

National or International consultant: National Consultant

Title of consultancy: Provision of services of a Mushroom Field Specialist

Project Title: STEPping up Nature Reserves Capacity – STEP4Nature

Period of assignment/services: 70 working days spread over a period of 7 months (no later than 31 May 2023)

Is this a LTA (yes/no): No

Terms of Reference

I. Background

The UNDP “STEPping up Nature Reserves Capacity – STEP4Nature” project aims at directly tackling 7 targets in full or in part although a number of others are targeted indirectly through NBSAP 2030 targets: (target 5) the total percent coverage of nature reserves is increased to reach at least 5% of Lebanon’s area; (target 9) rehabilitation plans are implemented in at least 20% of degraded sites that they can safeguard the sustained delivery of ecosystem services; (target 14) vulnerable ecosystems to climate change are identified and adaptation plans are developed and implemented; (target 15) research on biodiversity is improved in Lebanon, and research outputs and biodiversity related reports are shared through a centralized platform (from both public and private institutions), which is updated and made accessible to the public (CHM); (target 16) traditional knowledge, uses, and practices of local communities relevant to biodiversity and sustainable use of resources are documented, preserved and shared/published; (target 17) the relevant institutional and legal framework and government policies are reviewed, updated and reinforced where necessary to ensure effective biodiversity conservation and sustainable use; and (target 18) Lebanon has developed and is implementing a robust resource mobilization strategy with a sustainable mechanism to finance biodiversity initiatives.

To this end, the project will strengthen MOE legal and institutional NR framework, improve NR management, monitoring and evaluation plans, assess the NR vulnerability to climate change and disaster risks, set up a knowledge platform, carry out needed natural capital valuation and scientific research while formulating and implementing inclusive participatory and gender equality green and grey investments where communities living surrounding the official NR boundaries will be targeted.

The project is funded by the Ministry of Foreign Affairs and International Cooperation of the Italian Republic through the Italian Agency for Development Cooperation (AICS) and is implemented by the United Nations Development Programme (UNDP) in coordination with the Ministry of Environment of Lebanon.

Nature Reserves in Lebanon harbor relatively high concentration of endemic/threatened/rare species and is vulnerable to biodiversity loss due to catastrophic events and long-term human induced habitat changes or Climate Change. Current knowledge of Nature Reserves’ biodiversity lacks accuracy given the fact that

documented inventories are either nonexistent for some nature reserves or outdated for some others and that over the last decade there has been several climatic events and anthropogenic activities that have probably impacted the Lebanon's biodiversity habitats in a significant way.

The ecological assessment ought to validate and update existing biodiversity surveys and shed the light on species of important biological and patrimonial value, namely endemic species, rare species at the national level and endangered species and ways to conserve them.

It is in this context that the Step4Nature project is seeking the services of a specialist to support the project in carrying out, in close coordination with the Mushroom Senior Expert, a mushroom assessment within Nature Reserves in Lebanon and develop priority conservation and site-specific monitoring plans.

This assignment is expected to allow the project team, for each of the eighteen (18) nature reserves, to validate and update previous mushroom surveys (whenever available) otherwise establish first time checklists based on a standardized methodology and develop priority conservation and site-specific monitoring plans.

This consultancy is divided into the following tasks:

- **Task 1** - Desk Review
- **Task 2** - Methodology/ies and work plan
- **Task 3** - Field work
- **Task 4** - Integrated Monitoring Plan

II. Scope of work

The tasks mentioned in the next section shall be performed in close cooperation with the UNDP-STEP4Nature team and in close coordination and consultation with concerned stakeholders.

It is understood that the Consultant shall perform all the services/work as necessary to fulfill the objectives of the Consultancy Contract.

III. Key Tasks and Responsibilities

The Tasks involved will cover the followings:

Task 1 - Desk Review

The Consultant is expected to undertake all necessary desk review of relevant project documentation, national and international reports, scientific publications, and other resource tools in addition to direct consultations with key local stakeholders and data providers to:

- Perform stocktaking of all mushroom related publications and working documents related to Lebanon and more specifically within Lebanon's officially declared Nature Reserves;
- Review of mushroom literature in Lebanon in general and as applicable to this project.
- Build a preliminary database on the mushroom species based on inventory previously done in the existing Nature Reserves.

