

Scoping note

State of Mediterranean Forests 2024

As of 31 March 2023

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This scoping note aims at providing information on the next edition of the State of Mediterranean Forests (SoMF), planned to be published in 2024, to all of the experts directly involved in the drafting process of the publication, i.e. leading authors and co-authors, the board of experts, reviewers and core experts, and those in charge of facilitating the overall process.

Forest and land degradation affects almost 2 billion hectares of land and threatens the livelihoods, well-being, food, water and energy security of nearly 3.2 billion people.¹ Restoration has a key role at the global level in finding solutions to solve these issues, and thus is key in the Mediterranean region as well. Therefore, the central question to be addressed by the third edition of the SoMF is: How are Mediterranean forest ecosystems facing forest threats in the context of a changing climate and increasing degradation drivers' processes and what are the proper nature-based solutions to address these issues?

Background and rationale

The SoMF is a publication that seeks to improve public knowledge of Mediterranean forest ecosystems and landscapes. The first ([SoMF 2013](#)) and second ([SoMF 2018](#)) editions of the SoMF were copublished in 2013 and 2018, respectively, by the Food and Agriculture Organization of the United Nations (FAO) and Plan Bleu. At its Twenty-Third Session in April 2019, the Committee on Mediterranean Forestry Questions of *Silva Mediterranea* confirmed its interest in this publication and requested FAO to prepare the new edition, which is expected to be published in 2024. For this purpose, an online survey was launched on May 2022 by the FAO *Silva Mediterranea* secretariat to identify the main topics to be addressed in the next edition.

The aim of the survey was to collect the expectations of *Silva Mediterranea* actors about the strategic visions for addressing future Mediterranean forestry questions, also considering the effect of the spread of the COVID-19 pandemic worldwide and new environmental emergencies.

Forest and landscape restoration (FLR) can be the proper “adaptive” nature-based management solution (i.e. all actions that increase the adaptive capacity of forests and forest landscapes to changing environmental conditions)² to address these issues as it involves the restoration of ecological functions in deforested or degraded forest ecosystems and landscapes, bearing in mind the well-being of forest-dependent communities.

For instance, within the FLR context, preserving forest biodiversity; raising forest vitality from environmental, economic and social views; and maintaining healthy forest ecosystems are key actions. Particular emphasis should be placed on the importance to manage Mediterranean forest ecosystems with sustainable forest practices and the role of forest soils as a first frontier to fight desertification, hydrological threats and natural hazards in Mediterranean areas.

Moreover, necessary aspects to be considered are the capacity of Mediterranean forests to provide non-wood forest products (NWFPs) that can be better integrated into food supply chains and which markets need to be sustainably expanded. Youth entrepreneurship and green recovery are also timely forest topics deserving of proposal, as found in the Seventh Mediterranean Forest Week outcomes (March 2022, Türkiye). These outcomes address rural employment (specifically for young people) and

green entrepreneurship by developing forest-based solutions based on NWFPs, which, rather than wood products, can represent most of the economic value.

It is worthy to note that all of the above-mentioned examples are included in the FLR approach.

Proposed objectives, structure and content

Objective

The new edition of the State of Mediterranean Forests aims to highlight the role of Mediterranean forests in tackling global and regional issues under a rapidly changing climate, leading to an increase of unpredictable and extreme weather events, thus exposing Mediterranean forests to continuous and increasing abiotic and biotic threats. This is leading significant degrading processes such as desertification, soil erosion, land degradation, fires, megafires, flooding, rain, windstorms, drought, water shortages, land-use changes, anthropic overexploitation, the vulnerability of populations, land overexploitation, land abandonment, pests, diseases and forest genetic erosion.

This new edition aims to provide an overview on the status of forest resources in the Mediterranean region based on the most recent available statistics, to analyse the environmental emergencies affecting Mediterranean forest ecosystems and to showcase sound management, nature-based solutions and sustainable socioeconomic actions by reporting case studies and good practices. The SoMF will present the potential of three key nature-based approaches for tackling environmental crises in the Mediterranean region and building resilient Mediterranean forest ecosystems:

- restoring Mediterranean degraded lands;
- Mediterranean forest fire management; and
- monitoring Mediterranean forest resources.

Structure

The next edition of the SoMF will include nine chapters, each with an executive summary, entitled:

1. Introduction;
2. State of Mediterranean forest resources;
3. Abiotic threats affecting Mediterranean forest ecosystems;
4. Biotic threats affecting Mediterranean forest ecosystems;
5. Forest and landscape restoration initiatives in the Mediterranean region;
6. Forest fire management interventions in the Mediterranean region;
7. Role of urban and peri-urban forests for developing a sustainable rural-urban interface;
8. Monitoring Mediterranean forest resources to increase resilience to changing conditions; and
9. Conclusion.

