

Seacology Contribution to the Talanoa Dialogue

29 October 2018

Submitted by Duane Silverstein, Executive Director

<https://www.seacology.org>

“How do we get there?”

Sri Lanka Mangrove Conservation Project: Climate change mitigation through mangrove conservation

SUMMARY: Mangrove preservation and restoration are critical tools in the fight against climate change due to mangroves' ability to sequester large amounts of carbon for significantly long periods of time. When mangroves are destroyed - whether for the development of shrimp farms or for sale as charcoal – they release large quantities of carbon into the atmosphere, hastening the advance of climate change. Mangroves are under threat worldwide and strategies must be developed to preserve these critical blue carbon ecosystems; however, in order for such conservation initiatives to be successful, they must engage local communities and address the economic pressures they face.

The recent report from the UN Intergovernmental Panel on Climate Change (IPCC) has underscored the urgency for developing effective strategies to stem the growing threat of global warming. While strategies such as reducing reliance on fossil fuels and promoting clean energy are critical, they alone will not be sufficient in reducing carbon levels at the rate needed to avoid environmental catastrophe. Such strategies must be paired with widescale efforts toward conservation and reforestation in order to reduce atmospheric carbon most effectively. While many important initiatives are already underway to preserve rainforest, Seacology has chosen to focus on mangrove preservation and restoration as an effective blue carbon strategy for both mitigating and adapting to climate change.

Mangroves serve several extremely important functions for coastal communities around the globe. Mangroves provide a natural buffer to coastal communities against storm surges: dense, healthy mangrove forests can decrease the force of tsunamis and typhoon swells by 66%, saving lives and preventing property damage. Mangroves are also profitable ecosystems and the source of food for thousands of small communities as mangroves act as fish nurseries and strengthen the food supplies of nearby communities. Mangroves not only benefit fishing communities, but also help farming communities by stemming erosion and salt water intrusion into productive soils, thus helping to maintain sustainable agricultural production. ***However, mangroves' global importance lies in their ability to sequester large amounts of carbon for long periods of time:*** numerous studies have concluded that mangrove forests store many more orders of magnitude of carbon than other types of forests. If disturbed, mangroves release a tremendous amount of carbon dioxide into the atmosphere, hastening the advance of climate change.



Alarming, in the past 50 years, the world has lost half of its mangrove forests due to conversion to shrimp farms, croplands, waterfront development, and to deforestation for fuel wood and charcoal production. If current mangrove deforestation rates persist, nearly all of the earth's unprotected mangroves could be gone within the next 100 years. Based on mangroves' ability to both sequester large amounts of carbon and to protect coastal communities from increasing storm surges and flooding, reversing this trend of deforestation and actively preserving and restoring mangrove forests offers a highly effective strategy for climate change mitigation and adaptation.

Seacology has been working in island conservation since 1991, having now launched over 300 projects on islands in 60 countries. In recognition of the increasing urgency for ambitious and innovative solutions to the growing threat of climate change, in 2015 we partnered with Sri Lankan NGO Sudeesa and the Sri Lankan government to launch a nationwide project ***making Sri Lanka the first nation in the world to commit to preserving and replanting all of its mangrove forests***. In doing so, Sri Lanka will set an example for other nations to follow and be a leader in reducing carbon and mitigating climate change. The main conservation objectives of this five year project are to:

- Demarcate and protect all of Sri Lanka's existing mangrove forests (estimated >40,000 acres).
- Replant an additional 9,600 acres of mangrove forest in areas where mangroves have been cut.
- Establish three large nurseries to propagate 500,000 mangrove trees and many smaller community-run nurseries.
- Build a national mangrove conservation museum, the first of its kind in the world, where schoolchildren, scientists, and other community members can learn about mangroves and their importance to a healthy coastal ecosystem.



However, a project such as this will not succeed without support from the local communities that live adjacent to the areas being preserved. Unfortunately, many of these communities are economically disadvantaged and often local residents resort to cutting down mangroves, either to develop shrimp farms or to sell as charcoal. If community members are not offered alternative ways to earn a living, they will have little motivation to preserve this critical natural resource.

Because of this need to provide local community members with viable sources of income not reliant on cutting down mangroves, Seacology has developed livelihood trainings for people living adjacent to the mangrove forests. These livelihood trainings help mitigate poverty in coastal communities by providing new opportunities for economic advancement while also educating community members about the importance of mangroves to the local and global environment in an effort to discourage any further destruction resulting from either economic need or lack of awareness. In exchange for these livelihood trainings, given free of charge, community members commit to playing an active role in local efforts to preserve and replant their mangroves, giving them a fuller sense of ownership over the initiative.

By pairing livelihood trainings with mangrove conservation, Seacology is bolstering the overall resilience of impoverished coastal communities in three ways:

1. Food stocks are strengthened by increasing/stabilizing fish populations in the restored and protected mangrove areas; by reducing amounts of storm surges on coastal farms, with increased mangrove coverage along the coastline; and by strengthening families' food supplies from income earned from the new livelihood opportunities as a result of trainings.
2. Coastal communities are buffered in the event of natural disasters: By restoring healthy mangrove ecosystems and ensuring they are protected over the long term, this project will increase the ability of coastal communities to withstand floods by protecting them from storm surges and other natural disasters.
3. Families benefit from improved livelihood opportunities: By helping impoverished households start new businesses and diversify their livelihoods, this project targets families to improve their living conditions and increase their economic options.

When financial pressures to cut down the mangroves are reduced and community members are actively engaged in conservation efforts, results are both positive and sustainable. With local community protection, mangroves can continue to store carbon, mitigating climate change for decades, and possibly centuries, to come. This makes such initiatives both a local and a global win.



Based on our successes in Sri Lanka, Seacology is now poised to launch a second nationwide initiative, this time in the Caribbean, with a focus on mangrove conservation as a “best practice” strategy for mitigating climate change. As in Sri Lanka, we will pair mangrove conservation with alternative livelihood opportunities to reduce financial pressures to cut down mangroves. In addition, our project in the Caribbean will include a nationwide public awareness/pride campaign to educate the public about the importance of mangroves both locally and globally and to change current public perception of the trees as a nuisance whose primary value is economic. It has been repeatedly demonstrated that awareness campaigns play a critical role in community initiatives of this kind: by educating the public on the benefits of mangroves, local motivation to conserve them increases exponentially. When people understand the importance of the mangroves—and when viable alternatives are offered for earning a living—there is increased commitment to protect them.



Locally, mangrove conservation is one of the most comprehensive and effective ways to make people living in coastal communities more resilient. Protecting mangroves promotes food security through improved fishing and agriculture, sustainable livelihoods that can be resumed after a shock or stress, a natural buffer against storm surges and flooding, and a healthier environment in which communities can thrive. Globally, mangrove conservation represents a highly effective strategy for mitigating climate change by substantially reducing the amount of carbon being released into the atmosphere. While climate change is a daunting challenge, the urgency of the situation requires that multiple strategies be implemented simultaneously if we hope to avert an environmental disaster. Clean energy and a reduction in emissions are critical but alone will not suffice. To stave off the worse potential scenario, blue carbon strategies focused on deforestation and reforestation must be employed and, given their high-level ability to sequester carbon, mangrove conservation should be an integral part of international efforts to manage climate change and prevent further global warming.

