

Species	IUCN Red List	Endemic	Priority
Epipactis nordeniorum	VU	No	
Epipactis placentina	EN	No	
Epipactis tallosii	EN	No	
Erigeron frigidus	EN	Yes	2
Erodium astragaloides	CR	Yes	1
Erodium paularense	EN	Yes	2
Erodium rupicola	VU	Yes	
Eryngium variifolium	VU	Yes	
Eryngium viviparum	EN	No	
Erysimum kykkoticum	CR	Yes	1
Euphorbia bourgeana	VU	Yes	
Euphorbia handiensis	VU	Yes	
Euphorbia margalidiana	CR	Yes	1
Euphorbia nereidum	VU	Yes	
Euphorbia stygiana	CR	Yes	1
Euphrasia marchesettii	VU	No	
Ferula latipinna	VU	Yes	
Ferula mervynii	CR	Yes	1
Festuca brigantina	VU	No	
Flueggea anatolica	EN	Yes	2
Fritillaria conica	EN	Yes	2
Fritillaria drenovskii	VU	Yes	
Fritillaria epirotica	EN	Yes	2
Fritillaria euboeica	VU	Yes	
Fritillaria obliqua	EN	Yes	2
Fritillaria rhodocanakis	EN	Yes	2
Gagea antakiensis	CR	Yes	1
Gagea apulica	VU	Yes	
Gagea chrysantha	VU	Yes	
Gagea dayana	EN	Yes	2
Gagea elliptica	EN	Yes	2
Gagea luberonensis	VU	Yes	
Gagea moniliformis	VU	Yes	
Gagea omalensis	VU	Yes	
Gagea sicula	VU	Yes	
Galanthus ikariae	VU	Yes	
Galanthus peshmenii	VU	Yes	
Galanthus reginae-olgae	VU	Yes	
Galanthus trojanus	CR	Yes	1
Galium viridiflorum	EN	Yes	2
Genista ancistrocarpa	EN	No	
Genista benehoavensis	VU	Yes	
Geranium maderense	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Globularia ascanii	CR	Yes	1
Globularia sarcophylla	VU	Yes	
Globularia stygia	VU	Yes	
Goodyera macrophylla	CR	Yes	1
Gymnadenia widderi	EN	No	
Hammatolobium kremerianum	VU	Yes	
Heberdenia excelsa	VU	Yes	
Helianthemum alypoides	VU	Yes	
Helianthemum bystropogophyllum	CR	Yes	1
Helianthemum teneriffae	CR	Yes	1
Helichrysum gossypinum	VU	Yes	
Helichrysum melitense	CR	Yes	1
Helichrysum monogynum	EN	Yes	2
Helictochloa hackelii	VU	Yes	
Herniaria algarvica	VU	Yes	
Hieracium lucidum	CR	Yes	1
Himantoglossum metlesicsianum	EN	Yes	2
Horstrissea dolinicola	CR	Yes	1
Hypochaeris oligocephala	CR	Yes	1
Iberis runemarkii	VU	Yes	
Iris antilibanotica	CR	Yes	1
Iris atrofusca	VU	Yes	
Iris atropurpurea	CR	Yes	1
Iris bismarckiana	EN	Yes	2
Iris boissieri	CR	No	2
Iris bostrensis	EN	No	
Iris cedreti	CR	Yes	1
Iris grant-duffii	EN	Yes	2
Iris haynei	VU	Yes	
Iris hermona	EN	No	
Iris lortetii	EN	Yes	2
Iris nigricans	VU	No	
Iris nusairiensis	CR	Yes	1
Iris sofarana	EN	Yes	2
Iris vartanii	VU	Yes	
Iris westii	EN	Yes	2
Isatis platyloba	VU	Yes	
Isoetes azorica	VU	Yes	
Isoetes fluitans	EN	No	
Isoetes heldreichii	CR	Yes	1
Isoetes malinverniana	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Isoetes olympica	CR	Yes	1
Isoplexis chalcantha	CR	Yes	1
Isoplexis isabelliana	EN	Yes	2
Jasione lusitanica	EN	No	
Jasminum azoricum	CR	Yes	1
Juncus maroccanus	CR	Yes	1
Juncus sorrentinii	VU	Yes	
Juniperus brevifolia	VU	Yes	
Juniperus cedrus	EN	Yes	2
Jurinea fontqueri	CR	Yes	1
Kunkeliella psilotoclada	CR	Yes	1
Kunkeliella subsucculenta	CR	Yes	1
Lactuca singularis	VU	Yes	
Lactuca tetrantha	VU	Yes	
Lactuca watsoniana	EN	Yes	2
Lamyropsis microcephala	CR	Yes	1
Laserpitium longiradium	CR	Yes	1
Lathyrus belinensis	CR	Yes	1
Leontodon microcephalus	VU	Yes	
Leopoldia gussonei	EN	Yes	2
Lepidium violaceum	VU	Yes	
Leptochloa ginae	EN	Yes	2
Ligusticum huteri	CR	Yes	1
Lilium rhodopeum	VU	No	
Limonium calabrum	CR	Yes	1
Limonium dendroides	CR	Yes	1
Limonium duriaei	VU	Yes	
Limonium fruticans	EN	Yes	2
Limonium legrandii	EN	Yes	2
Limonium ornatum	VU	Yes	
Limonium palmyrense	VU	No	
Limonium perezii	VU	Yes	
Limonium poimenum	EN	Yes	2
Limonium preauxii	EN	Yes	2
Limonium sibthorpianum	CR	Yes	1
Limonium spectabile	CR	Yes	1
Limonium strictissimum	EN	Yes	2
Limonium sventenii	CR	Yes	1
Linaria pseudolaxiflora	VU	Yes	
Linum katiae	VU	Yes	
Linum muelleri	VU	Yes	
Lithodora nitida	EN	Yes	2
Lotus benoistii	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Lotus callis-viridis	EN	Yes	2
Lotus eremiticus	CR	Yes	1
Lotus kunkelii	CR	Yes	1
Lotus maculatus	CR	Yes	1
Lotus pyranthus	CR	Yes	1
Marcetella maderensis	EN	Yes	2
Marsilea batardae	EN	Yes	2
Medemia argun	CR	No	2
Medicago citrina	CR	Yes	1
Micromeria glomerata	CR	Yes	1
Micromeria leucantha	EN	Yes	2
Micromeria taygetea	EN	Yes	2
Micropyropsis tuberosa	EN	Yes	2
Minuartia dirphya	CR	Yes	1
Moehringia fontqueri	EN	Yes	2
Moehringia tommasinii	EN	Yes	2
Monanthes wildpretii	CR	Yes	1
Monizia edulis	CR	Yes	1
Musschia wollastonii	EN	Yes	2
Myosotis azorica	VU	Yes	
Myrica rivas-martinezii	CR	Yes	1
Nananthea perpusilla	VU	Yes	
Narcissus nevadensis	EN	Yes	2
Nasturtium africanum	EN	Yes	2
Naufraga balearica	CR	Yes	1
Odontites granatensis	CR	Yes	1
Omphalodes kuzinskyanae	VU	Yes	
Onopordum carduelium	CR	Yes	1
Onopordum nogalesii	CR	Yes	1
Ophrys argolica	VU	Yes	
Orchis sitiaca	EN	Yes	2
Origanum cordifolium	VU	Yes	
Origanum ehrenbergii	VU	Yes	
Paeonia parnassica	EN	Yes	2
Parolinia schizogynoides	VU	Yes	
Patellifolia webbiana	CR	Yes	1
Pericallis hadrosoma	CR	Yes	1
Pericallis malvifolia	CR	Yes	1
Petagnaea gussonei	EN	Yes	2
Petrocoptis grandiflora	VU	Yes	
Petrocoptis pseudoviscosa	VU	No	
Phalaris maderensis	VU	Yes	
Picconia azorica	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Picconia excelsa	VU	Yes	
Picris willkommii	EN	Yes	2
Pilularia minuta	EN	Yes	2
Pinguicula fontiqueriana	VU	Yes	
Pinguicula mundi	VU	Yes	
Pinguicula nevadensis	EN	Yes	2
Pittosporum coriaceum	CR	Yes	1
Plagius flosculosus	VU	Yes	
Plantago algarbiensis	EN	Yes	2
Plantago almogravensis	CR	Yes	1
Plantago famarae	CR	Yes	1
Plantago lacustris	VU	Yes	
Platanthera micrantha	EN	Yes	2
Pleiomeris canariensis	VU	Yes	
Polygala helenae	CR	Yes	1
Polygala sinisica	CR	Yes	1
Polystichum drepanum	CR	Yes	1
Potentilla delphinensis	VU	No	
Primula apennina	VU	Yes	
Primula palinuri	EN	Yes	2
Prunus korshinskyi	VU	No	
Prunus ramburii	VU	Yes	
Pseudarrhenatherum pallens	EN	Yes	2
Pteris incompleta	VU	Yes	
Puccinellia pungens	VU	Yes	
Pulicaria filaginoides	CR	Yes	1
Pyrus serikensis	VU	No	
Ranunculus kykkoensis	VU	Yes	
Ranunculus schweinfurthii	VU	Yes	
Ranunculus weyleri	VU	Yes	
Rhamnus integrifolia	VU	Yes	
Rhynchospora modesti-lucennoi	EN	No	
Ribes sardoum	CR	Yes	1
Romulea antiatlantica	CR	Yes	1
Rorippa hayanica	VU	Yes	
Rorippa valdes-bermejoi	CR	Yes	1
Rosmarinus tomentosus	EN	Yes	2
Rumex algeriensis	EN	Yes	2
Rumex bithynicus	EN	Yes	2
Rumex tunetanus	CR	Yes	1
Ruta microcarpa	EN	Yes	2
Salicornia veneta	VU	No	

