

Case Study: Friends of Lake Turkana

Read the passage below.

Ikal Angelei, 2012 winner of the prestigious Goldman Environmental Prize, works in the remote Lake Turkana region of Kenya and Ethiopia. Friends of Lake Turkana, a nonprofit organization she founded in 2007, works to stop construction of Ethiopia's Gilgel Gibe III Dam on the Omo River.

The Omo is the major tributary to Lake Turkana, and a dam upstream would drastically impact the lake environment. Changes to the lake's chemistry and shoreline would devastate the ecology of the region, as well as the local economies that have developed around it, such as fishing, agriculture, and pastoralism.

Angelei remembers being shocked on learning of the dam's likely impact. "At first, I thought, it can't be real," she told the *New York Times*. "I couldn't imagine the area without the lake."

Geography

Located in northern Kenya, the Lake Turkana Basin is a 70,000-square-kilometer (27,027-square-mile) region that is home to Lake Turkana, the most saline lake in East Africa and the largest desert lake in the world. The area includes three national parks: Sibiloi National Park, South Island National Park, and Central Island National Park.

Lake Turkana, nicknamed the "Jade Sea" due to its striking color, is a major stopover for migrating waterfowl. The surrounding area is a major breeding ground for Nile crocodiles, hippopotamuses, and a range of venomous snakes.

The basin surrounding Lake Turkana is arid and receives little rainfall outside the "long rain" season of March, April, and May. The region relies on the water from incoming rivers (including the Omo) and the long rain for nearly all its freshwater.

Due to the extreme climate conditions around Lake Turkana, there is a low human population in the basin. The people who live in the area are mostly small-scale farmers and pastoralists.

The Gibe III Dam is under construction in Ethiopia's Lower Omo Valley, in the southern part of the country. Gibe III is more than 160 kilometers (100 miles) from where the Omo empties into Lake Turkana. The Lower Omo Valley is a region of fertile grasslands, terraced hillsides, broad rivers, and forests. It is home to Omo National Park, an Ethiopian reserve where 306 bird species have been identified.

Assessment

Construction on the Gibe III Hydroelectric Project began in 2006 and is scheduled to be completed in 2013. When complete, the dam's wall would rise 240 meters (787 feet) and create

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a reservoir 150 kilometers (93 miles) long. Gibe III would be the largest hydroelectric power plant in Africa.

Proponents of the dam say Gibe III would provide 1,800 megawatts of electricity to residents of rural Ethiopia. It is also expected to increase the energy-generation capacity of Ethiopia by 234 percent and allow the poverty-stricken country to export power to the neighboring nations of Kenya, Sudan, and Djibouti.

Opponents of the project say Gibe III will negatively affect the people and natural ecosystems below the dam. Ikal Angelei, a Turkana native, co-founded Friends of Lake Turkana to halt construction of the dam.

Conflict

Friends of Lake Turkana says Gibe III will damage the lake, the outlet of the Omo River. The radical environmental change predicted by the organization would also devastate the fragile local economy of the region. The group says the dam would negatively affect people who live along the Omo River in Ethiopia as well.

Angelei and Friends of Lake Turkana say at least 200,000 indigenous people are heavily dependent on the Omo River for their survival.

Eight distinct ethnic groups live off of livestock herding and flood-retreat cultivation. Flood-retreat cultivation is an agricultural method that relies on rich silt left on riverbanks by retreating floodwaters to grow crops. Gibe III would control the outflow of the Omo River, which would result in less seasonal flooding. This could completely destroy the communities' flood-retreat cultivation system, a part of the native heritage as well as an economic livelihood.

Lake Turkana depends on water from the Omo River, which provides 90 percent of its water. With the dam stifling the river's flow, the lake's level is predicted to drop a minimum of almost 5 meters (16 feet), and could fall as much as 12 meters (40 feet).

The loss of freshwater coming into Lake Turkana would cause the lake's salinity to increase. This would result in less potable water for the local population as well as a decline in the lake's fish stocks.

