



Reference Number: 289/GSK/26-27

RFP for Consultancy Services-WWF Pakistan

Subject:

**Consultancy Services for Study for Determination of the
Recharge Index of Lahore**

Application Submission:

Application Submission: Interested consultants should submit the Proposal on Application Form Available Online or can access through following Link:

<https://forms.office.com/e/sxNStCNxPM>

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1) INTRODUCTION & BACKGROUND

Contract type: Consultancy and Services

Duration of assignment: 3 months

Consultant Type: Individual

WWF, the world's leading independent conservation organization, and GSK, a global biopharma company, have launched a long-term, multi-million-pound partnership through 2030 to support nature-positive solutions across GSK's operations and supply chains. As part of this partnership, WWF-Pakistan is implementing the project titled *"Building Water-Sensitive Societies: Collaborative Solutions for Freshwater Resilience and Sustainability,"* with a strong focus on improving freshwater ecosystems in Karachi, Lahore, Keenjhar Lake, and the Indus Delta to strengthen water governance, promote nature-based solutions, and enhance collective action among stakeholders.

Lahore's rapid and largely unplanned urban expansion over the past two decades has led to significant loss of natural drainage channels, gardens, and permeable surfaces that historically supported groundwater recharge. Concurrently, the city's dependence on groundwater for domestic, agricultural, and industrial use has intensified, resulting in a sustained decline in the water table across several parts of the city. Encroachment upon natural storm drains and depression zones, coupled with the expansion of impervious surfaces, has further reduced the land's capacity to absorb rainfall and storm runoff, aggravating both urban flooding during the monsoon and long-term aquifer depletion.

In response, WWF-Pakistan intends to commission a scientific study to determine the Recharge Index of Lahore. The study will apply a hydrogeological and hydrological assessment framework to characterize the spatial and temporal patterns of rainwater and storm runoff infiltration across the city, identifying the location and rate of recharge at a sub-catchment or zonal scale. The resulting Recharge Index will provide the technical evidence base required for the design of artificial groundwater recharge interventions, including the prioritization of recharge well locations, and will inform integrated urban water resource management and climate change adaptation planning for Lahore.

General Conditions

- 1) The WWF-PAKISTAN reserves the right to reject or accept any proposal. The WWF-PAKISTAN reserves the right to proceed with the implementation of any Service, in whole or in part, as described in the Proposal.
- 2) The WWF-PAKISTAN reserves the right to engage in discussions with any BIDDER to clarify responses or discuss certain issues with regards to the proposal or services requested. The WWF-PAKISTAN has no obligation to notify the other BIDDERS of the discussions, clarifications, or other information provided by a BIDDER. Any additional information required for preparation of the BID shall be distributed to all participants at the same time.
- 3) The WWF-PAKISTAN reserves the right to award the proposal based on experience, qualification, completion date, service cost and other criteria, and not necessarily the lowest cost.
- 4) Based on the RFP BID the WWF-PAKISTAN is entitled to change/replace or omit any clause/part of the preliminary defined scope of services of the proposal. The WWF-PAKISTAN shall conduct negotiations with WWF to achieve the full compliance to the requirements.
- 5) The WWF-PAKISTAN reserves the right in the event the successful CONSULTANT fails to comply with the terms and conditions as listed, to cancel this contract and award it to another CONSULTANT without penalty or action against the WWF-PAKISTAN. The RFP does not constitute an agreement or order.

6) The RFP is not a binding agreement between the parties, submission of a proposal or response by a proponent is voluntary.

7) By submitting a bid, the BIDDER is deemed to have acknowledged all of the undertakings, specifications, terms and conditions, WWF Fraud and Corruption Prevention and Investigation Policy (Annex 2) contained in the RFP, and to be bound by them if the BID is accepted. All expenses incurred by the Bidder in connection with the preparation of its proposal are to be borne by the RFP participant, and the WWF-PAKISTAN shall not incur any obligation whatsoever toward the Bidder regardless of whether such bid is accepted or rejected.

3) PURPOSE OF CONSULTANCY

The primary objectives of the study are following;

1. To determine the Groundwater Recharge Index of Lahore by assessing the spatial and temporal patterns of rainwater and storm runoff infiltration across the city, using an integrated hydrogeological/Geotechnical, GIS/RS-based analytical framework.
2. To determine the zones of high, medium, and low groundwater recharge potential across the city, and to identify priority locations for artificial recharge interventions with the technical basis for urban water resource management and climate resilience planning in Lahore.

4) TASKS AND DELIVERABLES

The selected consultant shall carry out the following tasks:

3.1: Secondary Data Collection & Baseline Review

- Gather existing published and institutional data from relevant agencies (WASA, PCRWR, Punjab Irrigation Dept., PMD, LDA):
- Historical rainfall trends and storm event data.
- Secondary soil/lithology profiles, borehole logs, and soil permeability maps.
- Depth-to-water-table data and historical groundwater trends.
- Existing drainage infrastructure maps.
- Perform targeted, visual field visits across major urban zones in Lahore to verify surface drainage, land use patterns, and potential runoff accumulation sites.