Species	IUCN Red List	Endemic	Priority
Salvia herbanica	CR	Yes	1
Salvia veneris	CR	Yes	1
Santolina elegans	VU	Yes	
Saponaria jagelii	CR	Yes	1
Saxifraga portosanctana	VU	Yes	
Scilla morrisii	CR	Yes	1
Scrophularia eriocalyx	EN	Yes	2
Sedum brissemoretii	VU	Yes	
Senecio caespitosus	VU	Yes	
Senecio elodes	EN	Yes	2
Serapias stenopetala	CR	Yes	1
Seseli intricatum	EN	Yes	2
Sideritis cypria	VU	Yes	
Sideritis cystosiphon	CR	Yes	1
Sideritis discolor	CR	Yes	1
Sideritis infernalis	VU	Yes	
Sideritis javalambrensis	VU	Yes	
Sideritis marmorea	CR	Yes	1
Sideritis reverchonii	EN	Yes	2
Sideritis serrata	CR	Yes	1
Sideroxylon mirmulano	VU	Yes	
Silene hicesiae	VU	Yes	
Silene hifacensis	EN	Yes	2
Silene holzmannii	EN	Yes	2
Silene nocteolens	CR	Yes	1
Silene orphanidis	EN	Yes	2
Sinapidendron angustifolium	CR	Yes	1
Sinapidendron frutescens	EN	Yes	2
Sinapidendron rupestre	CR	Yes	1
Sinapidendron sempervivifolium	EN	Yes	2
Sisymbrella dentata	EN	Yes	2
Sisymbrium cavanillesianum	VU	Yes	
Solanum lidii	CR	Yes	1
Solenanthus albanicus	EN	Yes	2
Sonchus gandogeri	CR	Yes	1
Sorbus maderensis	CR	Yes	1
Spergularia doumerguei	VU	Yes	
Spergularia embergeri	VU	Yes	
Stemmacantha cynaroides	EN	Yes	2
Stipa veneta	EN	No	
Sventenia bupleuroides	EN	Yes	2
Symphytum cycladense	VU	Yes	

Species	IUCN Red List	Endemic	Priority
Tanacetum oshanahanii	CR	Yes	1
Tanacetum ptarmiciflorum	EN	Yes	2
Teline nervosa	CR	Yes	1
Teline rosmarinifolia	EN	Yes	2
Teline salsoloides	CR	Yes	1
Teucrium abutiloides	CR	Yes	1
Teucrium lepicephalum	EN	Yes	2
Teucrium turredanum	VU	Yes	
Thermopsis turcica	CR	Yes	1
Thorella verticillato-inundata	VU	No	
Tolpis glabrescens	EN	Yes	2
Tuberaria major	EN	Yes	2
Tulipa cypria	EN	Yes	2
Verbascum litigiosum	VU	Yes	
Veronica micrantha	VU	No	
Veronica oetaea	CR	Yes	1
Vicia bifoliolata	CR	Yes	1
Vicia capreolata	EN	Yes	2
Vicia costae	CR	Yes	1
Vicia ferreirensis	CR	Yes	1
Vicia fulgens	CR	Yes	1
Viola athois	VU	Yes	
Viola libanotica	EN	Yes	2
Viola ucriana	CR	Yes	1
Wagenitzia lancifolia	EN	Yes	2
Zelkova abelicea	EN	Yes	2
Zelkova sicula	CR	Yes	1
Reptiles			
Acanthodactylus ahmaddisii	EN	No	
Acanthodactylus beershebensis	CR	No	2
Acanthodactylus blanci	EN	Yes	2
Acanthodactylus harranensis	CR	Yes	1
Acanthodactylus mechriguensis	CR	Yes	1
Acanthodactylus pardalis	VU	No	
Acanthodactylus schreiberi	EN	Yes	2
Acanthodactylus spinicauda	CR	Yes	1
Algyroides marchi	EN	Yes	2
Caretta caretta	VU	No	
Chalcides ebneri	CR	Yes	1
Chalcides guentheri	VU	Yes	
Chalcides manueli	VU	Yes	
Chalcides mauritanicus	EN	Yes	2

Species	IUCN Red List	Endemic	Priority
Chalcides minutus	VU	Yes	
Chalcides parallelus	EN	Yes	2
Chalcides simonyi	EN	Yes	2
Chelonia mydas	EN	No	
Chioninia vaillantii	EN	Yes	2
Dermochelys coriacea	VU	No	
Dinarolacerta mosorensis	VU	No	
Gallotia auaritae	CRx	Yes	
Gallotia bravoana	CR	Yes	1
Gallotia intermedia	CR	Yes	1
Gallotia simonyi	CR	Yes	1
Hemidactylus bouvieri	CR	Yes	1
Hierophis cypriensis	EN	Yes	2
Iberolacerta cyreni	EN	Yes	2
Iberolacerta martinezricai	CR	Yes	1
Iberolacerta monticola	VU	No	
Lepidochelys olivacea	VU	No	
Macrovipera schweizeri	EN	Yes	2
Mediodactylus amictopholis	EN	Yes	2
Montivipera albizona	EN	Yes	2
Montivipera bornmuelleri	EN	No	
Parvilacerta fraasii	EN	Yes	2
Philochortus zolii	EN	No	
Phoenicolacerta kulzeri	EN	Yes	2
Podarcis carbonelli	EN	No	
Podarcis gaigeae	VU	Yes	
Podarcis levendis	VU	Yes	
Podarcis lilfordi	EN	Yes	2
Podarcis milensis	VU	Yes	
Podarcis raffonei	CR	Yes	1
Psammodromus microdactylus	EN	Yes	2
Rafetus euphraticus	EN	No	
Saurodactylus fasciatus	VU	Yes	
Tarentola boavistensis	VU	Yes	
Tarentola chazaliae	VU	No	
Tarentola gigas	EN	Yes	2
Telescopus hoogstraali	EN	No	
Testudo graeca	VU	No	
Testudo kleinmanni	CR	Yes	1
Trapelus savignii	VU	No	
Uromastyx aegyptia	VU	No	
Vipera anatolica	CR	Yes	1

Species	IUCN Red List	Endemic	Priority
Vipera latastei	VU	No	
Vipera ursinii	VU	No	

Notes: CR = Critically Endangered; CRx = Critically Endangered, possibly extinct; EN = Endangered; VU = Vulnerable; Yes = endemic to the hotspot; No = not endemic to the hotspot; Priority 1 = CR and endemic; Priority 2 = CR or EN and endemic.

Annex 2: List of KBAs including link to strategic directions

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Albania	ALB-1	Liqeni i Zi	*Southwest Balkans*	2,843		YES	YES
Albania	ALB-2	Boboshtica	*Southwest Balkans*	1,091		YES	YES
Albania	ALB-3	Gjergjevica	*Southwest Balkans*	3,130		YES	YES
Albania	ALB-4	Liqeni i Butrintit	*Southwest Balkans*	14,792	YES	YES	YES
Albania	ALB-5	Gjiri i Vlorës - Karaburun - Mali i Çikës	*Southwest Balkans*	65,734	YES	YES	YES
Albania	ALB-6	Krujë - Tujan	*Southwest Balkans*	1,965		YES	YES
Albania	ALB-7	Laguna e Patokut	*Southwest Balkans*	3,233	YES	YES	
Albania	ALB-8	Liqeni i Prespes se Madhe	*Southwest Balkans*	22,828		YES	YES
Albania	ALB-9	Liqeni i Ohrit	*Southwest Balkans*	11,067		YES	YES
Albania	ALB-10	Liqeni i Shkodrës - Lumi i Bunës - Velipojë - Vau i Dejës	*Southwest Balkans*	56,818	YES	YES	
Albania	ALB-11	Gjirokastra	*Southwest Balkans*	56,083		YES	YES
Albania	ALB-12	Mali i Dajtit	*Southwest Balkans*	42,862		YES	YES
Albania	ALB-13	Mali i Gramozit	*Southwest Balkans*	9,968		YES	YES
Albania	ALB-14	Mali i Gribes	*Southwest Balkans*	3,884		YES	YES
Albania	ALB-15	Mali i Munellës – Bjeshka e Oroshit – Liqenet e Lurës	*Southwest Balkans*	160,725		YES	YES
Albania	ALB-16	Mali i Pashtrik - Morinë	*Southwest Balkans*	21,046		YES	YES
Albania	ALB-17	Mali i Tomorrit	*Southwest Balkans*	11,677		YES	YES
Albania	ALB-18	Masivi Guri i Topit - Valamarë	*Southwest Balkans*	13,014		YES	YES
Albania	ALB-19	Rrajca	*Southwest Balkans*	23,568		YES	YES
Albania	ALB-20	Rrjedha e sipërme e Devollit	*Southwest Balkans*	278		YES	YES
Albania	ALB-21	Rrjedha e sipërme e Osumit	*Southwest Balkans*	624		YES	YES
Albania	ALB-22	Laguna e Karavastase	*Southwest Balkans*	19,126	YES	YES	
Albania	ALB-23	Vargmali Korab-Korritnik	*Southwest Balkans*	48,973		YES	YES
Albania	ALB-24	Laguna e Nartes	*Southwest Balkans*	19,629	YES	YES	

