

Geo-referenced database on dams in Africa

Notes and References

General notes

A. Quality of data

The references used for the database were: i) International Commission on Large Dams (ICOLD). 1985. *The World Register of Dams*; ii) National Reports; iii) Information obtained from national experts through AQUASTAT national surveys; iv) April 2010 version of Global Reservoir and Dam (GRanD) Database; v) The Internet.

The database, in its present format, is neither complete nor can be considered error-free. It corresponds to the best available information at the time of the study.

B. Coordinates

Coordinates are given both in degrees, minutes, seconds, and in decimal degrees. In general, location was obtained through the AQUASTAT country surveys and through geographical information as detailed in the national and other references columns.

The degree of precision of the coordinates is as follows: if the coordinates are available in the reference, these figures are reported in the database. If the dam was located from maps from the World Aeronautical Operational Navigation Charts (ONC) (scale 1 : 1 000 000), the degree of precision is ten seconds. When more detailed maps were available (1 : 250 000 or more detailed), the degree of precision is one second. Figure 1 and 2 show the dams by basin and by country.

C. Large dam

According to ICOLD, a large dam is a dam with a height of 15 metres or more from the foundation. If dams are between 5-15 metres high and have a reservoir capacity of more than 3 million m³, they are also classified as large by ICOLD.

While the database concentrates on large dams, in some cases if information on other dams was available, it has also been included, since AQUASTAT considers this additional information to be valuable.

D. Dam height

All heights are given in metres, with a precision of two decimals (cm), although most of the available figures are given with a precision of 1 metre.

E. Reservoir capacity and sedimentation rate

The reservoir capacity refers to the initial capacity, not taking into consideration the reduction in volume due to sedimentation. The level of sedimentation refers to the percentage of initial capacity lost due to sedimentation. This should be linked to a year, but not always the year is available.

F. The Kariba Dam

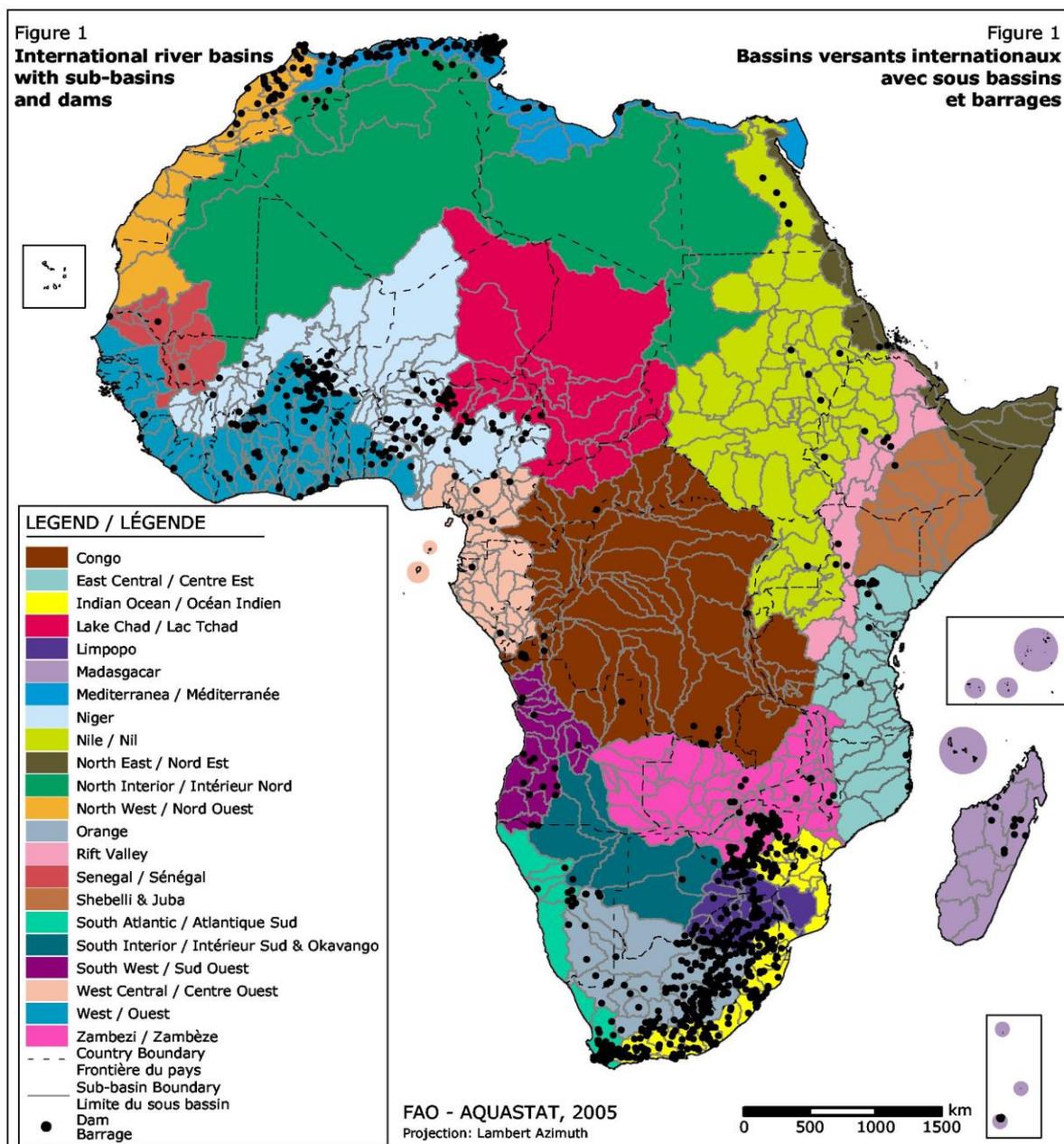
The Kariba Dam is located at the border between Zambia and Zimbabwe on the Zambezi River. Its total capacity is 188 km³, but in order to have the correct total of dam capacity for all Africa, 94 km³ has been put under Zambia and 94 km³ under Zimbabwe. Similarly, the surface area (5 100 km²) has been split between both countries, with 2 550 km² each.

G. The Owen Falls Dam

Lake Victoria, at the border between Tanzania, Kenya and Uganda, drains the upper part of the Nile. It is the second largest freshwater lake in the world with an area of about 67 000 km² (66 400 km² removing islands). Total flow into the lake is about 20 km³/year, of which 7.5 km³ from Kagera river, 8.4 km³ from the forests slopes in the northeast (Kenya), 3.2 km³ from the drier Serengeti plains in the southeast (Tanzania) and 1-2 km³ from the swamps in the northwest (Uganda). The theoretical design of the Owen Falls Dam at the outlet in Uganda would allow an increase in the level of the lake of 3 metres, which would be equal to an increase in storage capacity of 200 km³. However, at present the Owen Falls Dam is not being used for storage, but only operated as a run-of-the-river power plant (Ref. 59). Based on geo-political boundaries, the lake's surface area, and the corresponding storage capacity is allocated as follows: 40% for Uganda, 50% for Tanzania, and 10% for Kenya.

