



Iraq

## Developing the River Basin Monitoring System for Tigris and Euphrates

**3iSOLUTION**  
information . innovation . impact

### Background



Iraq is one of the countries most affected by climate change, as it continues to face water shortage problems, that are further perturbed by increased demand and the construction of dams on the Tigris and Euphrates Rivers in neighboring countries, which has drastically reduced the water flow. The situation has now reached a critical point, as highlighted by increased climate-induced displacement of communities within the most-affected Southern regions of Iraq.



Water supply will continue to reduce unless actions are taken. The ongoing water shortage problem is increasingly becoming one of the primary causes of tension within the region, in addition to food security challenges. Iraq heavily relies on the water of the Tigris and Euphrates Rivers, with no other alternative water resources that meet its consumption. Without a long-term strategic plan to preserve water resources in Iraq and prompt action, any gains made in the security and socioeconomic development of Iraq may be lost. To address this challenge, a prudent water management plan is required and should include the application of non-conventional water resources, new irrigation techniques, increased public awareness and new water management strategies.



#### National Centre of Water Resource Management

The National Centre for Water Resource Management (NCWRM), under the authority of the Iraqi Ministry of Water Resources, is responsible for monitoring and control of the Euphrates and Tigris River Basins, as well as assessing ground water availability. To this end, the NCWRM conducts ground surveys, conducts daily follow up on inflow discharges to the river basins to manage dams and reservoirs, as well as conducting environmental studies to support management of water resources.

Access to timely information on the status of Iraq's water resources is crucial for the NCWRM to effectively monitor and control water levels within the dams and reservoirs installed along the river basins. However, the NCWRM's operational planning and decision-making is currently inhibited by limited capacity to conduct data analysis and utilize predictive modelling for the prediction of seasonal flood events and water shortages.

**Donor:** United Nations Development Program (UNDP)

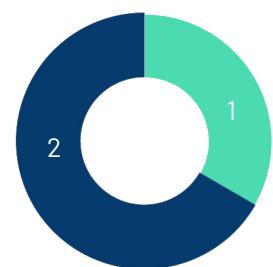
**Current project:** Developing the River Basin Monitoring System for the Tigris and Euphrates Rivers in Iraq

**Project Budget:** USD 429,720

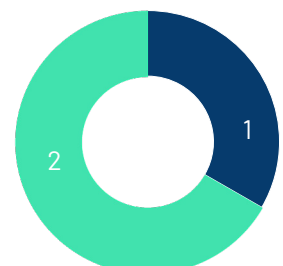
**Project Duration:** January 2023 – February 2024

### Personnel

**Number of personnel: 3**



■ Women  
■ Men  
■ National  
■ International



## Project Activities:



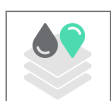
Through an initial needs assessment, 3iSolution will engage with the end users of the data to understand their information needs to address any existing gaps between the acquisition and application of information to operational decision-making. 3iS will advise on the type of analyses to be conducted, according to the available data, and provide training in interpretation and application of the information to support water resource planning and management.



3iS will identify key information needs to support the design and development of new information management and geospatial tools to centralize information and improve data capture, processing, analysis and visualization for timely dissemination of information to key decision-makers. Through the IM tools developed, 3iS will support the creation of interactive maps, dashboards, charts, infographics and other information products to improve access to information.



Following development and deployment of the new information management tools, 3iS will provide trainings, on-job training and technical support to the NCWRM information management staff to process and analyze the river basin monitoring data within the tools developed.



3iS will provide advanced GIS and remote sensing trainings to the NCWRM's GIS department, enabling them to automate workflow through creation of geoprocessing models to support land use surveys and conduct satellite imagery analysis to monitor encroachments and sources of pollution from discharge of sewage along the river basins.

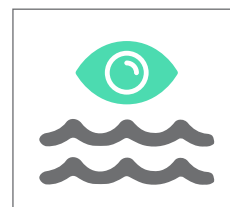


Through trainings and on-the-job support, 3iS will support the NCWRM's personnel to utilize its existing hydrological and meteorological data to create hydrological models for enhanced predictive capacity and to improve the Centre's flood/drought early warning system. Use of satellite imagery and predictive models will improve the NCWRM's capacity to create forecasts and estimate ground and surface water availability.

## Project Objectives:



Through the proposed project, 3iS aims to improve the NCWRM's information management processes to access reliable information on the status of Iraq's river basin, as well as strengthen capacity to collect, verify, analyze data make predictions related to water resource availability.



Enhancement of the existing river basin monitoring system will increase key decision-makers' access to information, while capacity building provided to the decision-makers will ensure that the information is utilized to its full potential. As a result, the NCWRM should have improved capacity to predict flood events and water shortages along the Tigris and Euphrates River basins and manage water levels to plan an effective response through its early warning systems.