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Albania	ALB-25	Zhej - Nemërçkë	*Southwest Balkans*	48,231		YES	YES
Albania	ALB-26	Liqeni i Prespes se Vogel	*Southwest Balkans*	606		YES	YES
Albania	ALB-27	Prespa dhe Zona Përreth	*Southwest Balkans*	276		YES	YES
Albania	ALB-28	Delta e Drinit	*Southwest Balkans*	2,283	YES	YES	
Albania	ALB-29	Gjiri i Lalzit	*Southwest Balkans*	1,340	YES	YES	
Bosnia and Herzegovina	BIH-1	Dabarsko i Fatnicko Polje	*Eastern Adriatic*	4,068		YES	YES
Bosnia and Herzegovina	BIH-2	Hutovo blato	*Eastern Adriatic*	8,165		YES	
Bosnia and Herzegovina	BIH-3	Livanjsko polje and Busko jezero	*Eastern Adriatic*	45,881		YES	YES
Bosnia and Herzegovina	BIH-4	Mostarsko Blato	*Eastern Adriatic*	3,672		YES	
Bosnia and Herzegovina	BIH-5	Orijen i Bijela gora	*Eastern Adriatic*	18,622		YES	YES
Bosnia and Herzegovina	BIH-6	North Travunija	*Eastern Adriatic*	17,104		YES	YES
Bosnia and Herzegovina	BIH-7	Rijeka Neretva	*Eastern Adriatic*	1,320		YES	
Bosnia and Herzegovina	BIH-8	Trebinjsko Jezero	*Eastern Adriatic*	2,831		YES	YES
Bosnia and Herzegovina	BIH-9	Pritoka Rijeke Trebižat	*Eastern Adriatic*	4,299		YES	
Cabo Verde	CPV-1	Alto das Cabaças	*Cabo Verde*	1,260			
Cabo Verde	CPV-2	Área do Vulcão, Ilha do Fogo - Marinha	*Cabo Verde*	247,251	YES		
Cabo Verde	CPV-3	Boa Esperança	*Cabo Verde*	489			
Cabo Verde	CPV-4	Boavista praias	*Cabo Verde*	4,132	YES		
Cabo Verde	CPV-5	Costa de Fragata	*Cabo Verde*	67	YES		
Cabo Verde	CPV-6	Cova / Paul / Ribeira da Torre and Moroco	*Cabo Verde*	5,568			
Cabo Verde	CPV-7	Cruzinha da Garça	*Cabo Verde*	2,501	YES		
Cabo Verde	CPV-8	Falésias costeiras entre Porto Mosquito e Baía do Inferno	*Cabo Verde*	212			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Cabo Verde	CPV-9	Falésias costeiras entre Porto Mosquito e Baía do Inferno - Marinha	*Cabo Verde*	1,293	YES		
Cabo Verde	CPV-10	Ilha de Santa Luzia	*Cabo Verde*	4,246	YES		
Cabo Verde	CPV-11	Raso / São Nicolau - Marinha	*Cabo Verde*	254,562	YES		
Cabo Verde	CPV-12	Ilhéu Branco	*Cabo Verde*	1,546	YES		
Cabo Verde	CPV-13	Ilhéu de Curral Velho - Marinha	*Cabo Verde*	307,052	YES		
Cabo Verde	CPV-14	Ilhéu Raso	*Cabo Verde*	1,041	YES		
Cabo Verde	CPV-15	Ilhéus do Rombo	*Cabo Verde*	280	YES		
Cabo Verde	CPV-16	Lagoas de Pedra Badejo	*Cabo Verde*	105	YES		
Cabo Verde	CPV-17	Serra Central da Ilha de São Nicolau	*Cabo Verde*	1,854			
Cabo Verde	CPV-18	Monte Grande	*Cabo Verde*	1,299	YES		
Cabo Verde	CPV-19	Monte Verde / Norte da Baía	*Cabo Verde*	415	YES		
Cabo Verde	CPV-20	Parque Natural da Serra da Malagueta	*Cabo Verde*	1,019			
Cabo Verde	CPV-21	Parque Natural de Tope Coroa	*Cabo Verde*	8,490			
Cabo Verde	CPV-22	Área do Vulcão, Ilha do Fogo	*Cabo Verde*	16,089			
Cabo Verde	CPV-23	Parque Natural do Norte do Maio	*Cabo Verde*	4,644	YES		
Cabo Verde	CPV-24	Praias da Ilha de São Nicolau	*Cabo Verde*	5,145	YES		
Cabo Verde	CPV-25	Ribeira de Fajã de Água	*Cabo Verde*	111			
Cabo Verde	CPV-26	Rocha de St António	*Cabo Verde*	1,709			
Cabo Verde	CPV-27	Serra do Pico da Antónia	*Cabo Verde*	2,873			
Cabo Verde	CPV-28	Serra Negra	*Cabo Verde*	327	YES		
Cabo Verde	CPV-29	Varandinha	*Cabo Verde*	2,121	YES		
Cabo Verde	CPV-30	Ilhéu de Curral Velho e zona costeira adjacente	*Cabo Verde*	625	YES		
Cabo Verde	CPV-31	Kapok tree, Boa Entrada	*Cabo Verde*	183			
Cabo Verde	CPV-32	Mahoganies at Banana, Ribeira Montanha, Ilha de Santiago	*Cabo Verde*	183			
Cabo Verde	CPV-33	Ribeira do Rabil	*Cabo Verde*	473			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Algeria	DZA-1	Aures - Chelia		483,447			
Algeria	DZA-2	Barrage de Boughzoul		22,540			
Algeria	DZA-3	Cap Tenes		1,362	YES		
Algeria	DZA-4	Chaîne des Bibans	*The Dorsal and Tellian Atlas*	105,069		YES	YES
Algeria	DZA-5	Chaîne du Dahra	*Oranie and Molouya*	340,762	YES		
Algeria	DZA-6	Chott Ech Chergui		399,139			
Algeria	DZA-7	Chott El Hodna		62,402			
Algeria	DZA-8	Complexe de zones humides de la plaine de Guerbes - Sanhadja	*The Dorsal and Tellian Atlas*	39,906	YES	YES	
Algeria	DZA-9	Dayet El Ferd		1,087			
Algeria	DZA-10	Djebel Aissa	*Saharian Atlas*	628,842			
Algeria	DZA-11	Djebel Amour	*Saharian Atlas*	1,272,100			
Algeria	DZA-12	Djebel Babor et Tababort	*The Dorsal and Tellian Atlas*	24,486		YES	YES
Algeria	DZA-13	Djebel Boutaleb (Hodna)		29,448			
Algeria	DZA-14	Djebel Chenoua		7,891	YES		
Algeria	DZA-15	Djebel Mégriss	*The Dorsal and Tellian Atlas*	6,668		YES	YES
Algeria	DZA-16	Constantine	*The Dorsal and Tellian Atlas*	28,575		YES	YES
Algeria	DZA-17	Djebel Ouarsseniss	*The Dorsal and Tellian Atlas*	1,908		YES	YES
Algeria	DZA-18	Djebel Takoucht	*The Dorsal and Tellian Atlas*	455		YES	YES
Algeria	DZA-19	Djebel Zaccar		77,155			
Algeria	DZA-20	El Abiod Sidi Cheikh	*Saharian Atlas*	114,719			
Algeria	DZA-21	El Bayadh	*Saharian Atlas*	158			
Algeria	DZA-22	El Kala - Tarf	*The Dorsal and Tellian Atlas*	253,498	YES	YES	YES
Algeria	DZA-23	Forêt d'Akfadou	*The Dorsal and Tellian Atlas*	28,241		YES	YES
Algeria	DZA-24	Forêt de Bainem (collines de la Bouzareah)		495	YES		
Algeria	DZA-25	Forêt de Djimla	*The Dorsal and Tellian Atlas*	1,197		YES	YES
Algeria	DZA-26	Forêt de Tamentout	*The Dorsal and Tellian Atlas*	5,625		YES	YES
Algeria	DZA-27	Ghar Rouban		66,599			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Algeria	DZA-28	Haut Seybouse	*The Dorsal and Tellian Atlas*	119,792		YES	YES
Algeria	DZA-29	Lac Fetzara	*The Dorsal and Tellian Atlas*	7,534		YES	
Algeria	DZA-30	Marais de la Macta	*Oranie and Molouya*	44,585			
Algeria	DZA-31	Massif de Ghazoul		5,518			
Algeria	DZA-32	Mont de Dréat		5,491			
Algeria	DZA-33	Monts des Traras	*Oranie and Molouya*	168,271	YES		
Algeria	DZA-34	Numidie occidentale	*The Dorsal and Tellian Atlas*	42,375		YES	YES
Algeria	DZA-35	Ouenza Nord	*The Dorsal and Tellian Atlas*	64,527		YES	YES
Algeria	DZA-36	Ouenza Sud		28,311			
Algeria	DZA-37	Chréa	*The Dorsal and Tellian Atlas*	116,175		YES	YES
Algeria	DZA-38	Gouraya	*The Dorsal and Tellian Atlas*	2,394	YES	YES	
Algeria	DZA-39	Taza	*The Dorsal and Tellian Atlas*	7,058	YES	YES	YES
Algeria	DZA-40	Belezma	*The Dorsal and Tellian Atlas*	32,839		YES	YES
Algeria	DZA-41	Massif Djurdjura	*The Dorsal and Tellian Atlas*	29,425		YES	YES
Algeria	DZA-42	Presqu'île de Collo	*The Dorsal and Tellian Atlas*	51,744	YES	YES	YES
Algeria	DZA-43	Presqu'ile de l'Edough	*The Dorsal and Tellian Atlas*	61,434	YES	YES	YES
Algeria	DZA-44	Mergueb		25,151			
Algeria	DZA-45	Îles Habibas	*Oranie and Molouya*	63	YES		
Algeria	DZA-46	Sahel d'Arzew	*Oranie and Molouya*	11,810	YES		
Algeria	DZA-47	Sahel d'Oran	*Oranie and Molouya*	28,636	YES		
Algeria	DZA-48	Sebkha d'Oran	*Oranie and Molouya*	35,759			
Algeria	DZA-49	Sebkhet Baker	*The Dorsal and Tellian Atlas*	1,513		YES	YES
Algeria	DZA-50	Tamesguida - Djendjen	*The Dorsal and Tellian Atlas*	5,883		YES	YES
Algeria	DZA-51	Théniet El Had	*The Dorsal and Tellian Atlas*	122,936		YES	YES
Algeria	DZA-52	Theniet El Had Zone Importante pour les Plantes	*The Dorsal and Tellian Atlas*	4,564		YES	YES
Algeria	DZA-53	Bou Redim	*The Dorsal and Tellian Atlas*	16		YES	
Algeria	DZA-54	Chott de Tinnsilt	*The Dorsal and Tellian Atlas*	2,000		YES	YES