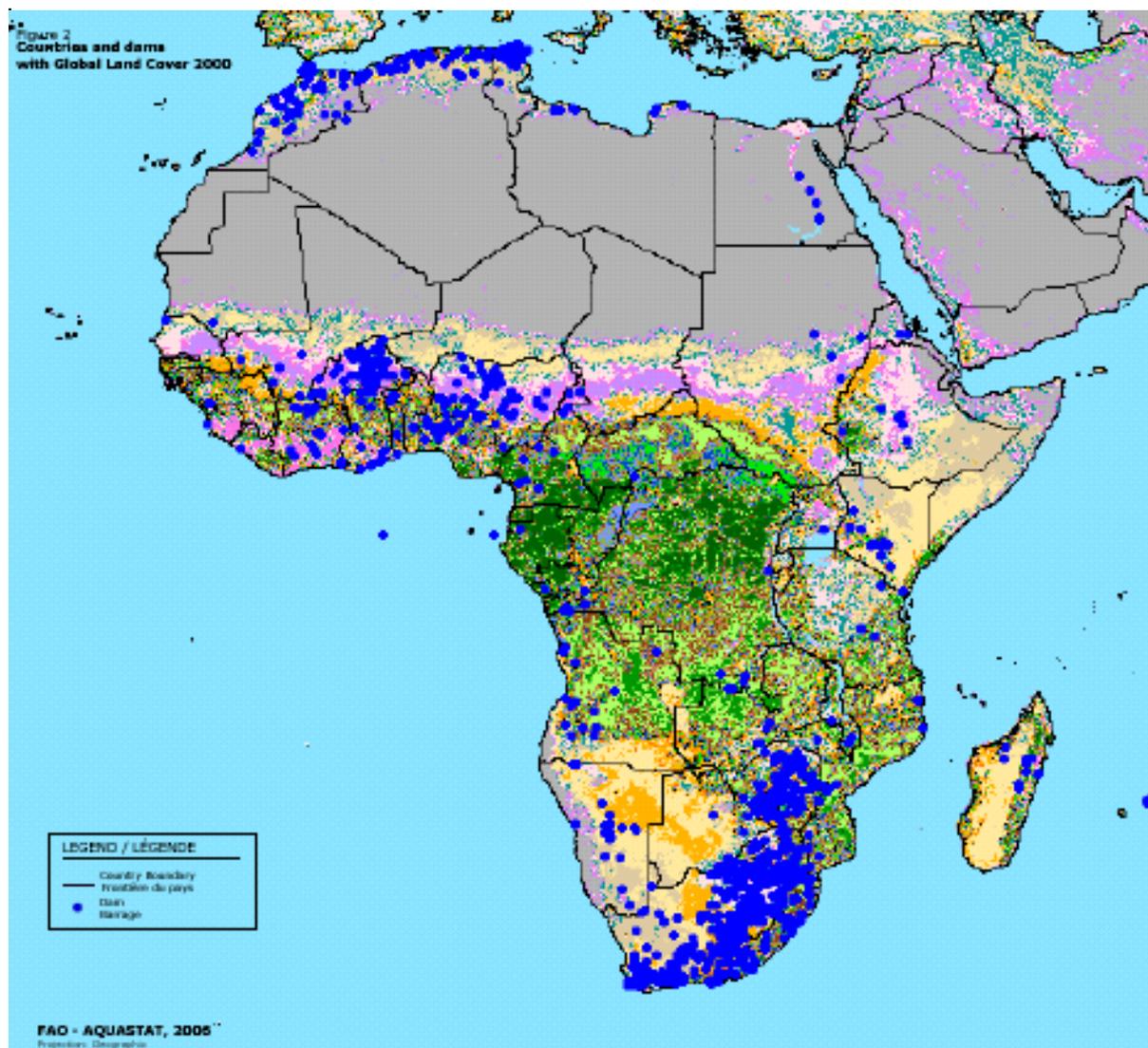
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Figure 1:
Major river basins with sub-basins and dams in Africa



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Figure 2:
Countries and dams in Africa, with global land cover 2000



Explanation of the fields of the dams database in Excel

Column Title	Explanation
Name of dam	The name of the dam
Country	The name of the country in which the dam is located
ISO alpha-3	Country codes used by United Nations
Administrative unit	The name of the sub-national administrative unit in which the dam is located. Was often determined using the GAUL dataset
Nearest city	The name of the city closest to where the dam is located
River	The name of the river on which the dam is located
Major basin	The name of the major river basin in which the dam is located.
Sub-basin	The name of the sub-basin in which the dam is located
Completed/operational since	Year in which the dam was completed, operational or improved
Dam height	Height of dam in metres. The precision given is two decimals (cm), although most of the available figures are given with a precision of 1 metre
Reservoir capacity	Capacity of reservoir in million (1 000 000) cubic metres (this is equivalent to hm ³). It refers to the initial capacity, not taking into consideration the reduction in volume due to sedimentation
Sedimentation rate	Percentage of initial capacity lost to sedimentation (%). This information is updated to be latest known.
Reservoir area	Surface area of the reservoir in square kilometres
Irrigation	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Water supply	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Flood control	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Hydroelectricity	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Navigation	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Recreation	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Pollution control	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Livestock rearing	An "x" here denotes the dam is used for this purpose. Check the comment for potential additional details.
Other	Purpose of the dam other than the 8 above. Check the comment for potential additional details.
Decimal Degree Latitude	Latitudinal coordinate of the dam, expressed in decimal degrees.
Decimal Degree Longitude	Longitudinal coordinate of the dam, expressed in decimal degrees.
National Reference(s)	Number of reference providing information on the dam, coming from a national source. The references are given in Notes and References of the regional file.
Other Reference(s)	Number of reference providing information on the dam, coming from a global or general source (for example ICOLD). The references are given in Notes and References of the regional file
Notes	In this column specific comments of importance to the dam are given

References and notes by country

Note: the reference numbers below correspond to the numbers in the columns "National Reference(s)" and "Other reference(s)" of the database

General/Other

1. Information provided by national experts through the AQUASTAT survey.
3. Lehner, B; Reidy Liermann, C; Revenga, C; Fekete, B; Vörösmarty, C; Crouzet, P; Döll, P; Endegan, M; Frenken, K; Magome, J; Nilsson, C; Robertson, JC; Rödel, R; Sindorf, N; and Wisser, C. 2010. *High resolution mapping of global reservoirs and dams and their impact on downstream rivers* (submitted). (Global Reservoir and Dam Database, GRaND).
65. Dams gathered by Central African Power Pool (CAPP)
66. Dams gathered by Eastern Africa Power Pool (EAPP)
67. Dams gathered by International Food Policy Research Institute (IFPRI)
68. Dams gathered by Southern Africa Power Pool (SAPP)
69. Dams gathered by Western Africa Power Pool (WAPP)

Algeria

76. Website of Agence Nationale des Barrages et des Transferts (ANBT): <http://www.anbt.dz/fr/index.php/anbt-projets>, accessed in November 2015
77. Etat des barrages en exploitation, arrêté au 31/12/2014 (xls file sent by national consultant on gender, Sonia Bellache)

Angola

4. FAO. 1980. *Mission de formulation pour le secteur agricole – Rapport de la mission*. AG:DP/ANG/79/016.
5. Ministerio da Educacao. 1982. *Atlas geografico*.

