

Lesotho



KATSE DAM

COORDINATES (degrees, minutes, seconds)

LATITUDE	LONGITUDE
29° 20' 11" S	28° 30' 25" E

LOCATION

This dam is situated on the Malibamatso River, which is a tributary of the Senqu River. It is located in Lesotho (landlocked by South Africa) in quaternary catchment D11E.

DESCRIPTION

The dam is a double curvature concrete arch dam, 1,993 m above sea level. The intake tower is located approximately 18 km north of Katse Dam and has been designed to accommodate 70 m³/s, which was the maximum transfer envisaged for full implementation of the Lesotho Highlands Water Project (LHWP). Katse Dam is connected to the Muela Dam via a 45-km tunnel (Phase I of the LHWP, which was completed in 2005). Phase I of the project also consisted of a 31-km tunnel from the Mohale Reservoir to the Katse Dam. The Mohale–Katse Transfer Tunnel has a maximum capacity of 807.56 million m³/a. The dam has a full supply level of 2,053 m. The dead storage level is at 1,989 m and the bottom of the reservoir is at 1,895 m.

PURPOSE

Phase I of the LHWP, which was completed in 2005, included the construction of Katse Dam, with the intention of augmenting South Africa's water supply via a transfer to the Vaal River catchment, through an agreement between South Africa and Lesotho. The maximum long-term transfer volume is 877 million m³/a, and will be transferred to South Africa regardless of the storage in the Vaal or Orange catchments (ORASECOM, 2007a). Currently the release from Katse Dam to the Vaal Dam is 777 million m³/a.



Katse Dam (source: www.jacquesleslie.com)



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Through this release, water is also used for hydropower generation, travelling through a 4-m-diameter, 45-km tunnel, existing at a hydroelectric station near Muela, approximately 45 km from Katse Dam. During periods of water shortages, water is discharged into the Mohokare (Caledon) River to provide water to the capital of Lesotho, Maseru. Releases are also made for the downstream ecological reserve of approximately 65.86 million m³/a.

PHYSICAL INFORMATION

Dam name	River	Quaternary catchment	FSC* (million m ³)	FSA (km ²)	Owner	DWA code	Wall height (m)	Wall length (m)
Katse	Senqu	D11E	1,950	35.8	Lesotho	D1R002	185	710

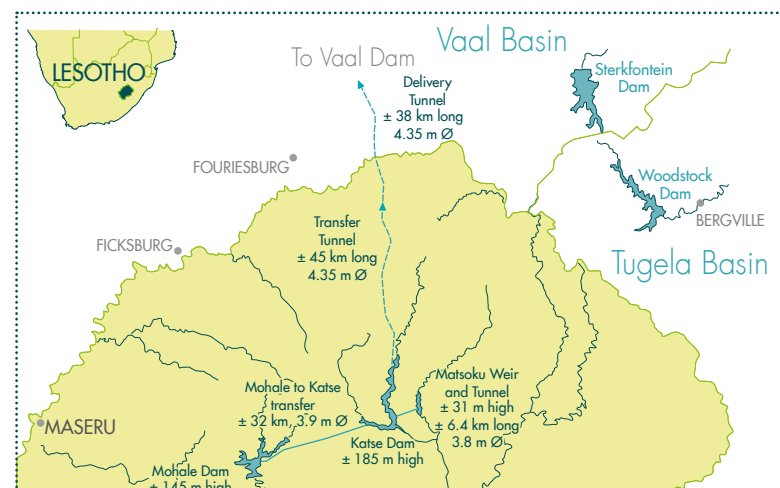
* Live full supply capacity (ORASECOM, 2007a, WRYM datasets and DWA, 1990)

Year of completion	Demands/abstractions (million m ³ /a)			1:50 yield (million m ³ /a)	Maximum spillway capacity (m ³ /s)
	Domestic	Irrigation	Transfer to Vaal Dam		
1996	Unknown	Unknown	777 †	451–586	70

† ORASECOM, 2011

AREA-CAPACITY RELATIONSHIP

Elevation (m)	Storage (million m ³)	Surface area (km ²)
2,053	1,950	35.80
2,050	1,845	34.60
2,040	1,520	30.50
2,030	1,234	26.70
2,020	985	23.10
2,010	773	19.60
2,000	593	16.40
1,992	472	13.90
1,985	381	12.10
1,895	0	0.00



Phase I of the Lesotho Highlands Water Project

