

# List Groundwater Maps Africa

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## List of Groundwater and Hydrogeology Maps in Africa

The lists below give details of more than 60 groundwater maps of all or parts of Africa, at various scales. Many of these maps are available to view online, and weblinks are provided where relevant.

If you know of maps that aren't on this list but should be, please let us know! Email us: [AfricaGWAtlas@bgs.ac.uk](mailto:AfricaGWAtlas@bgs.ac.uk)

### Continental Maps

Map Title	Date	Scale	Editors	Publishing Organisation	Format	Where to find	Notes
Groundwater resources of Africa	2018			BGR / WHYMAP	Paper map with marginalia		Special edition produced for 7th Africa Water Week. Depicts current status on groundwater resources mapping in Africa. Includes cross sections, TBA maps and information from regional hydrogeological studies

World Karst Aquifer Map	2017			WHYMAP	Vector shapefile; paper map on poster; available to view in online portal	<a href="#">Shapefile download</a> ; <a href="#">Online map portal</a>	
Global transboundary aquifer (TBA) maps	2009, 2012, 2014, 2015, 2017			IGRAC and UNESCO-IHP	Created as shapefiles; available to view in online portal; paper map on poster	<a href="#">Online map portal</a>	
Global Groundwater vulnerability to floods & droughts	2015	1: 25 million		WHYMAP	Vector shapefile; paper map on poster; available to view in online portal	<a href="#">Shapefile download</a> ; <a href="#">Online map portal</a> ; <a href="#">Scanned pdf map on poster</a>	
Groundwater (aquifer) productivity for Africa	2012	nominal 1:20 million	MacDonald et al	BGS	xyz tab-delimited text file (easily convertible to raster/grid in GIS)	<a href="#">Download digital map</a>	Part of Quantitative Maps of Africa set. Shows estimated relative aquifer productivity based on potential borehole yield (properly located, constructed etc) as a proxy, with 6 classes from Very High (> 20 l/s) to Very Low (< 0.1 l/s)
Groundwater storage for Africa	2012	nominal 1:20 million	MacDonald et al	BGS	xyz tab-delimited text file (easily convertible to raster/grid in GIS)	<a href="#">Download digital map</a>	Part of Quantitative Maps of Africa set. Shows potential groundwater storage as water depth in mm, with 6 classes from 0 to > 50,000 mm

Depth to groundwater for Africa	2012	nominal 1:20 million	MacDonald et al	BGS	xyz tab-delimited text file (easily convertible to raster/grid in GIS)	<a href="#">Download digital map</a>	Part of Quantitative Maps of Africa set. Shows potential groundwater storage as water depth in mm, with 6 classes from 0 to > 50,000 mm
Groundwater and river basins of the world	2012			WHYMAP	Scanned pdf	<a href="#">Scanned pdf</a>	
Groundwater resources map of Africa	2008			WHYMAP	Scanned pdf map	<a href="#">Scanned pdf map</a>	Extract from 'Groundwater Resources map of the World
Carte hydrogeologique de l'Afrique Hydrogeological map of Africa	2008	1:10 million	Jean Jaques Seguin et al	BRGM		<a href="#">Vector shapefile to download;</a> <a href="#">Paper map on poster;</a> <a href="#">Available to view in online portal.</a>	
Groundwater resources of the world	2008	1:25 million & 1:40 million		WHYMAP			

## Regional / Multi-Country

Map Title	Date	Scale	Editors	Publishing Organisation	Format	Where to find	Notes
Ramotswa Aquifer	2018?			Ramotswa project consortium	Created as shapefiles. Available to view in online portal.	<a href="#">Ramotswa Information Management System</a> (RIMS)	Online portal with maps of the Ramotswa aquifer (Botswana + South Africa). Multiple map layers including aquifer boundary, location of springs, groundwater levels and quality parameters, recharge.