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Algeria	DZA-55	Garaet et-Tarf		23,199			
Algeria	DZA-56	Île Rachgoune		27	YES		
Algeria	DZA-57	Lac Melah	*The Dorsal and Tellian Atlas*	921		YES	
Algeria	DZA-58	Lac Oubeïra	*The Dorsal and Tellian Atlas*	2,149		YES	
Algeria	DZA-59	Lac Tonga	*The Dorsal and Tellian Atlas*	2,660		YES	
Algeria	DZA-60	Levasseur	*The Dorsal and Tellian Atlas*	84,026		YES	YES
Algeria	DZA-61	Sebkhet Djendli	*The Dorsal and Tellian Atlas*	3,289		YES	YES
Algeria	DZA-62	Sebkhet Ez-Zemoul	*The Dorsal and Tellian Atlas*	5,047		YES	YES
Egypt	EGY-1	Bohayrat El-Bardawil & Zaranik	*Nile Delta Coast*	128,215	YES		
Egypt	EGY-2	Bohayrat El-Burullus	*Nile Delta Coast*	109,160	YES		
Egypt	EGY-3	Lake Idku	*Nile Delta Coast*	1,823	YES		
Egypt	EGY-4	Lake Manzala and Lake Malaha	*Nile Delta Coast*	180,041	YES		
Egypt	EGY-5	Lake Maryut	*Nile Delta Coast*	543	YES		
Egypt	EGY-6	El Omayed	*Nile Delta Coast*	18,276	YES		
Egypt	EGY-7	Ras El Hekma coastal dunes		19,857	YES		
Egypt	EGY-8	Sallum Area	*Cyrenaic Peninsula*	58,928	YES		
Egypt	EGY-9	Sallum Gulf	*Cyrenaic Peninsula*	55,833	YES		
Egypt	EGY-10	Western Mediterranean Coastal Dunes	*Cyrenaic Peninsula*	12,054	YES		
Iraq	IRQ-1	Fishkhaboor	*Northern Mesopotamia*	4,177			
Iraq	IRQ-2	Mosul Lake	*Northern Mesopotamia*	48,119			
Jordan	JOR-1	Ajloun	*Orontes Valley and Levantine Mountains*	15,183		YES	YES
Jordan	JOR-2	Dana		118,781			
Jordan	JOR-3	Dibbin	*Orontes Valley and Levantine Mountains*	46,501		YES	YES
Jordan	JOR-4	Hisma Basin - Rum		209,921			
Jordan	JOR-5	Irbid - Mafraq plains	*Orontes Valley and Levantine Mountains*	29,297		YES	YES
Jordan	JOR-6	Madaba - Hisban		25,925			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Jordan	JOR-7	Wadi Mujib		34,839			
Jordan	JOR-8	Northern Jordan Valley (North Ghor)	*Orontes Valley and Levantine Mountains*	5,970		YES	
Jordan	JOR-9	Rumeinin spring	*Orontes Valley and Levantine Mountains*	9,149		YES	YES
Jordan	JOR-10	Lava Safawai		79,683			
Jordan	JOR-11	Wadi Ibn Hammad - Haditha		26,002			
Jordan	JOR-12	Western Shuaib		6,795			
Jordan	JOR-13	Wadi Yarmuk	*Orontes Valley and Levantine Mountains*	38,337		YES	YES
Kosovo	KOS-1	Pashtrik Nature Park	*Southwest Balkans*	20,921			
Lebanon	LBN-1	Awally to Litani estuary		4,652	YES		
Lebanon	LBN-2	Beirut Coast		3,279	YES		
Lebanon	LBN-3	Beirut River Valley	*Orontes Valley and Levantine Mountains*	10,151		YES	YES
Lebanon	LBN-4	Bentael forest area		2,117			
Lebanon	LBN-5	Enfeh - Medfoun		5,518	YES		
Lebanon	LBN-6	Jbail coast		208	YES		
Lebanon	LBN-7	Jabal Moussa Mountain	*Orontes Valley and Levantine Mountains*	21,953		YES	YES
Lebanon	LBN-8	Mount Hermon	*Orontes Valley and Levantine Mountains*	32,095		YES	YES
Lebanon	LBN-9	Ehden - Bcharre - Tannourine / Makmal - Ainata	*Orontes Valley and Levantine Mountains*	46,533		YES	YES
Lebanon	LBN-10	Nahr Ed-Damour	*Orontes Valley and Levantine Mountains*	6,266		YES	YES
Lebanon	LBN-11	Nahr el Kabir southern basin	*Orontes Valley and Levantine Mountains*	8,244		YES	
Lebanon	LBN-12	Nahr Ibrahim estuary		54	YES		
Lebanon	LBN-13	Nakoura - Tyre		4,387	YES		
Lebanon	LBN-14	Palm Islands Nature Reserve		1,650	YES		
Lebanon	LBN-15	Rihane - Chouf - Ammiq - Sannine	*Orontes Valley and Levantine Mountains*	51,197		YES	YES

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Lebanon	LBN-16	Sarada	*Orontes Valley and Levantine Mountains*	317		YES	YES
Lebanon	LBN-17	Semi-arid north-western Anti-Lebanon	*Orontes Valley and Levantine Mountains*	79,680		YES	YES
Lebanon	LBN-18	Upper Litani River	*Orontes Valley and Levantine Mountains*	11,673		YES	YES
Lebanon	LBN-19	Qammouaa - Dinnyeh - Jurd Hermel	*Orontes Valley and Levantine Mountains*	66,337		YES	YES
Libya	LBY-1	Ajdabiya Marsh	*Cyrenaic Peninsula*	1,365	YES		
Libya	LBY-2	Al Hizam Alakhdar	*Cyrenaic Peninsula*	88,384	YES		
Libya	LBY-3	Bumbah Gulf	*Cyrenaic Peninsula*	80,388	YES		
Libya	LBY-4	Chat Elbadine	*Cyrenaic Peninsula*	1,028,082			
Libya	LBY-5	Elfatayeh	*Cyrenaic Peninsula*	1,054	YES		
Libya	LBY-6	Geziret Farwa	*Wetlands of Tunisia and Libya*	13,562	YES		
Libya	LBY-7	Geziret Garah		58	YES		
Libya	LBY-8	Gulf of Sirte		73,572	YES		
Libya	LBY-9	Jabal al Akhdar	*Cyrenaic Peninsula*	1,151,978	YES		
Libya	LBY-10	Nefhusa		1,338,156	YES		
Libya	LBY-11	Karabolli		5,121	YES		
Libya	LBY-12	Mamarica	*Cyrenaic Peninsula*	155,876	YES		
Libya	LBY-13	Sebkhet Qasr Ahmed (Taworgha)		106,139	YES		
Libya	LBY-14	Tawuoryhe Sebkha		119,743	YES		
Morocco	MAR-1	Aire Marine de Melilla - Nador (l'Orientale)	*Oranie and Molouya*	73,089	YES		
Morocco	MAR-2	Aire Marine du Nord-Maroc (Al Hoceïma)		87,392	YES		
Morocco	MAR-3	Barrage al Massira		18,436			
Morocco	MAR-4	Barrage Mohamed V		10,255			
Morocco	MAR-5	Basse Oum Er Rbia	*Coastal Atlantic Plains*	14,722			
Morocco	MAR-6	Beni Snassene		6,944			
Morocco	MAR-7	Bou Hachem	*The Rif Mountains*	9,702		YES	YES

