Case Study 1: Kiribati - Pacific Island Nation

Kiribati is a nation of islands in the Pacific Ocean. Rising sea levels and storm surges threaten many of their villages, eroding away land along the coast. Finding fresh water has been a challenge because storm surges flood the water wells with salty sea water. The World Bank has built coastal sea walls and installed solar powered water pumps to help.

"In villages like Nabeina in Kiribati, sea-level rise not only threatens their shorelines but also the wells where they source fresh water for drinking, cooking, and washing. By installing a solar pump in the village, villagers were able to adapt to the challenge of saltwater intrusion and build resilience."

The government of Kiribati also purchased 6,000 acres of land on the nearby island of Fiji because of its higher elevation and more stable coastline. Citizens may have to relocate if conditions worsen as predicted.

Source: World Bank and New York Times

Case Study 2: Gansu Province, China

Farmers across China's Gansu Province, one of the country's driest regions, are already struggling to cope with the effects of climate change, as droughts and arid land contribute to the region's vast poverty.

The World Bank and the Chinese government are funding a $313.14 million project to improve irrigation systems and boost climate-smart agricultural practices. They've also helped farmers stay informed about the weather with new meteorology stations so they can know when to plant and harvest as the climate changes.

Some traditional crops won't thrive in Gansu's new climate environment, so the project has introduced new varieties of crops that are better adapted to extreme weather like droughts or floods.

Source: World Bank

Case Study 3: Cape Town, South Africa

One result of climate change is an increase in droughts around the world. Cape Town had a severe water crisis in 2018 that was partially caused by one of these droughts. The city came dangerously close to “Day Zero”, the day they would have to turn off the water supply.

To prepare for Day Zero, the city prepped 200 emergency water stations outside grocery stores and other gathering spots. Each would have to serve almost 20,000 residents. Cape Town officials made plans to store emergency water at military installations. They also drilled new water wells and built desalination plants to take the salt out of seawater.

Cape Town is no longer in crisis, but residents still do what they can to conserve water, and the government continues to prepare for the next drought that is likely to occur as temperatures rise.

Source: National Geographic

Case Study 4: Alaskan Villages

According to a national climate report, Alaska is warming twice as fast as the rest of the country. Rural and Alaska Native communities are the first to feel those impacts. Warren Jones is from the village of Quinhagak, which sits close to the Kuskokwim Bay. Just last week, he went fishing for trout. That’s not a normal activity for November because the river should have already been frozen.

The community is trying to save artifacts from an ancient village nearby because they feared their heritage would wash out to the sea from erosion, caused by climate change. About 87 percent of Alaska Native communities are experiencing erosion. Many residents rely on rivers freezing over so they can travel to other villages by snow machine or car. And so they can hunt and fish safely in the winter.

Some villages are also facing relocation in order to survive. Newtok is the village that’s closest to being able to relocate, and it will cost them millions of dollars to move.

Source: Alaska Public Media and Smithsonian

Exit Ticket Case Study: Belize Barrier Reef

Coral reefs all over the world are threatened by climate change. Even a small increase in average temperature can cause coral bleaching and the destruction of these diverse ecosystems. The Belize Barrier Reef is one of these endangered areas. It's the second largest reef in the world, but it was put on the UNESCO danger list in 2009.

In response, The Caribbean Community Climate Change Centre has partnered with the World Wildlife Fund to farm stony corals and transplant them to damaged reefs. Farming corals that may be resilient to climate change will help it remain healthy and provide important shoreline protection during tropical storms.

WWF helps preserve the mangroves, the trees and shrubs that grow along the coast and protect coral reefs. They also support the Coral Watch program that measures the impacts of climate change on the coral reef. This information will help Belize and world aid groups know how to protect the reef as the climate continues to change.

Source: EcoMar Belize and National Geographic

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