

## TERMS OF REFERENCE FOR CONTRACTORS/ CONSULTANTS

<b>Title of Assignment</b>	Complementary Service for the Baseline Assessment at AIUla County- Soil Microbial Assessment (Bacterial and fungal counts)	
<b>Location</b>	Kingdom of Saudi Arabia (KSA)-AIUla County	
<b>Project name</b>	Strategy and the Execution Plan of Ecosystem Restoration for AIUla	
<b>Timeframe</b>	<b>From: upon signature</b>	<b>To: 30 April 2024</b>

### Background

The International Union for the Conservation of Nature (IUCN) is the world's leading conservation membership union established over 70 years ago and composed of over 1,400 member-based organizations of both government and civil society organizations as well more than 18,000 experts. The union's mission is to encourage and assist societies to conserve the integrity and diversity of nature and ensure that any use of natural resources is equitable and ecologically sustainable. Through its Regional Office for West Asia (ROWA) and related global programs, IUCN is seeking to strengthen its presence in Saudi Arabia, particularly in Alula Country on initiatives that align with IUCN's mission and priorities.

AIUla has a unique natural environment of diverse terrains and ecosystems that for centuries have combined a wealth of biodiversity, resilient ecosystems, and a valuable cultural heritage. However, during the last decades, the ecosystems have faced a significant degree of degradation and natural resources deterioration as a result of frequent drought, overgrazing, wood cutting, unorganized arid land cultivation, and other human activities. For this purpose, the Royal Commission for AIUla (RCU) was established to protect and safeguard AIUla, a region of outstanding natural and cultural significance in North-West Saudi Arabia. The RCU is embarking on a long-term master plan to develop and deliver a sensitive and sustainable transformation of the region. The rich flora of AIUla may provide an opportunity for the re-establishment of healthy sustainable ecosystems under protection conditions. However, as large areas of the nature reserves and beyond the protected lands are under severe degradation; protection only wouldn't be enough to rehabilitate the habitats and restore the ecosystems. Hence, ecological restoration practices will be widely implemented within and beyond the nature reserves. The ecosystem restoration will require developing policy and guidelines, building technical capacity, and implementing a restoration plan to restore degraded ecosystems. The RCU's goal is also to reaffirm AIUla as one of the country's and region's most important archaeological and cultural destinations while preparing to welcome local and around-the-world visitors. RCU is committed to preserving the natural beauty of AIUla's landscapes and rehabilitating rangeland and re-establishing the rich diversity of plant life and wildlife.

### Context of the project

IUCN ROWA is currently implementing a new project in Saudi Arabia-ALUla County entitled Strategy and execution plan of ecosystem restoration for AIUla in the Kingdom of Saudi Arabia. The main purpose of the strategy and the action plan is to ensure the good and successful implementation of ecosystem restoration projects in line with RCU's overall vision, mission, and strategic objectives. The project will begin by conducting an analysis of the current situation, making use of the available data and outputs from the executed and current projects, and implementing additional baseline ecological surveys in targeted areas to identify the priority areas for the protection of important flora and priority degraded rangeland and ecosystems areas for rehabilitation and ecological restoration. The work will be implemented and conducted under the supervision of the IUCN's regional office for West Asia- Drylands, Livelihoods and Gender program, thus, IUCN-ROWA will hire a qualified consultant/organization for the achievement of the project deliverables, goals, and objectives. Furthermore, detailed analyses of the economic valuation of ecosystem services and the cost of ecosystem degradation and restoration in AIUla will be implemented. The ecosystem restoration and afforestation KPIs in AIUla will be developed and to be linked to Vision 2030, Saudi Green Initiative, and RCU strategic objectives and KPIs. In addition, strategic guidelines and principles action plan, and governance and funding model of the ecological restoration and afforestation will be prepared. To ensure successful implementation, IUCN-ROWA and its consultants will ensure effective stakeholder engagement, including collaboration with the RCU, local communities, government agencies, and environmental organizations.

## Site Description:

AIUla is located 1,100km from Riyadh in northwest Saudi Arabia. AIUla is a place of extraordinary natural and human heritage. The vast area of AIUa, covering 22,561km<sup>2</sup>, includes a lush oasis valley, towering sandstone mountains, and ancient cultural heritage sites dating back thousands of years. AIUla has a unique natural environment of diverse terrains and ecosystems that have combined a wealth of biodiversity, resilient ecosystems, and a valuable cultural heritage for centuries. Six nature reserves with a total area of about 13.000 km<sup>2</sup> have been created in AIUla to conserve the biodiversity and natural heritage of AIUla, following international best practice management guidelines (see Table 1).

## Scope of Work

### Baseline Assessment- (Complementary Service for the Baseline Assessment at AIUla County- Soil Microbial Assessment (Bacterial and fungal counts)

Soil microbial communities form the foundation of the terrestrial ecosystem are critical drivers of biogeochemical processes. Microbes play an essential role in nutrient cycling and soil fertility and influence global climate, water quality, and atmospheric composition. There are still many questions about how bacterial abundance, type, and diversity are related to ecosystem health, productivity, and function. There are complex interrelationships between climate, ecosystem function, and microbial communities. However, most climate change models relegate microbial inputs to "black box" status. More research is needed to better understand how microbes are both responding to and driving environmental and climate changes from local to global scales. Looking at microbial communities in soil provides important insights into the overall health and productivity of the terrestrial ecosystem. At terrestrial field sites, soil cores are collected for microbial analysis to determine the overall composition and abundance of microbial communities. Thus, IUCN – ROWA is seeking a qualified consultant to support project management to provide expertise and support in developing a comprehensive ecosystem restoration strategy for the AIUla County. The objective of this consultancy is to conduct a bacterial and fungal counts in the prioritized sites in AIUla six reserves. All deliverables, including databases should be compatible with the RCU-GIS system requirements. The work entails regular interactions with peers from national administrations, particularly the Royal Commission for AIUla. The consultant will be working collaboratively with the project manager/ Drylands, Livelihood, and Gender Programme. The work requires travel to the Saudi Arabia-AIUla region to conduct the needed field work.