Angelei says there are already human conflicts in the region over scarce water and fertile pastures. Gibe III's reduction of freshwater would exacerbate these pre-existing conflicts.

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The main goal of Friends of Lake Turkana “is to save Lake Turkana and preserve its ecological existence,” Angelei says. “With this, we are lobbying for an independent and comprehensive Environmental Social Impact Assessment. However, we cannot ignore the concerns of the Omo Basin communities and ecology; therefore, we strive to conserve and preserve the Omo River Basin.”

Stakeholders

The completion of Gibe III would have a wide variety of impacts on people and resources from around the world, but mostly the rural, poverty-stricken regions of southern Ethiopia and northern Kenya.

Ethiopian government: The Gilgel Gibe III Dam will be operated by Ethiopia’s state-owned electric company, Ethiopian Electric Power Corporation. It would provide 1,800 megawatts of electricity to rural Ethiopians. The country would also be able to generate income by selling surplus energy to Kenya, Sudan, and Djibouti.

Increased funding would help put more rural Ethiopians on the nation’s power grid. Many Ethiopians cannot easily access schools, industries, or hospitals because these facilities rely on electricity that isn’t available in the country’s rural areas. Allowing more residents to access the power grid could increase opportunities for development.

The current annual per capita income in Ethiopia is about \$150. The jobs and opportunities afforded by Gibe III, supporters say, would significantly increase that number.

Flood control would reduce fatalities on the Omo River. More than 360 people died in devastating floods on the Omo in 2006, for instance. Even more lost their homes and businesses. Disaster relief demanded by such floods—from both national and international aid—would be reduced as the flow of the Omo River is controlled.

Gibe III’s reservoir would also ensure a large, reliable supply of freshwater. This would protect Ethiopia against droughts, which frequently plague the region.

Salini Costruttori: The Ethiopian government hired this Italian construction company to build the dam in 2006. Salini is also constructing transmission lines throughout the Omo Valley. The Ethiopian government is paying Salini millions of dollars to construct the dam.

Chinese government: The Ethiopian government is relying primarily on Chinese creditors to finance Gibe III. The main financiers are a Chinese state-owned bank (the Industrial and

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Commercial Bank of China ([IBIC]) and credit agency (China Export Import Bank). Another Chinese firm, Dongfang Electric Corporation, is responsible for constructing the dam's turbines. IBIC underwrote \$500 million to Dongfang in 2009, and the entire contract could be worth much more.

Kenyan government: Kenya has signed an agreement to purchase electricity from Ethiopia upon completion of the dam. Most residents of the Turkana Basin have unreliable access to electricity, and increasing the amount of power could spur development in the area.

However, no price or mode of transmission has been agreed upon. How Kenya would pay for the electricity, or how it would reach the power grid, is unknown.

Nonprofit organizations such as Friends of Lake Turkana are putting pressure on the Kenyan government (as well as other African nations) to oppose Gibe III. This opposition could take the form of international or bilateral agreements, negotiations, or even sanctions.

Indigenous communities: More electricity in Ethiopia would likely increase rural access to the nation's power grid. This could spur development, including schools, factories, and hospitals. However, access to the grid is not specifically tied to construction of the Gibe III Dam.

Gibe III would affect the communities of the Omo watershed by possibly destroying flood-retreat cultivation, on which they depend.

It would also negatively impact the livelihoods of those in the Turkana Basin. The dam would mean less water in the lake and surrounding area. This would affect the basin's fishers and pastoralists: The lake's increased salinity would reduce fisheries, and the area's radically reduced water table would lead to a scarcity of water and pasture land for goats, sheep, cattle, and camels.

Lake Turkana aquatic life: Lake Turkana's fish and other aquatic organisms may not be able to adapt to the lake's increased salinity.

Migratory waterfowl: Lake Turkana is a major stopover for migratory birds, including flamingoes, pelicans, and storks. The size of the lake would limit the habitat and food source for these birds.

Tourism industry: Lake Turkana is home to three national parks. Dwindling water levels would probably cause a decrease in the number of people who visit the parks.