SADC Hydrogeological map	2010	1:2.5 million		Sweco International (Sweden); Council for Geoscience (South Africa); Water Geosciences Consulting (South Africa) and Water Resources Consultants (Botswana).	Created as shapefiles.	<a href="#">Online map portal</a>	Hydrogeological map shows aquifer lithology, flow type and groundwater potential
Middle East Hydrogeology / Vorderer Orient Hydrogeologie	1990	1: 8 million	Schöler et al	Universität Tübingen, Germany			Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Hydrogeological Map of the Arab Region and Adjacent Areas	1988	1:5 million	J Khouri & A Droubi	Regional Office for Science & Technology in the Arab States, ACSAD; WRD & UNESCO			Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> Covers Somalia, Ethiopia, South Sudan, Sudan, Egypt, Libya, (CAR?), Algeria, Morocco, WS, Mauritania, parts of Mali, Niger & Chad
Map of groundwater resource potentiality of West and Central Africa	1986	1: 5 million		BRGM Paris			Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> Combines type of reservoir, mainly based on lithology and potentiality grades, based on number of wells/sources inventoried.
North Africa - Tunisia, Algeria	1983	1: 1 million	Stuckmann et al	German Research Society, Berlin			Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte de Planification des Ressources en Eau du Gabon et du Congo	1982	1: 1 million		Comité Interafricain d'Etudes Hydrauliques, Ouagadougou & BRGM, Orléans			Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> Represents 'renewable resource of aquifers as fraction of mean effective precipitation. Also shows exploitable reserves, main geological formations, rivers, main wells

Carte de Planification des ressources en eau du Ghana, du Togo et due Benin	1978	1:1 million	Bourgeois	Comite Interafricain d'Etudes Hydrauliques, Ougadougou / BRGM	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte de planification pour l'exploitation des eaux souterraines de l'Afrique soudano-sahelienne	1976	1:1.5 million		BRGM with Bureau Central d'Etudes pour les equipments Outre-Mer (Mali) & Comite Inter-africain d'Etudes Hydrauliques (Niger)	
Groundwater in North and West Africa	1975	1:4 million			Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte hydrogeologique du Congo Belge et du Ruanda Urundi	1957	1:5 million	M J Snel	Service Geologique du Congo Belge	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>

## National / Country

Map Title	Date	Scale	Editors	Publishing Organisation	Format	Where to find	Notes
MAR suitability map for South Africa	2009			DWP		Available to view in <a href="#">online map portal</a>	
Carte Hydrogeologie de Madagascar	2008	1:500,000	Davies	BGS			
Hydrogeological Map of the Republic of South Africa	2004	1:2 million	I du Toit	Department of Water Affairs & Forestry, Pretoria		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>	
Hydrogeological Map of Namibia	2001	1:1 million	van Wyk et al	Geological Survey Namibia, Department of Water Affairs, Windhoek & Bundesanstalt fur Geowissenschaften und Rohstoffe (BGR), Hannover		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> ; explanations in report <a href="#">Groundwater in Namibia</a> (Christelis and Struckmeier 2001/2011)	
Ethiopia: Water security and drought	2001	1:3.5 million	MacDonald et al	BGS	Created in GIS. Available as pdf image	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>	

Ile Maurice Carte Geologique au 1:50 000 Schema hydrogeologique	1999	1:50,000	Giorgi et al	Republique du Maurice; Union Europeene; Ministere des Affaires Etrangers Cooperation et Francophonie	
Groundwater harvest potential of the Republic of South Africa	1996	1:3 million	Seymour et al	DWAF, Pretoria	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> . See also <a href="#">DWAF</a> .
Groundwater resources of the Republic of South Africa - Sheet 1	1995	1: 2.5 million	Vegter et al	DWAF, Pretoria	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> . See also <a href="#">DWAF</a> .
Groundwater resources of the Republic of South Africa - Sheet 2	1995	1: 2.5 million	Vegter et al	DWAF, Pretoria	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a> . See also <a href="#">DWAF</a> .
Groundwater pollution vulnerability map Republic of Botswana	1995	1:1 million	Busch & von Hoyer	Geological Survey Department, Lobatse	Print (hard copy); Scanned PDF
Hydrogeological map of Lesotho	>1993	1:300,000	Arduino et al	Government of Lesotho Ministry of Natural Resources, Department of Water Affairs, Ground Water Division; Government of Italy General Directorate of Development Cooperation	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Groundwater resources of Swaziland - Hydrogeological Map	1992	1:250,000		Canadian International Development Agency; Kingdom of Swaziland Department of Geological Surveys and Mines	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Mapa Hidrogeologico de Angola	1990	1:1.5 million		Hidroprojecto Consultores de Hidraulica e Salubridade SA, Lisboa & MacDonald & Partners Ltd Cambridge	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>

