

Project Update: June 2019

1.0 Project Area

The Keta Lagoon Complex Ramsar Site (KLCRS) was established as a wetland protected area or Ramsar site on 14 August 1992. It is located within the South Tongu, Akatsi South, Ketu South and Keta districts of the Volta Region of Ghana. The KLCRS has an area of 101,022.7 hectares which covers part of the Volta River estuary. The lagoon area of 30,000 ha is fringed by numerous settlements. In addition to the mangroves that are globally threatened, the KLCRS contains a number of unique animal species that are relevant for conservation. Seventy-six migratory and resident waterbird species, including 21 globally significant species, numbering over 100,000 are found in the KLCRS. The vulnerable West African manatee or seacow (*Trichechus senegalensis*) and the West African sitatunga (*Tragelaphus spekii*) – a swamp-dwelling antelope which is categorised as least concerned species by IUCN – have been spotted in the KLCRS before.

2.0 Project Site

This pilot project is being implemented in Agbatsivi, Salo and Agortoe communities in the Keta Municipality.

3.0 Project Background

Overexploitation of mangroves for fuelwood and mangrove conversion to other land uses has aggravated climate change impacts (coastal erosion and floods) in the KLCRS. Interventions have focused on mangrove restoration and community education on their conservation values. Nonetheless, fish processors and households do not have alternative fuelwood sources. Consequently, mangroves are continuously degraded.

In addition to education and awareness creation, this pilot project seeks to identify and train mangrove harvesters and community groups to establish and sustainably manage woodlots made of fast-growing coppiceable species (*Senna siamea*) to supply households and fish processors with fuelwood and restore mangroves and their ecosystem services. Mangrove forests are crucial to build resilience of coastal communities against sea-level rise and storms, and provide other benefits such as carbon sequestration and habitat for aquatic organisms.

4.0 Project Contribution

This pilot project is aimed at contributing to;

1. Restoration of the mangrove ecosystems in the KLCRS to provide ecosystem services to benefit the communities within the KLCRS.
2. Awareness creation in communities on the ecosystem services provided by mangrove ecosystems (especially flood regulation) and the need to conserve the ecosystems; and alternative sources of fuelwood (*Senna siamea*) for fish processing and use in households.
3. Provision of sustainable alternative sources of energy (fuelwood) to reduce pressure on mangrove ecosystems.

5.0 Implemented Activities in Fourth Quarter of the Project

Project activities in the last quarter included community *Senna siamea* woodlot establishment, mangrove ecosystem and ecosystem services restoration, and education and awareness creation.

5.1 Woodlot Establishment, Maintenance and Sustainability

5.1.1 Woodlot Establishment

A demonstration (*Senna siamea*) woodlot has been established on a parcel of land measuring 1 ha at the Agbatsivi community.

The rest of the *Senna siamea* seedlings has been given out to community members and participants of the demonstration woodlot establishment to expand the demonstration woodlot and/or plant in their communities and households.

5.1.2 Woodlot Maintenance and Sustainability

The approach adopted in the woodlot establishment was to provide spaces (or alleys of 3 m) in between the *Senna siamea* hedgerows for community members to grow crops, at least in first 4 years after establishment, before the woodlot canopy closes.

This strategy is to ensure that the community members or group will be actively engaged in crop production for income generation while indirectly maintaining the woodlot.

After woodlot canopy closure when crop production is no longer possible, the group will benefit from the wood harvested from the woodlot. It has been suggested to the group to consider beekeeping after the canopy closure.

5.2 Mangrove Restoration

In this quarter of the project, 1000 potted white mangrove (*Avicennia germinans*) seedlings, 1500 red mangrove propagules and 2000 white mangrove wildlings have been planted on degraded muddy or partially flooded sites in close to Agbatsivi community.

Visits to sites where red and white mangroves have been planted in the last two quarters shows that most of the red mangrove propagules that were planted directly, and the white mangrove wildlings have established well and developed fresh shoots.

5.3 Education, Awareness, and Participation in Project Activities

The audio message recorded in local language on conservation values of mangroves and alternative sources of fuelwood was played on Jubilee Radio in Keta. .

This, together with direct engagement with community leaders and members, has helped the project to get good reception from the communities, especially Agbatsivi community.

In all, some 35 community members participated in project activities in this quarter.

5.4 Challenges

The mangroves within the KLCRS are dominated by red mangroves (*Rhizophora racemose*). The red mangroves grow at the banks and at various points within the

numerous lagoons within the KLCRS, providing services such as habitat and breeding grounds for fish, crabs and other aquatic organisms. Communities also depend on the red mangroves for fuelwood and poles for construction and furniture.

Even so, community members, who are mostly dependent on fish and other aquatic organisms for their livelihoods, find the mangroves a nuisance and do not see the need to plant more or conserve. Importantly, the red mangroves are spreading vigorously in the lagoons, producing giant roots which harbor sand to reduce the water depth. These roots which obstruct fishing canoes.

Thus, the mangroves are ultimately depriving them of their livelihoods by blocking fishing routes on the lagoons and limiting access to fishing grounds.

Others also suggest mangroves provide breeding grounds for mosquitoes which causes malaria.

5.5 Lessons Learned

Projects on mangrove restoration could consider activities on mangrove management, including clearing of fishing and transport routes on the lagoons.

Communities and community groups welcome projects providing sustainable and affordable alternatives to the use of mangroves as fuelwood. They are also interested in use of multipurpose trees such as mango that can provide other economic benefits like fruits in addition to fuelwood.

6.0 Conclusion

- A hectare demonstration *Senna siamea* woodlot has been established at Agbatsivi community. The rest of the *Senna siamea* seedlings has been given out to interested community members and demonstration woodlot project participants to expand the demonstration woodlot and/or plant in their communities and households.
- A total of 3000 potted seedlings and wildlings of white mangroves (*Avicennia germinans*) and 1500 red mangrove propagules (*Rhizophora racemose*) have been planted in areas near Agbatsivi community. In all, the project planted 6,400 red mangroves and 3000 white mangroves, making a total of 9,400.
- Most of the red mangrove propagules and white mangrove seedlings and wildlings that were previously planted have established well, and the red mangrove propagules have developed fresh shoots.
- Audio message was played on Jubilee Radio in Keta to educate communities within the KLCRS on conservation values of mangroves and alternative sources of fuel. This helped to improve participation in project activities, especially in this quarter of the project.



Left: Established white mangrove wildling in a degraded mangrove forest area taken over by *Sesuvium portulacastrum*. Right: Sprouted red mangrove propagule in a degraded mangrove forest area taken over by *Sesuvium portulacastrum*.



Left: Sprouted red mangrove propagule in a previously cleared mangrove forest area. Right: Red mangrove forests extending roots to block fishing routes in fishing areas near Agbatsivi Community.



Left: Sprouted red mangrove propagules in a previously cleared mangrove forest area. Right: Established white mangrove wildling in a degraded mangrove forest area taken over by *Sesuvium portulacastrum*.



Left: Planting of white mangrove wildlings in a previously cleared mangrove forest area taken over by *Sesuvium portulacastrum*. Right: Planted white mangrove wildlings in a previously cleared mangrove forest area.



Left: Planting white mangrove in a degraded mangrove forest area taken over by *Sesuvium portulacastrum*. Right: Some of the youth offloading *senna siamea* seedlings from a wheelbarrow for planting.



Left: A section of the mangrove planting team meeting during planting. Right: Transporting mangrove seedlings to planting area.



Woodlot establishment on 27th April 2019.