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Morocco	MAR-8	Cap Spartel - Perdicaris	*The Rif Mountains*	2,433	YES	YES	
Morocco	MAR-9	Cap des Trois Fourches	*Oranie and Molouya*	4,532	YES		
Morocco	MAR-10	Oued Chebeika		35,469	YES		
Morocco	MAR-11	Marais Larache (Bas Loukkos)	*The Rif Mountains*	38,720	YES	YES	
Morocco	MAR-12	Région Jorf Lasfar	*Coastal Atlantic Plains*	413	YES		
Morocco	MAR-13	Côte Imsouane - Taghazout		12,966	YES		
Morocco	MAR-14	Courant des Canaries - Zone I		389,466	YES		
Morocco	MAR-15	Courant des Canaries - Zone II		671,400	YES		
Morocco	MAR-16	Courant des Canaries - Zone III		266,115	YES		
Morocco	MAR-17	Dayas d'Essaouira	*Coastal Atlantic Plains*	6,906			
Morocco	MAR-18	Dayas du Gharb	*Coastal Atlantic Plains*	1,749			
Morocco	MAR-19	Détroit de Gibraltar	*The Rif Mountains*	108,091	YES	YES	
Morocco	MAR-20	Dunes d'Essaouira	*Coastal Atlantic Plains*	43,777	YES		
Morocco	MAR-21	Embouchure Oued Moulouya	*Oranie and Molouya*	16,505			
Morocco	MAR-22	Falaise Sidi-Moussa	*Coastal Atlantic Plains*	138			
Morocco	MAR-24	Haute Moulouya	*The Atlas Mountains*	43,392		YES	YES
Morocco	MAR-25	Jbel Krouz	*Saharian Atlas*	178,615			
Morocco	MAR-26	Jbel Moussa	*The Rif Mountains*	4,144	YES	YES	
Morocco	MAR-27	Parc Naturel de Talassemtane	*The Atlas Mountains*	127,542		YES	YES
Morocco	MAR-28	Jbel Tichouket	*The Atlas Mountains*	14,695		YES	YES
Morocco	MAR-29	Jbel Zerhoun	*The Atlas Mountains*	22,937		YES	YES
Morocco	MAR-30	Imzi		167,213			
Morocco	MAR-31	Maamora	*Coastal Atlantic Plains*	160,899			
Morocco	MAR-32	Marais et Côte du Plateau Rmel	*The Rif Mountains*	234	YES	YES	
Morocco	MAR-33	Dwiyate	*The Atlas Mountains*	733		YES	
Morocco	MAR-34	Merja Zerga	*The Rif Mountains*	8,550	YES	YES	
Morocco	MAR-36	Oued Oum Er-Rbia	*The Atlas Mountains*	152,260		YES	YES
Morocco	MAR-37	Msseyed		352,002			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Morocco	MAR-38	Oued Amezmiz	*The Atlas Mountains*	17,720		YES	YES
Morocco	MAR-39	Oued Bouhlou	*The Atlas Mountains*	18,235		YES	YES
Morocco	MAR-40	Oued Matil - Ksob		124			
Morocco	MAR-41	Oued Mird		456,213			
Morocco	MAR-42	Oued Tizguite et Oued Ouaslane	*The Atlas Mountains*	68,797		YES	YES
Morocco	MAR-43	Oued Lakhdar - Oued Ahançal	*The Atlas Mountains*	80,326		YES	YES
Morocco	MAR-44	Parc National d'Al Hoceima	*The Rif Mountains*	46,509	YES	YES	YES
Morocco	MAR-45	Lagune de Khnifiss		165,509	YES		
Morocco	MAR-46	Parc National de Souss-Massa and Aglou		55,403	YES		
Morocco	MAR-47	Parc National de Tazekka	*The Atlas Mountains*	13,868		YES	YES
Morocco	MAR-48	Parc National de Toubkal	*The Atlas Mountains*	37,194		YES	YES
Morocco	MAR-49	Parc Naturel d'Ifrane	*The Rif Mountains*	78,268		YES	YES
Morocco	MAR-50	Parc National du Haut Atlas Oriental	*The Atlas Mountains*	55,471		YES	YES
Morocco	MAR-51	Plage Blanche - Ras Takoumba		4,077	YES		
Morocco	MAR-52	Plaines côtières de Saidia	*Oranie and Molouya*	4,356	YES		
Morocco	MAR-53	Canton Forestier de Sidi Bou Ghaba	*Coastal Atlantic Plains*	949	YES		
Morocco	MAR-54	Sebkha Bou Areg	*Oranie and Molouya*	13,745	YES		
Morocco	MAR-55	Sebkha Zima		674			
Morocco	MAR-56	Sahb al Majnoun		3,859			
Morocco	MAR-57	Sidi Moussa - Oualidia	*Coastal Atlantic Plains*	7,991	YES		
Morocco	MAR-58	Piste de Tagdilt		14,925			
Morocco	MAR-59	Tasga	*The Atlas Mountains*	149,674		YES	YES
Morocco	MAR-60	Vallée du Haut Tifnout	*The Atlas Mountains*	12,678		YES	YES
Morocco	MAR-61	Wad et Jbel Mgoun	*The Atlas Mountains*	133,446		YES	YES
Morocco	MAR-62	Wad Lakhdar	*The Atlas Mountains*	331,407		YES	YES
Morocco	MAR-63	Région Fouchal - Matarka		322,657			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Morocco	MAR-64	Zone Humide de Laayoune		1,882			
Morocco	MAR-65	Archipel d'Essaouira	*Coastal Atlantic Plains*	63	YES		
Morocco	MAR-66	Barrage Idriss Premier	*The Atlas Mountains*	3,347		YES	
Morocco	MAR-67	Montagnes du Moyen-Atlas Oriental	*The Atlas Mountains*	351,609		YES	YES
Morocco	MAR-68	Imouzzer du Kandar	*The Atlas Mountains*	85,841		YES	YES
Morocco	MAR-69	Islas Chafarinas	*Oranie and Molouya*	27,444	YES		
Morocco	MAR-70	Oued Tahadart	*The Rif Mountains*	22,252	YES	YES	
Morocco	MAR-71	Oued N'Fiss	*The Atlas Mountains*	113,579		YES	YES
North Macedonia	MKD-1	Belasica	*Southwest Balkans*	11,183		YES	YES
North Macedonia	MKD-2	Crn Drim gorge	*Southwest Balkans*	3,215		YES	YES
North Macedonia	MKD-3	Demirkapiska Klisura		11,998			
North Macedonia	MKD-4	Dojransko Ezero	*Southwest Balkans*	3,302		YES	
North Macedonia	MKD-5	Galichica Mountain	*Southwest Balkans*	24,896		YES	YES
North Macedonia	MKD-6	Ilinska Planina	*Southwest Balkans*	27,548		YES	YES
North Macedonia	MKD-7	Jablanica	*Southwest Balkans*	16,214		YES	YES
North Macedonia	MKD-8	Mantovsko Ezero i reka Kriva Lakavica		6,923			
North Macedonia	MKD-9	Monospitovo Blato	*Southwest Balkans*	873		YES	
North Macedonia	MKD-10	Ohridsko Ezero	*Southwest Balkans*	24,757		YES	YES
North Macedonia	MKD-11	Pelister	*Southwest Balkans*	17,171		YES	YES
North Macedonia	MKD-12	Prespansko Ezero	*Southwest Balkans*	19,770		YES	YES
North Macedonia	MKD-13	Reka Vardar	*Southwest Balkans*	61,590		YES	YES

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
North Macedonia	MKD-14	Stogovo	*Southwest Balkans*	11,586		YES	YES
Montenegro	MNE-1	Buljarica		157	YES		
Montenegro	MNE-2	Ćemovsko Polje	*Southwest Balkans*	2,614		YES	
Montenegro	MNE-3	Bojana Delta	*Southwest Balkans*	12,552	YES	YES	
Montenegro	MNE-4	Kanjon Cijevne i Hum Orahovski	*Southwest Balkans*	3,576		YES	YES
Montenegro	MNE-5	Katici, Donkova i Velja Seka		440	YES		
Montenegro	MNE-6	Kotorsko-Risanski Zaliv	*Eastern Adriatic*	2,779	YES	YES	
Montenegro	MNE-7	Lovćen	*Eastern Adriatic*	6,268		YES	YES
Montenegro	MNE-8	Orjen	*Eastern Adriatic*	17,246		YES	YES
Montenegro	MNE-9	Platamuni	*Eastern Adriatic*	1,699	YES	YES	
Montenegro	MNE-10	Rijeka Morača	*Southwest Balkans*	5,304		YES	YES
Montenegro	MNE-11	Rijeka Zeta	*Southwest Balkans*	22,182		YES	YES
Montenegro	MNE-12	Rumija	*Southwest Balkans*	9,260		YES	YES
Montenegro	MNE-13	Skadarsko jezero	*Southwest Balkans*	37,113	YES	YES	
Montenegro	MNE-14	Tivatska Solila	*Eastern Adriatic*	133	YES	YES	
Montenegro	MNE-15	Trebjesa		40			
Montenegro	MNE-16	Kakaricka gora	*Southwest Balkans*	504		YES	
Montenegro	MNE-17	Sasko jezero	*Southwest Balkans*	447		YES	
Montenegro	MNE-18	Ulcinjska solane	*Southwest Balkans*	1,455		YES	
Palestine	PSE-1	Al-Quds	*Orontes Valley and Levantine Mountains*	5,166		YES	YES
Palestine	PSE-2	Central Ghor region	*Orontes Valley and Levantine Mountains*	21,630		YES	
Palestine	PSE-3	Ein Al-Fashkha		22,110			
Palestine	PSE-4	Ein el 'Auja and Wadi el Qilt region	*Orontes Valley and Levantine Mountains*	13,495		YES	YES
Palestine	PSE-5	Jebal Al Khalil North region	*Orontes Valley and Levantine Mountains*	5,761		YES	YES
Palestine	PSE-6	Jebal Al Khalil West region	*Orontes Valley and Levantine Mountains*	4,708		YES	YES

