Reforestation of a 5-hectare cuirasse plateau in the Liptako area of Niger, West Africa

Client: none **Position held**: Manager and Financier

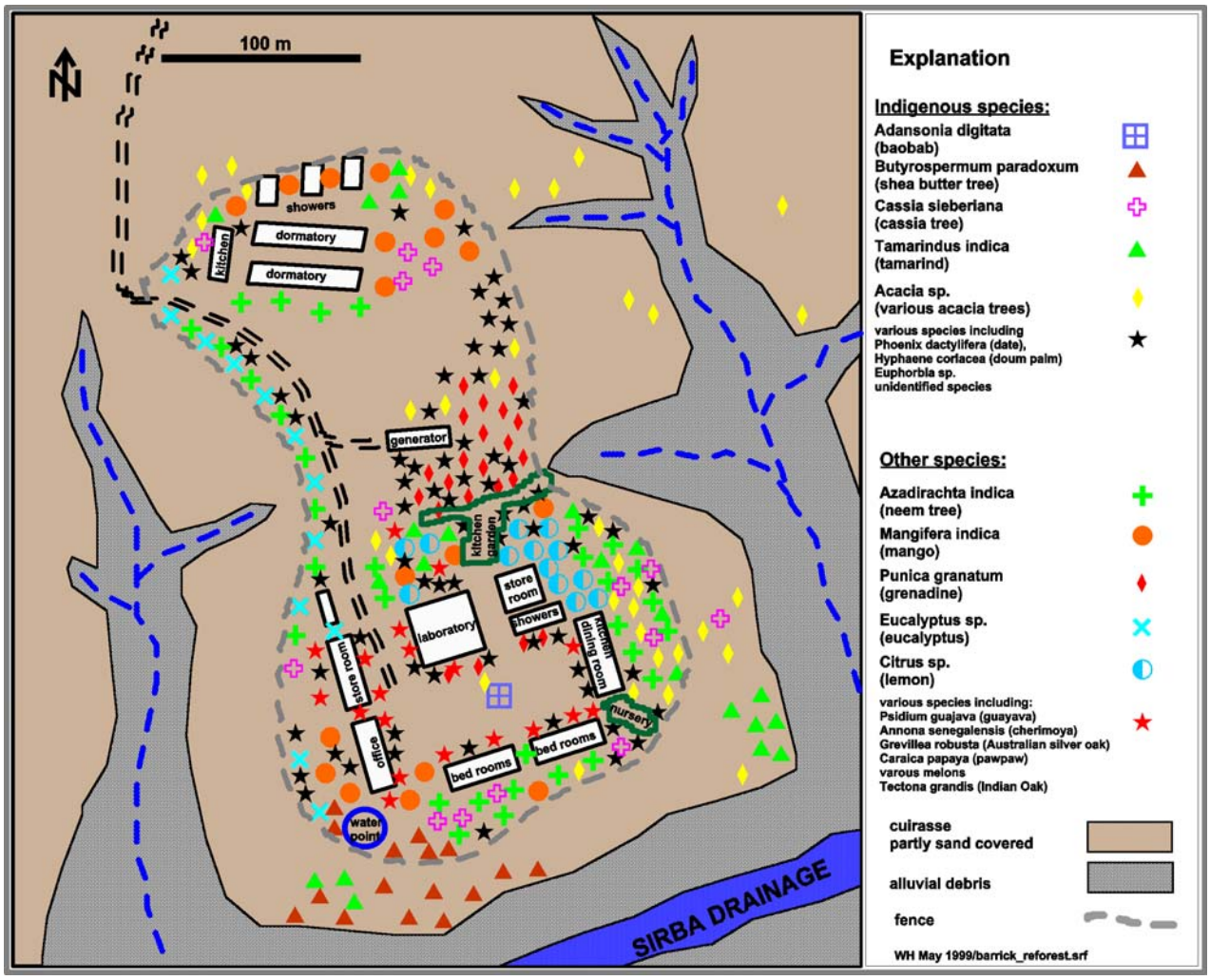
Scope of project:
To reforest Barrick's camp site built on a lateritic plateau which was entirely void of any vegetation. As this was not part of the consultancy job for Barrick, the planning and supervision was limited to my scarce spare time. The project was wholly financed by myself.

General:
The Liptako area of Niger belongs to the semi-arid Soudano-Sahelian climate zone. Annual rainfall of some 450 mm is limited to the time between May/June and September, the rest of the year is completely dry. The temperature varies between 25°C in January and 45°C in April/May. The region was once covered with extensive savannah forests, recurrent droughts, deforestation and a growing population left, however, only small remnants of the original vegetation. The project area can be characterised as a partly truncated cuirasse plateau which is covered in it's southern half by a 10 to 60 cm thick layer of eolic sand. The underlying rocks include profoundly weathered granodiorites, granites and pegmatites as well as some volcanic dykes. The depth of the 1st groundwater table is estimated to be between 3 and 7 m below surface.

Approach:
The most important criterion for the selection of plant species was their insensitiveness towards the semi-arid climate. Other important criteria were a high growth rate and the usefulness of the plants. The latter means their use as fire wood (e.g. Australian silver oak), timber (e.g. eucalyptus), for medicinal purposes (e.g. neem tree, shea butter tree) or the production of edible fruits (e.g. mango, tamarind, melons, etc.). The seeds of the indigenous species were collected during the whole year round in the area and grown in a nursery at the camp site. Seedlings of other, non-indigenous species were bought in the capital. Seeds of some species not to be found or bought in Niger were brought from Europe.

The fast growing species like neem tree, eucalyptus, cassia and tamarind were planted along the fence to diminish the effect of the strong, dry wind called harmattan. The same trees were also planted around the camp buildings to provide some shade. More delicate species like lemon were planted on the best soils, very drought and salt resistant plants like grenadine were planted on the poorest soils. One full time employee took care of the plants, i.e. he watered them and distributed the manure. The manure was delivered by local farmers in exchange against fruit. A fence around the entire campsite helped against unwanted visitors, i.e. goats. The total expenditures for the gardener and the plants for one year are estimated at US $ 1,600.

Results: Out of the 600 trees and some 400 other plants, approximately 90% survived the first year. Now, some 2 years after the project was closed, some 70 % of the initial number are still growing! The 'champion' of the trees is the neem tree which grows at a speed of 1.50 m to 2.50 m per year. Already during the first year of this project, the camp became self-sufficient for grenadine, melons, cherimoya and various herbs and salads. By the way, two similar projects were successfully initiated and organised by myself in Burkina Faso, one in the outskirts of Ouagadougou, the other one on the Piéla Permit some 100 km SW of this project.



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