**Table 1** AIUla Nature Reserves

No.	Site Name	Area	General Description
1	Sharaan Nature Reserve	1600 Km <sup>2</sup>	It represents a typical natural landscape of the AIUla area, which is shaped by sandstone massif erosion that forms a complex network of valleys, gorges, and canyons.
2	Harrat Uwayrid	4680 Km <sup>2</sup>	Large discrete Harrat landscape – a landscape shaped by volcanism and a key watershed, monumental sandstone margins, perpetual springs, and wet/damp wadis.
3	Harrat Alzabin	1677 Km <sup>2</sup>	The second largest volcanic harrat, a key watershed, and a Key future component of the much larger AIUla National Park, the Arabian Gazelle are still present, but in small numbers.
4	AlGhrameel	2115 Km <sup>2</sup>	Diverse desert steppe habitat mosaic, beautiful, outlandish, and varied rock formations.
5	Wadi Nakhlah	2427 Km <sup>2</sup>	Wide wadis encompassed by monumental butte and column rock formations and converging into the main Wadi Nakhlah, Castellated rock complexes comprising rock towers and pillars along upper wadi sections.
6	Harrat Khaybar	600 Km <sup>2</sup>	Wide range of volcanic rock types and distinctive terrain have been formed over thousands of years. The distinctive shape of the harrat is the result of a massive explosion that emitted gases and ash containing silicon.

## 1. Microbial soil assessment (bacterial and fungal counts)

### The consultant is required to:

- Literature review of the available resources such as technical reports, publications and past projects and ongoing projects on soil microbial assessment, particularly bacterial and fungal counts at the national and local level.
- By deploying the appropriate methods, conduct a bacterial and fungal counts in the pre-identified sites within the six reserves.
- Create georeferenced databases for spatial distribution of the bacterial and fungal counts to accurately map the measured areas.
- Develop GIS layers maps based on the collected data and georeferenced databases.
- Ensure that all deliverables are compatible with the RCU-GIS system requirements.

### Deliverables and timeframe

For the implementation of this consultancy, the consultant will be responsible for the delivery of the following specific deliverables within the following time frame to IUCN's Regional Office for West Asia. **The consultant is expected to complete the work starting upon signature until 30<sup>th</sup> April 2024.**

Deliverable	Deliverable Description	Timeframe
D 1	<b>Inception reports and updated work plans.</b> It aims to illustrate and present clearly and timely detailed methodologies and approaches for the microbial soil assessment (bacterial and fungal counts) and provide a clear work plan with timeframes for implementation. The work plan has a clear timeframe for the implementation of the assigned service.	<b>Upon signature</b>
D 2	<b>First report:</b> the first report must summarize, and present preliminary findings of the microbial assessment include initial analysis and observations	<b>31 March</b>
D 3	<b>Final Report:</b> A comprehensive final report Summarize all findings from the microbial assessment. Include detailed analysis, thematic maps, and recommendations for ecosystem restoration and ensure compatibility with RCU-GIS system requirements.	<b>30 April</b>

## Payment Schedule

The consultant is expected to submit all deliverables by the end of September 2023 through office and fieldwork, and consultation with the IUCN ROWA, RCU's experts, and other key stakeholders. Both the Royal Commission for ALUla (RCU) and the IUCN-ROWA office must approve the planned deliverables before they can be accepted.

The consultant shall submit an invoice according to the schedule of payments described below:

- 30% upon signing the contract.
- 20% upon delivery and approval the inception report by IUCN and RCU (Deliverable 1)
- 20% upon delivery and approval of the first report by IUCN and RCU (Deliverable 2)
- 30% upon delivery and approval of the final report by IUCN and RCU (D3).

## Monitoring, control, and validation of the work

The consultant will work collaboratively with the IUCN ROWA-Drylands, livelihoods, and gender program for the successful delivery of the assignment deliverables. Provisional approval of submitted deliverables shall occur at each of the defined milestones in the deliverables section. The consultant shall account for a minimum period of two weeks when delivering the reports, for IUCN to review and accept the deliverables. The consultant is expected to hand in the final version of the deliverables no later than 15 days after IUCN and relevant stakeholders have made their observations and comments. The delivery schedule should be agreed upon with IUCN ROWA at the start of the project and confirmed before each milestone.

## Compensation modality and indicative budget

1. The consultant will be paid through a lump sum amount which is all-costs inclusive. All costs (professional fees, travel costs, living allowances, communications, consumables, etc.) that could possibly be incurred by the consultant must be factored into the final amounts submitted in the financial proposal. Note that the contract price is fixed regardless of changes in the cost component.
2. If the consultant is subject to tax in the territory of Jordan in respect of the consideration received under this agreement, the consultant hereby acknowledges that IUCN is entitled to deduct 5% for residents of Jordan and 10% for residents outside Jordan, in addition to 1% as a national contribution for non-residents, as income tax arising or made in connection with this agreement. Also, IUCN will deduct a 5% amount as admin and review costs arising or made in connection with this agreement.
3. Financial offers shall be submitted in US dollars.

## Qualifications of Successful Candidate

- Proposing firms or individual consultants are required to prepare a simplified technical proposal to apply for this consultancy. The proposal will include a section called "Approach and Methodology", in which firms should explain specifically how they will achieve the outputs and deliverables, the data sources and/or baseline assessments that will be used to inform their proposed approach,