

Project Update: January 2024

Location and collection of the species seeds

Our team reviewed several databases on the species in Benin and located list of the localities where populations of *Pterocarpus erinaceus* have been recently reported. This information was gathered with the first months of the projects, after which we started the fieldwork of the project. As part of this project, the main field visits were made to the town of Ketou, where scattered natural populations of the species are present in the sacred forests. Other scattered populations of the species have been located in northern Benin.

Following these field activities, we collected seeds from different populations in order to set up the species nursery. A limited number of seeds were collected, however, as the fieldwork phase did not completely coincide with the fruiting period.

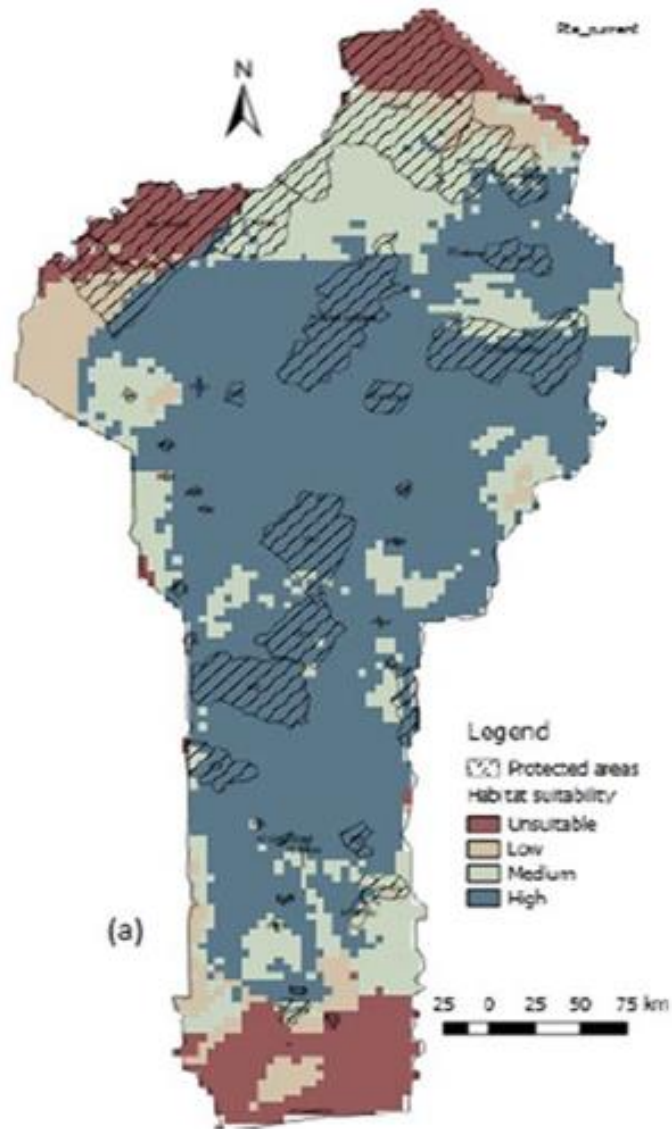


Figure 1: Suitable areas for *P. erinaceus* plantation across landscapes in Benin.

Achievement of the habitat suitability modeling of *P. erinaceus* in Benin in the context of climate change

After running the models with Maxent software on the basis of field data and the existing species database, we were able to draw up distribution maps for further fieldwork. Maxent software (Phillips et al., 2006) was employed for species distribution modeling, utilising georeferenced presence locality points. The analysis incorporated environmental layers comprising a set of 19 bioclimatic variables and altitude sourced from the Worldclim database (Hijmans et al., 2005).

The results of the models enabled us to identify the relevant variables in the distribution of the species in Benin. Based on the results of the correlation test and the Jackknife test, it can be concluded that the distribution of the species *P. erinaceus* is significantly influenced by specific environmental variables. The identified key variables, including the mean diurnal range of temperature, seasonal temperature variation, annual precipitation, maximum temperature of the warmest month, and soil type, suggest that these factors play a crucial role in determining the suitable habitats for *P. erinaceus*.

The models identified the Sudano–Guinean zone and the Sudanian zone, with some expansion southward into the Guineo-Sudanian zone, as presently suitable for the species, as depicted in Figure 1.

We are currently preparing a scientific paper to present the results in detail and to outline plans for the conservation of this species in Benin in the context of climate change.

Thanks to the maps we have drawn up, planting areas for the species have been identified in southern, central and northern Benin.

Tree nurseries and planting of the species in suitable areas of Benin

The seeds collected during the field trips have been used to conduct the species tree nurseries. After the establishment of the nursery, we had a low success rate, nevertheless we were able to produce several seedlings of the species that were maintained until the planting phase in favorable areas (private and public domain in central Benin).

To expand our planting activity, some of the seedlings produced were donated to partner NGOs to conduct plantations in various ecosystems (natural and protected) in central Benin, such as in the Dogo-Ketou region, etc. The latter planted around 200 seedlings in sacred forests, natural forests, etc. This initiative is also aimed at addressing the existing imbalance in the prevalence of fast growing species employed in reforestation initiatives, as this, in various ways, poses a threat to biological diversity.

In addition, planting sessions of the species *Pterocarpus erinaceus* were organised to symbolise our commitment. We have carried out awareness raising and planting activities in public areas such as the Lama secondary school and in private plantations, with assurances from landowners that these plants will be well cared for. We often make field visits to check on the condition of the planted trees.



Left: Seeds of the species. Right: Trees nurseries.



Produced plants.

Pictures of activities





Photos1: Planting the species in a school.

The aim of planting this species in this public school is to contribute to environmental education, social responsibility, improving the school environment, supporting the increase in the population of this threatened species in the region, combating climate change, while offering students a practical learning experience.



Photos 2: Planting the species in the sacred forest.

Acknowledgements

We are very grateful to The Rufford Foundation for this grant. The objectives of the project have been successfully achieved and the next phases will build on the achievements of this project.