RIMS

RAMOTSWA INFORMATION MANAGEMENT SYSTEM

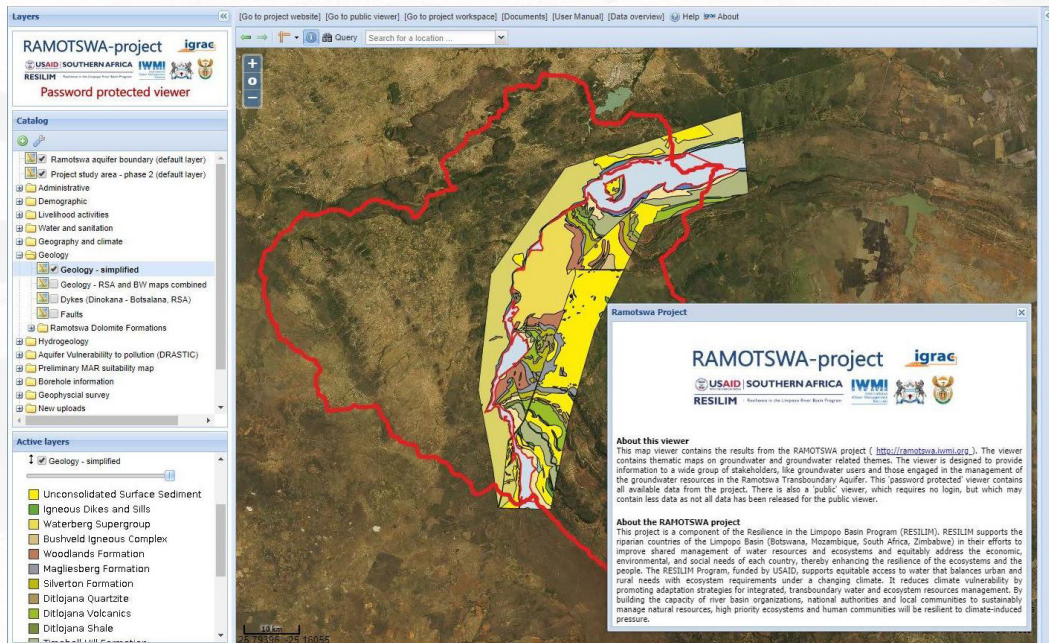### WWW.RAMOTSWA.UN-IGRAC.ORG

THE PROJECT

The RAMOTSWA project focuses on one of the most important shared aquifers in Southern Africa the Ramotswa Transboundary Aquifer shared by Botswana and South Africa. Funded by the US Agency for International Development (US-AID), the project supports equitable access to water that balances urban and rural needs with ecosystem requirements under a changing climate. It reduces climate vulnerability by promoting adaptation strategies for integrated, transboundary water resources management. Through building the capacity of transboundary River Basin Organizations, national authorities and local communities to sustainably manage natural resources, high priority ecosystems and human communities will be more resilient to climate induced pressure.

INFORMATION MANAGEMENT

Information management is one of the key factors for good groundwater governance in general and for transboundary aquifer governance in particular. To enable sharing of information between stakeholders in Botswana and South Africa the RAMOTSWA Information Management System (RIMS) was developed. RIMS is an on-line portal providing access to maps, data and information related to groundwater in the RAMOTSWA Project study area. Users can browse maps and underlying data on-line and can create overlays of different maps to create new insights. On request maps and data can also be downloaded for further analyses off-line.

RAMOTSWA

The RAMOTSWA project and Ramotswa transboundary aquifer derive their names from the town of Ramotswa, in the South-East District of Botswana, south-west of the capital Gaborone.