It is expected to be 170 pages in length, i.e. about 15-20 pages per chapter – figures and references included. The guidelines for authors will be provided, including the following:

- Three versions in English, French and Spanish will be prepared.
- A balance between North and South, in terms of examples and authorship, will be sought.
- The report will be composed by nine chapters.
- Each chapter will have a coordinator. The chapter coordinator will be responsible for:

- identifying the authors (considering gender, youth and geographical balance);
- drawing the outline of the chapter with the authors;
- assisting and contributing to the writing of the chapter by the authors;
- ensuring that the guidelines for the authors are respected;
- finding the reviewer/s of the chapter;
- ensuring that the language (English or French) has a minimum level of fluency; and
- liaising with FAO.

Scientific board:

- One or two senior forestry experts per chapter will be responsible for assisting in the preparation of the report and reviewing the final publication. Possible candidates to be contacted are: Christophe Besacier (FAO—the Forest and Landscape Restoration Mechanism [FLRM]), Valentina Garavaglia (FAO—FLRM), Ismail Belen (the General Directorate of Forestry, Türkiye), Virginia Garcia (University of Malaga, Spain), Carolina Gallo Granizo (FAO—FLRM), Davide Pettenella (University of Padova, Italy), Annemarie Bastrupbirk (European Union [EU]), Jarkko Koskela (FAO), Shiroma Sathyapala (FAO), Michele Bozzano (EFIMED), Magda Bou Dagher Kharrat (EFIMED), Simone Borelli (FAO), Chadi Mohanna (Ministry of Agriculture, Lebanon), Mohammed Boufaroua (General Directorate of Forestry [DGF], Tunisia), Pio Roversi (Council for Agricultural Research and Economics, Italy), Piermaria Corona (Council for Agricultural Research and Economics, Italy), Elena Hernández Paredes (Silva Mediterranea working group 1, Spain), Jordi Cortina (the Society for Ecological Restoration Europe, Spain).

Review committee:

- A scientific reviewer will be assigned to each chapter by the chapter coordinator. The reviewer will revise the content of the chapter (not as an editorial review) and provide support to the authors. The reviewer can also be selected among the list of authors of other chapters of the SoMF.
- The preparation of the third edition of the SoMF is based on voluntary contributions.

Preface

As done for past editions, the preface will be written by high-level FAO individuals from the Assistant Director-General, Forestry Department. Special attention in this chapter will be devoted to providing a comprehensive rationale leading to the publication of this edition, as well as how this edition will address the new Mediterranean forestry questions related to environmental emergencies.

Chapter 1 - Introduction

This chapter will provide a description on how this SoMF edition will contribute to future Mediterranean forest policies and strategies and how current international forest policies have inspired this edition.

In particular, this chapter will address questions regarding:

- The contribution and role of the SoMF 2024 in future Mediterranean forest policies;
- The role of Mediterranean forests in the global framework (e.g. United Nations Decade on Ecosystem Restoration);
- The participatory approach leading to the SoMF edition 2024; and

- The socioeconomic characteristics and trends in the Mediterranean region.

Chapter 2 – State of Mediterranean forest resources

This chapter will focus on updated statistics on Mediterranean forest resources based on official FAO Global Forest Resources Assessment (FRA) 2020 country reports and other data collection efforts, including all relevant information and statistics on the changing climate in the Mediterranean region and case studies on its impact on forests. For instance, a recent forest mapping based on two types of input data have been elaborated on by using: satellite data from the European Space Agency (ESA) and the National Aeronautics and Space Administration (NASA); multispectral data from sensors of the ESA's Sentinel-2 satellite's; and land cover and forest ground data extrapolated by land cover maps.

Keywords: Forest Resources Assessment, forest genetic resources, forest cover, Mediterranean forest types, meteorological extreme events mapping

Chapter 3 – Abiotic threats affecting Mediterranean forest ecosystems

This chapter will present an overview of past, current and future abiotic threats and related emergencies exposing Mediterranean forest ecosystems to an increase of degradation processes. The increase of extreme weather events that occurred in the Mediterranean region during the last decade are exposing Mediterranean forest ecosystems to several risks due to the unpredictable extension of drought periods and water shortages, sudden rain and windstorms, irregular distribution of precipitation and flooding, and other threats that are leading to an increase of land degradation processes, namely land-use changes, megafires, flooding, soil erosion, landslides, land degradation, desertification, and rural and mountain depopulation.