Task 2 - Methodology/ies and work plan

In coordination with the Mushroom Senior Expert, develop methodology/ies of work for a representative rapid, yet solid and reliable, assessment within the Nature Reserves and covering the existing mushroom species detailing all the parameters and measurements that will be performed during this exercise. Jointly develop metadata standards to guide future mapping and data collection. The methodology selected should be in line with international best practice but based on applicability in the national content, cost and time-considerations of the project and shall enable the characterization of the mushroom diversity and natural patrimony for each protected area including:

- Design a qualitative and quantitative field surveys methodologies (site and species specific) for all habitats occurring within the vicinity of the targeted nature reserves and their respective spatial distribution.
- The methodologies elaborated shall also include a list of needed annexes and useful form sheets to properly execute the assessment.
- Listing of mushroom species with an important biological and patrimonial value and their associated plant hosts, namely endemic species, rare species at the national level and endangered species for the development of priority conservation and site-specific monitoring plans.

Task 3. Field work

Based on the methodology developed in Task 2 and validated by the Mushroom Senior Expert, the Consultant should undertake the following:

- In coordination with a Mapping assignment currently being executed, validate acquired information to come up with a confirmed spatial analysis and description of natural mushrooms' habitats identified within the vicinity of the nature reserves and generate a geospatial database for terrestrial habitat maps within each Nature Reserves and mark zones of interest – mushroom diversity hotspot.
- Conduct a rapid ecological assessment during the fruiting period (between October and April) for ground truthing and surveys as per the relevant methodology/ies set and agreed upon with the project team in each of the Nature Reserves to include indigenous, invasive, and threatened species.
- As part of the findings, highlight mushroom species with an important biological and patrimonial value, namely, endemic species, rare species at the national/regional level as well as endangered species for the development of conservation and monitoring.
- For each of these important species, develop specific protocols for reproductive parts collection (spores) including recommendation for best timing for collection, conservation, and propagation.
- Identify threats to biodiversity (species listed above), provide a comprehensive assessment of the potential impact of the Invasive mushroom species (if encountered) should it become established in Lebanon, and determine appropriate mitigation responses.
- Collect Voucher Specimens and reproductive parts: Voucher specimens, mainly for important mushroom should be collected and identified with full taxa and related data as per recognized templates, ready to be lodged at a national Fungarium to become a permanent record. For the same species, reproductive parts (spores) shall be collected and handed over to the mushroom laboratory at LARI-Tal Amara.
- Identify mushroom substrates (hosting alive or dead plant types and parts or other types of substrates such as soil) observed during surveys and incorporate substrate types in the classification criteria.

- A checklist of the identified mushrooms with full scientific names and their associated host plants shall be elaborated for each nature reserve segregated per season, strata, and habitat with high resolution pictures.
- In addition, take as much as possible high-resolution photos of all habitats encountered within each of the protected areas and of the important mushrooms with a biological and patrimonial value. All taken photos should be referenced so that later on the project can use them in the analysis of the habitats or for the identification of the mushrooms.
- Produce a report including all findings and data collected (i.e. inventories, surveys and analysis) and summarizing of the biological assets and natural particularities of each nature reserve.

Task 4. Integrated Monitoring Plan

Based on findings of mushroom assessment, the Consultant should:

- Design a site-specific conservation and an integrated monitoring plan (IMP) for each nature reserve that will support key ecosystem services and secure the protection of these identified important mushroom species to be implemented over five years' period that would feed in the Nature Reserves Management plans with a set of simple indicators. This IMP shall constitute a baseline from which to conduct long-term assessment and monitoring.
- Develop priority conservation and monitoring protocol for future initiatives, in line with the IMP requirements, including methodology and protocols for best timing and frequency of data collection, census datasheets, the locations within each nature reserve where the monitoring shall be undertaken as well as the checklist of mushroom that need to be monitored during the different seasons. A reporting mechanism shall be proposed as well, to feed this information into the international database and make the sites know worldwide.

