Name of Project: Joint Network for wild Fungi (JoNeF)	
ToR Reference No.: 2023-VII/07	Author(s): Dott. Francesca Floccia (ISPRA), Dott. Stefania Ercole (ISPRA), Valeria Giacanelli (ISPRA), Eng. Massimo Diaco (ISPRA)
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TERMS OF REFERENCE FOR WORK UNDER THE AUSPICES OF IMPEL	

Please read the IMPEL Internal Rules, IMPEL Tender Policy and IMPEL Travel Policy before filling in the Terms of Reference Template.

1. Work type and title

1.1 Identify which Expert Team this needs to go to for initial consideration	
Industry and air	☐
Waste and TFS	☐
Water and land	☐
Nature protection	☒
Cross-cutting tools and approaches	☐
1.2 Type of work you need funding for	
Exchange visits	☒
Peer reviews (e.g. IRI)	☐
Conference	☐
Development of tools/guidance	☒
Comparison studies	☐
Assessing legislation (checklist)	☐
Other, (please describe):	☐
1.3 Full name of work	
Joint Network for wild Fungi	
1.4 Abbreviated name of work or project	
JoNeF	

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2. Outline business case (why this piece of work?)

2.1 Name the legislative driver(s) where they exist

For the moment, there is only one but fundamental legislative driver:

1. **Convention on Biological Diversity 1992 (CBD)** [1]

The first aim of CBD is the "conservation of biological diversity". CBD defines biodiversity "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".. Therefore, fungi is one of the components of biodiversity that CBD aims to preserve.

The CBD is an international treaty signed by most countries in the world, including all 27 member states of the European Union. The aim of the CBD is to promote the conservation and sustainable use of biodiversity, as well as the fair and equitable sharing of the benefits arising from the utilization of genetic resources.

The EU is committed to implementing the CBD and has adopted several measures to promote its objectives.

There is currently no specific EU legislation on fungi. However, fungi are indirectly covered by various EU regulations and directives that relate to their use, conservation, and protection.

The EU's nature conservation legislation, including the Birds Directive and the Habitats Directive, protects the habitats of many fungal species that are associated with protected plant and animal species.

There are various non-legislative drivers:

1. The International Union for Conservation of Nature (IUCN) calls for an increase in the attention given to conservation of Fungi.
2. The IUCN Species Survival Commission calls for the due recognition of Fungi as major components of biodiversity in legislation and policy [2].
3. The Fauna Flora Funga Initiative asks that the phrases "animals and plants" and "fauna and flora" be replaced with "animals, fungi, and plants" and "fauna, flora, and funga" [3].
4. The European Council for Conservation of Fungi reviewed the status and threats of 33 species that are Red Listed by IUCN as endangered.
5. The letter published on Science "Include macrofungi in biodiversity targets" [4].
6. The European Forest Institute (EFI) on14.12.2022 wrote an Open Letter on the crucial role of fungi in preserving and enhancing biodiversity [5].

Moreover, in 2020 ISPRA launched the Network for the study of mycological diversity (Ndm) [6].

2.2 Link to IMPEL MASP priority work areas

[1] https://www.cbd.int/convention/

[2] https://www.iucn.org/news/species-survival-commission/202108/rewild-and-iucn-ssc-become-first-global-organizations-call-recognition-fungi-one-three-kingdoms-life-critical-protecting-and-restoring-earth

[3] https://faunaflorafunga.org/

[4] https://www.science.org/doi/10.1126/science.abj5479

[5] https://efi.int/news/open-letter-crucial-role-fungi-preserving-and-enhancing-biodiversity-2022-12-14

[6] https://www.isprambiente.gov.it/en/activities/biodiversity/network-for-the-study-of-mycological-diversity/network-for-the-study-of-mycological-diversity?set_language=en

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1. Assist members to implement new legislation.	☐
2. Build capacity in member organisations through the IMPEL Review Initiatives.	☐
3. Work on 'problem areas' of implementation identified by IMPEL and the European Commission.	☐
4. Other, (please specify): Assist IMPEL members to implement EU and international policies and legislation on biodiversity conservation.	☒

2.3 Why is this work needed?

In recent years, there has been a growing awareness (see non-legislative drivers for some examples) of the necessity of integrating Fungi (macrofungi) into European environmental policies on a par with Animals and Plants, in order to protect them in their natural habitats.
Despite that, currently European environmental legislation focuses on protect plants and animals excluding Fungi, which are essential components of terrestrial habitats. Moreover, macrofungi can be used as indicators to describe the environmental conditions of forests and other terrestrial habitats.
In order to fill this gap, Fungi should be incorporated into law-making and decision-making processes and in conservation and environmental initiatives, to create a comprehensive conservation strategy.
In this context, the first step is to collect existing data of macrofungi in EU and to establish common census/monitoring protocols and standards, as well as the ones existing for plants and animals.
We believe it is fundamental that environmental bodies coordinate these activities without leaving it only in the hands of associations, private entities and Universities.

2.4 Desired outcome of the work

The expected outcomes of the first phase of the project (in the period July 2023 – December 2024) are:

- Established EU common standards and protocols for macrofungi census and monitoring.

If the project will be extended, the expected outcomes of the second phase will be:

- Developed European macrofungi indicators for habitat biodiversity and status, and climate change.

The overall aim of the project work is to support:

- Extension of the scope of the existing European environmental legislation with fungi in relation to monitoring of habitats and biodiversity and protecting/restoring forests
- Integration of fungal species in the Annex of Habitats Directive
- Development of an EU Database Platform for monitoring of macrofungi.

2.5 Does this project link to any previous or current IMPEL projects?

No links to other projects have been identified.

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3. Structure of the proposed activity

3.1 Describe the activities of the proposal

The project will gather IMPEL and non-IMPEL members interested in, which are experienced or not in macrofungi, in order to analyse existing protocols and standards for census and monitoring of macrofungi and develop a common guide on the same topic.

The main activities of the project are:

- Dissemination of an online questionnaire to IMPEL and non-IMPEL members in order to collect, compare and analyse relevant information and data for the project, with particular focus on the different initiatives about European macrofungi census, monitoring and mapping
- Project meetings: 4 virtual and 2 in-person, including in situ visits in woods/forests in order to share best practices, as the Italian model proposed within the NDM Network.

3.2 Describe the products of the proposal

At the end of 2024 the project aims to develop the **Guide for census and monitoring of macrofungi** in European habitats and forests, including:

- recommendations for a European Database Platform for census and monitoring of macrofungi species in correlation with specific habitat and within biogeographical regions;
- recommendations for a mobile phone app for census and monitoring of macrofungi in-situ.

Project will follow the timeline below.

Year	2023					2024											
Month	July 2023	Sept 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	March 2024	Apr 2024	May 2024	June 2024	July 2024	Aug 2024	Sept 2024	Oct 2024	Nov 2024	Dec 2024
Activities		Dissemination of questionnaire	Deadline for sending answers			Report of questionnaire results											Delivery of the Guide
Kick-off meeting (online)																	
2nd meeting (online)																	
Dissemination of the online questionnaire																	
Data analysis and Report of questionnaire results																	
1st site visit																	
3rd meeting (online)																	
2nd site visit																	
Final meeting (online)																	
Development of the Guide																	
Delivery of the Guide																	

If the project will be extended to the second phase, it aims to:

- develop European macrofungi indicators for habitat biodiversity and status, and climate change;
- final workshop will be organised to disseminate the project results. We will conduct the workshop online or in hybrid mode.

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