Basin Profile: Great Fish River
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Water Scarcity Status

- South Africa faces a water crisis and critical shortages are projected as early as 2020.
- Before the inter-basin transfer of the Orange Fish River, the Great Fish and Eastern Cape experienced water shortages that left thousands of hectares of irrigable soil that could not be irrigated.

Basin Overview
Eastern Cape, South Africa
Area: 30,800 sq km
Climate: Semi-Arid
Basin population: 17,959

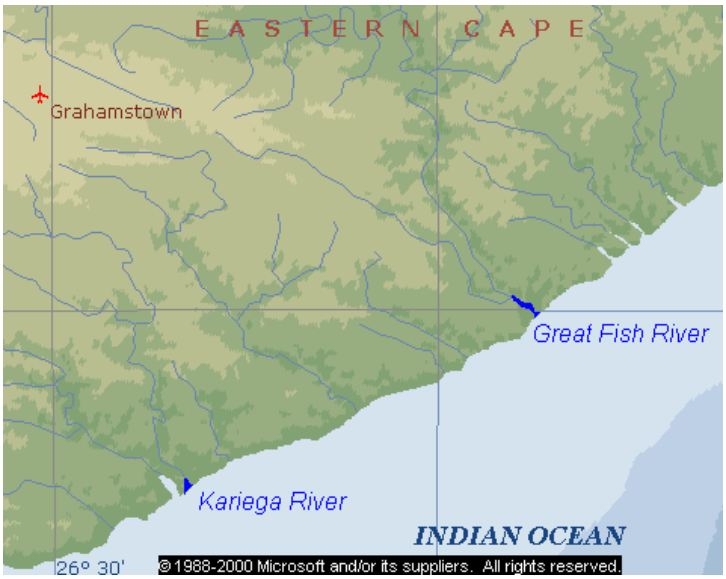

Figure 1. Map of Great Fish River (http://nest.su.se/mnode/Africa/S_Africa/KGF.htm)

The Great Fish River is located in the Eastern Cape Province in South Africa. It runs 400 miles (644 kilometers) long, and the basin covers 30,800 square kilometers, with an estuary that flows into the Indian Ocean. Its Afrikaans name is "Groot-Vis" meaning "great" and Vis as "fish". A Great Fish River Reserve is managed by the Eastern Cape Parks, a governmental organization responsible for maintaining wilderness in public areas. This park has a total area of 45,000 hectares, where the river runs through the park. The Great Fish River Reserve lies in the valley of Grahamstown and Fort Beaufort and extends to the Kieskama River.

The Orange River is the longest river in South Africa, and it is inter-connected to the Great Fish River by an inter-basin transfer of water that flows from the Orange to the Great Fish with the help of a canal and tunnel system. Two major dams exist in the river basin, the Egerton and Elandsdrift dams.

The Department of Water Affairs Forestry (DWAF) serves as the custodian of South African water resources. They are responsible for implementation of policy that governs this sector. They also have the power to override responsibility for water services provided by local government. The National Water Policy requires that a formal policy be developed for water conservation and use in each sector, such as agriculture, industry, and mining. This policy has provided a framework within which water conservation and water demand management can be implemented.

There are various types of economic production that rely on the river and its water. The river valley area is popular for tourism, which brings substantial revenue into the Eastern Cape area. The valley area has been used for farming since the 1800's. The main crops irrigated in the basin are lucerne, maize and pastures. The crops are irrigated with water that is brought to farms by a series of open earth canals. Commercial farming occurs on the western side of the river. The Great Fish River Valley is steadily growing into a very important food basket for South Africa. Primary agriculture accounts for 2.5% of the GDP. Major crops include citrus, corn, wheat, dairy products, sugar cane, tobacco, wine, and wool.

Water Scarcity Impacts

Environmental Impacts

The Great Fish River once had an irregular seasonal flow that has now become perennial with water imports from the Orange River. Mean annual runoff of the upper portion of the river has increased by between 500 and 800%, due to the inter-basin transfer of water from the Orange River. The mean annual discharge of the lower river has changed slightly, but the seasonal flow variation in the lower river has been substantially reduced. Elements of sodium, magnesium, and chloride have been reduced in concentration from the introduction of low-salinity water that has diluted the highly mineralized Great Fish River water.

Changes in the flora and fauna associated with water importation have created problems for farmers. Much of the Great Fish River ecosystem has been taken over by Orange River flora and fauna, including a blackfly infestation.

Economic and Social Impacts

The inter-basin water transfer scheme in the Great Fish River has led to a blackfly infestation that causes large scale livestock loss due to insects biting sheep and cattle, causing economic losses estimated at 43 million rand per year.

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