Botswana

6. Ministry of Mineral Resources and Water Affairs. 1990. *Botswana national water master plan study - Vol. 6*.
7. FAO. 1994. *Water conservation and irrigation facilities - Project findings and recommendations*.
8. Ministry of Mineral Resources and Water Affairs. 1992. *Botswana national water master plan study - Executive Summary*.
9. Mopipi dam. Located with GeoNet Names Server (gns_swb_dams.shp) <http://geonames.nga.mil/gns/html/> (National Geospatial-Intelligence Agency) and the use of the FAO document: FAO. 1990. *Source book for the inland fishery resources of Africa, Vol. 1*. CIFA Technical Paper 18/1. <http://www.fao.org/docrep/005/t0473e/t0473e00.HTM>
10. Dikabeya dam. From: National master plan on arable agriculture and dairy development (NAMPAADD) 28 July, 2003. "...Rainfed farming will be conducted in Barolong farms and a horticultural pilot project is earmarked for Dikabeya Dam in Palapye."

Burkina Faso

11. Ministère de l'eau. 1987. *Inventaire et Reconnaissance Générale de l'état des barrages et retenues d'eau*.
Note:
a. Only dams with a capacity of > 1 million m³ have been selected from this reference.
b. Several errors due to the distinction between east and west were observed in the reference and corrected whenever possible
12. Ministère de l'eau. 1991. *Carte des ressources en eau de surface*.
71. Ministère de l'Agriculture et de l'Hydraulique, Direction Générale des Ressources en Eau, Direction des Études et de l'Information sur l'Eau. 2012. *Annuaire statistique 2011 de l'eau et de ses usages; volet retenues d'eau du Burkina Faso* (AQUASTAT Source ID : 6366).

Cameroon

13. World Bank/Lake Chad Basin Commission. 2002. *Access of the Appraisal of the Safety of Maga Dam, Cameroon*. March 2002.

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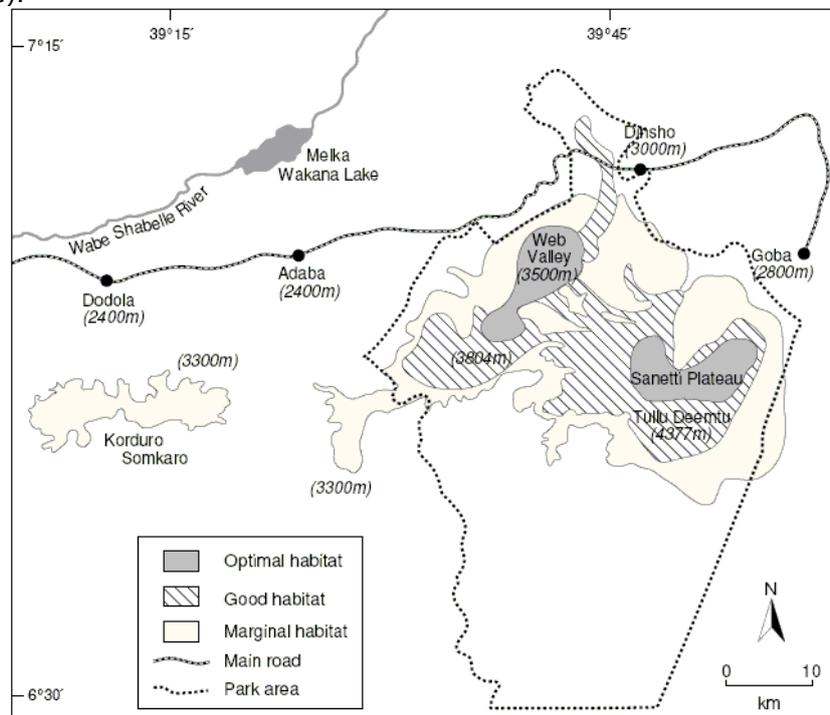
In section 2-1, Description of the Dam, a description of the location of the dam is given.
<http://iwlearn.net/iw-projects/767/reports/lake-chad-basin-project-maga-dam-safety-assessment-cameroon-english-version.pdf>

Congo

14. Djoue dam. Located with GeoNet Names Server (gns_swb_dams.shp)

Ethiopia

15. FAO. 1993. *Utilization of natural resources for balanced development - Water resources development*.
16. Melka Wakena dam. From: The World Conservation Union (IUCN). 2002. *The Ethiopian wolf*. <https://portals.iucn.org/library/efiles/documents/1997-040-2.pdf>. Page 21, Chapter 2, was geo-referenced and used to pin point the dam's location in respect to the reservoir (lake).



17. Legedadi (Main) dam. From: Adinew, Adam. 1999. *Water supply upgrading projects – Their potential impacts*. The 25th Water, Engineering and Development Centre (WEDC) Conference, Addis Ababa, Ethiopia, 1999.
<http://wedc.lboro.ac.uk/resources/conference/25/359.pdf>
"...The next major phase of expansion of the water supply facilities commenced in 1970 with the commissioning of the Legedadi dam/treatment plant which was located at 33 kilometres on the big Akaki river, east of Addis Ababa City. Further development of the water supply facilities was pursued in 1986 under Water Supply Stage II Project and treatment capacity of the Legedadi Plant was upgraded from 50 000 to 150 000 cubic metres of water per day. Along these, the Dire Dam Project is completed to avail additional 42 000 cubic metres of water per day for Legedadi Plant..." (p.359)
18. Alwero dam. The name of the dam is Alwero in the city Abobo of which the spatial location was readily available.

Ghana

19. World Bank. 1986. *Irrigation sub-sector review*
20. FAO. 1993. *Survey on water use for agriculture and rural development* (AQUASTAT 1995)
21. Bui, Kanyanbia, Kulpawn and Sissili dams. Location determined with: "Cultivated, uncultivated areas, principal dams & reservoirs, hydroelectric potential of principal rivers" (paper map), Land and Water Resources Survey – Upper and Northern Regions. FAO GEONETWORK: ISIS Identifier: 001858; Related document location: AGL GHA/S-3; Additional info: FAO/SF: 31/GHA Land and Water Resources Survey Upper & Northern Regions, Vol. V: Water Resources Development & Soil Conservation (AGL Documentation Library)

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- 22.** Barekese dam. From: FAO. 1990. *Source book for the inland fishery resources of Africa, Vol. 2.* CIFA Technical Paper 18/2.

<http://www.fao.org/docrep/005/t0360e/t0360e00.HTM>

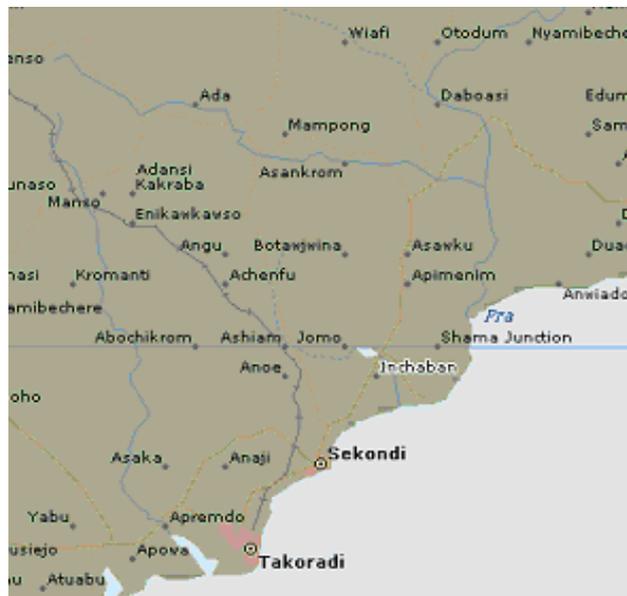
Barekese Reservoir

Geographical data

Location: Ghana - 6°44'; 1° 42'W
date closed: February 1970
Surface area: 6.4 km² at USL
Max. length: 13 km
Max. width: 1.25 km
Major inflowing river: Ofin
Outflowing river: Ofin

