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Taming the rising tide

Keeping the ocean at bay through community reforestation on Kisiwa Panza island, Tanzania

Background

Imagine waking up after a night of heavy rain to find skeletons from the local cemetery bobbing about in the rising waters, and a tombstone right on your path.

That's what happened in Madauni village during a very heavy downpour in 1994, recounts Juma Eli Mati. He's a local resident, and secretary of Jumuiya ya Sanaa, Elimu ya Ukimwi na Mazingira (JSEUMA: Community of Arts, HIV/AIDS Education and Environment) on Kisiwa Panza island, one of the eight small islands surrounding Pemba Island off the Tanzanian coast. Kisiwa Panza lies within the marine managed area known as the Pemba Channel Conservation Area, and has a population of about 7000 people.

Rising sea levels, and degradation from unsustainable harvesting of terrestrial trees and mangrove forests, were to blame for the macabre event. During high tides that coincided with heavy rains, salt-water flooding had become increasingly common; and, increasingly intense.



Figure 1. Location of Kisiwa Panza.

While the dislodgment of skeletons and tombstones was disturbing to say the least, perhaps more concerning still were the effects of the floods on the community's food security and social amenities. Rice, cassava, banana and sweet potato are cultivated intensively in the area, and salt intrusion affected most of the arable land. Social service facilities and infrastructure such as schools and bridges were not spared either.

“The whole process has been very participatory. And this is something we are extremely proud of: that the community can now identify its own problems, and figure out how to solve them, too.”

– Juma Ali Mati

Secretary of the Community of Arts, HIV/AIDS Education and Environment organization of Kisiwa Panza Island, Tanzania

Taking action

Mati describes how community members were motivated to take action to improve their livelihoods and living conditions, and to save the island from being flooded by seawater. So in 2007, they approached the Tanzanian government, and gained support to address these issues. “The whole process has been very participatory,” says Mati. “And this is something we are extremely proud of: that the community can now identify its own problems, and figure out how to solve them, too,” he says.

On Kisiwa Panza, JSEUMA leads an umbrella network, Mtandao wa Mwambao wa Kisiwa Panza (the Kisiwa Panza Coastal Network) which brings together various groups that are concerned with issues such as savings and credit, health, tree planting and so on, and has about 2000 members in total. For the reforestation project, these members were initially placed into groups of 40 members each, but personality issues and differences ensured the groups did very little, says Mati. Then, JSEUMA asked members to decide who they wanted to work with and join the group they felt comfortable in. Eventually, 50 groups were formed.

The community mapped out the areas to be reforested, and each group was assigned an area in which to plant trees and ensure that they survived. In any given week, at least four groups would be planting trees, says Mati: it took slightly over a month to reforest 200 hectares. Mangoves were planted on areas bordering the sea; on dryland, the groups planted mikungu (*Terminalia* spp.), mivinje (*Casuarina* spp.) and mitondoo (*Canophila* spp.)

These trees have helped stabilize and restore the areas most affected by flooding, including the cemetery. Support from the Least Developed Countries Fund also enabled construction of two walls measuring 50 metres long, in the areas most affected by rising waters, Kitungandegeni and Maduwini. Madauni lies between these areas.

Farmers have been encouraged to practice agroforestry on their farmland, so that when they need timber and firewood they can harvest these trees instead of those in the common areas that are being reforested. “We have also stressed to the community that even when they plant trees on their own land, this tree cover serves the wider community and they should therefore not cut the trees indiscriminately,” says Mati.

Community members are also encouraged to use energy-saving cooking stoves, and build houses with concrete blocks instead of wooden poles, to reduce pressure on wood resources. Further, a patrolling unit works to ensure that people don't harvest timber illegally in the reforestation areas, particularly within the mangroves.



Photo 1. Women members of JSEUMA sort mangrove propagules of *Avicennia marina* for nursery planting.

Perspectives on success

According to Mati, the most important benefits of the project have been “taming the rising seawaters” so that farmers can successfully grow food crops again, and reforesting land that was gradually turning into desert. To date, around 50 farmers have returned to their farms in Kitungandegeni and Maduwini, which they had abandoned due to salinization. As a result of the restored arable land, household nutrition and incomes have increased significantly across the whole area.

Biodiversity is also recovering, says Mati. Birds that had abandoned the area have made a comeback. Crabs had also vanished, but have now returned to breed in the reestablished mangrove forests. These forests have also proven an ideal site for hanging beehives, and a beekeeping industry is thriving in the community.

Support from funding partners (including the Marine and Coastal Environmental Management Project, Care International, Fauna & Flora International, The Foundation for Civil Society and the Mwambao Coastal Community Network, among others) has been significant in the groups’ success so far. However, Mati emphasizes that the community’s own motivation and mobilisation is particularly central to the benefits they are now enjoying. “There is a lot of goodwill and support,” he says: for example, “school children are so motivated by the ‘new’ landscape that they are also planting trees on their own initiative!”

Challenges

Mati says it’s difficult to procure sufficient seedlings of the types of trees (mikungu, mivinje and mitondoo) that community members want to grow. “We need support to access more seedlings, so we can take full advantage of the community and schools’ interest in planting the trees,” he says. Community members also need to build skills on how to document their activities, as many of these could be replicated in other areas if the information were more readily available.

It can also be challenging to educate and engage the wider community in environmental issues. In the past, says Mr Mati, attendance at community meetings was very poor. So JSEUMA turned to the arts – poetry, recitals, drama, songs, and rap – to communicate with the wider community on conservation and health issues. “Whenever we present these shows, attendance is always very good,” says Mati. “In this way, we have educated and made the community aware of the issues they face.”



Photo 2. JSEUMA mangrove rehabilitation site on the east coast of Kisiwa Panza.

Scaling up?

According to Mati, the central issue at present is “consolidating the projects: we have ongoing projects scattered around several areas, and we need to complete each one of these before we start on new ones.” And opportunities for new projects abound. Some areas of the island are still seriously affected by flooding and salinization, and the community organization has received numerous requests to expand its activities to these areas, he says. They are also addressing other issues such as ending illegal fishing around the island’s shores, so that local fisherpeople can maintain their livelihoods.

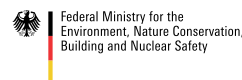
“We definitely want to expand our activities,” acknowledges Mati, “but we cannot spread ourselves so thin.” Under its mandate, the project can cover only

a certain number of areas. However, the organizers are reaching out to other entities that may be able to partner with them and pick up these kinds of issues.

Mati says a regional umbrella organisation is needed, “so that we can consolidate our activities in the East African region, and learn from other areas such as Kenya about their solutions to similar challenges. That way, we can avoid reinventing the wheel.” He recounts how a visit to Kakamega Forest (a community-managed forest reserve in Kenya) in 2006 was what first motivated him to register the community organization back on Kisiwa Panza in 2007. “I saw first-hand how people can work together to protect their environment,” he says, “and the power of collaborating for the common good.”

Story was developed by Esther Mwangi (CIFOR) and Monica Evans
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