



# FUGRO

## WATER RESOURCES, ZANZIBAR

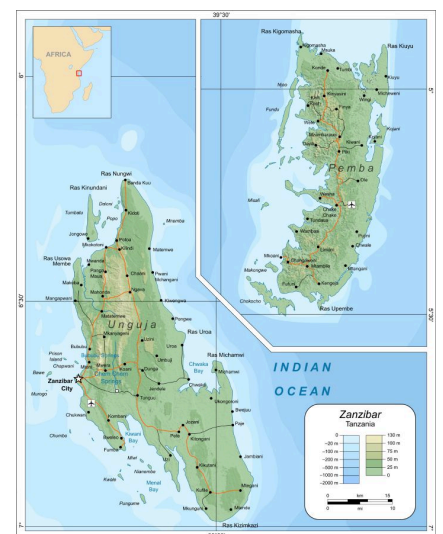
Two islands in the Zanzibar Archipelago needed an effective way to manage their water resources. Fugro provided a customized Integrated Water Resources Management System (IWRMS) based on GeoDin software and trained local staff to use it.

### ZANZIBAR

Zanzibar is a Tanzanian archipelago off the coast of East Africa in the Indian Ocean. The African Development Bank funded this project whose aim was to provide the Zanzibar Water Authority (ZAWA) with a system for effective water resources management on the two main islands of Unguja and Pemba. Fresh water is a very precious resource on such low-lying islands and there is mounting evidence of groundwater depletion. The water levels in many old wells has dropped and ones that were fresh are now brackish. Tourism is placing ever greater demands on the already constrained supply network.

### IWRMS DESIGN

Fugro provided ZAWA with a special tailor-made solution comprising a central GeoDin database with tools for data management, presentation, modelling and resource management. The design process was carried out in consultation with ZAWA, data collection was organised in appropriate structures and interfaces created to other systems. For example the local wards (Shehia) were integrated in all data collection masks and help texts in the local language (Kiswahili) were provided. The software was installed on central servers in Unguja and Pemba, as well as on mobile field computers.



Map of Zanzibar Archipelago (Oona Räisänen, licensed under GFDL via Wikimedia Commons: [https://commons.wikimedia.org/wiki/File:Map\\_of\\_Zanzibar\\_Archipelago-en.svg#/media/File:Map\\_of\\_Zanzibar\\_Archipelago-en.svg](https://commons.wikimedia.org/wiki/File:Map_of_Zanzibar_Archipelago-en.svg#/media/File:Map_of_Zanzibar_Archipelago-en.svg))





### KNOWLEDGE TRANSFER

Consultation and training were carried out in three workshops hosted at ZAWA head office in Stone Town, as part of the knowledge transfer process. Fugro hydrogeologists and data management specialists worked with the ZAWA staff and consultants to adapt the software to local requirements and provide detailed instruction on its day-to-day usage.

The project goal was to train local staff to become competent IWRMS users and to enable future management of their database system without the need for external consultants support. This was achieved by emphasising the importance of working with data in a hydrogeological context and using practical examples wherever possible to explain system components. Integration with other software for 3D modelling was also demonstrated. Fugro provided a help guide specific to ZAWA prerequisites, as well as subsequent remote IT support.

### TECHNICAL DETAILS

The recommended system requirements are PCs with Windows operating system from Windows 10 (64-bit) with 4 GB RAM and a display resolution of 1920 x 1080 px. GeoDin may also be run from a Windows Server 2016 or higher as well as Citrix. Previous Windows operating systems and RAM configurations may work, but these are not supported. When working with client/server databases the appropriate database drivers must also be installed.

GeoDin can be used as a stand-alone program or integrated in a multi-user network. Integrated contextual help is provided in English and German.

GeoDin is designed, programmed and distributed exclusively by Fugro. Visit [info.geodin.com](mailto:info.geodin.com) or [geodin.com](http://geodin.com) for further information.