Hydrogeological map of Tanzania	1990	1:500,000		Sir M MacDonald & Partners Ltd, Cambridge with Hidroprojecto Consultores de Hidraulica e Salubridade, SA, Lisboa	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Hydrogeological map of Uganda	1989	1: 1.5 million		Sir Alexander Gibb and Partners / Institute of Hydrology / BGS	Scanned image available to view in <a href="#">portal</a>
Hydrogeological Map of Sudan	1989	1:2 million		National Corporation for Development of Rural Water Resources, Sudan & TNO-DGV Institute of Applied Geoscience, The Netherlands	Scanned image available to view in <a href="#">portal</a>
Hydrogeological Map of Ethiopia	1988	1:2 million	Chernet	Ethiopian Institute of Geological Surveys, Ministry of Mines and Energy, Addis Abeba	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Hydrogeological Map of Egypt	1988	1:2 million		Research Institute for Groundwater, Giza / Water Research Center, Ministry of Public Works and Water Resources Arab Republic of Egypt	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carta Hidrogeologica de Mocambique	1987	1:1 million	Ferro & Bouman	Direccao Nacional de Aguas, Ministerio da Constucao e Aguas, Maputo	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Groundwater resources map of the Republic of Botswana	1987	1:1 million	von Hoyer & Struckmeier	Geological Survey Department, Lobatse	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Hydrogeological reconnaissance map of Malawi	1987	1:250,000	Basali et al	Department of Surveys, Blantyre	
Zimbabwe Regional Hydrogeological Map	1986	1: 500,000		Ministry of Energy & Water Resources & Development, Harare	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte de Reconnaissance des Eaux Souterraines de la Republique de Djibouti	1983	1:300,000	Müller et al	Service du Genie Rural, Djibouti & BGR, Hannover	Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>

10 maps of main aquifers in 10 African countries	1977	1: 5 million		BRGM	Paper (hard copy)	Funded by EEC and FAC (French Fund for Aid & Cooperation). Based on inventory of docs in CNRS, UNESCO & BRGM. Represents main continuous & discontinuous aquifers, graded according to facies, mean thickness & overall flow rates & water quality
Hydrogeological Map - Somalia	1971	1:1 million	Popov	Ministry of Mining & Water Resources, Mogadiscio		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte Hydrogeologique de la Republique du Tchad	1969	1:500,000	Scheider & Wolff	BRGM		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Groundwater maps of the Kingdom of Libya	1964	1:4 million	Jones	USGS		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte de reconnaissance hydrogeologique du Niger Sud Oriental	1964	1:1 million	F Pirard	BRGM		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Carte Hydrogeologique du Sud de Madagascar	1957	1:500,000	J Aurouze	Service Geologique de Madagascar		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>
Hydrogeological Map of Zambia	?	1:1.5 million	MacDonald & Partners	? Geological Survey Department, Lusaka; Department of Water Affairs		Scanned image available to view in <a href="#">WHYMAP/WHYMIS portal</a>

### Sub-national (e.g. district, catchment, aquifer)

Map Title	Date	Scale	Editors	Publishing Organisation	Format	Where to find	Notes
Managed Aquifer Recharge (MAR) suitability map for North Kenya	2013			Acacia Water		Available to view in <a href="#">Online Portal</a>	