Keywords: degradation drivers, vulnerability, dieback, climate change, wildfires, water scarcity, land abandonment

Chapter 4 – Biotic threats affecting Mediterranean forest ecosystems

Strictly linked to the previous chapter, this chapter will provide a status of biotic threats and related emergencies exposing Mediterranean forest ecosystems to an increase of degradation processes. For instance, it will provide an overview on past and current pests and diseases and show how they are affecting Mediterranean forests. It will also highlight new and exotic insect and pathogen species that are finding new environmental niches in Mediterranean forests. In addition, the chapter will highlight relationships between resource shortages (e.g. water or nutrients) leading to the general weakness and decay of forests and, consequently, exposing them to secondary pathogen attacks. Of comparable importance, it will present some recent research advances in relation to the impact of changing climate on forest phenology, as it seems that the warming and changing of precipitation regimes are upsetting the phenology of forest ecosystems. This could be expected particularly in the Mediterranean region, where the negative effects of climate change are significantly affecting forest cycles. Biodiversity loss and the related introduction of new exotic tree species are also important topics deserving recognition

in this chapter, and future forest management strategies for preserving and ensuring the genetic variability of Mediterranean forest species at intra-and-inter-specific levels should be discussed.

Keywords: forest protection, pests and diseases, biodiversity loss, genetic erosion, forest management, climate change

Chapter 5 – Forest and landscape restoration initiatives in the Mediterranean region

This chapter will introduce the vision, rationale, concepts and comprehensive description of the forest and landscape restoration (FLR) approach, its application in the Mediterranean forest eco-systems in solving current and future threats, the importance of improving the socioeconomic conditions and well-being of forest-dependent communities, particularly with the example of the recently proposed Mediterranean flagship and the related best practices proposed in it.

The chapter will also address questions regarding:

- Mediterranean forest adaptation capacity to climate change and degradation drivers, the role of adaptive management in the context of FLR, and best practices in Mediterranean forests and case studies;
- projecting the natural range of Mediterranean forest species to future climate scenarios, assisted species' migration and assisted natural regeneration practices;
- implementing climate change and landscape restoration in Mediterranean forest management plans;
- agroforestry and agrosilvopastoral systems as a sustainable option to ensure food security, providing examples from familiar/farm agriculture and non-wood forest products;
- the socioeconomic component of FLR, the importance to preserve and restore forests to ensure the well-being of Mediterranean populations, and the role of forest-dependent communities in FLR;
- the international context of FLR, funding opportunities and youth entrepreneurship such as:
 - the context of forest and landscape restoration;
 - achieving international targets (the Paris agreement, the Bonn Challenge, the Agadir commitment, the Antalya declaration and National Biodiversity Strategies and Action Plans [NBSAPs]);
 - funding opportunities and tools;
 - the role of youth in Mediterranean forest activities, as stated during the 7th Mediterranean Forest Week (Youth statement and Antalya declaration); and
 - the economic value of forest and landscape restoration in the Mediterranean area.

Keywords: ecological restoration, forest management, silviculture, adaptation, socioeconomic context, future forest scenarios, governance, international treaties, forest policy, bioeconomy, new generations

Chapter 6 - Forest fire management interventions in the Mediterranean region

This chapter will present an overview on fire and megafire events affecting the Mediterranean region and the related forest strategies for recognizing the importance of forest fire management, prevention and post-fire restoration. It will provide innovative solutions to address the need to establish a cooperative task force and strong partnerships in the Mediterranean area to manage forest fire events in the context of climate change and regional and international commitments such as the Antalya declaration, Forest Europe and the Global Fire Platform.

This chapter will also address questions regarding:

- o future extreme fire events in the context of climate change and new scenarios;
- o forest management (e.g. silviculture, prescribed fires, grazing and best practices) and supporting capacity building to prevent and control wildfires;
- o international and regional commitments in establishing a cooperative task force in the Mediterranean region; and
- o a collection of good practices on postfire restoration (including targeted support of the flagship).

Keywords: forest fires, vulnerability, degradation drivers, forest management, cooperation

Chapter 7 – The role of urban and peri-urban forests for developing a sustainable rural-urban interface

In a highly populated region, the interaction between forest resources and cities is critical. This chapter will present the status of urban and peri-urban forestry (UPF) that contributes to greener, healthier and more resilient and liveable cities. Despite the multiple benefits provided by UPF – including many environmental aspects, human health and well-being, and increasing initiatives to green cities – the implementation of urban forestry solutions is still facing many obstacles.