IV. Expected Outputs and Deliverables

Deliverables/ Outputs	Estimated Duration to Complete	Target Due Dates	Review and Approvals Required
Deliverable 1: Inception Report including Desk Review (Task 1) and Methodology/ies for the Mushroom assessment including all needed templates and annexes (Task 2)	10 Working days	1 month from contract signature	Project Officer
Deliverable 2: Mushroom assessment field report and data analysis (Task 3)	50 Working days	5 months from contract signature	Project Officer
Deliverable 3: site-specific conservation and an integrated monitoring plan (IMP) for each nature reserve (Task 4)	10 Working days	7 months from contract signature	Project Officer

All deliverables must be submitted in English language and should be handed out in three hard copies as well as one soft copy (word format and excel format for tables) and a PDF format for all collected documents and publications. If relevant, copies of high-resolution maps and graphics should also be handed out to the project management team.

V. Institutional arrangements

The Consultant shall report to UNDP on the tasks mentioned in section III and will work under the direct supervision of the Step4Nature Project Officer.

VI. Duration of work

The overall duration of the contract covered by this ToR is 70 working days spread over a period of 7 months from the date of contract signature (no later than 31 May 2023).

VII. Duty station

Home and field-based assignment: The consultant is expected to carry out his duties at his own premises, to attend meetings at the Project Office and undertake visits to the project site in the targeted Nature Reserves as need be.

VIII. Requirements for experience and qualifications

- Academic Qualifications:
Master's degree in biology, ecology, biodiversity, or related fields.
- Years of experience:
At least 5 years of proven relevant experience in ecological and biodiversity assessments, surveying and/or related fields at a local and regional level, preferably related to mushrooms
- Technical experience:
 - Knowledge, understanding, and practical implementation of mushrooms' survey methodologies (at least 3 projects in Lebanon and the region).
 - Experienced in, or extensive knowledge of, biodiversity related issues and conservation management solutions in terrestrial ecosystems, preferably in Mediterranean ecosystems.
 - Experience in working with UNDP or other local or international non-governmental organizations on similar contracts is an asset.
- Competencies:
 - Good analytical and report-writing skills
 - Proficiency in the use of computer and related software.
 - Commitment to team and cross-disciplinary work
 - Emphasis on delivery of results and reacts well to constructive criticism
 - Proficiency in English and Arabic languages;

IX. Presentation of Proposal and Offers

For purposes of generating Offers whose contents are uniformly presented and to facilitate their comparative analysis, it is best to recommend the preferred contents and presentation of the Offer to be

submitted, as well as the format/sequencing of their presentation. The following documents may be requested:

- **Personal CV or P11**, indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references.
- **Brief description** of why the individual considers him/herself as the most suitable for the assignment, and a methodology to complete the assignment.
- **Financial Proposal** that indicates the all-inclusive fixed total contract price, supported by a breakdown of costs.

X. Scope of Price Proposal and Schedule of Payments

The contract will cover the amount payable for fees and foreseeable expenses, including all travel to within Lebanon during missions. Proposal of costs must be expressed in Lump Sum Amount and must be “all-inclusive”¹;

The payment will be issued according to the following schedule:

Task	Payment	Deliverables	Potential Dates
1	14.3%	Deliverable 1: Inception Report including reviewed Desk Review (Task 1) and Methodology/ies for the Mushroom assessment including all needed templates and annexes (Task 2)	10 Working days
2	71.4%	Deliverable 2: Mushroom assessment field report and data analysis (Task 3)	50 Working days
3	14.3%	Deliverable 3: site-specific conservation and an integrated monitoring plan (IMP) for each nature reserve (Task 4)	10 Working days

¹ The term “all inclusive” implies that all costs (professional fees, travel costs, living allowances, communications, consumables, etc.) that could possibly be incurred by the Contractor are already factored into the final amounts submitted in the proposal.