3.2: GIS & Satellite Remote Sensing Analysis

- Acquire satellite image processing and Digital Elevation Models covering the metropolitan region of Lahore.
- Process, standardize, and format multi-source geospatial datasets into core thematic layers using a uniform spatial resolution and coordinate reference system. The finalized layers will encompass the following key parameter domains:

- Land surface types, vegetation cover, and impervious built-up ratios to evaluate surface runoff generation.
- Characterizing underlying geological formations and subsurface material profiles governing percolation.
- Categorizing soil textural distribution and upper-layer infiltration capabilities.
- Spatial buffering and proximity analysis relative to major surface water bodies and river networks.
- Subsurface hydraulic conductivity and flow-transmitting capacities derived from hydrogeological logs.
- Quantifying stream channel density and surface runoff accumulation pathways across the study area.
- Spatial wetness indices to capture terrain-driven surface retention and saturation potential.
- Slope aspect to account for directional runoff flow paths, sun exposure, and localized evapotranspiration dynamics.

3.3: GRI Calculation & Recharge Potential Zoning

- Apply a spatial multi-criteria decision analysis framework to weight and evaluate core thematic layers based on standard hydrogeological data.
- Overlay spatial layers to generate the Groundwater Recharge Index (GRI) map for Lahore.
- Delineate urban zones classified into High, Medium, and Low groundwater recharge potential.

3.4: Site Identification & MAR Conceptual Framework

- Identify 8 to 12 specific, high-priority locations across Lahore (e.g., specific public parks, low-lying storm hotspots, wide green belts) ideal for artificial recharge.
- Provide basic conceptual recommendations (typology and design principles) for suitable Managed Aquifer Recharge (MAR) techniques (e.g., recharge wells, soakage trenches, retention basins, etc.).
- Package findings into a technical report and deliver the GIS database.

3.5: Laboratory-Scale Aquifer Model of Lahore

- Design, fabricate, test and deliver a bench-top transparent acrylic physical model of Lahore's alluvial vadose zone and unconfined aquifer, including:
 - Scaled engineering design and drawings, with inlet/outlet flow control chambers and piezometer ports.
 - Technical specifications and BOQ for local procurement, covering acrylic tank (dimensions, thickness, joints, sealants, framing) and gradation of sand, silt and gravel layers.
 - Fabrication, media packing, leak/flow testing and commissioning.
 - Handover with as-built drawings.

3.6: Determination of the Recharge Index of Lahore

- Establish an overall Recharge Index for Lahore based on the combined results of the infiltration, permeability, drainage, and rainfall assessments detailed above

4. Deliverables

- Inception Report (methodology, work plan, data requirements and schedule).
- Baseline Data and Field Visit Report, with the thematic GIS layers.
- GRI map, High/Medium/Low recharge zoning and the report on 8 to 12 priority MAR sites with conceptual designs.
- Design drawings, specifications and BOQ for the aquifer model, then the fully tested physical model with as-built drawings.
- Final Report on the Recharge Index of Lahore, with the complete GIS database.

5) DURATION OF THE ASSIGNMENT

The study shall be completed within a period of three (3) months from the date of commencement.

6) REQUIREMENTS

The interested consultant(s) or firm should meet the following criteria:

Minimum requirements

The consultant/consulting firm should demonstrate relevant experience and technical capacity to undertake urban nature-based planning and design assignments in complex urban environments, preferably in Pakistan or similar developing country contexts.

The minimum requirements include:

1. Ph.D. in Water Resources Engineering.
2. Minimum 10–12 years of relevant professional experience with at least 5 years of experience following completion of Ph.D.
3. Demonstrated expertise in groundwater modelling, hydrological modelling, and data assessment.
4. Extensive experience in groundwater modelling (Modflow/Groundwater vista or any integrated model) with the integrated use of remote sensing, ArcGIS, Google Earth Engine, and Hydrological models.

7) CORRESPONDENCE & SUBMISSION OF PROPOSAL

1. Application Submission:

Application Submission: Interested consultants should submit the Proposal on Application Form Available Online or can access through following Link:

<https://forms.office.com/e/sxNStCNxPM>

2. Interested consultants should submit the technical and financial Proposal to

To: Faiza khan (fakhan@wwf.org.pk)

Cc: Asad Ullah (assadullah@wwf.org.pk)

3. The proposal submission deadline is mentioned on WWF-Website.
4. Any information and responses to enquiries will be made in writing and distributed by email to all proponents. Enquiries after the foregoing deadline will not receive a response.

8) FORMAT OF THE PROPOSAL

The BID submitted by the participant must be structured as per the below provided instructions:

- 1) **Application Form available at WWF-Website** - Completed application form including general information about the bidder, educational qualifications, relevant experience, and CV(s) of the proposed consultant(s) or training team.
- 2) **Experience:**
 - a) **Description of the complete projects:** A list and brief description of relevant assignments completed by the consultant or firm, particularly those related to capacity building, focused on water governance, water stewardship, integrated water resource management, climate resilience, or environmental management. The description should include the consultant's role in the project, scope of work, and key outcomes achieved.
- 3) **Proposal outlining scope of consultancy service-** Description of scope and working process, stages, deliverables, exclusions, conditions, methodology
- 4) **Service Provision Timeline** – Provide Detailed Work Plan as per Deliverable and TORs.
- 5) **Financial Proposal-** the prices shall be provided in Pak Rs, the total price must be inclusive of all types of applicable taxes

Note:

Templates of all Information is provided on Application form available at WWF-Website. Any Additional Information related to the RFP can be attached along with application Form.

