



Global
Landscapes
Forum

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August 2018

Building resilience to climate change through community forest restoration in Ghana

Background

At Nyinahin Catholic Secondary School (NCSS) outside Kumasi in the Ashanti region of central Ghana, students use cutlasses to slash the grasses around mahogany, ofram and kapok saplings in the school's very own tree plantation. They're members of NCSS's 200-strong A Rocha/Climate Stewards club. The school is one of 15 in the area that have collaborated with the two international environmental NGOs to plant trees on degraded land in school grounds.

The benefits are manifold: students learn about agro-forestry and environmental stewardship through planting, maintaining and making use of the trees, such as through harvesting non-timber forest products like fruits and medicinal plants. Food crops are interspersed with the growing seedlings, and used to feed the students and staff or sold as a cash crop; some school also maintain beehives and fishponds in these highly productive landscapes. The work has also helped schools to secure their tenure rights to the land and protect it against the threat of encroachment from external agricultural activities.



Figure 1. Location of A Rocha Ghana restoration sites across Ghana.

In the bigger picture, climate change mitigation and adaptation is a key motivator for the work. Mr Sackey, Deputy Headmaster of neighbouring Nsutaman Catholic Senior High School, observes that some of his school's plantings failed because rain came late: a weather pattern he observed for three years running. This boosted his passion for the project even further: "The world is God's creation," he says, "and we must work together to protect it, and prevent the climate from changing further." He's now retired, but has no intention of leaving the project, which he considers his "fourth daughter".

A Rocha Ghana has worked since 2006 to support communities across three regions of the country to protect biodiversity on the land they own and manage,

and build their resilience towards the impacts of climate change. Alongside the aforementioned program with schools and communities in the Ashanti region, they also work with people in the dry savannahs surrounding Mole National Park in the north of the country to restore drought- and fire-resistant indigenous species that have been felled for timber, firewood and agricultural expansion. A project has also been initiated on the coast, centered on the Muni-Pomadze Ramsar site in Winneba, which is considered to be a wetland of international importance under the Ramsar convention. There, A Rocha works with fishing communities to restore the mangrove, cassia and acacia trees that have been decimated by charcoal production, firewood collection, bush burning, inappropriate farming practices and illegal hunting.

Perspectives on success

Since the program's inception in 2006, over 137.8ha of terrestrial land has been reforested across 18 sites, with a success rate of around 75%. 10ha of degraded mangrove forest have also been replanted, with a 65% success rate. According to Jacqueline Mbawine, a fundraiser and scientific officer for A Rocha Ghana, these trees will absorb approximately 22,492 tons of CO₂ over their average lifespan of 50 years, representing a big win for climate change mitigation.

Another important outcome for the project is enhanced community awareness about the importance of conserving biodiversity and other natural resources on their lands. Zakariah Joe Abubakari, who is a coordinator for one of the sites in Damongo in Northern Ghana, says "I like the trees and I see the benefit for our nation. I know it will take a long time – but there's no food for the lazy man."

The initiative has also helped build career paths for a number of the students involved – many have gone on to study environmental science and natural resource management, and to work for conservation organizations. Indeed, most of A Rocha Ghana's current staff members were involved in A Rocha/Climate Stewards while at high school. Abigail Frimpong, a former club member who now works for Conservation Alliance, says "The A Rocha School Club provided me with a practical and exciting perspective on conservation. My experience in the club etched in me a lasting desire to do more for Mother Nature and inspire others to do the same."

Through the introduction of new options for generating livelihoods, many participants now have alternative sources of income to the farming and/or fishing that they traditionally relied on. This provides them with valuable financial flexibility and resilience in the case of incidents such as crop failure, which are increasingly common in the context of climate change. Ekua Kitseaba, a mother of five and grandmother of three who took part in the mangrove restoration project, observes: "With the livelihood support in snail rearing that I received from the project, I can now earn my own money and not depend on my children."

Improved ecosystem services from restoration are also impacting community livelihoods for the better. "We have seen that there is improvement in the fish stocks since we started planting the mangroves," says Wisdom Klutse, a fisherman from Akosua village. "This makes us fisherfolk happy, because we know our lives will improve as a result."

Mbawine says that the projects have prompted shifts in gender roles and improvements in family living conditions, by giving women opportunities to procure their own independent income sources. Afsha Alhadji Dramani, a farmer on a Climate Stewards tree-planting site at Larabanga in Northern Ghana, has seven children and is one of her husband's two wives, so resources to pay for her children's education are understandably scarce. Through the project, Dramani planted native mahogany, kapok and dawadawa on a one-acre plot given to her by her husband, and was given free soya

seeds to plant around the seedlings. She was then able to sell surplus beans from these plants to finance her children's education.

Now that the trees have grown, it's too shady to grow crops beneath them. But Dramani likes the cool shade on her land, and is proud of what she has achieved. "If we were given support I would plant more trees," she says. "We have birds and butterflies. Before, the place was bare; now we have forest."

Mbawine attributes the program's success to its participatory approach. "It is essential to get community buy-in, where communities feel that they are a part of the project and can take responsibility for the initiatives being introduced," she says. Awareness-building, about the risks and challenges that communities stand to face if they do not take action now, also helped to motivate community involvement, as well as the provision of practical and profitable opportunities to build livelihoods while restoring forest cover, she says.

Challenges

When mangrove restoration began in the Muni Lagoon in 2013, both red (*Rhizophora*) and white (*Avicennia*) mangroves were planted, as the site was said to originally support both varieties. However, around 80% of the white mangroves that were planted did not survive. Possible causes were very high salinity levels due to poor rains, which meant there was not enough fresh water coming into the lagoon; exceptionally high tides; grazing from domestic animals (goats and sheep); and a disease that seemed to be attacking only the white mangrove seedlings, says Mbawine.

In response to this challenge, subsequent planting sessions were carried out during the months when the tides were lower, and only red mangroves were planted, as they seemed to be better adapted to the site and had a much higher survival rate. The area was also fenced off to prevent grazers from chewing on the leaves once the mangroves had established. Unfortunately, project organizers were unable to find out more about the suspected disease affecting the white mangroves, because they lacked the resources to carry

out the research required. However, opportunities are being sought to explore this issue in future projects, says Mbawine.

In the terrestrial landscapes, trampling from elephants and cattle, poor rains and wildfires also contributed to the loss of some of the trees planted. Says Abubakari, "Keeping trees alive in this environment is not easy" – especially as climate change makes weather patterns more unpredictable.

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– **Jacqueline Mbawine**

Fundraiser and scientific officer for A Rocha Ghana



Photo 1. Women distributing mangrove tree seedlings at a planting site in Muni-Pomadze.

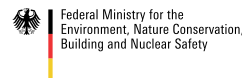
Scaling up?

A Rocha Ghana is now seeking new opportunities to work with other communities through one of its flagship programs, the Community Resource Management Area (CREMA), which holistically addresses issues of landscape management including restoration, community governance and management of natural resources, awareness creation and livelihoods.

Currently, a CREMA is being established in the Atewa Range Forest Reserve, where community lands have been degraded due to illegal mining activities. There, A Rocha is supporting communities on capacity building, awareness-raising, and developing action plans that include restoration of the degraded areas. It's now seeking funding and partnerships to help implement these plans, and instigate more "win-win" outcomes for communities and the ecosystems that they rely on, says Mbawine.

Story was developed by Esther Mwangi (CIFOR) and Monica Evans
Photos by A Rocha Ghana

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