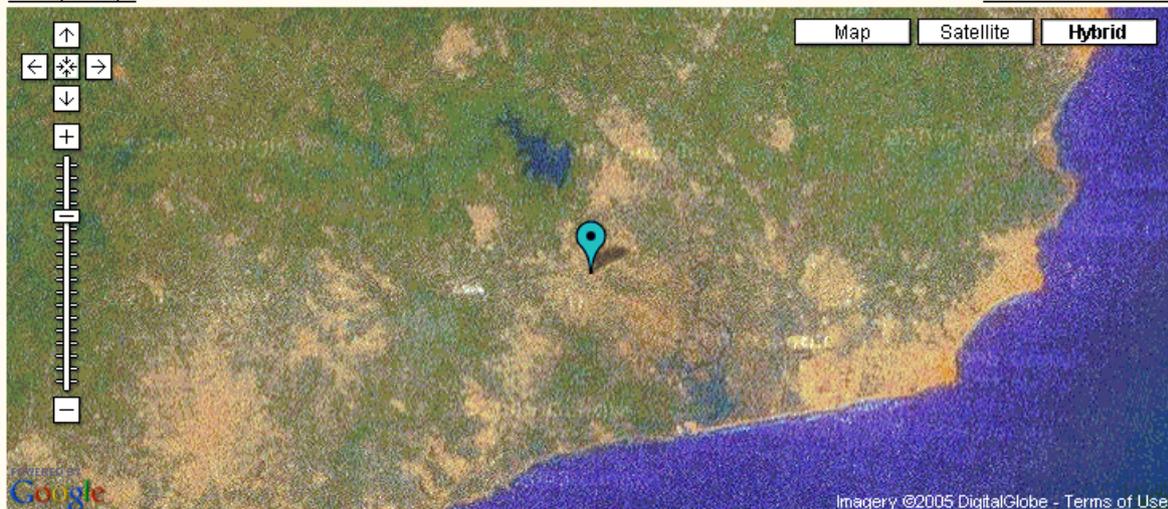
Ichnaban dam. By using a Google map Gazetteer and MSN Encarta atlas, the location of the Ichnaban dam was determined

- 23.** Kwanyaku dam. The location was found with the Earthsearch.net website which does not exist anymore but showed:



Ads by Google

Advertise on this site



Kenya

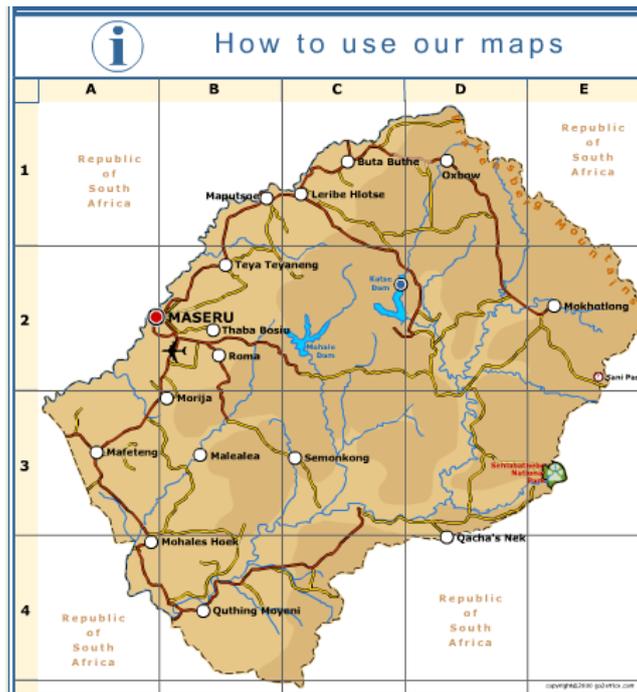
- 24.** Ministry of Water Development. 1992. *The study on the national water master plan – Executive summary.* Funded by: Japan International Cooperation Agency (JICA)

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25. Manooni dam. Location of the town was confirmed with the following website:
<http://www.fallingrain.com/world/KE/03/Manoni.html>

Lesotho

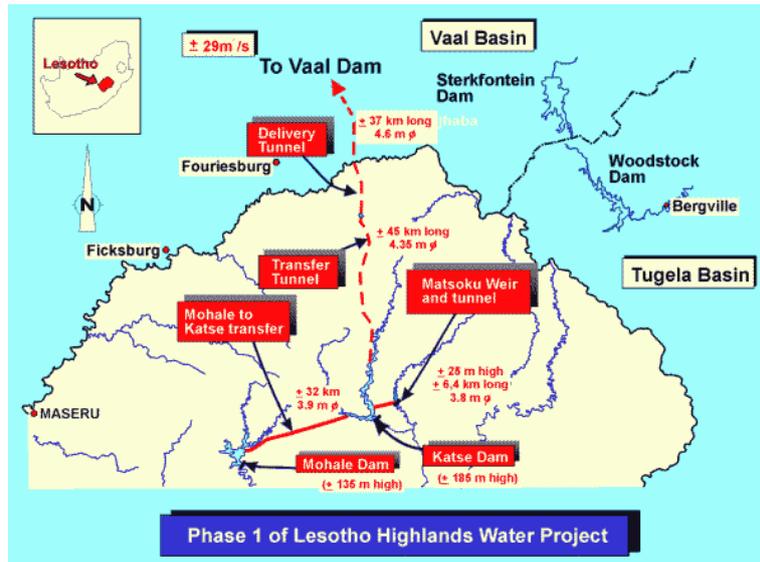
26. Katse dam. The dam was located through the Lesotho Highlands Water Project website
<http://www.lhda.org.ls/>
 "Katse Dam is situated on the Malibamats'o River just downstream of its confluence with the Bokong River, and has a storage capacity of 1,950million m³."
27. Mohale dam. The map found on the following website shows the location for the Mohale and Katse dams in Lesotho: <http://www.go2africa.com/lesotho/lesotho/default.asp#map>



28. Muela dam. From: http://www.dwaf.gov.za/orange/Up_Orange/lhwpoover.htm.
 "The 185 m high Katse Dam; the intake structure capable of handling 70 m³/s; the 45 km long transfer tunnel from Katse reservoir to the Muela reservoir; the Muela Dam and hydro-power station; the 37 km long delivery tunnel from the Muela reservoir to the Vaal River basin"