Keywords: urban forestry, biocities, green infrastructures

Chapter 8 - *Monitoring Mediterranean forest resources to increase resilience to changing conditions*

This chapter will focus on recent advances and products in Mediterranean forest monitoring efforts, research-oriented approaches and innovation. Continuous monitoring and surveillance on Mediterranean forest resources, data sharing and evidence-based decision-making are essential for minimizing impacts and adjusting policies over time and in the current changing conditions.

Future scenarios in forest growth and yield, climate change, carbon storage and forest fauna could be reported in this chapter. Moreover, this chapter may include information and outcomes coming from new national forest inventories of Mediterranean countries and the latest Mediterranean forest research on these subjects.

Specific topics that may be addressed in the chapter are:

- o Mediterranean forest mapping, spatial forest analysis for forest conservation and restoration applications, and the use of digital tools to support forest management;
- o case studies on new national forest inventories

Keywords: forest mapping, forest monitoring, Mediterranean Forest Research Agenda

Chapter 9 - Conclusion

This chapter will analyse and provide answers to the following questions:

- o What is the future for Mediterranean forest resources?
- o the role of research in the region (the Mediterranean Forest Research Agenda 2030).
- o What will be their role at the global level?

Chapter Coordinators and Potential Authors

Proposed content, chapter coordinators and potential authors. Note that some proposals as chapter coordinator and chapter contributor have been raised through the survey.

Proposed Chapter	Ideas of structure and key elements of the chapter	Potential contributor/s	Chapter Coordinator/s
CHAPTER 1			
Introduction	<ul style="list-style-type: none"> o the contribution and role of the SoMF 2024 to future Mediterranean forest policies; o the role of Mediterranean forest in the global framework (<i>i.e.</i>, United Nations Decade on Ecosystem Restoration); o the participatory approach leading to SoMF edition 2024; and o socioeconomic characteristics and trends in the Mediterranean region. 	<ul style="list-style-type: none"> Ümit Turhan, <i>Silva Mediterranea</i> Chair (Türkiye) FAO–FLRM Mohamed Boufaroua, DGF Tunisia and <i>Silva Mediterranea</i> Vice-chair (TUNISIA) 	<ul style="list-style-type: none"> Mohamed Boufaroua, DGF Tunisia and <i>Silva Mediterranea</i> Vice-chair (TUNISIA) Chadi Mohanna Ministry of Agriculture of Lebanon and <i>Silva Mediterranea</i> Vice-chair (LEBANON)
CHAPTER 2			
Mediterranean forest statistics	<ul style="list-style-type: none"> o the state of Mediterranean forest resources. 		<ul style="list-style-type: none"> FAO [FRA - FLRM] Virginia Garcia Millan [SPAIN]
CHAPTER 3			
Abiotic threats affecting Mediterranean forest ecosystems	<ul style="list-style-type: none"> o <i>abiotic threats</i>: <ul style="list-style-type: none"> o increasing drought extension and water shortage; o heavy precipitation events and flooding; o windstorms; o megafires; 		<ul style="list-style-type: none"> Michele Bozzano [EFIMED] Piermaria Corona [CREA, ITALY]

	<ul style="list-style-type: none"> ○ increasing soil erosion; and ○ increasing vulnerability to desertification and land degradation processes. 	
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<i>CHAPTER 4</i>		
Biotic threats affecting Mediterranean forest ecosystems	<ul style="list-style-type: none"> ○ <i>biotic threats:</i> <ul style="list-style-type: none"> ○ increasing pests and diseases and new pathogens in the Mediterranean region; ○ forest decay and secondary pathogens; ○ phenology upset; ○ biodiversity loss; and ○ exotic and invasive trees. 	<p>Shiroma Sathyapala [FAO]</p> <p>Pio Roversi [CREA, ITALY]</p>
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<i>CHAPTER 5</i>		
Forest and landscape restoration initiatives in the Mediterranean region	<ul style="list-style-type: none"> ○ Mediterranean forest adaptation capacity to climate change and degradation drivers, the role of adaptive management in the context of forest and landscape restoration. Best practices in Mediterranean forest and case studies; ○ projecting the natural range of Mediterranean forest species to future climate scenarios, assisted species' migration and assisted natural regeneration practices; ○ implementing climate change and landscape restoration in Mediterranean forest management plans; ○ agroforestry and agrosilvo pastoral systems as a sustainable option to ensure food security, with examples from familiar/farm agriculture and non-wood forest products; ○ the socioeconomic component of FLR, the importance to preserve and restore forests to ensure the well-being of Mediterranean populations and the role of forest-dependent communities in FLR; and ○ the international context of FLR, funding opportunities and youth entrepreneurship. 	<p>Christophe Besacier [FAO–FLRM]</p> <p>Valentina Garavaglia [FAO–FLRM]</p> <p>Annemarie Bastrupbirk [EU]</p> <p>Jordi Cortina [SPAIN]</p> <p>Davide Pettenella [University of Padova, ITALY]</p> <p>Chadi Mohanna Ministry of Agriculture of Lebanon and <i>Silva Mediterranea</i> Vice-chair [LEBANON]</p>