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Palestine	PSE-7	Jerusalem wilderness	*Orontes Valley and Levantine Mountains*	21,624		YES	YES
Palestine	PSE-8	Masafer Yatta and Bani Naeim region	*Orontes Valley and Levantine Mountains*	14,320		YES	YES
Palestine	PSE-9	North-eastern Slopes region	*Orontes Valley and Levantine Mountains*	30,378		YES	YES
Palestine	PSE-10	Ein Qinia	*Orontes Valley and Levantine Mountains*	2,170		YES	YES
Palestine	PSE-11	Um Al-Rihan		10,766			
Palestine	PSE-12	Um Al-Safa - Nabi Saleh	*Orontes Valley and Levantine Mountains*	5,193		YES	YES
Palestine	PSE-13	Wadi Al-Qof - Beit Kahel	*Orontes Valley and Levantine Mountains*	2,519		YES	YES
Palestine	PSE-14	Wadi Qana and Wadi Al Shaer region	*Orontes Valley and Levantine Mountains*	15,609		YES	YES
Palestine	PSE-15	Jebel Al-Ras - Wadi Al-Makhrour	*Orontes Valley and Levantine Mountains*	1,106		YES	YES
Palestine	PSE-16	Jericho		2,109			
Palestine	PSE-17	Mar Saba - Wadi Qadron	*Orontes Valley and Levantine Mountains*	1,389		YES	
Palestine	PSE-18	Wadi Al-Qelt	*Orontes Valley and Levantine Mountains*	6,274		YES	YES
Palestine	PSE-19	Wadi Gaza		1,836			
Palestine	PSE-20	Ein Al-Oja	*Orontes Valley and Levantine Mountains*	3,611		YES	YES
Syria	SYR-1	Abu Zad	*Orontes Valley and Levantine Mountains*	10,073			
Syria	SYR-2	Afrin - Kurd Dag	*Orontes Valley and Levantine Mountains*	157,250			
Syria	SYR-3	Northern El Kabir River	*Orontes Valley and Levantine Mountains*	23,366			
Syria	SYR-4	Eastern Anti Lebanon Mountains	*Orontes Valley and Levantine Mountains*	33,989			
Syria	SYR-5	Daher Al Qseir	*Orontes Valley and Levantine Mountains*	4,423			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Syria	SYR-6	Eastern Akroum	*Orontes Valley and Levantine Mountains*	5,343			
Syria	SYR-7	Euphrates Valley (Upper Section)	*Northern Mesopotamia*	27,706			
Syria	SYR-8	Fronloq - Kasab	*The Taurus Mountains*	11,786			
Syria	SYR-9	Ghab	*Orontes Valley and Levantine Mountains*	1,592			
Syria	SYR-10	Hadhbat al-Jawlan	*Orontes Valley and Levantine Mountains*	80,098			
Syria	SYR-11	Hass - Jabbul		40,863			
Syria	SYR-12	Jabal Abdul Aziz		58,232			
Syria	SYR-13	Jabal Al Arab / Djebel el-Druze		154,028			
Syria	SYR-14	Jabal al-Shaykh	*Orontes Valley and Levantine Mountains*	19,271			
Syria	SYR-15	Jabal al-Shuah	*Orontes Valley and Levantine Mountains*	25,534			
Syria	SYR-16	Jabal Slenfeh	*Orontes Valley and Levantine Mountains*	8,041			
Syria	SYR-17	Jebel Bilas		80,101			
Syria	SYR-18	Jebel El Wastani	*Orontes Valley and Levantine Mountains*	112,160			
Syria	SYR-19	Jisr al Shoghur	*Orontes Valley and Levantine Mountains*	16,417			
Syria	SYR-20	Kanfo	*Orontes Valley and Levantine Mountains*	188			
Syria	SYR-21	Karatchok - Tigris	*Northern Mesopotamia*	24,782			
Syria	SYR-22	Lajat		24,871			
Syria	SYR-23	Lattakia Beach		612			
Syria	SYR-24	Lower Orontes River	*Orontes Valley and Levantine Mountains*	10,482			
Syria	SYR-25	Marmousa	*Orontes Valley and Levantine Mountains*	47,970			
Syria	SYR-26	Qadmus	*Orontes Valley and Levantine Mountains*	12,556			
Syria	SYR-27	Muzaireeb Lake		169			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Syria	SYR-28	Nahr al Hawaiz River		6,825			
Syria	SYR-29	North of Wuguf Plain		2,428			
Syria	SYR-30	Qassioun		18,979			
Syria	SYR-31	Quwayq River		38,525			
Syria	SYR-32	Sabkhat al-Jabboul		41,781			
Syria	SYR-33	Salma - Haffeh	*Orontes Valley and Levantine Mountains*	4,136			
Syria	SYR-34	Tual al-'Abba	*Northern Mesopotamia*	87,622			
Syria	SYR-35	Umm al-Tuyyur		17,123			
Syria	SYR-36	Upper Orontes River and Homs Lake (Bahrat Homs)	*Orontes Valley and Levantine Mountains*	96,981			
Syria	SYR-37	Wadi al-Azib		108,184			
Syria	SYR-38	Wadi al-Qarn - Burqush	*Orontes Valley and Levantine Mountains*	10,600			
Syria	SYR-39	Wadi al-Radd		52,181			
Syria	SYR-40	Wadi Qandil Beach		20			
Syria	SYR-41	Yarmuk valley	*Orontes Valley and Levantine Mountains*	20,857			
Syria	SYR-42	Zebdani	*Orontes Valley and Levantine Mountains*	16,058			
Tunisia	TUN-1	Aqueduc de Zaghouan		6			
Tunisia	TUN-2	Archipel de la Galite		8,144	YES		
Tunisia	TUN-3	Archipel de Zembra		141,221	YES		
Tunisia	TUN-4	Barrage Bezikh		84			
Tunisia	TUN-5	Barrage Chiba		107			
Tunisia	TUN-6	Barrage Lebna		684			
Tunisia	TUN-7	Barrage El Houareb		868			
Tunisia	TUN-8	Barrage El Ogla	*The Dorsal and Tellian Atlas*	84		YES	
Tunisia	TUN-9	Barrage Khairat	*The Dorsal and Tellian Atlas*	319		YES	
Tunisia	TUN-10	Barrage Masri		78			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Tunisia	TUN-11	Barrage Mlaâbi		82			
Tunisia	TUN-12	Barrage Mornaguia		148			
Tunisia	TUN-13	Barrage Moussa		18			
Tunisia	TUN-14	Barrage Moussa Chami		30			
Tunisia	TUN-15	Barrage Oued El Haajar		210			
Tunisia	TUN-16	Barrage Oued Rmal		582			
Tunisia	TUN-17	Barrage Sidi Abdelmonem		24			
Tunisia	TUN-18	Barrage Sidi Jdidi		110			
Tunisia	TUN-19	Côte du Cap Negro - Cap Blanc (Plages de Sidi Mechreg)	*The Dorsal and Tellian Atlas*	8,119	YES	YES	
Tunisia	TUN-20	Forêt de Cap Negro - Cap Serrat (Oued El Zouara)	*The Dorsal and Tellian Atlas*	21,705	YES	YES	
Tunisia	TUN-21	Côte de Zerkine et El Grine	*Wetlands of Tunisia and Libya*	7,296	YES		
Tunisia	TUN-22	Côtes de l'Île de Djerba	*Wetlands of Tunisia and Libya*	21,356	YES		
Tunisia	TUN-23	Dunes de Ras El Melan		1,910	YES		
Tunisia	TUN-24	Dyr El Kef	*The Dorsal and Tellian Atlas*	837		YES	YES
Tunisia	TUN-25	Garaet Douza		1,643			
Tunisia	TUN-26	Garaet Sejnane	*The Dorsal and Tellian Atlas*	1,956		YES	
Tunisia	TUN-27	Golfe de Boughrara	*Wetlands of Tunisia and Libya*	50,360	YES		
Tunisia	TUN-28	Île de Djerba	*Wetlands of Tunisia and Libya*	48,406	YES		
Tunisia	TUN-29	Îles Kerkennah	*Wetlands of Tunisia and Libya*	15,333	YES		
Tunisia	TUN-30	Îles Kneiss	*Wetlands of Tunisia and Libya*	15,933	YES		
Tunisia	TUN-31	Îles Kuriat		3,570	YES		
Tunisia	TUN-32	Jbel el Haouaria		1,357	YES		
Tunisia	TUN-33	Jbel Nadhour et Lagune de Ghar El Melh		23,952	YES		
Tunisia	TUN-34	Jbel Zaghouan	*The Dorsal and Tellian Atlas*	8,073		YES	YES
Tunisia	TUN-35	Kroumirie	*The Dorsal and Tellian Atlas*	7,205		YES	YES
Tunisia	TUN-36	Lac de Tunis		3,739	YES		

