New forest on the Tain river bank in Ghana

And the impact of reforestation with indigenous Eastern Guinean Lowland Rainforest on fauna

In four years' time over 1,000 hectares of degraded land has been reforested with indigenous trees by Form Ghana along the Tain River in the Bono Region of Ghana, at the border of the Tain II Forest Reserve. This reforestation initiative was executed in collaboration with the forestry experts from Form International and was part of the Landscape Restoration Programme for Tain II Forest Reserve, funded by DOB Ecology. The restoration sites already show some promising features. An avifauna assessment attested to the significant progress of the reforestation initiative compared to non-restored areas. The project is also having a ripple effect on surrounding communities, some of which have begun with conducting land reforms that will allow for reforestation of areas along the river.

The reforestation initiative in Tain II Forest Reserve

The Tain II Forest Reserve lies within the Eastern Guinean lowland forest zone, a WWF defined ecoregion and Conservation International designated biodiversity hotspot known for amongst others its endemism in amphibian species. Originally, the main vegetation type in the reserve was dry semi-deciduous forest. This vegetation type generally contains valuable timber trees such as Wawa (*Triplochiton scleroxylon*), Odum (*Milicia excelsa*), Sapele (*Entandrophragma cylindricum*) and Kokrodua (*Pericopsis elata*) and is home to elephants (*Loxodonta africana*), chimpanzees (*Pan troglodytes*), forest buffalos (*Cyncerus caffer nanus*), bongos (*Tragelaphus eurycerus*) and many other species of wildlife. The Tain II Forest Reserve was once completely covered with this forest type and played a vital role in the lives of people living near it.

Image 1 & 2: Results after 4 years after planting. The photograph on the left was taken in May 2018. The photograph on the right was taken in November 2021 of the same area.

Today however, large areas of the reserve are covered by savannah vegetation, resulting from human induced forest degradation. Due to intensive farming and annually occurring wildfires very little of the original forest remains and much is now grassland. As a result of this degradation, the riverbanks have become dominated by fast-growing invasive weeds, which prohibit the natural regeneration of forest. Only some tiny forest patches are remaining along the river, which serve as an important refuge for animals during the dry season. These patches are actually too small to support healthy fauna populations.

The reforestation initiative was set up to give forest recovery along the banks of the Tain river a kick-start towards regeneration and to connect the remnant forest patches. Ultimately, a strip of around 18 kilometres along the Tain will be restored to healthy forest. Form Ghana selected species that were supposed to be in the original forest but were not found in the flora inventories of recent years. Species such as Edinam (*Entandrophragma angolense*), Kokrodua (*Pericopsis elata*), Otie (*Pycnanthus angolensis*), Tweneboa (*Cordia milleni*) Oyaa (*Zanthoxylum leprieurii*) and Ato (*Irvingia gabonensis*) have been planted to restore biodiversity. Many of these species also produce edible fruits which will help to restore people's interest in the forest and attract wildlife. Attracting wildlife is an important restoration catalyst as animals play an important role in the seed dispersal of many plant species.

The reforestation programme had a goal of planting 1,000 ha. This was achieved within four years during which a total of 1,075.68 hectares were planted. In the next few years the focus will be on tree maintenance to ensure rapid canopy closure and the formation of a healthy forest ecosystem. Looking at the current growth rate, this is expected to happen around 2025. Until this moment, maintenance is needed to protect the growing trees free from climbers or over-growth from elephant grass.

Image 3 & 4: Field work and establishment of fauna traps for monitoring with landscape restoration project team under the lead of HCV fauna experts Llwelyn Coertzen and Tyron Clark

Impact of reforestation on flora and fauna

To monitor the development of the reforestation programme, a fauna assessment was carried out by the experts of HCV Africa out in October 2021. The purpose of the assessments was to investigate the impact of reforestation on animal populations. The fauna assessment drew the conclusion that Tain II Forest Reserve supports a high faunal diversity, despite being heavily affected by deforestation. The assessment showed that the forest restoration efforts are having a significant positive impact on animal species as evidenced by the high faunal abundances in these habitats compared with non-restored areas. This highlights the importance of continued reforestation efforts and monitoring.

Image 5: A very large maternal roost colony of Straw-coloured Fruit Bat (Eidolon helvum) was discovered inside Form Ghana's area. This roost supports several thousand individuals and mass congregations of this magnitude should be considered important on a regional to national scale. The large forest blocks occupied as a roost by these bats needs to be conserved in-situ.

Image 6, 7, 8 & 9: The African pied hornbill (Lophoceros fasciatus) – upper left, Brown banana frog (Afrixalus dorsalis) – upper right, Guinea turaco (Tauraco persa) – bottom left, and African wood owl (Strix woodfordii) – bottom right, were found in the already protected conservation sites of Form Ghana. As the forest restoration measures will result in an increase in closed canopy forest this will result in an increase in the prevalence of these species.