

TERMS OF REFERENCE FOR CONTRACTORS/CONSULTANTS

Title of Assignment	Valuation of ecosystem services and cost of ecosystem degradation and restoration in Al Ula County.	
Location	Kingdom of Saudi Arabia (KSA)-AlUla County	
Project name	Strategy and the execution plan of ecosystem restoration and agroforestry for Al Ula	
Timeframe	From: Upon signature	To: 15th January 2024

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-organisations of both government and civil society organizations with the input of more than 18,000 experts. IUCN's mission is to influence, 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 on initiatives that align with IUCN's mission and priorities.

AlUla 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. During the last decades, the ecosystem has faced a degree of degradation and natural resources deterioration as a result of frequent drought, overgrazing, wood cutting, unorganized arid land cultivation, and other human activities. RCU is committed to preserving the natural beauty of AlUla's landscapes rehabilitating rangeland and re-establishing the rich diversity of plant life and wildlife.

IUCN ROWA is currently implementing a project in the Kingdom of Saudi Arabia "Strategy and the Execution Plan of Ecosystem Restoration and Agroforestry for AlUla 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 conduct analyses of the current situation, make use of the available data and outputs from the executed and current projects, and implement additional baseline ecological surveys in targeted areas to identify the priority areas for 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 Regional Office for West Asia-Drylands, Livelihoods, and Gender programme, thus, IUCN-ROWA will hire a qualified consultant/entity for this particular deliverable for the achievement of the project goals and objectives.

Overview of the Project

The project is dedicated to the preservation and revitalization of the natural environment in AlUla, a region renowned for its diverse terrains and ecosystems, as well as its rich cultural heritage. Over the past decades, this unique environment has suffered from significant degradation and the deterioration of natural resources due to a range of factors, including recurring droughts, overgrazing, unregulated wood cutting, and uncoordinated arid land cultivation, all exacerbated by human activities. The Royal Commission for AlUla (RCU) has undertaken a steadfast commitment to

safeguarding the natural beauty of AlUla's landscapes and rejuvenating its ecosystems. In this pursuit, RCU has already initiated substantial efforts to conserve the region's biodiversity and natural ecosystems. AlUla's rich and diverse flora presents an opportunity for the re-establishment of healthy, sustainable ecosystems under protective conditions. However, a substantial portion of the area, both within and beyond designated nature reserves, has experienced severe degradation. Recognizing that protection alone cannot suffice, the project focuses on implementing widespread ecological restoration practices. This endeavor necessitates the formulation of policies and guidelines, the enhancement of technical expertise, and the execution of a comprehensive restoration plan to rehabilitate degraded ecosystems. This project aims to accelerate and facilitate the progress toward ecosystem restoration, ensuring the continued preservation of Al Ula's natural splendor and cultural significance for generations to come. This strategy must account for the unique ecological characteristics of Al Ula and align with the strategic objectives of both the Royal Commission for AlUla (RCU) and national initiatives like the Saudi Green Initiative and the KSA National Environmental Strategy.

The project encompasses a comprehensive set of deliverables aimed at rejuvenating and safeguarding the diverse ecosystems of AlUla County, in line with the commitment of the Royal Commission for AlUla (RCU) to preserve this natural and cultural treasure. These deliverables are as follows:

- **Analyses of the Current Situation:** The project initiates with in-depth analysis, encompassing long-term climate data, existing information related to ecosystem restoration, and a thorough examination of RCU's strategy, objectives, and long-term plan. Furthermore, it delves into the Saudi Green Initiative, the KSA National Environmental Strategy, and ongoing projects in AlUla related to habitat mapping, ecological restoration, and afforestation. Benchmarking with similar strategies worldwide will help identify best practices. The Drivers, Pressure, State, Impact, and Response (DPSIR) analysis will also provide a holistic understanding of the ecosystem in AlUla County. This deliverable will be ready by 30th September 2023 and it will be handed over to the selected vendor.
- **Baseline Assessment:** This stage involves the implementation of satellites and field baseline surveys in targeted areas identified through the current situation analysis. The assessment covers diverse aspects, including the diversity of habitats, habitat mapping, vegetation cover, and levels of land and vegetation degradation. Highly detailed GIS maps will be generated for these ecosystems, helping prioritize zones based on their ecological importance and restoration needs. The baseline assessment includes vegetation surveys, georeferenced flora databases, and soil surveys and sampling, with in-depth soil analysis. This deliverable will be ready by 30th November 2023 and it will be handed over to the selected vendor.
- **Valuation of Ecosystem Services:** The project seeks to quantify the manifold ecosystem services provided by AlUla's natural environment. This includes provisioning services, regulating services, cultural services, and supporting services. The standardized methodology follows the Millennium Ecosystem Assessment to provide estimates of the economic and social values of these services. A proper handover for this deliverable to the next vendor needs to be done after completion.
- **Cost of Ecosystem Degradation and Restoration:** High-level cost estimates for both the degradation and restoration of ecosystems in AlUla County will be developed. This

