

THE VAAL RIVER – South Africa's water workhorse



The Vaal River is often described as the hardest working river in South Africa. But what does this mean? And why is this river so important to the country?

Lani van Vuuren

Major dams and weirs on the Vaal River

- Grootdraai Dam
- Vaal Dam
- Vaal Barrage
- Bloemhof Dam
- Vaalharts Weir
- Douglas Weir

The Vaal River (named after its naturally dull brown-grey colour) is the second-largest river in South Africa, after the Orange River, into which it flows. The 1 200 km-long river crosses a number of provinces, namely Gauteng, the Free State, Mpumalanga and the Northern Cape.

The Vaal River starts in the eastern Highveld plains, in the vicinity of Ermelo, in Mpumalanga. The river then flows westward on a long course, without rapids or waterfalls, broadening into a large river. While it is a major river it is still a tributary as it does not reach the sea, but instead joins the Orange River at Douglas, in the Northern Cape.

The Vaal River might not be large by international standards (it is about the 129th largest river in the world) it is large by South African standards. Yet it does not run constantly, which means that in winter it has much less water than it has in the rainy season. For this reason large dams have had to be constructed on the river to

ensure a steady water supply to all those people and industries dependent on water from the river.

In earlier times, many little dams were built to irrigate farms. These dams were the forerunners of the great barrages and dams which today control the river on which Gauteng and the surrounding industrial areas depend so heavily. One of the first large schemes to be built on the Vaal River was the Vaal Barrage. This dam, situated about 70 km from Johannesburg, was finished in 1923. This dam has a capacity of 63 million litres.

The Suikerbosrant, Klip, and Rietspruit rivers that feed into the Vaal River Barrage Reservoir flow from industrial and heavily populated areas such as Johannesburg, Vereeniging and Sasolburg. This reservoir was used to supply water to the Witwatersrand but no longer does so because the quality of its water is deteriorating due to pollution, says Rand Water. However, this reservoir, which is managed by Rand Water, is still used for many recreational

activities, such as boating, skiing, fishing, swimming and many holiday resorts have grown up on its banks.

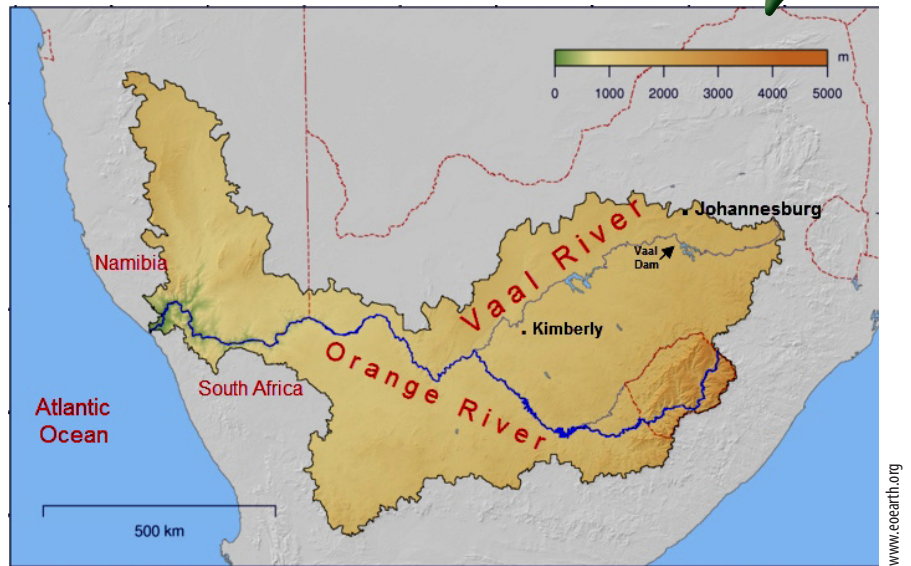
The biggest dam on the Vaal River is the Vaal Dam. This dam was built in 1938. While it was the biggest dam to be built in South Africa at the time, it was constructed almost entirely by hand by hundreds of workers. These workers lived and worked at the dam in special construction villages, which had everything from housing, to canteens to an entertainment complex.

The Vaal Dam has been raised twice. In the early 1950s the wall was raised by 6.1 m enabling it to store 2 188 million m³. Then it was raised again in 1985 by another 3.5 m. This increased the volume of the dam to 2 575 million m³. The dam has a surface area of 321 km² and an average depth of 22.5 m.

According to Rand Water, the main water supplier to Gauteng, even though the Vaal Dam is only the fourth-largest dam

in South Africa today, it is still the most important dam in the country because of its role as the primary supplier of water to the economic heartland of South Africa. The water from the Vaal River supplies water to all of the most important industries in South Africa situated around Pretoria and Johannesburg. These industrial areas produce more than 50% of South Africa's wealth as well as more than 80% of the country's electricity requirements – more than 50% of all the electricity supplied in South Africa. From the Vaal River water is also supplied to some of the largest gold and platinum mines in the world, as well as many of the world's largest coal reserves.

Further down the Vaal Dam and Vaal Barrage there is the Bloemhof Dam. This dam has a surface area of 232 km². At Christiana there is a complex series of canals which takes the water to about 1 200 farms in one of the largest irrigation schemes in the southern Hemisphere. This is the Vaalharts Irrigation Scheme. At Douglas, in the Northern Cape, the Vaal River meets the Orange River. The Orange River, which has its origin in Lesotho, then continues westward and eventually flows into the Atlantic Ocean at Alexander Bay.



Above: Map showing the Vaal River.

Below: The Vaal Barrage.

Even these dams have not been enough to supply the increasing need for water. Water now gets 'imported' from KwaZulu-Natal to the Vaal Dam from the Thukela-Vaal Transfer Scheme and as far as Lesotho from the Lesotho Highlands Development Project.

The Vaal River is not only the hardest working river in South Africa because of all the people and industries it supports, it also has to deal with a lot of pollution, like wastewater treatment plants, runoff from mines, industries and agriculture. Organisations like Rand Water and Save the Vaal Environment work to improve conditions in the catchment of the Vaal River and so improve the quality of water that enters the river. □



Did you know?

The Vaal River get its name from the muddy colour of its water, with 'Vaal' meaning 'grey water'. The name is translated from the Khoikhoi name of the river, which is *Heigariiep*.



Many people enjoy the Vaal Dam from a recreational point of view.

Sources

- www.southafrica.net/zalen/articles/entry/article-southafrica.net-vaal-river
- <http://www.randwater.co.za/corporateresponsibility/www/pages/waterorigin.aspx>
- http://www.ewisa.co.za/misc/RiverVaal/VAALRiver_Geology%20.htm
- <https://www.youtube.com/watch?v=lgHYsa-D8tk&list=PLOz2OX6evpWMZyKDK3s7YtHEVSd5VQ9K0> (a video from The Citizen newspaper of the Vaal Dam with its sluices open)
- <http://www.eoearth.org/view/article/228145/>