

Treated wastewater as a resource: scientific support for reuse in Tunisia

REUT Tunisia – Scientific cooperation to increase the reuse rate of treated wastewater (ONAS/KfW accompanying measure)



Water scarcity is one of Tunisia's key challenges. The 125 wastewater treatment plants of the national sanitation utility ONAS produce around 292 million m³ of treated effluent per year – yet only about 20 % of it is reused. Commissioned by ONAS and financed by KfW, FiW provides scientific support for the implementation of the national master plan "Water Reuse 2050" together with the Tunisian research centres CERTE and CBBC: the project analyses the technical, socio-economic and regulatory barriers to water reuse, carries out studies at pilot sites and develops a monitoring system for ONAS's contribution to Tunisia's climate targets (NDC).

Water scarcity and deteriorating water quality are growing challenges for Tunisia. Treated wastewater is a still largely untapped non-conventional resource: at the end of 2022, the 125 ONAS treatment plants produced around 292 million m³ per year, of which only some 20 % was reused (ecological use included). The reasons range from effluent quality that does not always meet requirements and missing storage infrastructure, to user reluctance and a tariff barely adjusted since 1998, to regulatory gaps, for instance for aquifer recharge. The master plan "Water Reuse 2050" and Tunisia's Nationally Determined Contributions (NDC)

rely on water reuse as a climate adaptation measure that replaces conventional resources.

Against this background, the German Government, through KfW, is financing an accompanying measure to the ONAS programme "Rehabilitation and Extension of Wastewater Treatment Plants and Pumping Stations I–III". It comprises an institutional and a technical component implemented by the main consultant (JV Dorsch Impact GmbH / SCET-Tunisie) – including a practical guide, a tariff study, training modules and the selection and design of



two to four pilot projects – and a scientific component for which FiW is responsible as an independent German research institute.

The scientific support is organised in three missions. Mission I establishes a lasting cooperation between FiW, the research centres CERTE (water quality, tertiary treatment, hydrogeology) and CBBC (agronomy, soil-plant systems) and independent Tunisian experts, analyses the key factors currently limiting water reuse and presents the results in annual workshops with ONAS and other users. Mission II operates at national level: technical studies close knowledge gaps – for instance on irrigating crops not yet authorised such as tomatoes or on innovative irrigation techniques – and a monitoring system makes ONAS's contribution to the national climate targets measurable. Mission III accompanies the pilot sites with studies on water quality, environmental and health risks, socio-economics and governance, and with soil and groundwater investigation campaigns.

The aim is to demonstrate at the pilot sites that water reuse reduces the demand for conventional resources and protects surface water and groundwater. All results are translated into concrete recommendations for ONAS, feed into the implementation of the master plan and promote the next generation of Tunisian scientists.

Project overview

PROJECT TITLE

REUT Tunisia – Scientific support for the ONAS/KfW accompanying measure "Rehabilitation and Extension of Wastewater Treatment Plants and Pumping Stations III – Increasing the Reuse Rate of Treated Wastewater", component "Scientific Cooperation" (Mesure d'Accompagnement Réhabilitation et Extension des STEP et des Stations de Pompage III – Augmentation du Taux de Réutilisation des Eaux usées traitées, Volet « Coopération scientifique »)

PROJECT PERIOD

01/2026 – 10/2030

PROJECT PARTNERS

Centre de Recherches et des Technologies des Eaux (CERTE), Technopole Borj Cédria, Tunisia; Centre de Biotechnologie de Borj-Cédria (CBBC), Tunisia; independent Tunisian experts (socio-economics, environment, hydrogeology, agro-economics)

CLIENT / FUNDING

Office National de l'Assainissement (ONAS), Tunis
German Government through KfW Development Bank –
Tunisian-German Financial Cooperation (grant);
BMZ no. 2021.7028.0

SUPERVISOR

KfW Development Bank (acting on behalf of ONAS for the preparation and implementation of the procurement; contract management by ONAS); KfW no. 511050

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Status

September 2026

As a member of the JRF research community, FiW is funded by the state of North Rhine-Westphalia.



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