Progress Report: December 2006 – May 2007

Introduction

The present study partially funded by the Rufford Small Grant for Nature Conservation, is a component of a baobab (*Adansonia digitata* L.) conservation and domestication research program being undertaken in Benin. The project is planned to be executed for a period of 18 months (December 2006 – June 2008) and aims at combining molecular analyses (AFLP) and ethnobotanical surveys to develop optimal strategies for conservation and sustainable utilization of baobab genetic resources in Benin.

Short report of the first six months (December 2006 – Mai 2007): ethnobotanical studies

The first data records on baobab focused on ethnobotanical studies among 112 women and 151 men of different ages in 9 ethnic groups of Benin. Survey included questions on perceptions and human/cultural meaning of morphological variation, preferences (desirables/undesirable traits) and links between traits. Local people of Benin used 13 criteria to differentiate baobab individuals *in situ*. These criteria are related to the characteristics of leaves, fruits, bark and the whole tree. Local people prefer baobab trees having delicious leaves, sweet or slightly acid pulp, non slimy pulp, yellowish pulp, capsules producing high yield of pulp, bark easy to harvest, and which are considered as female. Farmers are also aware of the linkages between different traits of baobab. According to them, the easier the bark harvesting, the tastier the pulp and leaves; the slimier the pulp, the less tasty it is. Moreover, Ditamari people in northern Benin have outstanding knowledge to link specific baobab traits: hairy leaves are invariably tasteless, male baobabs give tasteless leaves, long shaped fruits of intermediate size invariably yield in a sweet pulp. Since local people have knowledge to correlate different criteria characterizing baobab individuals, they are able to guide researchers in collecting germplasm from superior trees. Therefore, the potential for conserving, selecting or breeding desirable baobabs seems to be promising.

Planning for the Next 6 Months (June 2007 – November 2007)

<u>Submission of publication</u>: A publication related to folk classification, local perception and preferences of baobab products and their implication for the species conservation and improvement is being written and will be submitted to *Economy Botany*, a per-review international scientific journal.

<u>Molecular analyses of baobabs' populations</u>: Based on the indigenous knowledge, 6 baobab populations with 30 individuals per population (180 individuals in total) have been sampled from the three climatic zone of Benin. For the next six months, the study will mainly consist in DNA extraction from leaves (Matab protocol) following by AFLP analyses (De vos *et al.*, 1995) in order to determine patterns of genetic variation among and between baobabs' populations. Based on the results as well as on indigenous knowledge, *in situ* and *ex situ* conservation strategies of the baobab genetic resources will be proposed accordingly.

Capsules variability in baobab
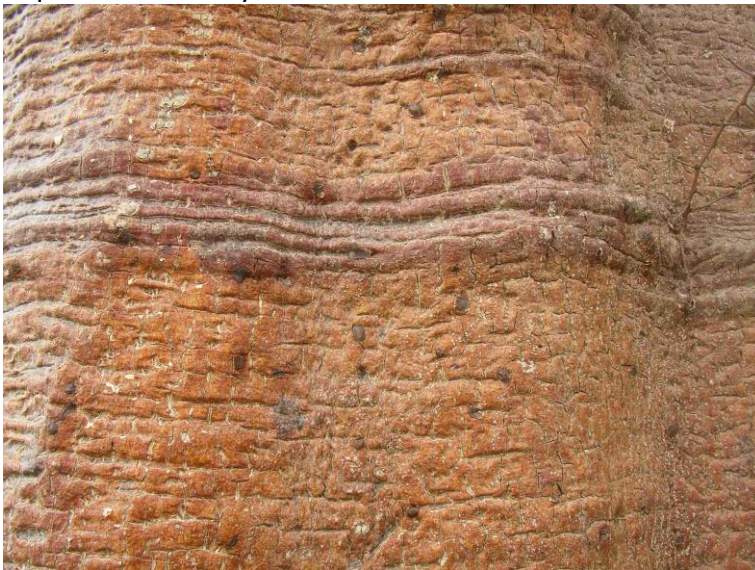
Bark color 1 -A. digitata (EDC, 2004, Benin)_15

Bark color 2 A. digitata (EDC, 2004, Benin)_18