assessment will encompass costs associated with land degradation, desertification, and unsustainable wood cutting. A systematic approach will determine the expenses required for ecological restoration actions, prioritizing areas for cost-effective restoration to achieve targeted levels of ecosystem restoration. A proper handover for this deliverable to the next vendor needs to be done after completion.

- **Ecosystems Strategic Guidelines and Principles:** Lessons learned from best ecological and ecosystem restoration practices in arid and semi-arid areas will be identified. This will lead to the formulation of practical strategies to strengthen the effectiveness of ecosystem restoration in AIUla. Guidelines will be developed, adaptable to different habitats and their varying degrees of degradation. These guidelines will include recommendations for ecological restoration project management and monitoring.
- **Plan for Scale-up of Ecological Restoration:** Detailed GIS maps will be generated, outlining proposed sites and areas for ecological restoration, afforestation, and vegetation development both within and outside nature reserves. Proposed execution areas for ecological restoration practices will be identified and mapped, with a scale-up plan for ecological restoration in AIUla.
- **Strategic Components of the Strategy:** This stage involves identifying the fundamental components of the ecological restoration and afforestation strategy, including vision, mission, objectives, pillars, initiatives, programs, and key performance indicators (KPIs). It also outlines the appropriate institutional framework for strategy implementation.
- **Ecosystem Restoration Action Plan:** A comprehensive execution plan for the ecological restoration and afforestation strategy will be prepared. It will encompass detailed descriptions of strategy initiatives, programs, and projects, outlining scopes of work, project phasing, timetables, and budget requirements.
- **Governance and Funding Model:** Identification of key stakeholders, their roles and responsibilities, reporting structures, and mechanisms for monitoring and control. A governance framework will be established, along with proposed funding, operational, and investment models to implement the strategy.
- **Risks and Mitigation Actions:** A comprehensive risk analysis will identify potential risks associated with the strategy and action plan. Mitigation actions will be proposed to address these risks, including event identification, impact assessment, risk prioritization, and mitigation plans. This will ensure the strategy's resilience in the face of potential challenges.

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 AIUla covers 22,561km² and 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 for centuries have combined a wealth of biodiversity, resilient ecosystems, and a valuable cultural heritage. Six nature reserves with a total area of about 13,000 km² have been created in AIUla to conserve the biodiversity and natural heritage of AIUla, following international best practice management guidelines (see Table 1).

Table 1 Al Ula Nature Reserves

No.	Site Name	Area	General Description
1	Sharaan Nature Reserve	1600 Km ²	It represents a typical natural landscape of the AlUla area, which is shaped by sandstone massif erosion that forms a complex network of valleys, gorges, and canyons.
2	Harrat Uwayrid	4680 Km ²	Large discrete Harrat landscape – a landscape shaped by vulcanism and a key watershed, monumental sandstone margins, perpetual springs, and wet/damp wadis.
3	Harrat AlZabin	1677 Km ²	The second largest volcanic harrat, a key watershed, and a Key future component of the much larger AlUla National Park, the Arabian Gazelle are still present, but in small numbers.
4	AlGhameel	2115 Km ²	Diverse desert steppe habitat mosaic, beautiful, outlandish, and varied rock formations.
5	Wadi Nakhlah	2427 Km ²	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 ²	A 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.

Context of the Consultancy: Valuation of Ecosystem Services and Cost Assessment for Ecosystem Restoration in AlUla County

In the distinctive context of AlUla County, this consultancy encompasses two interrelated assignments. The first assignment, known as the Valuation of Ecosystem Services, embarks on an exhaustive exploration of the diverse ecosystems defining AlUla County, recognizing their multifaceted roles in sustaining local livelihoods and the broader environment. Through a combination of field surveys, stakeholder engagement, and advanced valuation techniques, this task seeks to precisely quantify the economic and ecological worth of ecosystem services while concurrently evaluating the far-reaching consequences of their decline on agricultural productivity, water availability, climate regulation, and cultural heritage preservation.

