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STORY

‘There’s No More Water’: Climate Change on a Drying Island

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BY TOMMY TRENCHARD



The trickle of a once-potent river on the island of Anjouan, in the Comoros. Image by Tommy Trenchard for *The New York Times*. Comoros, 2019.

COMOROS — Hundreds of brightly clad women flock to the banks of the river each week to scrub their way through bundles of laundry. Some of them travel hours from tiny villages to access a critical but increasingly endangered resource here on the island of Anjouan: water.

The island, part of the nation of the Comoros off the East African coast, receives more annual rainfall than most of Europe. But a combination of deforestation and climate change has caused at least half of its permanent rivers to stop flowing in the dry season.

Since the 1950s, the island has been clearing forests to make way for farmland and in the process disrupted a delicate ecosystem. With so many trees and plants cut down, the water they would normally collect and feed back into the ground and rivers is disappearing. Families in parts of the island now struggle to meet their domestic needs, and farmers are finding it increasingly difficult to irrigate their fields.

“We’ve lost 40 permanent rivers in the last 50 years,” said Mohamed Misbahou, the technical director of Dahari (<https://daharicomores.org/en/>), a nonprofit focused on reforesting land in some of the hardest hit areas on the island. “In some parts of the country, there’s now a big problem getting water.”

The drying rivers of Anjouan are part of a web of environmental problems on the island and a potent example of how developing nations with ever more mouths to feed are struggling in the face of climate change, deforestation and population growth. The challenges it is seeing now are likely to become more acute in other parts of the developing world in years to come, experts warn.

“We’re faced with increasing temperatures over time, so we know different crops will respond differently, as well as more extreme weather events, and that makes it harder for farmers,” said Alex Forbes, a manager for the United Nations

Environment Program's work on adapting to climate change. "There's a recognition that we need to collectively improve on land management in order to sustain livelihoods and production."



Deforested hillsides on Anjouan. Across the Comoros, deforestation has been rapid in the decades since independence from France. Image by Tommy Trenchard for *The New York Times*. Comoros, 2019.

With dwindling crop returns and farms being divided into smaller and smaller plots with each generation, tens of thousands of people have left their villages in the Comoros to look for work elsewhere. Anjouan, in particular, has become a major departure point for migrants in the archipelago trying to reach the nearby French island territory of Mayotte.

The population of the Comoros has more than doubled since 1980, to just under one million people, putting pressure on its forests. After gaining independence from France in 1975, the country experienced one of the world's fastest rates of deforestation.

Lost were vast tracts of “cloud forests,” filled with lichens, mosses and trees designed to act like sponges — soaking up thick condensation in the air and releasing it down to the forest floor, where the water found its way into rivers.

“Anjouan is a small island,” said Arnaud Charmoille, the author of a 2012 study into the disappearance of the island’s waterways. “There’s a lot of rain. But if you cut down even a small amount of cloud forest it will have a serious impact.”

In less than two decades, between 1995 and 2014, some 80 percent of the country’s remaining forest cover was cut down, disrupting waterways and leaving once-fertile soil exposed to erosion and the leaching of vital nutrients.

Crops have declined noticeably, farmers and agricultural charities say, a major problem in a place where more than three-quarters of the population is involved in agriculture. Farmers have turned to ever greater quantities of chemical fertilizers as a result.



Youths playing soccer on an Anjouan beach all said they planned to leave the Comoros for the nearby French island of Mayotte. Image by Tommy Trenchard for *The New York Times*. Comoros, 2019.

“There’s been a big reduction in agricultural production, and that leads to food insecurity,” said Ahmed Ali Gamao, a contractor for the Comoros environment ministry, who oversees a project funded by the United Nations to restore forest cover and aid farmers.

The project has helped improve the harvesting of rainwater and planted over a million trees in the past four years, focusing on species able to withstand climate changes.

“There are certain species that we used to grow that we can no longer grow in our fields,” Mr. Gamao said. “The agricultural seasons are changing a lot. In some places it’s raining all the time, and in other places it’s always dry.”

In the village of Adda-Doueni, Sumaila Yousouf Abdullah, a 45-year-old farmer, was packing soil into small plastic seedling bags as part of a reforestation effort run by Dahari.

“When I was young, there was a river down there, and another over there, and another just over that point there,” he said.

Restoring forests is a challenge, and cloud forest can be particularly difficult.

“It’s almost impossible to replace it,” said Aida Cuní Sanchez, a cloud forest specialist at the University of York in England. “You need to save them before they’re gone.”

Dr. Cuní Sanchez has been conducting research in northern Kenya, where she says the loss of cloud forest is having a similar impact on rivers and streams. A 2019 report

(https://ipbes.net/sites/default/files/2018_ldr_full_report_book_v4_pages.pdf) by one intergovernmental think tank predicts that global crop yields could fall by up to 10 percent by 2050 as a result of land degradation and climate change.

The United Nations estimates that just 13 percent of the population in the Comoros now has access to the quality water it needs.



Villagers planted seedlings as part of a United Nations-funded project to restore forest cover on Anjouan. Image by Tommy Trenchard for *The New York Times*. Comoros, 2019.

In the small farming village of Mnadzishumwé, which sits amid groves of banana and clove trees on the southern end of Anjouan, water was once plentiful. But these days, just getting enough for domestic use is a struggle.

A village water committee has been created to manage what little remains, and a system of rationing has been introduced: The communal taps are opened only once every two or three days, depending on the season.

“Usually we can get two 20-liter jerrycans for two or three days,” said Sandia Halifa, a 45-year-old clove farmer with four children. “It’s not enough. We need to wash, we need to cook, we need to wash our clothes.”

In comparison, the average American household uses more than 1,000 liters of water per day, according to the Environmental Protection Agency.

The scarcity of water in parts of the island is exacerbated by an antiquated distribution system which, if fixed, might take off some of the pressure. But as the population grows and the climate continues to heat up, that would only go so far.



At a natural spring on Anjouan, men filled tanks with water to be transported to villages in the interior where it is in short supply. Image by Tommy Trenchard for *The New York Times*. Comoros, 2019.

Growing up, Ms. Halifa remembers doing laundry in a river in the next village. For much of the year, that river no longer exists, so every Sunday she joins the flow of women from rural villages who travel to the Jomani River to wash their clothes. The Jomani is one of only a handful of rivers on the island that still flow year round.

Ms. Halifa says the journey costs her 1,000 Comorian francs (about \$2.20) each way, a significant expense in a country with a per capital annual G.N.P. of less than \$1,400. For day-to-day use, the family has resorted to buying water from entrepreneurs who have started driving from village to village selling supplies.

“They know we’re desperate,” said Sumailan Mshinda, a village elder in Mnadzishumwé. “They sell us 20 liters for 250 Comorian francs,” or about 55 cents.

In nearby Adda-Doueni, Mr. Abdullah recalled farming in bygone days. “There was no difference between the dry season and the rainy season,” he said. “They were big rivers, and there was always a lot of water.”

Now, he added, “when the rainy season is over, there’s no more water.”



Trash littered a dry riverbed in Mutsamudu on Anjouan's north shore. Image by Tommy Trenchard for *The New York Times*. Comoros, 2019.



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PUBLICATIONS

The New York Times (<https://www.nytimes.com/2020/04/16/world/africa/comoros-climate-change-rivers.html>)

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