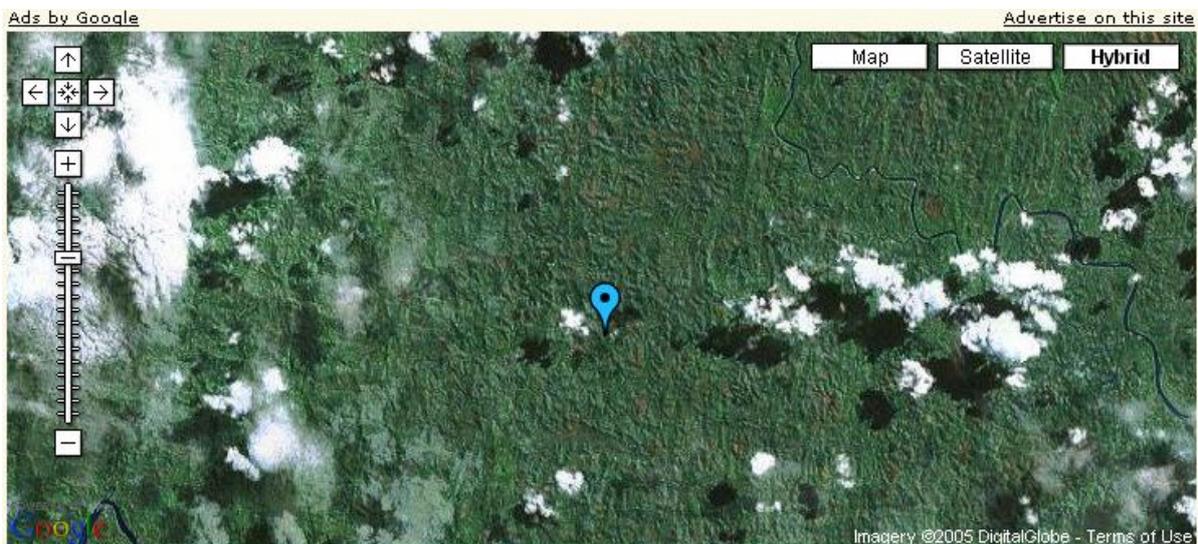


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Madagascar

29. Mandraka dam. From: <http://members.virtualltourist.com/m/tt/36347/> and by using MapLandia with Google Maps <http://www.maplandia.com/madagascar/toamasina/toamasina-rural/mandraka/>
"But to reach it, you will have to leave main road at Ambatoloana and drive some 12 kms. We hadn't done it this time. Mandraka Gradually, in a 10km length, you will descend to reach coastal area. Up to now, you were in the highlands. But soon, you have to descend Falaise de l'Angavo, (Angavo cliff), in Mandraka (some 70km from Tana). The descent from an average altitude of 1400m will lead you to an intermediary altitude of 900m. Combined actions of heat and humidity keep thick forests in good shape. While descending, you will see Mandraka hydraulic barrage."

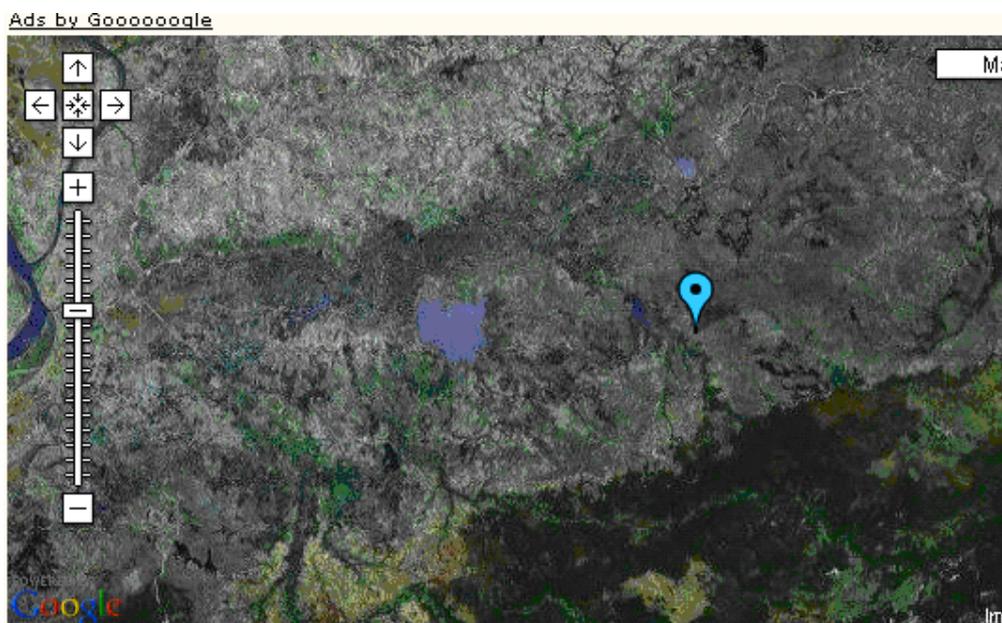


30. Amboromalandy dam. A map of Amboromalandy was found using MSN Encarta Atlas

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31. Ambilivily dam. By using the MapLandia website <http://www.maplandia.com/madagascar/mahajanga/marovoay/ambilivily/> and MSN Encarta Atlas, the location of the Ambilivily dam was found



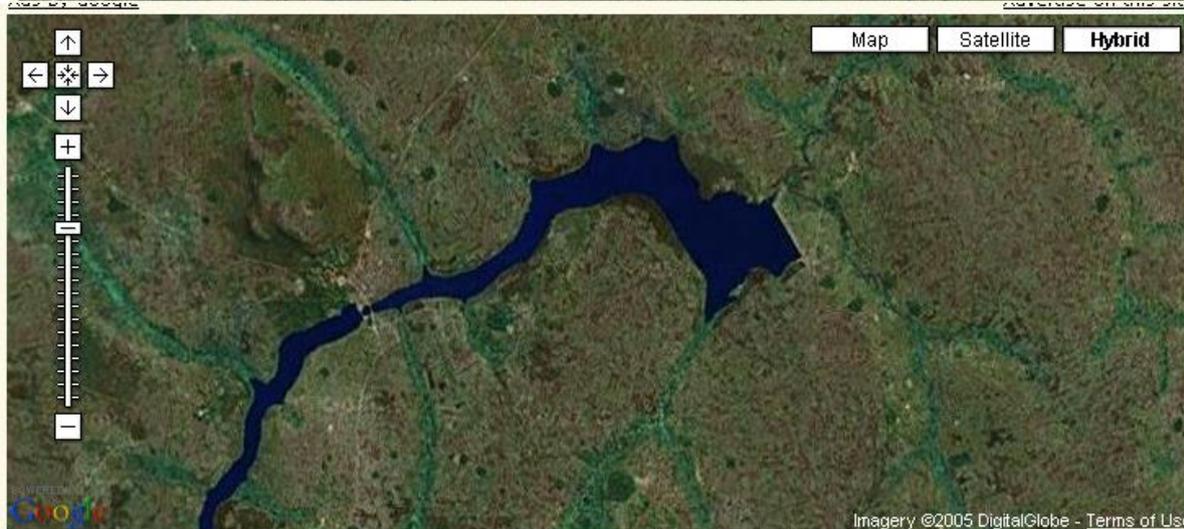
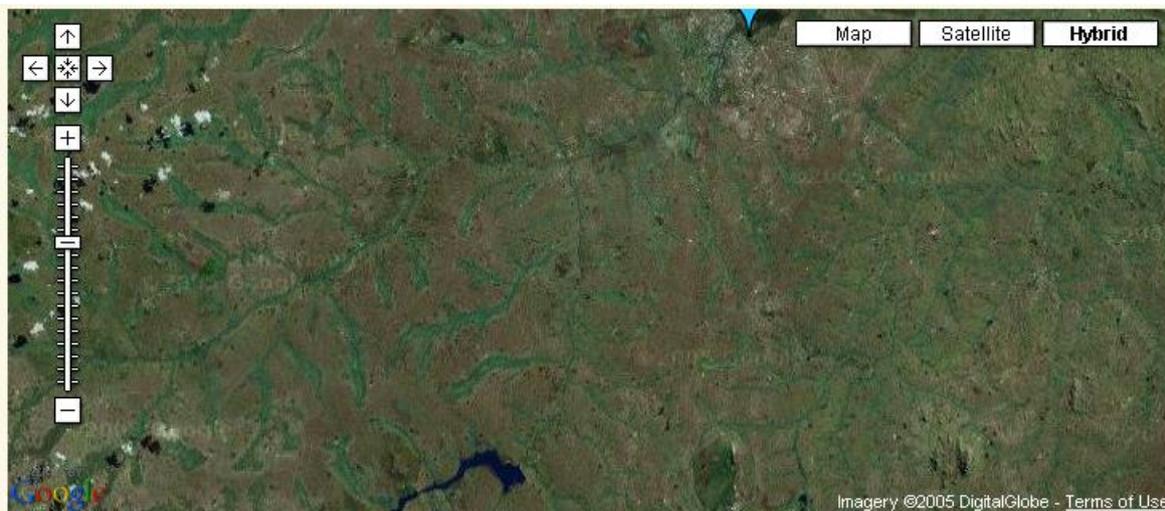
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Malawi