Concurrently, the second assignment investigates deeply into the realm of the Cost of Ecosystem Degradation and Restoration. This task involves a scrupulous analysis of the economic expenses entailed by ecosystem degradation, encompassing factors such as land degradation, desertification, and unsustainable wood harvesting practices.

Furthermore, it involves the identification and thorough evaluation of prospective restoration measures, including estimating their associated costs and establishing prioritization criteria based on their potential to facilitate ecosystem recovery and alignment with the localized objectives. Out of this assignment, recommendations will emerge, spanning policy alterations and the promotion of

sustainable practices, all while considering the intricate socio-cultural dynamics prevalent in AlUla County.

Together, these assignments are intrinsically linked within a dynamic landscape, where the quantification of ecosystem services and the evaluation of restoration costs converge, with the overarching goal of delivering holistic insights and strategies to chart a course toward a sustainable and resilient future for AlUla County.

It's essential to note that this consultancy will capitalize on the groundwork laid by previous project phases, drawing from the data and findings collected in the initial two deliverables, namely the Analyses of the Current Situation and the Baseline Assessment. Moreover, close collaboration with fellow consultants will be paramount, ensuring seamless data integration and comprehensive project cohesion.

Scope of Work

Component No.1: Valuation of Ecosystem Services at AlUla County

Within this Assignment, the consultant will be responsible for quantifying the multiple ecosystem services provided by the natural ecosystems in AlUla and providing estimates of their economic and social values. The valuation will follow a standardized method based on the Millennium Ecosystem Assessment (MA) framework, which identifies four broad categories of ecosystem services: provisioning services, regulating services, cultural services, and supporting services. The consultant will conduct a comprehensive analysis and assessment of the ecosystem services in AlUla County, applying the MA framework and utilizing appropriate valuation techniques. The work will involve data collection, analysis, and engagement with relevant stakeholders, including the Royal Commission for AlUla.

The consultant will collaborate closely with the project manager to ensure the successful completion of the valuation study. The work will require travel to the AlUla region in Saudi Arabia.

Below is a description of the scope of work intended for the consultant:

Prior to this project phase, comprehensive analyses of the current ecological and environmental conditions, as well as a Baseline Assessment for AlUla County, were previously undertaken by different consultants and vendors. As a result, all pertinent data, extensive reports, and other relevant materials stemming from these earlier assessments will be provided prior to the start of this consultancy. This approach serves to enhance project efficiency while eliminating the need for redundant repetition of these initial steps. The consultant will conduct a systematic analysis and deliver the following scope of work:

1. Categorization of Ecosystem Services:

- Apply the standardized method outlined by the Millennium Ecosystem Assessment to categorize ecosystem services into provisioning, regulating, cultural, and supporting services.
- Identify and inventory the specific ecosystem services provided by natural ecosystems in AlUla County within each category.
- Classify and describe the relationships between the ecosystem services and the natural resources, habitats, and species in the region.

2. Quantitative assessment

- Conduct a quantitative assessment of ecosystem service provision across AIUla County, utilizing appropriate technologies and tools that capture stocks and flows of services.
- Provide a spatial assessment of ecosystem services and their condition, highlighting spatial patterns across AIUla. This assessment will identify:
 - 'Hotspots' for ecosystem service provision.
 - Target areas for restoration.
 - Opportunities for maximizing benefits.
- This spatial assessment will serve as a critical foundation for the subsequent economic evaluation.
- All the reports from the first two deliverables (spatial data, technical reports, field data ... etc.) will be shared with the selected vendor.

3. Economic Valuation:

- Quantify the economic value of each identified ecosystem service using appropriate valuation techniques.
- Apply market-based valuation methods, such as estimating the market prices of goods and services derived from the ecosystems.
- Employ cost-based methods to evaluate the costs associated with the loss or degradation of ecosystem services.
- Utilise stated preference methods, such as surveys or choice experiments, to elicit the willingness to pay or willingness to accept compensation for changes in ecosystem services.

4. Social Value Assessment:

- Assess the social value and importance of ecosystem services to local communities and stakeholders.
- Conduct stakeholder consultations, interviews, or focus groups to understand perceptions, preferences, and cultural significance related to ecosystem services.
- Explore the role of ecosystem services in supporting local livelihoods, cultural practices, and well-being.