<i>CHAPTER 6</i>		
Forest fire management interventions in the Mediterranean region	<ul style="list-style-type: none"> ○ future extreme fire events in the context of climate change and new scenarios; ○ forest management (e.g. silviculture, prescribed fires, grazing and best practices) and supporting capacity building to prevent and control wildfires; ○ international and regional commitments in establishing a cooperative task force in the Mediterranean region; and ○ the collection of postfire restoration good practices (including targeted support of the flagship). 	<p>Carolina Gallo Granizo [FAO–FLRM]</p> <p>Ismail Belen [TURKEY]</p> <p>Elena Hernández Paredes <i>Silva Mediterranea</i> working group 1 [SPAIN]</p>
<i>CHAPTER 7</i>		
The role of urban and peri-urban forests for developing a sustainable rural-urban interface	<ul style="list-style-type: none"> ○ the role of urban forests and their management in Mediterranean cities to improve life quality and livelihood and to develop a sustainable rural-urban interface. 	<p>Simone Borelli [FAO and <i>Silva Mediterranea</i> working group 5]</p>
<i>CHAPTER 8</i>		
Monitoring Mediterranean forest resources to increase resilience to changing conditions	<ul style="list-style-type: none"> ○ Mediterranean forest mapping, spatial forest analysis for forest conservation and restoration applications, and the use of digital tools to support forest management; ○ case studies on new national forest inventories 	<p>Virginia Garcia Millan [SPAIN]</p>
<i>CHAPTER 9</i>		
Conclusion	<ul style="list-style-type: none"> ○ What is the future for Mediterranean forest resources? ○ the role of research in the region (the Mediterranean Forest Research Agenda 2030). ○ What will be their role at the global level? 	<p>FAO–FLRM</p> <p>EFIMED</p>

Proposed timeline

What?	When?	By whom?
Develop outline	December–February 2023	<i>Silva Mediterranea</i> Secretariat
Develop detailed scoping note, propose to scientific board	January–February 2023	<i>Silva Mediterranea</i> Secretariat and FAO–FLRM
Identification of chapter coordinators	February–March 2023	Scientific board
Contact proposed authors and secure agreement	February–March 2023	Chapter coordinators and scientific board
Contact all authors and secure agreement	March–April 2023	Chapter coordinators and authors
Check and include copyright rules in scoping note	April–May 2023	FAO
Presentation of detailed outline	April–May 2023	<i>Silva Mediterranea</i> Secretariat, scientific board and chapter coordinators
Organize a presentation webinar with chapter coordinators, authors to present scoping note and timeline	May–June 2023	<i>Silva Mediterranea</i> Secretariat, scientific board, chapter coordinators and authors
Organize one call with each chapter team to scope detailed contents of articles	May–June 2023	Scientific board and chapter coordinators
Drafting by authors	<ul style="list-style-type: none"> • V0: • V1: 	July–September 2023 September–October 2023
Draft articles (V0)	July–September 2023	
Review articles and send to chapter coordinators	September–October 2023	Reviewers, authors and chapter coordinators
V1 sent back to chapter coordinators	September–November 2023	Authors
Comments of the chapter coordinators sent back to authors	November–December 2023	Chapter coordinators
Editing V2 (to ensure the text flows and English is correct – content not edited)	December–January 2024	FAO, FAO–FLRM and EFIMED
Get endorsement of edited articles by authors	December–January 2024	Chapter coordinators and scientific board
Copyediting EN	January–February 2024	FAO
Translate EN-FR – FR-EN and ES	January–March 2024	FAO translator
Prepare layout	January–March 2024	FAO
Proofreading EN – FR - ES	February–March 2024	FAO proofreaders
Print	February–April 2024	FAO
Launch	April–May 2024 – 8th Mediterranean Forest Week	Date still to be confirmed

Notes

¹ Garrett L, Léville H, Besacier C, Alekseeva N. and Duchelle M. 2022. The key role of forest and landscape restoration in climate action. Rome, FAO. <https://doi.org/10.4060/cc2510en>

² Spathelf P, Stanturf J, Kleine M. *et al.* Adaptive measures: integrating adaptive forest management and forest landscape restoration. *Annals of Forest Science* 75, 55 (2018). <https://doi.org/10.1007/s13595-018-0736-4>