

TREES FOR MOZAMBIQUE. TO RESTORE AND PROTECT THE NHAMACOA MIOMBO FOREST

The Nhamacoa Forest is a remnant of a once enormous Miombo forest now largely destroyed by human activities. Covering an area of only 30 ha it is completely surrounded by subsistence farmers and their fields. As the wildlife in the forest is expanding and is trapped inside this area, it is essential to increase their habitat. Illegal logging is an on-going problem as the machamba owners (farmers and landowners) turn to charcoal making to supplement their incomes. Uncontrolled fires are the biggest threats to the local forest. Without protection, the Nhamacoa Forest and its wildlife will eventually be destroyed.

The project will introduce trees nurseries and a community based reforestation programme in the area. Involving local communities to grow trees instead of chopping them down would benefit the local economy and ecosystem, including the animals and the plant life. This includes setting up of an indigenous tree nursery in the Nhamacoa Forest in order to reforest 10 ha chosen by the community, who will be involved in the care and planting out of the trees. It is estimated that about 10.000 indigenous trees (1000 trees per hectare) will need to be grown.

Inventory work

Within this project there is a strong need for base line data, especially on the flora, data that will be used in the efforts to protect and use forest products in a sustainable way. Collecting this data could be carried out as several studies suitable as MSc projects (or equivalent) within the Minor Field Study programme. Several focus areas (and students) are possible, such as:

1. An inventory of all vascular plants available in flower or fruit as field work is carried out;
2. An inventory of selected life forms (trees, shrubs, lianas, or herbs);
3. A study of vascular plant diversity through inventories within plots or transects (possibly also including sterile samples and juvenile plants);
4. Inventories of different adaptive strategies (phenology, pollinators, fruit types, etc.);
5. Make community based studies of the forest involving, helping e.g, local schools and organisations to set up educational trails and and descriptive material.

Project outcomes

An inventory of primarily vascular plants in the Nhamacoa Miombo forest will provide important baseline data that will be useful to all components of the main project. In a strict sense, the distribution and conservation status of different species can be properly assessed only when correctly identified. Other kinds of information are also dependent on correct identification. In addition, an inventory will also yield information on abundance, phenology, and reproduction, aspects of pivotal importance for the management of tree nurseries, beekeeping activities as well as protecting the forest as a whole.

Floristic and other botanical data will be made available to the scientific community as a whole, thereby improving the knowledge of the African flora and increasing progress in taxonomy and evolutionary biology.

In order to obtain flowering and fruiting material of all species occurring in the reserve the inventory should include several periods of fieldwork covering different seasons. The exact time needed to complete the inventory cannot be assessed until the actual inventory work starts, but it is expected that the inventory will encompass a total of 3-4 months of field work.

Besides a qualitative inventory, several permanent plots of at least 0.1 ha (or transects) will be set up in order to make it possible to document different aspects of forest dynamics, such as flowering and fruiting patterns, and tree growth and recruitment. To collect forest dynamics data, however, many extra turns of monitoring will be needed.

Plant specimens will be collected and dried with well-proven methods. All collections will be made in sets of four or more duplicates, for distribution to specialist for identification and storing in the herbaria (also in Mosambique). Collections will be geo-referenced and photographed, when possible. A special challenge will be collecting trees, epiphytes and lianas, activities for which special equipment will be necessary and preferably field assistants with equipment and training to climb trees.

The best period for field work is seemingly March through May, but other periods of the year should be possible. For a complete inventory, field work throughout the year will be necessary.

The final outcome of the floristic inventory will be a complete or near complete treatment of all vascular plants growing in the Nhamacoa Miombo forest, along with information on abundance, phenology, dispersal and pollination. In addition, much of the inventory work can involve local people, thereby making it possible to develop school activities and educate natural history guides for ecotourism.

For questions or further discussions concerning potential degree project practicalities, please turn to Bertil Ståhl <bertil.staahl@ebc.uu.se>