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Tunisia	TUN-37	Lagunes de Korba		377	YES		
Tunisia	TUN-38	Lagune de Soliman		635	YES		
Tunisia	TUN-39	Lagune El Bibane	*Wetlands of Tunisia and Libya*	24,962	YES		
Tunisia	TUN-40	Lagunes de Maâmoura et Tazarka		614	YES		
Tunisia	TUN-41	Rivière Maden	*The Dorsal and Tellian Atlas*	82,003	YES	YES	YES
Tunisia	TUN-42	Metbassta		100			
Tunisia	TUN-43	Oasis de Gafsa	*Wetlands of Tunisia and Libya*	1,377			
Tunisia	TUN-44	Oasis de Lalla	*Wetlands of Tunisia and Libya*	887			
Tunisia	TUN-45	Oued Maltine	*Wetlands of Tunisia and Libya*	659	YES		
Tunisia	TUN-46	Jbel Bou Kornine		3,677	YES		
Tunisia	TUN-47	Bouhedma	*Wetlands of Tunisia and Libya*	24,767			
Tunisia	TUN-48	Chaâmbi	*Wetlands of Tunisia and Libya*	7,620			
Tunisia	TUN-49	Ichkeul		13,270	YES		
Tunisia	TUN-50	El Feidja	*The Dorsal and Tellian Atlas*	3,237		YES	YES
Tunisia	TUN-51	Plaines de Kairouan		1,389			
Tunisia	TUN-52	Réserve Naturelle Aïn Zana	*The Dorsal and Tellian Atlas*	0		YES	YES
Tunisia	TUN-53	Réserve Naturelle Jebel El Ghorra	*The Dorsal and Tellian Atlas*	2,348	YES	YES	YES
Tunisia	TUN-54	Salines de Thyna	*Wetlands of Tunisia and Libya*	33,670	YES		
Tunisia	TUN-55	Sebkhet Ariana		3,849	YES		
Tunisia	TUN-56	Sebkhet Dreiaâ	*Wetlands of Tunisia and Libya*	1,616	YES		
Tunisia	TUN-57	Sebkhet Ennoual	*Wetlands of Tunisia and Libya*	23,076			
Tunisia	TUN-58	Sebkhet Halk El Menzel et Oued Sed		2,257	YES		
Tunisia	TUN-59	Sebkhet Kelbia		13,559			
Tunisia	TUN-60	Sebkhet Sejoumi		2,705			
Tunisia	TUN-61	Sebkhet Sidi El Hani		44,376			
Tunisia	TUN-62	Sebkhet Sidi Khelifa		1,523	YES		
Tunisia	TUN-63	Sebkhet Sidi Mansour	*Wetlands of Tunisia and Libya*	4,171			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Tunisia	TUN-64	Sejnane	*The Dorsal and Tellian Atlas*	76,133		YES	
Tunisia	TUN-65	Steppe de Gafsa	*Wetlands of Tunisia and Libya*	24,358			
Tunisia	TUN-66	Garaet Mabtouh		2,059			
Tunisia	TUN-67	Jbel Serj	*The Dorsal and Tellian Atlas*	20,540		YES	YES
Tunisia	TUN-68	Jbel Oust		15,795			
Tunisia	TUN-69	Salines de Monastir		1,300	YES		
Türkiye	TUR-1	Acigöl	*The Taurus Mountains*	32,745			
Türkiye	TUR-2	Acikir Bozkirlari		98,493			
Türkiye	TUR-3	Ahir Dagi	*The Taurus Mountains*	34,487			
Türkiye	TUR-4	Akbük Kiyilari	*The Taurus Mountains*	15,481			
Türkiye	TUR-5	Akçakale Bozkirlari	*Northern Mesopotamia*	108,633			
Türkiye	TUR-6	Akdag - Çivril	*The Taurus Mountains*	52,262			
Türkiye	TUR-7	Akdag - Denizli	*The Taurus Mountains*	126,964			
Türkiye	TUR-8	Akseki ve Ibradi Ormanlari	*The Taurus Mountains*	134,444			
Türkiye	TUR-9	Aksu Vadisi	*The Taurus Mountains*	22,181			
Türkiye	TUR-10	Alaçam Daglari	*Marmara Sea Basin*	80,675			
Türkiye	TUR-11	Alaçati	*The Taurus Mountains*	56,783			
Türkiye	TUR-12	Aladaglar	*The Taurus Mountains*	244,043			
Türkiye	TUR-13	Alata Kumullari	*The Taurus Mountains*	747			
Türkiye	TUR-14	Altinözü Tepeleri	*Orontes Valley and Levantine Mountains*	74,530			
Türkiye	TUR-15	Altintas Ovasi		19,595			
Türkiye	TUR-16	Amanos Daglari	*The Taurus Mountains*	372,473			
Türkiye	TUR-17	Andirin	*The Taurus Mountains*	43,814			
Türkiye	TUR-18	Antalya Ovasi	*The Taurus Mountains*	27,043			
Türkiye	TUR-19	Araban Tepeleri	*Northern Mesopotamia*	18,856			
Türkiye	TUR-20	Armutlu Yarimadasi	*Marmara Sea Basin*	80,028			
Türkiye	TUR-21	Aydincik ve Ovacik Kiyilari	*The Taurus Mountains*	26,413			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Türkiye	TUR-22	Ayvalik		25,835			
Türkiye	TUR-23	Baba Dagi	*The Taurus Mountains*	54,871			
Türkiye	TUR-24	Babakale - Asos Kiyilari		13,800			
Türkiye	TUR-25	Bafa Gölü	*The Taurus Mountains*	17,659			
Türkiye	TUR-26	Bakirçay Deltasi		3,158			
Türkiye	TUR-27	Barla Dagi	*The Taurus Mountains*	59,419			
Türkiye	TUR-28	Bati Mentese Daglari	*The Taurus Mountains*	142,210			
Türkiye	TUR-29	Berit Dagi	*The Taurus Mountains*	73,030			
Türkiye	TUR-30	Beydaglari	*The Taurus Mountains*	191,002			
Türkiye	TUR-31	Beysehir Gölü	*The Taurus Mountains*	93,115			
Türkiye	TUR-32	Biga Daglari	*Marmara Sea Basin*	31,089			
Türkiye	TUR-33	Binboga Daglari	*The Taurus Mountains*	92,158			
Türkiye	TUR-34	Bismil Ovasi	*Northern Mesopotamia*	141,309			
Türkiye	TUR-35	Bodrum Yarimadasi	*The Taurus Mountains*	37,517			
Türkiye	TUR-36	Bogaziçi	*Marmara Sea Basin*	55,317			
Türkiye	TUR-37	Bolkar Daglari	*The Taurus Mountains*	399,242			
Türkiye	TUR-38	Boz Daglari	*The Taurus Mountains*	236,238			
Türkiye	TUR-39	Bozova	*Northern Mesopotamia*	164,731			
Türkiye	TUR-40	Bozyazi Kiyilari	*The Taurus Mountains*	2,144			
Türkiye	TUR-41	Burdur Gölü	*The Taurus Mountains*	25,100			
Türkiye	TUR-42	Burnaz Kumsali	*The Taurus Mountains*	1,360			
Türkiye	TUR-43	Büyük Menderes Deltasi	*The Taurus Mountains*	24,626			
Türkiye	TUR-44	Büyükçekmece Gölü	*Marmara Sea Basin*	5,124			
Türkiye	TUR-45	Çanakkale Bogazi	*Marmara Sea Basin*	110,313			
Türkiye	TUR-46	Çesme Bati Burnu	*The Taurus Mountains*	3,466			
Türkiye	TUR-47	Ceyhan Deltasi	*The Taurus Mountains*	34,040			
Türkiye	TUR-48	Ceylanpinar	*Northern Mesopotamia*	384,633			
Türkiye	TUR-49	Çiçek Adalari	*The Taurus Mountains*	8,723			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Türkiye	TUR-50	Çiglikara Ormanlari (ve Avlan Gölü)	*The Taurus Mountains*	49,474			
Türkiye	TUR-51	Cizre ve Silopi	*Northern Mesopotamia*	12,178			
Türkiye	TUR-52	Çorak Gölü	*The Taurus Mountains*	1,931			
Türkiye	TUR-53	Dalaman Ovasi	*The Taurus Mountains*	45,330			
Türkiye	TUR-54	Datça ve Bozburun Yarimadalari	*The Taurus Mountains*	256,763			
Türkiye	TUR-55	Dedegöl Daglari	*The Taurus Mountains*	138,585			
Türkiye	TUR-56	Devegeçidi Baraji	*Northern Mesopotamia*	6,783			
Türkiye	TUR-57	Dicle Vadisi	*Northern Mesopotamia*	135,559			
Türkiye	TUR-58	Dilek Yarimadasi	*The Taurus Mountains*	28,708			
Türkiye	TUR-59	Dimçay Vadisi	*The Taurus Mountains*	9,478			
Türkiye	TUR-60	Dogu Boncuk Daglari	*The Taurus Mountains*	40,079			
Türkiye	TUR-61	Egirdir Gölü	*The Taurus Mountains*	62,643			
Türkiye	TUR-62	Elbeyli		2,038			
Türkiye	TUR-63	Ermenek Vadisi	*The Taurus Mountains*	139,673			
Türkiye	TUR-64	Eruh Daglari	*Northern Mesopotamia*	132,481			
Türkiye	TUR-65	Feke	*The Taurus Mountains*	167,885			
Türkiye	TUR-66	Fethiye	*The Taurus Mountains*	23,531			
Türkiye	TUR-67	Foça Yarimadasi	*The Taurus Mountains*	25,425			
Türkiye	TUR-68	Gavur Gölü	*Orontes Valley and Levantine Mountains*	6,652			
Türkiye	TUR-69	Gazipasa - Anamur Kiyilari	*The Taurus Mountains*	30,354			
Türkiye	TUR-70	Gediz Deltasi	*The Taurus Mountains*	26,178			
Türkiye	TUR-71	Gelibolu Kemikli Burnu	*Marmara Sea Basin*	22,923			
Türkiye	TUR-72	Gevne Vadisi ve Gokbel Yaylasi	*The Taurus Mountains*	22,353			
Türkiye	TUR-73	Geyik Daglari	*The Taurus Mountains*	251,440			
Türkiye	TUR-74	Girdev Gölü ve Akdaglar	*The Taurus Mountains*	74,960			
Türkiye	TUR-75	Gökçeada Dalyani	*Marmara Sea Basin*	8,949			
Türkiye	TUR-76	Gökçeada Kuzey Kiyilari	*Marmara Sea Basin*	9,148			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Türkiye	TUR-77	Gökdere	*The Taurus Mountains*	60,547			
Türkiye	TUR-78	Gökova Kuzey Kiyilari	*The Taurus Mountains*	18,339			
Türkiye	TUR-79	Göksu Deltasi	*The Taurus Mountains*	21,612			
Türkiye	TUR-80	Göksu Vadisi	*The Taurus Mountains*	52,791			
Türkiye	TUR-81	Gölcük Gölü	*The Taurus Mountains*	433			
Türkiye	TUR-82	Gölgeli Daglari	*The Taurus Mountains*	75,318			
Türkiye	TUR-83	Gorduk Deresi		11,987			
Türkiye	TUR-84	Güllük Dagi	*The Taurus Mountains*	35,251			
Türkiye	TUR-85	Güllük Körfezi	*The Taurus Mountains*	24,271			
Türkiye	TUR-86	Gülnar	*The Taurus Mountains*	17,543			
Türkiye	TUR-87	Güney Firat Vadisi ve Birecik Bozkirlari	*Northern Mesopotamia*	210,048			
Türkiye	TUR-88	Harran Harabeleri	*Northern Mesopotamia*	365			
Türkiye	TUR-89	Honaz Dagi	*The Taurus Mountains*	25,590			
Türkiye	TUR-90	Incirli Tepeleri	*Orontes Valley and Levantine Mountains*	6,488			
Türkiye	TUR-91	Isikli Gölü	*The Taurus Mountains*	9,731			
Türkiye	TUR-92	Istanbul Adalari	*Marmara Sea Basin*	9,454			
Türkiye	TUR-93	Kale	*The Taurus Mountains*	4,718			
Türkiye	TUR-94	Karaburun ve Ildir Körfezi Adalari	*The Taurus Mountains*	87,319			
Türkiye	TUR-95	Karacadag	*Northern Mesopotamia*	135,464			
Türkiye	TUR-96	Karakuyu Sazligi	*The Taurus Mountains*	1,583			
Türkiye	TUR-97	Karamik Sazligi		9,341			
Türkiye	TUR-98	Karatas Gölü	*The Taurus Mountains*	2,428			
Türkiye	TUR-99	Kargi Çay Vadisi	*The Taurus Mountains*	7,385			
Türkiye	TUR-100	Karkamis	*Northern Mesopotamia*	16,071			
Türkiye	TUR-101	Kas-Kalkan Kiyilari	*The Taurus Mountains*	9,496			
Türkiye	TUR-102	Kastabala Vadisi	*The Taurus Mountains*	9,141			
Türkiye	TUR-103	Kaz Daglari	*Marmara Sea Basin*	160,233			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Türkiye	TUR-104	Kazanli	*The Taurus Mountains*	1,616			
Türkiye	TUR-105	Kekova	*The Taurus Mountains*	27,302			
Türkiye	TUR-106	Kibriscik	*The Taurus Mountains*	95,339			
Türkiye	TUR-107	Kiliç Dagi	*The Taurus Mountains*	6,987			
Türkiye	TUR-108	Kizildag	*The Taurus Mountains*	2,210			
Türkiye	TUR-109	Kizildag Izmir	*The Taurus Mountains*	80,515			
Türkiye	TUR-110	Kizilot	*The Taurus Mountains*	8,129			
Türkiye	TUR-111	Kocaçay Deltasi	*Marmara Sea Basin*	38,421			
Türkiye	TUR-112	Köprüçay Vadisi	*The Taurus Mountains*	147,008			
Türkiye	TUR-113	Köycegiz Gölü	*The Taurus Mountains*	39,857			
Türkiye	TUR-114	Küçük Menderes Deltasi	*The Taurus Mountains*	7,775			
Türkiye	TUR-115	Kumluca	*The Taurus Mountains*	3,168			
Türkiye	TUR-116	Küpeli Dagi	*Northern Mesopotamia*	96,907			
Türkiye	TUR-117	Limonlu Havzasi	*The Taurus Mountains*	24,274			
Türkiye	TUR-118	Lower Orontes hydrobasin	*Orontes Valley and Levantine Mountains*	9,394			
Türkiye	TUR-119	Mahal Tepeleri	*The Taurus Mountains*	69,820			
Türkiye	TUR-120	Manyas Gölü (Kus Gölü)	*Marmara Sea Basin*	22,689			
Türkiye	TUR-121	Mardin Esigi	*Northern Mesopotamia*	287,090			
Türkiye	TUR-122	Marmara Adalari	*Marmara Sea Basin*	102,863			
Türkiye	TUR-123	Marmara Gölü	*The Taurus Mountains*	6,916			
Türkiye	TUR-124	Meriç Deltasi	*Marmara Sea Basin*	15,297			
Türkiye	TUR-125	Mersin Tepeleri	*The Taurus Mountains*	46,152			
Türkiye	TUR-126	Murat Dagi	*Marmara Sea Basin*	130,942			
Türkiye	TUR-127	Nemrut Dagi	*Northern Mesopotamia*	104,096			
Türkiye	TUR-128	Nif Dagi	*The Taurus Mountains*	21,409			
Türkiye	TUR-129	Patara	*The Taurus Mountains*	11,854			
Türkiye	TUR-130	Pendik Vadisi	*Marmara Sea Basin*	2,851			

