

Dagoberto digging into the dry, salty earth on his farm, to study the ground water on the restoration site.



Cuba Biodiversity Restoration and Community Development in Guantànamo

In Guantànamo province, Cuba the biodiversity restoration is an important project underway by families in the area, the State Forest Company and the Cuban Forestry Research Institute. As the rainy season approaches, Dagoberto is getting ready to plant his first seedlings and build the foundation of a healthy ecosystem. It can take a whole lifetime for a forest to reach maturity; therefore, one of the most important aspects of this project is to ensure that the farmers and the community have a

long term vision for their land. By drawing maps we can imagine what the future might be like for these areas and have a goal to work towards over the coming years, long after the project is officially over. Restoring biodiversity is about having a long term vision for the environment and working to make sure that our children and our children's children can live in a healthier world.

Dagoberto Diaz

restoring biodiversity

Dagoberto Diaz is a farmer who lives in Cuba; on the south-eastern edge of the island, in a province called Guantánamo. Dagoberto lives with his wife Tania and their three children in a bright blue farmhouse on a piece of land owned by the government of Cuba. Dagoberto and his family are responsible for looking after the land and for helping the State Forest Company with its goal of reforesting the area.

Life on the farm is very difficult for Dagoberto and his family. There is no electricity or water connection, and as in the rest of Cuba, material resources are very hard to come by. Simple things that we take for granted in Canada, such as paper and pencils to use at school, are not always available for Dagoberto's children.

Dagoberto's farm is in a community called Paraguay, which is located in the driest region of the country. The vegetation of this area is known as "xerophytic"; which means it grows in desert-like conditions. The xerophytic corridor of Cuba is a challenging place to live, not only for its low rainfall and hot climate, but also for the history of human's negative impact on the area. For over one hundred years, the area was used for sugarcane plantations, which destroyed the native vegetation and left the soil in very poor condition. The lack of water for irrigation and dry salty soils means that the land can not produce enough to feed the family, let alone provide suitable conditions for planting new trees.



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Dagoberto knows that in order for his family to live a healthier life, the whole surrounding environment including the water, soil, air, plants, and animals, must also be healthy. At the moment, the earth on the farm is very dry and hard, the water is polluted, and the landscape looks barren and empty. With the dream of a better life for his family and his community, Dagoberto would like to learn how to help the land return to the natural healthy condition which it was in before it was destroyed by years of human exploitation.

Although the Cuban State Forest Company which owns Dagoberto's land, is dedicated to planting trees, it is often doing it in a way that damages the environment. By creating plantations of trees which are only made up of one or two non-native species, the ecosystem which is created does not provide habitat for birds and animals of the area. The tree species chosen are those which grow quickly, and not those which are well adapted to the area. This means that the plantations are very

vulnerable to disease, fire, pests, and hurricanes, and is not creating a natural healthy forest environment. Furthermore, it is very difficult for Dagoberto and his family to earn a living, because with this system of tree plantations, it will still be many years before they can harvest their crop.

Dagoberto and his family are learning about the ecosystem as a whole and the relationship between flora and fauna. Along with his wife Tania, he is beginning to learn about biodiversity restoration techniques to recreate the conditions of the natural forest which will provide important habitat for native birds, animals, and plants which have almost vanished from the area. He is learning how to collect native seeds and how to prepare nurseries for the seedlings. Dagoberto hopes that as the natural forest vegetation returns, it will improve the condition of the soil which will allow him to plant species such as mangos, coconuts, and other tropical fruits to feed his family and to bring some income to the family

WORKING TOGETHER Fostering Healthy and Diverse Forest Ecosystems

Growing up with restoration
Tania, arms full of plants and her young daughter.



for native species and that local farmers in the area will be inspired to collaborate so that they can turn the whole landscape into a greener, healthier, and more diverse habitat.

The work which

restoring biodiversity, Dagoberto is sending a very positive message to the world from an area which is known to be politically difficult. He is demonstrating that by protecting trees, plants, and animals, he can create a healthier environment for his children in a peaceful and sustainable way.

In Canada, restoring biodiversity is also very important for our environment and our community. In areas which have been degraded by logging, intensive agriculture, mining, or other human development, it is crucial that we help the land return to a healthy state. We can ensure that we protect our forest ecosystems by learning about native species of flowers, plants, and trees and the animals, birds, and insects that are part of these habitats. As in Cuba, reforestation can also be very good for our economy if we make sure to also plant species which have a commercial value. One example is Maple syrup, which comes from the sap of the maple tree; it is a product which can be produced in a natural forest environment and which can help support the livelihood of the landowner.

so that they will be able to afford things such as paper and pencils for the children's school.

Because there is no natural forest remaining in the region, Dagoberto has been talking to elders in the community in order to find out what kind of species used to grow in the area. With the help of the State Forest Company and the Cuban Forestry Research Institute, he will then look for seeds from these plants, and create a small nursery on his farm. Dagoberto hopes that one day his dry land will be a diverse habitat

Dagoberto and Tania are doing to restore their land is very important not only for their family and their community, but also on a global scale. Unfortunately, their province, Guantánamo, is also the location of a military base and prison which is owned by the government of the United States. You may have read about the Guantánamo prison in the newspaper or heard about it on the news as it is known for housing international prisoners and for having severe cases of human rights abuses. By dedicating his land to

Discussion Questions

Curriculum Connection Environmental Science 122/123 (Grades 11/12). Sustainable development Unit. World Issues 120. Issues facing the global community Unit.

1. a) In the article or case study, what type of plantation is mentioned as a factor causing environmental degradation? What are the specific effects this type of production has on the environment? How do you think that it happened? b) Compare this case against the notion of sustainable agriculture practices and soil management.
2. How does Dagoberto's work in reforestation have a positive impact nationally and internationally in regards specifically to his location on the island of Cuba, at Guantánamo Bay?
3. We all need natural resources to satisfy our needs. Our individual and collective actions can have positive and negative effects in the local and global sphere. Reflect upon the last statements and link it with the idea of interdependence and global energy resources.
4. What can be done to solve the problem of natural resource depletion?