9) FINANCIAL PROPOSAL

The proposed prices shall be provided in PKR, the prices shall be provided in Pak Rs, the total price must be inclusive of all types of applicable taxes.

The prices will include all the Travel, Boarding & Lodging and other expenses

The Payment Terms shall be defined by the contract to be concluded between WWF -Pakistan and the consultant.

Financial Proposal				
Description	Units	Quantity	Rate	Total Amount
1. Remuneration: • Field • Office	Man Days [MD] / Man Months [MM]			
2. Air Travel	N/A	N/A	N/A	0
3. Road Travel	Road travel costs for consultants will be reimbursed on actual basis.			
4. Boarding/Lodging	Boarding and lodging costs for consultants will be paid on actual basis.			
5. Others (Please specify) Training Material, Printing, Photocopies, Colour printing, practical demonstration equipments e.g candling	Please separate remuneration and out-of-pocket expenses.			
Grand Total Inclusive of All direct or indirect Taxes and Out of Pocket Expenses				

10) EVALUATION PROCESS

Applicant's proposal shall be evaluated based on Quality and Cost Based Selection (QCBS) method. Under QCBS both technical and financial proposals shall be evaluated as per following criteria against a maximum score of 100 points.

- Technical Proposal 70%
- Financial Proposal 30%

The following criteria shall be used as a basis for evaluation of technical proposals:

Qualifications (maximum 30 points)

- Experience relevant to the assignment (maximum 30 points)
- Adequacy of the proposed methodology and work plan (maximum 20 points)
- Skills & Competencies for the assignment (maximum 10 points)
- Prior experience with WWF-Pakistan (maximum 10 points)

Note: Late/ incomplete submissions will not be accepted. Only three (03) top-ranked firms will be included in the comparative process

Legends:	Maximum Points
Q Qualifications/CVs of team is mandatory	30
E Experience relevant to the assignment	30
A Adequacy of the proposed methodology and work plan	20

S	Skills & Competencies for the assignment	10
P	Prior experience with WWF-Pakistan	10

11) DOCUMENTATION AND CONFIDENTIALITY

All documents completed based on requirements of the present RFP shall be the property of the WWF-Pakistan, and shall not without the consent of the WWF-Pakistan be used, reproduced or made available to third parties beyond what is necessary in respect of the fulfilment of the Project. All documents issued and information given to the BIDDER shall be treated as confidential.

12) BUDGET

The total Budget for this activity inclusive of all taxes and Out of Pocket expenses is **PKR.1,200,000/-**

Annexure A: Layout of the Intervention Site – Public Park in Gulberg, Karachi



Image 1 - Satellite View of the Park

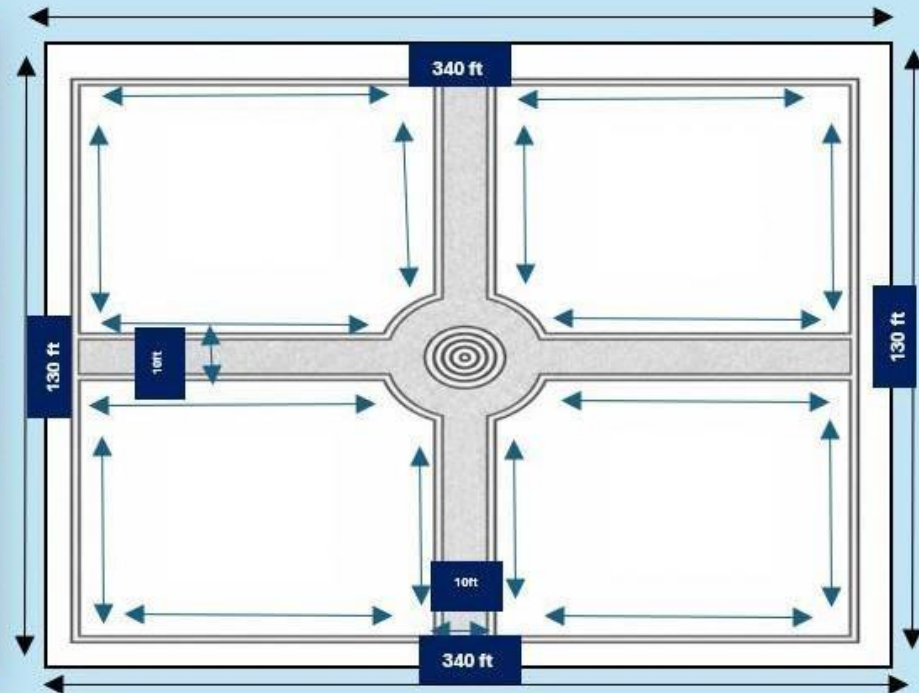


Image 2- Detailed Park Layout and Dimensions