Country	Code	Name	Corridor Name	Surface (ha)	Priority SD1	Priority SD2	Priority SD3
Türkiye	TUR-131	Salda Gölü	*The Taurus Mountains*	6,224			
Türkiye	TUR-132	Samandag Kumullari	*The Taurus Mountains*	2,915			
Türkiye	TUR-133	Sandras Dagi	*The Taurus Mountains*	133,693			
Türkiye	TUR-134	Saros Körfezi	*Marmara Sea Basin*	41,729			
Türkiye	TUR-135	Seyhan Deltasi	*The Taurus Mountains*	41,001			
Türkiye	TUR-136	Southern Çatalca Peninsula	*Marmara Sea Basin*	128,966			
Türkiye	TUR-137	Spil Dagi	*The Taurus Mountains*	26,464			
Türkiye	TUR-138	Sugözü - Akkum	*The Taurus Mountains*	851			
Türkiye	TUR-139	Sündiken Daglari		212,703			
Türkiye	TUR-140	Tahtali Daglari	*The Taurus Mountains*	132,813			
Türkiye	TUR-141	Taseli Platosu	*The Taurus Mountains*	113,294			
Türkiye	TUR-142	Türkmenbaba Dagi		53,994			
Türkiye	TUR-143	Uluabat Gölü	*Marmara Sea Basin*	24,515			
Türkiye	TUR-144	Uludag	*Marmara Sea Basin*	136,513			
Türkiye	TUR-145	Yamanlar Dagi	*The Taurus Mountains*	36,247			
Türkiye	TUR-146	Yarisli Gölü	*The Taurus Mountains*	2,622			
Türkiye	TUR-147	Yesilce		5,453			
Türkiye	TUR-148	Yilanlikale Tepeleri	*The Taurus Mountains*	9,636			

CEPF is a joint initiative of l'Agence Française de Développement, Conservation International, the European Union, Fondation Hans Wilsdorf, the Global Environment Facility, the Government of Japan and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

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CRITICAL ECOSYSTEM PARTNERSHIP FUND

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