

Revamping the genetic diversity of African rosewood in Ghana

Pterocarpus erinaceus, commonly known by the name African rosewood or Senegal rosewood is a valuable timber tree with wide distribution in most part of the African continent. The tree grows well in open forest and wooded Savannahs. It is a bisexual medium-sized deciduous tree that reaches a height of 12-16 m. The tree generally has a poorly-formed bole and exudes red sap when cut. Apart from timber, it caters various other needs in the form of food, fodder, gum, tannin and medicine too. Hence the tree species forms an integral part of rural livelihood. In addition, considerable potential of the species in nodulation and nitrogen fixation is yet to be experimented in detail. Due to these immense utility, the species faces huge pressure for its survival almost throughout its natural range.

From the year 2014, export of African rosewood log is banned from Ghana except for those obtained from tree plantations. This stringent measure is followed by the illegal removal of this valuable genetic resource from natural populations and thereby raising serious concerns about its conservation strategies. Adding to the predicament is the lack of knowledge on genetic diversity and structure of the species in its natural distribution range. Further, non-availability of planned seed orchards, seed banks and *ex situ* germplasm collections is another major obstacle for deriving conservation and sustainable management strategies for the species. All these events clearly show that a knowledge gap persists in revamping the species' diversity.

Under these situations, a new research project supported by the Abdou-Salam Ouédraogo (ASO) Fellowship has been awarded to a young forest genetic resources scientist in sub-Saharan Africa to pursue research related to African rosewood conservation. The ASO grant carries an amount of US\$ 10,000 and is awarded annually by Biodiversity International exclusively for carrying out research on FGR aspects of trees relevant to people's livelihood in Sub-Saharan Africa. The winner of this year's ASO Fellowship is Mr. William Bandoh, a scientist at the CSIR - Forestry Research Institute of Ghana. Mr. Bandoh has earned a Master's degree in environmental science and possesses hands on training in techniques related to molecular genetics and population genetic analysis. He will simultaneously be mentored by a scientist at Biodiversity International.



Survey of *P. erinaceus* populations

Sources from Biodiversity International have stated that, building on an earlier study at his Institute, this project will inform strategies for the sustainable management and conservation of African rosewood (*P. erinaceus*) both as timber and a community resource. The first step towards achieving this goal will be a study of the species' genetic diversity across its natural distribution range in Ghana, spanning four ecological zones. By extracting DNA from leaves, Mr. Bandoh will obtain information that will help identify populations that are genetically diverse and have the most valuable traits, and hence of priority for conservation.

A second objective is to use this genetic information to develop and implement a strategy for germplasm conservation of African rosewood. Seeds of trees with interesting genetic traits will

be collected and planted in seed orchards and stored in *ex situ* gene banks, thus filling gaps in the national collection of African rosewood. The materials will also be a resource for future tree breeding. All this will help shift the management of African rosewood in Ghana from an extractive activity to a sustainable forestry practice and an income source for local communities.

Source:

<http://www.biodiversityinternational.org/news/>