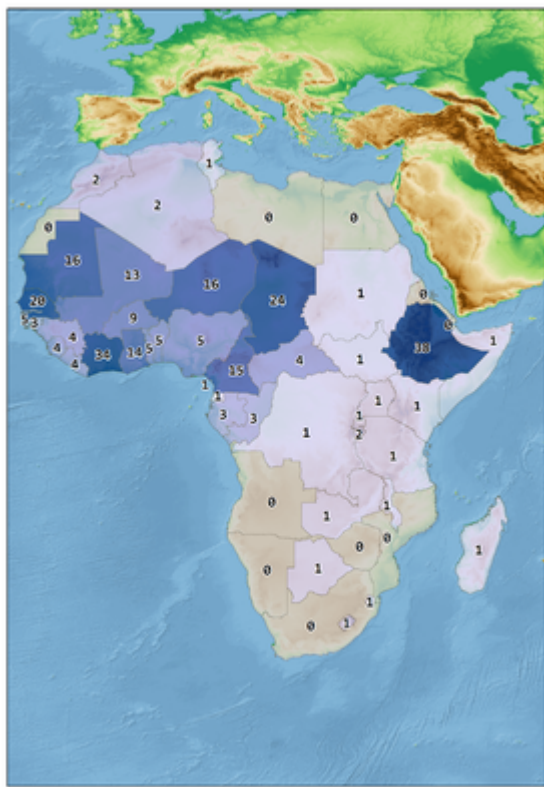


Groundwater development potential map for the Northern Region, Ghana	2011		Ó Dochartaigh et al	BGS	Created in GIS; available only as pdf in report	<a href="#">Ó Dochartaigh et al (2011)</a>	
Groundwater availability in Benishangul-Gumuz region, Ethiopia	2009		Ó Dochartaigh	BGS / RIPPLE	Created in GIS; available only as pdf	<a href="#">Ó Dochartaigh (2009)</a>	Thematic map on poster with information on how it was developed
Groundwater Potential of part of Benishangul-Gumuz region, Ethiopia	2008		Lemacha	WaterAid Ethiopia / RIPPLE	Created in GIS; available only as pdf	<a href="#">Lemacha 2008)</a>	Thematic map on poster with information on how it was developed
Geohydrological Map Series of South Africa	1998-2002	1:500,000	Girmann et al	DWAF, Pretoria			
Groundwater Potential Maps for Nzega and Tabora study areas, Tanzania	2002		Davies & Ó Dochartaigh	BGS	Created in GIS; available only as pdf in report	<a href="#">Davies &amp; Ó Dochartaigh (2002)</a>	Maps with accompanying table describing geology, groundwater targets, quality and recommended field development techniques
Afram Plains Groundwater Development Map	2002		Davies & Cobbing	BGS	Created in GIS; available only as pdf in report	<a href="#">Davies &amp; Cobbing (2002)</a>	
Groundwater development maps of Oju and Obi Local Areas, eastern Nigeria	1998	1:100,000	MacDonald & Davies	BGS	Created in GIS; available only as pdf in report	<a href="#">MacDonald &amp; Davies (1998)</a>	
37 maps in Abbay river basin, Ethiopia	1997		BRGM / BCEOM / ISL				Maps created for 'Abbay river basin integrated development master plan project'

## Unlisted Maps

As well as the maps in the lists above, there are other maps at a country or sub-country scale, many of which were produced and/or edited by [BRGM](#). The BRGM maps are mainly in Sahelian countries

(see the map below). They were produced between 1952 and 2010, and are held in BRGM archives. Most of the maps exist as pdf images; a few are in paper (hard copy) format only. Also in [BRGM's](#) archives are more groundwater maps produced by other organisations, most of which are in paper format only. The details of these maps will be added to the lists on this page soon.



The number of groundwater maps produced and/or edited by [BRGM](#) in African countries between 1952 and 2010. These maps are held in [BRGM](#) archives.

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