32. Mulunguzi dam. Was found with the Southern African development Community (SADC) database
33. Malingunde Dam II. From: <http://www.engineeringnews.co.za/eng/features/stainless/?show=8709> website which does not exist anymore but mentioned: "The dam is located on the Lilongwe river about 20 km upstream and south-west of Lilongwe, and just downstream of Kamuzu Dam I."
34. Malingunde Dam I. From: Ministry of Water Development. 2004. *Report on the Malawi national consultative meeting on the World Commission on Dams (ECD) report – dams and development: a new framework for decision making*. Kambiri Resort Hotel, Salima, 30–31 July 2004.
http://www.unep.org/dams/files/Country%20Dialogues/malawi_report.pdf

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Mali

- 35. Traoré, Mamadou. 1980. *Atlas du Mali*. Les atlas Jeune Afrique.
- 74. Zwarts, L., van Beukering, P., Kone, B., Wymenga, E. 2005. *Le Niger, une artère vitale. Gestion efficace de l'eau dans le Bassin du Haut Niger*.
http://www.altwym.nl/uploads/file/388_1294300622.pdf

Mauritania

- 36. Fom Gleita dam. Located with the document: FAO. 1984. *New reservoirs in Africa, 1980-2000*. CIFA Occasional Paper 11.
<http://www.fao.org/docrep/005/r0868b/R0868B00.htm>

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Morocco

37. World Bank. 1995. *Le secteur de l'eau au Maroc*.
38. Ministère des travaux publics. 1993. *Les petits barrages*.
39. Royaume du Maroc, Conseil supérieur de l'eau (5ème Session). *Aménagement des bassins versants et protection des barrages contre l'envasement*.
40. Royaume du Maroc, Conseil supérieur de l'eau (7ème Session). *Plan intégré d'aménagement des des eaux des bassins du Loukkos, du Tangérois et des côtières méditerranéens*.
41. Ministère chargé de l'incitation de l'économie. 1993. *Annuaire statistique du Maroc*.
42. Dhkila, Kasba Tadla, Ouazzane, Safi, Taghdout, Zemrane dams. Location determined with: "L'irrigation au Maroc" (paper map), GEONETWORK: Location: FAO – AGL Morocco/Miscellaneous (AGL Documentation Library) and, ISIS Identifier: 003667; "Carte Piscicole" (paper map) GEONETWORK: Location: FAO – AGL Morocco/Miscellaneous (AGL Documentation Library) ISIS Identifier: 003668
70. Royaume du Maroc. Ministère Délégué auprès du Ministre de l'Énergie, des Mines, de l'Eau et de l'Environnement, Chargé de l'Eau. Les grands barrages du Royaume. <http://www.water.gov.ma/index.cfm?gen=true&id=80> (viewed on 11/11/2014, section patrimoine/barrages).

Mozambique

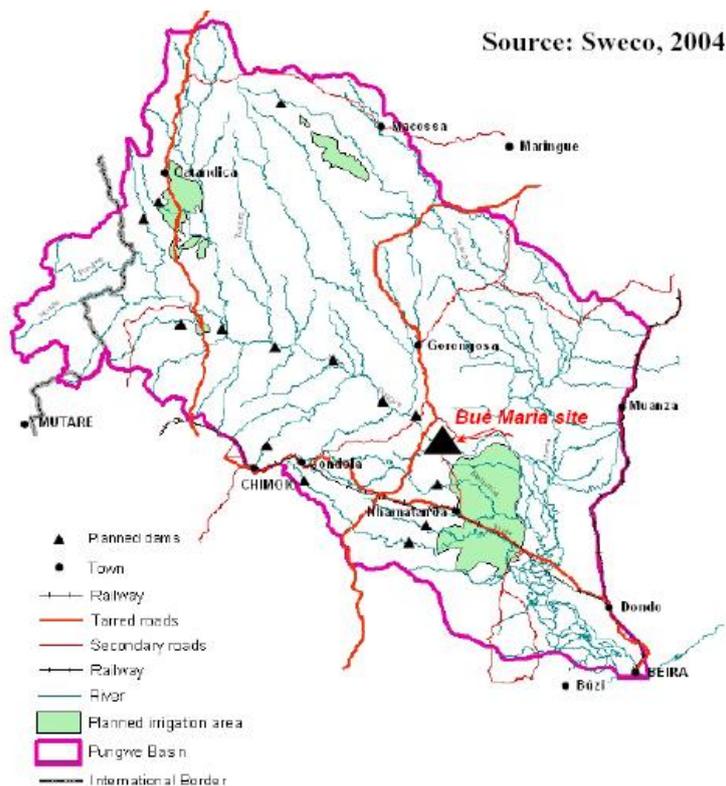
43. Ministry of Construction and Water. 1987. *Explanatory notes to the hydrogeological map of Mozambique scale 1 : 1 000 000*.
44. Mavuzi dam. Located with the GeoNet Names Server spatial dataset in point format.
45. Chimoio dam. From: Zaag, Pieter van der. 2000. *The Pungwe river basin*. http://web.world.unesco.org/water/wwap/pccp/cd/pdf/educational_tools/course_modules/reference_documents/sharinginternwatercases/thepungweriver.pdf. 1 August 2000.

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“The Massingir Dam controls 34 percent of the total flows at Chokwé. Mihajlovich and Gomes (1986) estimated that the annual volume of water entering the station of Mapai on the Limpopo River (upstream of the confluence of the Limpopo and Elephants Rivers) is 3 510 million m³”



48. Bué Maria dam. From: Zaag, van der Pieter and Bolding, Alex. 2005. *Water governance in the Pungwe river basin: institutional limits to the upscaling of hydraulic infrastructure*. Bonn, 12 October 2005. The map on page 15 shows the site of the Bué Maria dam.



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Namibia

- 49. Ministry of Agriculture, Water and Rural development. 1994. Namibia early warning and food information system. Crop and food security bulletin.
- 50. Tilda Viljoen, Bondels, Omatjenne, Otjivero Main, Daan Viljoen, and Olushandja dams. Located with South African Development Community – Surface Water Bodies Database (SADC_SWB.shp) which is a vector point file with almost 100 fields of potential data entry for each point.
- 51. Omarur Delta dam. From:
<http://www.lce.com.na/?keyword=omdel&m=sitesearch&online=&application=&s=>
Omdel (Lund Consulting Engineers, LCE).

Niger

- 75. CLISS. 1982. *L'hydraulique villageoise dans les pays membres du CLISS. Situation au Niger*. Comité permanent Inter-états de lutte contre la sécheresse dans le Sahel.

