

Term of Reference

Data Providing and Hydrological Characterization and Description for Ziglab Dam Catchment Area;

Prevention Measures of Soil Erosion and Sediments Accumulation Control of Ziglab Dam Area

Introduction and Background

Jordan is suffering from severe water scarcity with renewable water resources below 100m³/per capita annually, far below the global threshold of severe water scarcity, Jordan is one of the most water-scarce countries in the world. The Ministry of Water and Irrigation (MoWI) outlined in its 2016-2025 Water Sector Strategy the challenge of the growing national water demand over the medium to long-term due to increased demographic pressure (significantly linked to the Syrian refugee influx), compounded by severe deterioration in water resource quality due notably to malpractices in agricultural activities. Despite the construction of more than 30 dams, a high level of sedimentation and the lack of local capacity to effectively clean sediment from reservoirs threatens water supply. The water stored in Ziglab dam is used for municipal supply, livestock, agriculture and groundwater recharge. The Jordan Valley Authority (JVA) oversees the functionality of the dams as potential resources for maximizing the amount of run-off collected. This, in return, will relieve the dependency on the excessive use of groundwater and will provide additional water for the municipal, industrial and agricultural sectors.

IUCN will conduct in full coordination with Jordan Valley Authority (JVA) a hydrological study of the whole Ziglab dam's watershed area to include information received from the local municipality, detailed maps, data analysis, and risk rate of erosion in the wadi. The report will be collated and shared with the relevant authorities and IUCN will formally present the results to the JVA. The hydrological study will act as a base for the site selection and will highlight the measures to be taken for erosion prevention across the watershed.

Consultancy Objective:

The objective of the study is to support the project with required data parameters on geological, hydrologic, climatic and land use data and digital elevation model for the study area, also build full description and reporting on the hydrological settings and other climatic conditions in Ziglab Dam Catchment area in order to perform the design of prevention measures of sedimentation load control to the dam reservoir.

Consultancy location and duration:

Location: Ziglab Dam, Jordan

Duration: One and half month from signing the contract

Starting Date: 20th January 2019

End Date: 28th February 2019

Consultancy Specific Tasks:

The consultant will be specifically responsible for:

- ✓ Prepare and Provide the project with the GIS-data shapefiles and Raster dataset on the following:
- ✓ Digital Elevation Model (DEM-Layer) with spatial resolution of at least **10 m X 10 m** contour interval (Raster dataset)

- ✓ Land use/Land cover map with spatial coverage of **1-5, 0000** scale including attribute-file on the land unit code and its description and definition of all land use classes. (Vector data shapefile)
- ✓ Soil map with spatial coverage of **1-5, 0000** scale including attribute-file on all soils units/codes that cover the catchment area and definition of soils unit and texture properties. (Vector data shapefile)
- ✓ Delineated Ziglab catchment area with conducting slope, hydraulic gradient and stream orders analysis.
- ✓ Prepare and Designing climatic and weather datasheets on the following parameters. This should include all weather stations located in Ziglab dam catchment area with a buffer zone of 5 km. The data should be gathered for the last 5 years on a daily basis:
 - Rainfall data
 - Temperature (Maximum and Minimum)
 - Solar Radiation
 - Relative Humidity
 - Wind Speed
- ✓ Collect and Prepare runoff data for Wadi Ziglab, inflows to the dam and sedimentation accumulated in the dam.

- ✓ Conduct field visits to the watershed of Wadi Ziglab to determine the geological setup and geological units vulnerable to erosion, land use, vegetation cover, and collect runoff measurements.
- ✓ Prepare the full characterization and reporting of Ziglab dam catchment area and describe the hydrology, geology, land use, soil classifications, and historical flood events in the area with the support of maps and tables.
- ✓ Write and submit the final narrative reports and present the assignment result for GIZ, JVA and the project's Partners.

Bidding Information:

IUCN is seeking to contract a consultancy firm or an individual to conduct this assignment. The bidder must submit:

1. Narrative Proposal
2. Financial Proposal
3. Company profile / CV for individual

Offers will be evaluated based on the following:

Narrative Proposal	35%
Company profile / CV for individual	35%
Financial Proposal	30%

Qualified Consultants shall send their Proposals and required information to Ali.Hayajnej@iucn.org before 4:00PM of 18.01.2019.