RAMOTSWA INFORMATION MANAGEMENT SYSTEM

www.ramotswa.un-igrac.org

RIMS is developed to assist in the assessment, management and governance of the Ramotswa Transboundary Aquifer. RIMS is a user friendly tool enabling access to groundwater relevant data and information for stakeholders in both countries and beyond. RIMS provides users online access to a map-based platform for storing, organising, sharing and analysing spatial information related to the transboundary Ramotswa aquifer. The availability of a common information system facilitates transparency and cooperation between aquifer states and provides a tool for all stakeholders – also non-governmental – involved in the governance of the aquifer.
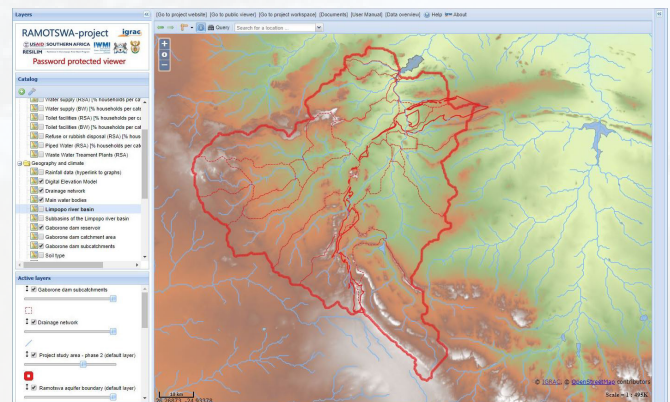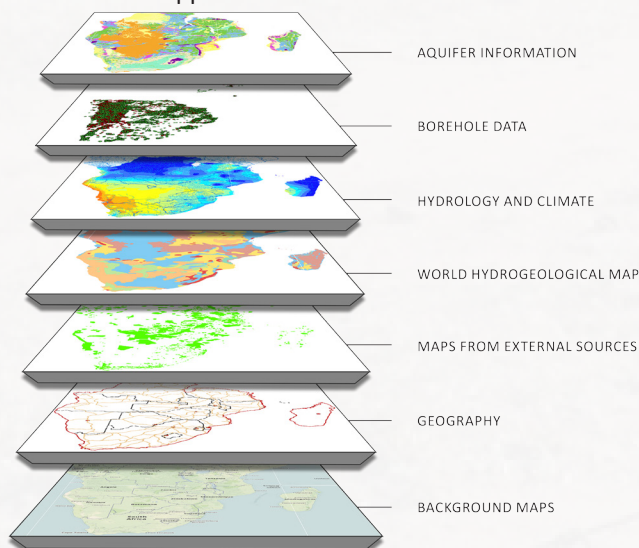
MAP BASED VIEWER FOR SHARING OF DATA

RIMS is designed to store and share processed and interpreted data and information from the multi-disciplinary assessment of the groundwater resources. RIMS does not replace (national) databases with 'raw data' on groundwater; it is a tool to share information based on such databases. The added value of RIMS over traditional databases is that it provides a single portal to information originating from many different sources and disciplines and whenever possible it displays data and information in maps.

Overlays of maps can be made to create thematic maps. Additional 'information behind the maps' (meta-data) can be visualised and downloaded for further off-line processing and analyses. Additional data such as pictures, tables and documents are also available.

WEB-BASED APPLICATION

A web-based application was chosen for RIMS as this has the

- AQUIFER INFORMATION
- BOREHOLE DATA
- HYDROLOGY AND CLIMATE
- WORLD HYDROGEOLOGICAL MAP
- MAPS FROM EXTERNAL SOURCES
- GEOGRAPHY
- BACKGROUND MAPS

benefit that all stakeholders always have the latest version of data and software at their disposal. One of the major benefits of a web based (or cloud based) database in comparison to conventional off-line data bases is that there is no risk of different and diverging versions of the database developing over time. Data can be accessed from anywhere with internet access, which is a great benefit to the wider group of stakeholders depending on the resource and/or involved in the governance of the resource. It also allows for easy sharing or show-casing of project results with partners who have not directly been involved in the project.

FEATURES

The RAMOTSWA Viewer contains:

- A map viewer to visualise data and information on a geographic location
- A catalogue containing all map layers with data structured in a systematic way
- A feature panel providing access to tabular output of the data
- Access to Meta Information Module containing relevant documents

RAMOTSWA INFORMATION MANAGEMENT SYSTEM
www.ramotswa.un-igrac.org

What users are able to do with RIMS:

- View thematic maps, documents and images
- Generate new information by creating overlays of thematic maps
- Query map data using filters
- Access additional data behind the maps (feature tables) and download these data for off-line processing and further analyses
- Download shapefiles (on request via RIMS managers)
- Add thematic maps from external sources making use of web map services (WMS)

PUBLIC AND PASSWORD PROTECTED WORKSPACES

Most information, data and reports are available via the public workspace which is accessible for anyone with an internet connection and web browser. There is also a password protected workspace. The password protected environment is only accessible to authorized users.

The password protected workspace is for uploading and managing the data in RIMS. The password protected workspace can also be used to share draft maps between partners (countries) or to store information which is considered confidential and should only be available to authorised project partners.

RIMS DATA OVERVIEW

RIMS contains more than 100 thematic maps. The information originates from many different sources; such as various ministries / department, statistics offices, open access internet databases, past projects like the SADC hydrogeological mapping project. And of course data collected in the RAMOTSWA project like the results from the airborne geophysics and various smaller field surveys and workshop outcomes. Data are grouped in categories:

- Administrative
- Demographic
- Livelihood activities
- Water and sanitation
- Geography and climate
- Geology
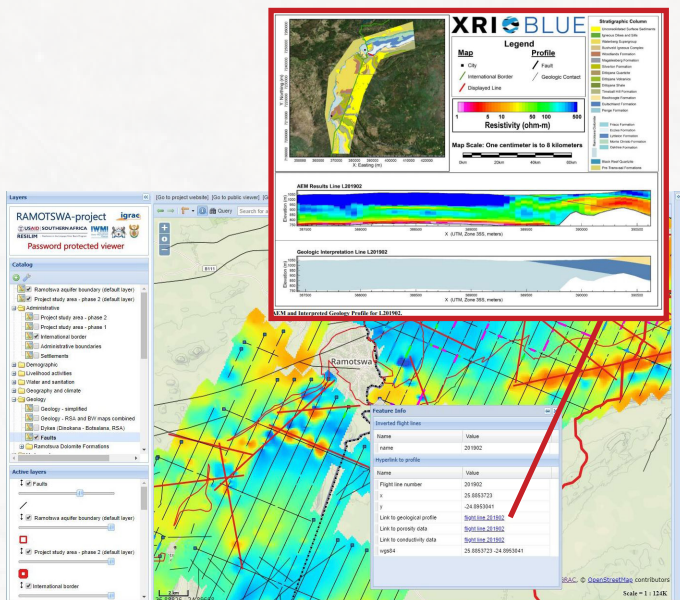- Hydrogeology
- Geophysical survey

RIMS OWNERSHIP, MAINTENANCE AND USE

The Botswana Department of Water Affairs and the South Africa Department of Water and Sanitation are responsible for / take decisions on:

- Which data is uploaded to RIMS,
- Which data is made available in the public viewer,
- Who gets additional authorizations for viewing and/or uploading data in the password-protected viewer,
- Provide first-line assistance to RIMS users,
- Advertising RIMS within their departments and beyond.

Each department has assigned the role of RIMS manager to key staff members, who are the departments contact points for RIMS.

RIMS has been set-up using software developed and maintained by IGRAC and RIMS is a module within a larger groundwater information management system called the Global Groundwater Information System (GGIS). IGRAC is responsible for the maintenance of the software, and provides support to the project partners. This support includes for example the setting up of user authorisations and providing technical support (helpdesk).

ABOUT THE RAMOTSWA PROJECT

The Ramotwa Information Management System (RIMS) described in this brochure, is one of several components of the RAMOTSWA project which started in 2015 is now in its second phase which will run until 2019.

OVER-ALL PROJECT OBJECTIVES

The overall objective of the RAMOTSWA Project is to support a shared vision and cooperation in sustainably exploiting the shared groundwater resources of the Ramotswa Transboundary Aquifer. The project facilitates joint management and better groundwater governance of the aquifer. Specifically, it aims to:

- Increase awareness of the importance and vulnerability of the transboundary Ramotswa Aquifer.
- Improve understanding of the socio-economic importance of the aquifer area, and the challenges in water access and security across the population.
- Assess the extent and hydrogeology of the transboundary aquifer resources under present and future climate and population projections.
- Develop human and institutional capacity for shared and harmonized management and monitoring of groundwater resources.
- Develop tools for shared and harmonized management and monitoring of groundwater resources, aligned with the national water resources management processes.
- Establish national and cross-border dialogue and cooperation on the Ramotswa Aquifer, and further encourage international cooperation on transboundary aquifers in the Southern African Development Community (SADC) region.

KEY COMPONENTS RAMOTSWA-PHASE 2:

- Hydrogeological modelling works towards understanding of recharge and water withdrawal in the aquifer area in order to enable prediction of future impacts of changes in water use and storage
- Managed Aquifer Recharge (MAR) potential examines potential for MAR in the aquifer area, including determination suitable locations, volumes and sources of MAR.
- Agricultural Water Solutions seeks to strengthen agricultural water productivity in the aquifer area through the use of two technologies – Wetting Front Detector and Chameleon.
- Ramotswa Information Management Systems (RIMS) seeks to compile, house and display mappable data from the Ramotswa Aquifer.
- Joint Strategic Action Plan (JSAP) is being undertaken to identify and prioritize investments and actions that can be pursued to enhance the benefits derived from the Ramotswa transboundary aquifer.

PROJECT ORGANISATION AND PARTNERS

Funding:
- USAID

Project implementation:
- IWMI (lead agency)
- IGRAC

Project Partners:
- Department of Water Affairs (DWA) and Water Utilities Corporation (WUC), Botswana
- Department of Water and Sanitation (DWS), South Africa
- Local Municipalities
- Southern African Development Community (SADC)
- Joint Permanent Technical Committee (JPTC) between South Africa and Botswana
- Limpopo Watercourse Commission (LIMCOM)
- University of Botswana (UB), Botswana
- University of the Free State (UFS), South Africa
- University of Pretoria, South Africa
- University of the Witwatersrand, South Africa

RAMOTSWA Information Management System:
www.ramotswa.un-igrac.org

RAMOTSWA Project website:
http://ramotswa.iwmi.org

CONTACT

BOTSWANA
Department of Water Affairs
bsomolekae@gov.bw

SOUTH AFRICA
Department of Water and Sanitation
rims@dws.gov.za

IGRAC
www.un-igrac.org
info@un-igrac.org