Nigeria

- 52. Federal Ministry of Agriculture, Water Resources and Rural Development. 1993. *The study on the national water resources master plan*. Funded by Japan International Cooperation Agency (JICA).

South Africa

- 53. Department of Water Affairs. 1986. *Management of the water resources of the Republic of South Africa*.
The coordinates given in this publication were not verified, except in the case of four dams for which an obvious error could be observed (three were cancelled and one was corrected).
- 54. Gilbert Eyles, Kleinplaas, Klipplaatdrift, Koos Raubenheimer, Lady Grey, Lindley, Meulspruit, Middle Letaba, Molopo Oog, Spes Bona, Tuinroete, Vaalbank and Van Niekerk Broer dams. Located with South African Development Community – Surface Water Bodies Database (SADC_SWB.shp) which is a vector point file with almost 100 fields of potential data entry for each point.

Sudan

- 55. Abdalla Abdelsalam Ahmed. 1991. *Sedimentation in Sudan multi-purpose reservoirs*.

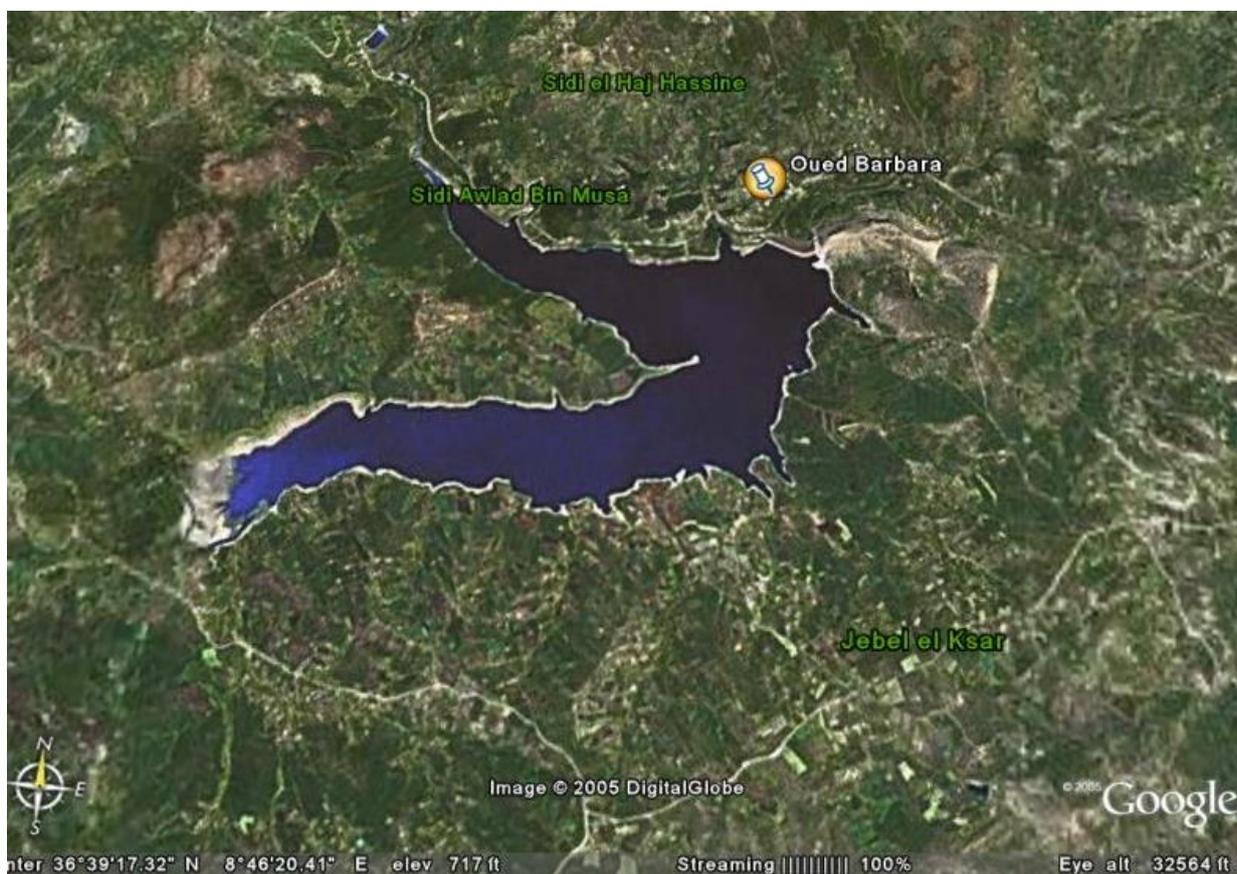
Togo

- 56. Nasia and White Volta dams. Location determined with: "Cultivated, uncultivated areas, principal dams & reservoirs, hydroelectric potential of principal rivers" (paper map), Land and Water Resources Survey – Upper and Northern Regions. FAO GEONETWORK: ISIS Identifier: 001858; Related document location: AGL GHA/S-3; Additional info: FAO/SF: 31/GHA Land and Water Resources Survey Upper & Northern Regions, Vol. V: Water Resources Development & Soil Conservation (AGL Documentation Library)

Tunisia

- 57. Ministère de l'agriculture. 1992. *Commission de réflexion sur le développement des ressources en eau de surface – analyse & plan d'action*.
This reference does not give 'reservoir capacity' but 'volume mobilisé' (in Mm³/an). Comparison with other references shows that the two figures are generally very close.
- 63. Oued Barbara Dam. From: Google Earth pushpin from engineer working on the dam – Paolo Gazzarrini P. Eng., Sea To Sky Geotech Inc. 12-2242 Folkestone Way, West Vancouver, BC, V7S 2X7

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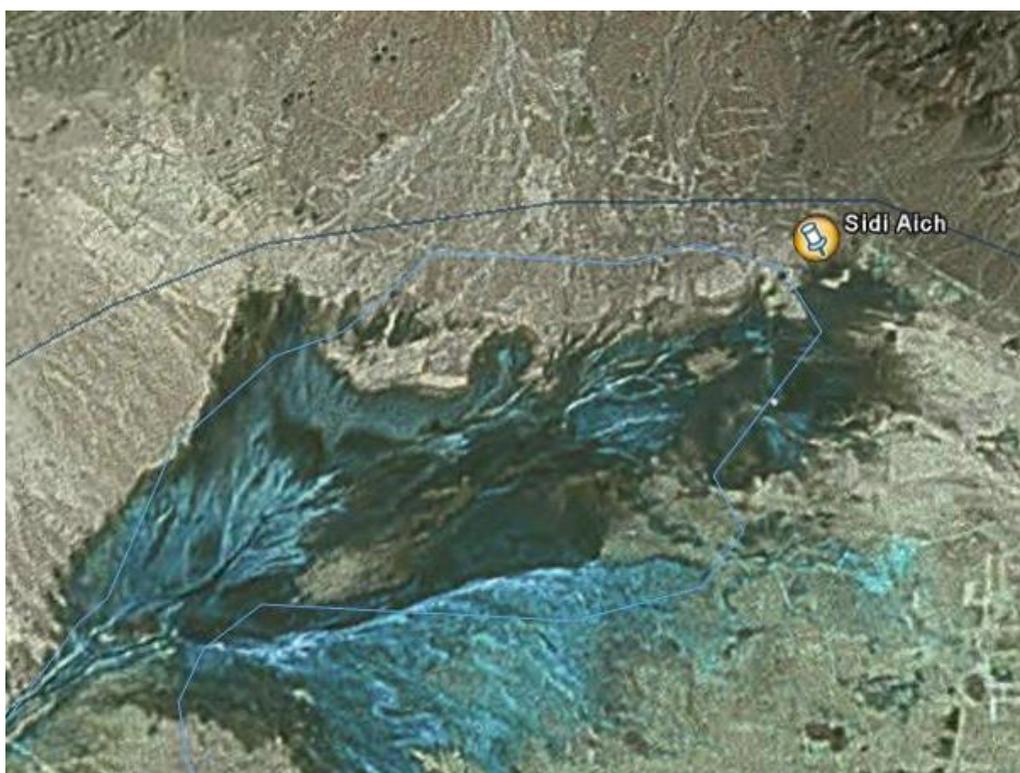
64. Sidi El Barrack dam. From: Google Earth pushpin from Paolo Gazzarrini P. Eng. Located from: <http://www.environnement.nat.tn/parcickel.htm>, which does not exist anymore but showed:



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Sidi Aich dam. From Google Earth pushpin from Paolo Gazzarrini P. Eng. Google earth locator.

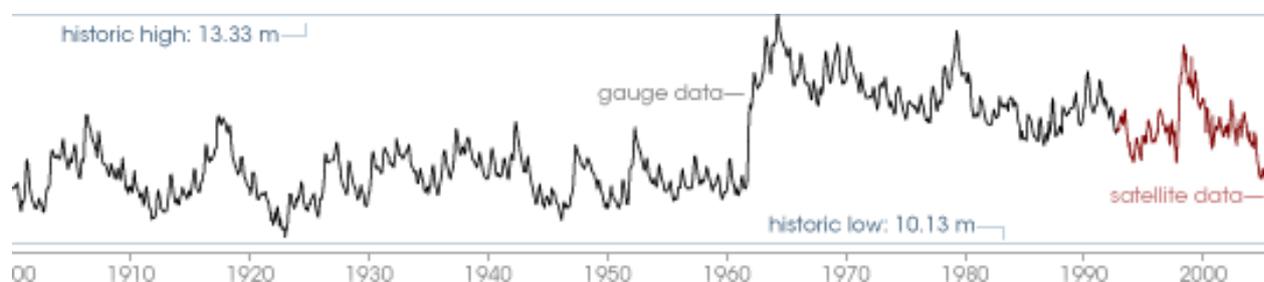


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Uganda

- 58. Uganda third power project and proposed Bujagali hydropower project. Signed on 13 December 2005. Funded by the World Bank.
- 59. Kashef, Abdel-Aziz I. 1981. The Nile – one river and nine countries. In: *Journal of Hydrology 53 (1981) 53-71*. Elsevier Scientific Publishing Company, Amsterdam. Westlake, Charles; Mountain, Reginald; Paton, Thomas. 1954. Owen Falls, Uganda, Hydro-electricity development.
It is mentioned that the lake level could increase by 3 metres, which would be equal to an increased storage of 200 km³, considering a lake area of around 67 000 km². However, at present the dam is used for a power plant and not for storage. Below is difference in lake level from 1900 onwards.



Lake Victoria height variation relative to a fixed point at Jinja.

Source: Robert Simmonin, based on data provided by the USDA Foreign Agricultural Service

Zambia

The Kariba dam (same dam as put under Zimbabwe) is located on the Zambezi river, which forms the border between Zambia and Zimbabwe. In order to be able to sum up all dam capacities in the Excel sheet and have the correct total for all dams in Africa, 94 km³ has been put under capacity of the Kariba dam in Zambia and 94 km³ in Zimbabwe.

Zimbabwe

- 60. Government of Zimbabwe, Department of the Surveyor-General. 1984. Topographic map scale 1 : 1 000 000.
A few dams have two names: the one given in ref. 2 and the one given in ref. 9.
- 61. Beitbridge ORS II dam. From: GeoNet Names Server point vector database.
- 62. Clifton ORS dam. Internet research showed that this dam is in Beitbridge. An approximate location was determined with this.
The Kariba dam (same dam as put under Zambia) is located on the Zambezi river, which forms the border between Zambia and Zimbabwe. In order to be able to sum up all dam capacities in the Excel sheet and have the correct total for all dams in Africa, 94 km³ has been put under capacity of the Kariba dam in Zambia and 94 km³ in Zimbabwe.
- 78. ZINWA. 2015. *List of dams by catchment*. ZIMWA website. Zimbabwe National Water Authority
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Countries updated October 2015: BFA, MAR, MLI, NER, TUN; November 2015: DZA; February 2016: ZWE

Zimbabwe - Dam

Number of records returned: 28

Name	Type	Latitude	Longitude
Bangala Dam	Dam	-20.683333	31.233333
Chaba Vlei Dam	Dam	-17.2	28.1
Chihada Dam	Dam	-16.8	31.75
Gangeni Dam	Dam	-18.95	28.05
Hillside Dams	Dam	-20.200278	28.621111
Janke Dam	Dam	-18.966667	28.283333
Kate Dam	Dam	-18.933333	28.433333
Kyle Dam	Dam	-20.25	31.033333
Lalazhou Dam	Dam	-21.333333	30.133333
Madoko Dam	Dam	-21.283333	28.833333
Magwati Dam	Dam	-20.266667	30.516667
Manasa Dam	Dam	-18.9	28.233333
Muchenami Dam	Dam	-20.3	30.516667
Nyatsanga Dam	Dam	-16.616667	31.666667
Pamabodo	Dam	-18.833333	29.716667
Robertson Dam	Dam	-18.866667	28.083333
Samasi Pan	Dam	-19.133333	28.6
Sebakwe Poort	Dam	-18.833333	29.716667
Segodi Dam	Dam	-18.583333	28.4
Sempisi Dam	Dam	-18.766667	28.283333
Simesi Dam	Dam	-19.133333	28.6
Simassa Pan	Dam	-19.133333	28.6
Sindombe Dam	Dam	-18.833333	28.266667
Sipempe Dam	Dam	-18.766667	28.316667
Tunke Dam	Dam	-19.166667	28.7
Tunke Pan	Dam	-19.166667	28.7
Vanke Dam	Dam	-18.866667	28.283333
Zomba Dam	Dam	-21.283333	30.366667

- 80** The Herald. 2015. *Floods likely as dams fill up*. 6 January 2015. Available at: Zimbabwe Situation website.
- 81** Salini Impreglio. 2015. *Osborne dam on the Odzi river*.
- 82** Manyanhaire, I.O, Svtwa, E., Sango, I. and Munasirei, D. 2007. The Social Impacts of the Construction of Mpudzi Dam (2) in Zimunya Communal Lands, Manicaland Province, Zimbabwe. *Journal of Sustainable Development in Africa* 9(2): 214-230.
- 83** MoEWC. 2015. *Programme of the water resources and infrastructure investment conference*. Harare, 25-26 June 2015. Ministry of Environment, Water and Climate.
- 84** Office of the Comptroller and Auditor-General of Zimbabwe. 2011. *Report on the management of dam construction and water supply projects by the Zimbabwe National Water Authority*.
- 85** AfDB. 2011. *Infrastructure and growth in Zimbabwe. An action plan for sustained strong economic growth*. African Development Bank, Tunis.