الحديقة النباتية الملكية
Royal Botanic Garden

Terms of Reference (TOR)
Position: **GIS Officer / Spatial Data Analyst**

Organization: **Royal Botanic Garden of Jordan (RBG)**

Reports to: **Research & Landscape Manager/ Director of Conservation**

Contract Type: **Full-time**

1. Background

The Royal Botanic Garden of Jordan (RBG) is the national institution responsible for the conservation, restoration, documentation, and sustainable management of Jordan's native flora and habitats. GIS, spatial data management, and remote sensing form a core pillar supporting:

- National vegetation and habitat mapping
- Ecological restoration and rangeland rehabilitation
- Living collections and nursery planning
- Biodiversity assessment and monitoring
- The Global Biodiversity Standard (TGBS) regional implementation

RBG seeks to recruit a highly skilled GIS Officer / Spatial Data Analyst to lead all geospatial data systems, spatial analysis, remote sensing, and WebGIS platforms supporting RBG and the TGBS Hub.

2. Overall Purpose of the Position

To manage, analyse, and develop all spatial datasets and GIS systems supporting RBG's conservation, restoration, mapping, monitoring programmes, and the TGBS Hub, and to provide high-quality maps, spatial analyses, remote sensing outputs, and WebGIS dashboards to guide scientific and strategic decision-making.

3. Key Duties and Responsibilities

A. Spatial Database Management

- Maintain and update the central RBG geodatabase (sites, boundaries, infrastructure, habitats, vegetation, biodiversity points).
- Ensure data integrity, versioning, metadata standards, QA/QC, and backup protocols.
- Harmonize layers using unified classifications.
- Integrate GPS and field survey data into the central system.

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B. Mapping & Spatial Analysis

- Produce high-quality maps for reports, masterplans, publications, donor submissions, and decision support.
- Conduct advanced analyses including:
  - Habitat mapping
  - Terrain and hydrological modelling
  - NDVI time-series
  - Land-cover classification
  - Suitability modelling and change detection
- Prepare spatial layers for restoration planning, species distribution, fire-risk analysis, planting layouts, and monitoring frameworks

C. Fieldwork & Survey Support

- Collect, verify, and manage GPS data for flora, habitats, transects, and infrastructure.
- Support vegetation and biodiversity surveys.
- Coordinate with botanists to ensure field data is correctly structured and linked to species layers

D. Remote Sensing

- Process satellite imagery (Sentinel-2, Landsat, commercial data).
- Generate spectral indices (NDVI, NBR, SAVI, moisture indices).
- Monitor vegetation change, land degradation, and restoration recovery

E. Support to RBG Projects

- Prepare GIS inputs for:
  - Masterplans
  - Restoration plans
  - Environmental assessments
  - Nursery planning
  - Rangeland assessments
  - Ecological monitoring frameworks
- Provide real-time spatial decision-support maps

F. Support to TGBS Regional Hub

- Build and maintain TGBS spatial databases for all evaluation sites.
- Prepare baseline and reference-condition maps.
- Develop spatial models for restoration prioritization.
- Prepare spatial reports submitted to BGCI.
- Maintain dashboards and facilitate partner access to TGBS WebGIS

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G. WebGIS & Dashboards

- Develop WebGIS portals for RBG and external partners.
- Create interactive dashboards for monitoring sites, vegetation change, and project progress

H. Data Quality, SOPs & Security

- Develop and implement SOPs for:
  - Field data collection
  - Data cleaning and validation
  - Layer standardisation
  - Metadata documentation
- Ensure data security and confidentiality

4. Key Deliverables

- Fully maintained and updated RBG central geodatabase (monthly).
- All project maps delivered on time (PDF + WebGIS).
- Seasonal / quarterly NDVI and habitat-change analyses.
- GIS inputs for masterplans, restoration designs, and reports.
- All TGBS sites mapped with baselines and monitoring layers.
- Fully functional WebGIS and dashboards.
- GIS SOP and protocol manuals.
- Annual GIS technical report

5. Required Qualifications

A. Education

- BSc in GIS, Geomatics, Geography, Environmental Sciences, or related field.
- MSc is an advantage.

B. Experience (Mandatory)

- Minimum 5 years of proven professional experience as a GIS Officer / Spatial Data Analyst.
- Demonstrated experience in:
  - Environmental, ecological, or planning GIS systems
  - Database management, mapping, and spatial analysis
  - Remote sensing and monitoring workflows.

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C. Technical Competencies

- Very strong skills in:
  - ArcGIS Pro, QGIS, ArcGIS Online / Enterprise
  - Google Earth Engine
  - GPS data collection and survey workflows
  - Cartography and map design
  - Dashboards and WebGIS development.

D. Scientific Background

- Good understanding of:
  - Ecology and vegetation mapping
  - Habitat assessment and restoration
  - Biodiversity monitoring and indicators

E. Language & Reporting

- Good professional English technical writing and reporting.
- Arabic working proficiency is an advantage.

F. Personal Skills

- High attention to detail and data accuracy.
- Ability to work under pressure and meet deadlines.
- Strong communication and teamwork.
- Ability to train other staff in GIS tools

6. Key Performance Indicators (KPIs)

- Functionality and quality of RBG GIS database
- Timely delivery of maps and spatial analyses
- Quality of remote sensing monitoring outputs
- Operational WebGIS dashboards
- GIS support quality to RBG and TGBS
- Compliance with SOPs and data standards
- Quality of annual GIS technical report

7. Tools & Resources

- ArcGIS Pro, ArcGIS Online/Enterprise, QGIS, Google Earth Engine
- GPS (high precision), high-spec workstation, secure storage, plotter, drone (optional)