IMPROVED AGROFORESTRY IN THE BATEKE PLATEAU

Fig. 1: One of WCS's agroforestry nurseries. All the species used in the agroforestry model are first grown in these nurseries. From here the seedlings are distributed amongst the community projects to be replanted on site. Photo: Lucie Escouflaire/WCS

INTRODUCTION

The Bateke plateau, in Congo's central region, is dominated by fire-maintained savannahs. Forest cover in the plateau is around 20%, mostly gallery forests in river valleys and patches of evergreen forests surrounded by grassland. As a result of poor soil fertility in the savannahs, local communities favor patches of forest for agriculture and target these forests for fuel wood collection. Due to the patchy nature of the forest resource, women must travel long distances to obtain fuel wood. In order to tackle both causes of deforestation, as well as to improve the livelihoods of local communities, WCS is implementing agroforestry projects that combine food crops with the provision of fuel wood on the Bateke Plateau. Agroforestry is climate smart agriculture; it can improve agricultural productivity and increase carbon storage in farmed land while simultaneously reducing deforestation.

RAPID DEFORESTATION

Due to growing pressure on the forest resource, the plateau region has one of the highest rates of forest loss in Congo. Carbon emissions from deforestation in the plateau are estimated at 1.5M tCO_2 . Forest pockets on the Bateke plateau act as refugia for remnant populations of forest species such as elephants, buffalo and chimpanzees. Although unsustainable hunting remains the greatest threat, the maintenance of forest habitat is critical for the long-term success of wildlife conservation.

THE APPROACH

This model of agroforestry incorporates traditional crops and fast growing tree species. The system is based around crops that are cultivated together but that mature at different stages, in order to satisfy short, medium and long term needs. Trees such as Acacia auriculiformis (a leguminous tree which is valued for fuel wood) are plated in rows with wide spacing, while cassava and peanuts are planted between the rows. The peanuts are harvested after 4-6 months, providing short term revenue to the community. Cassava matures after 12-14 months, at which point the trees are already forming a closed canopy over the plantation. Once the cassava is harvested, traditional non-timber forest products, such as marantacea and Gnetum africanum can be introduced in the shade of the plantation, and continue to be harvested until the trees are ready for harvest in year five.

Fig. 2: A cookstove in use on the Bateke Plateau. The use of cookstoves, as opposed to the traditional three-stone open fire, could cut wood consumption in half. Photo: Lucie Escouflaire/WCS

COOKSTOVES

To complement the creation of agro-forestry woodlots and secure the reduction in emissions from the local use of fuel wood, WCS has embarked on a programme to encourage the use of fuel efficient cook-stoves. A cook-stove model developed and locally manufactured by the NGO Initiative Developpement has proved effective at reducing fuel wood consumption by up to 50% compared with a traditional three-stone fire.

PROGRESS TO DATE

Since 2014 WCS has been producing tree seedlings for agroforestry projects in its own tree-nursery. The nursery which was established through a collaboration with the reforestation service of the Congolese forest department (SNR) now produces around 20,000 plants each year. The agroforestry programme, which started in 2014, now includes 5 villages in the buffer zone of the Lefini reserve. A further 3 villages will join the scheme in early 2016. WCS covers the start-up costs of plantation establishment, and provides the trees from the project nursery free of charge. The activity is carried out in collaboration with the Aspinall Foundation, whose PROFADELL project operates in the southern part of the Bateke landscape. PROFADELL has already supported the establishment of village plantations in 12 sites, and continues to expand its operations with financial support from WCS.

Fig. 3. (a) In year one of the model fast-growing tree seedlings are planted together with food crops (peanuts and Cassava). In year two the cultivation of Cassava continues and **(b)** in years 3-5 once the trees grow taller and canopy cover closes marintacea and Gnetum africanum (a green vegetable) - both shade tolerant species - are grown and continually utilized. In year five the wood is harvested.

CONTACT INFORMATION

WCS Congo Program:
B.P. 14537, Brazzaville,
Repuplic of Congo
+(242) 05 722 7411
wcscongobrazza@wcs.org

Bateke project coordinator:
Tim Rayden
trayden@wcs.org
+(242) 05 694 6402

NEXT STEPS

- Continue to expand the program throughout the buffer zones of the two reserves and across the Batéké Plateau, in collaboration with The Aspinall Foundation and SNR, to ensure 100% of local fuel wood needs are met from plantation grown wood. In future it is hoped that surplus plantation wood will be sold to Brazzaville to displace fuel wood from natural forest clearance.
- Roll out the use of improved cook-stoves across the landscape to reduce local demand for fuel wood.
- Work with timber growing communities to develop charcoal manufacture using improved kilns, adding an additional source of revenue for local communities.
- Develop agroforestry systems using fast growing native tree species that can replace the need for exotics such as Eucalyptus and Acacia.