5. Ecosystem Services Risk Register:

- Create an Ecosystem Services Risk Register that identifies and assesses potential risks to ecosystem service provision in AIUla County. This register should encompass risks related to climate change, development, and other relevant factors.
- Develop risk mitigation strategies to address and manage identified risks, ensuring the long-term sustainability of ecosystem services.

6. Data Analysis and Synthesis:

- Analyse the collected data, including biophysical, socio-economic, and valuation data, using appropriate statistical and analytical methods.
- Synthesise the findings to estimate the economic and social values associated with each ecosystem service.
- Identify key trends, patterns, and relationships between ecosystem services and their values.

7. Recommendations and Reporting:

- Prepare a comprehensive report summarising the methodology, data analysis, valuation results, and key findings.
- The recommendations include the development of a comprehensive strategy for monitoring and measuring changes in ecosystem service provision over the long term.
- Present the results and recommendations in a clear and accessible manner.
- Provide actionable recommendations for the sustainable management and conservation of ecosystem services in AIUla County, taking into consideration the unique context and stakeholder perspectives.
- Conduct a stakeholder workshop to present the draft report, gather feedback, and incorporate inputs into the final report.

Component No.2: (Costs of Ecosystem Degradation)

In this component, the consultant is entrusted with the vital task of evaluating the costs related to ecosystem degradation and restoration in AIUla County. This comprehensive assessment encompasses estimating the economic implications of ecosystem degradation, including factors such as land degradation, desertification, and unsustainable practices. Simultaneously, it involves providing high-level cost estimates for potential ecological restoration efforts. The consultant will conduct a systematic analysis and deliver the following scope of work:

1. Assessment of Ecosystems Degradation Costs:

- Quantify the economic costs associated with land degradation within AIUla County. This includes evaluating aspects like soil erosion, diminished agricultural productivity, and infrastructure damage resulting from land degradation.
- Assess the economic impacts of desertification in the region, encompassing costs related to soil loss, reduced vegetation cover, and implications for agriculture and local livelihoods.
- Evaluate the economic consequences of unsustainable wood-cutting practices within AIUla ecosystems, considering both direct and indirect costs such as loss of biodiversity and ecosystem services.

2. High-Level Estimates for Ecological Restoration Costs:

- Identify potential ecological restoration actions to mitigate ecosystem degradation. This should encompass strategies like reforestation, habitat restoration, soil conservation, and other pertinent restoration techniques.
- Provide high-level cost estimates for implementing ecological restoration actions. These cost estimates should be categorized by action type and location.
- Project future costs under different scenarios and validate these through a sensitivity analysis.

3. Cost-Effective Restoration Planning:

- Identify strategic locations within AIUla County where ecological restoration actions can be most cost-effective and yield optimal restoration benefits by utilizing spatial analysis from the ecosystem services assessment.

- Prioritize restoration actions based on their potential to achieve targeted levels of ecosystem restoration and their alignment with local conservation objectives.

4. Reporting and Recommendations:

- Prepare a comprehensive report that concisely summarizes the methodology, cost assessments, and restoration recommendations.
- Present the results and recommendations in a clear and accessible format.
- Provide actionable recommendations for the sustainable management and conservation of ecosystem services in Al Ula County, considering the unique local context and stakeholder perspectives.
- Conduct a stakeholder workshop to present the draft report, gather feedback, and incorporate stakeholder inputs into the final report.

5. Monitoring and Evaluation:

- Develop a comprehensive strategy for monitoring and measuring changes in ecosystem service provision over the long term.
- Define key indicators and metrics to track enhancements in ecosystem service provision resulting from restoration efforts.
- Establish a baseline using the current project's findings, which will serve as a reference point for measuring future impacts.

Deliverable	Deliverable Description	Timeframe
D 1	Inception report An initial report outlining the consultant's understanding of the project, methodologies to be employed, and a detailed work plan and schedule.	15 November 2023
D2	Data Compilation and Review: A compilation of existing data, reports, and studies related to ecosystem services, ecosystem degradation, and restoration in Al Ula County.	15 December 2023
D3	Categorization of Ecosystem Services: A report categorizing ecosystem services into provisioning, regulating, cultural, and supporting services, following the Millennium Ecosystem Assessment (MA) framework.	15 December 2023
D4	Quantitative Assessment and Spatial Analysis: A quantitative assessment of ecosystem service provision across Al Ula County, including spatial analyses highlighting 'hotspots' and target areas for restoration.	15 December 2023

D5	Economic Valuation Report: A report quantifying the economic value of each identified ecosystem service, utilizing appropriate valuation techniques.	31 December 2023
D6	Social Value Assessment Report: A report assessing the social value and importance of ecosystem services to local communities and stakeholders.	31 December 2023
D7	Monitoring and Measurement Framework: A framework for monitoring and measuring changes in ecosystem service provision over the long term, including key performance indicators (KPIs).	31 December 2023
D8	Ecosystem Services Risk Register: A register identifying and assessing potential risks to ecosystem service provision in Al Ula County, along with risk mitigation strategies.	31 December 2023
D9	Assessment of Ecosystem Degradation Costs: A report quantifying the economic costs associated with land degradation, desertification, and wood cutting in Al Ula ecosystems.	10th Jan. 2024
D10	High-Level Estimates for Ecological Restoration Costs: A report providing high-level cost estimates for implementing ecological restoration actions, along with prioritization recommendations.	10th Jan. 2024
D11	Cost-Effective Restoration Planning Report: A report identifying strategic locations for cost-effective ecological restoration actions and prioritizing these actions.	10th Jan. 2024
D12	Final Comprehensive Report: A final report incorporating all findings, analyses, and recommendations from both the Valuation of Ecosystem Services and Cost Assessment for Ecosystem Restoration components.	15 January 2024
D13	Stakeholder Workshop Presentation: Presentation materials and documentation from the stakeholder workshop where draft findings and recommendations were presented and feedback was gathered.	15 January 2024

Payment Schedule

The consultant is expected to submit all deliverables by the 15th of January 2024 through office and fieldwork, after consultation with the IUCN ROWA, RCU's experts, and other key

stakeholders. Both the Royal Commission for Al Ula (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:

- 20% upon signing the contract and delivery and approval of the inception report (D1);
- 30% upon delivery and approval of the Economic Valuation Report (D5);
- 20% upon delivery and approval of the High-Level Estimates for Ecological Restoration Costs (D10);
- 20% upon delivery and approval of the final report (D12).

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 or individual consultants 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, the details of any joint ventures, and

what staff will comprise the project team. Firms or individual consultants must also describe their relevant professional experience in ecosystem restoration, and relevant experience elsewhere.

- Proposing firms that suggest innovative and/or original approaches to achieve the project outputs and outcome, and additional opportunities for training and/or knowledge products, will be regarded favourably.
- The bidder's financial proposal shall include all costs to deliver the expected outputs. Bidders' financial proposals will be assumed to include: (i) all key and non-key experts, in accordance with the person-month allocation for each as defined by the proposing entity; (ii) mobilization and travel costs of all experts, including travel, accommodation, per diems, among others; (iii) all fieldwork, surveys, and workshops; and (iv) corporate overheads including insurances.
- The proposing applicant must show a strong understanding of environmental science, conservation principles, sustainable land management practices, and ecosystem restoration. The proposing applicants should be knowledgeable about the ecological dynamics of arid and semi-arid areas and have experience working on similar projects.
- Knowledge and familiarity with regional strategies, such as the Royal Commission for Al Ula's (RCU) plans and the Saudi Green Initiative, as well as national environmental strategies, will be advantageous. Understanding the policy context and the ability to align the proposed strategy with broader objectives is important.
- The candidate should have experience working collaboratively with diverse stakeholders, including government agencies, local communities, and environmental organizations. Strong communication and interpersonal skills are crucial for successful engagement and building partnerships.
- Ability to succinctly compile large amounts of information into a coherent document for conservation practitioners and government officials.

Nature of penalty clause in the contract

If the requested deliverables are not submitted within the timeframe stated in this TOR, the payments will be withheld. International Union for Conservation of Nature – Regional Office for West Asia (IUCN-ROWA) reserves the right to:

- Withhold all or a portion of payment if performance is unsatisfactory, if work/outputs are incomplete, not delivered, or for failure to meet deadlines.
- All materials developed will remain the copyright of IUCN and IUCN will be free to adapt and modify them in the future.

Important notes:

- All the deliverables from the consultants whether reports, presentations, documents, etc. should include (IUCN, RCU) logos and it should be mentioned whenever this activity is mentioned.
- Any pictures, figures, charts, etc. used in this consultancy must include the copyrights.
- The final compiled reports for this assignment will need to follow IUCN's visual identity and publication guidelines, which will be provided by IUCN, if applicable.