3UNCCD rd Scientific Conference

COMBATING DROUGHT, LAND DEGRADATION AND DESERTIFICATION FOR POVERTY REDUCTION AND SUSTAINABLE DEVELOPMENT

The contribution of science, technology, traditional knowledge and practices 9-12 MARCH 2015, CANCÚN,

DEKPA BOTANICAL RESERVE, AN EXAMPLE OF INNOVATION AGAINST LAND DEGRADATION AND FOR CONSERVATION OF BIODIVERSITY ON MINE SITES (COTE D'IVOIRE)

VROH B.T.A., TIEBRE M.-S., OUATTARA D., ADOU YAO C.Y., N'GUESSAN K.E.

Laboratory of Botany, University Felix Houphouet-Boigny

vrohbitra@gmail.com

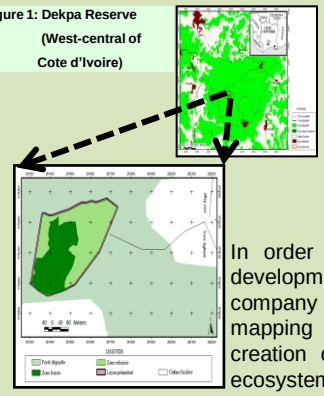

Figure 1: Dekpa Reserve (West-central of Cote d'Ivoire)

Introduction

Mining companies are usually accused as "devour" biodiversity on all their area; which promotes land degradation, advancing desert, drought and the increasing poverty of local communities (Vroh *et al*., 2014). In Cote d'Ivoire, after an environmental and social impact study on a gold mine site, the mining company agreed to create a conservation area for biodiversity offsets: the Dekpa Botanical Reserve (Figure 1). This study aims to assess plant diversity of this site, its value for flora conservation, and availability of plants for traditional uses. The study also shows the partnership between scientists, the mining company and local populations.

Methods

In order to create the reserve, several activities was defined in a development and rehabilitation project: (1) meetings with the mining company and local communities of the 5 closest villages; (2) reserve mapping and delimitation, physical and technical management and creation of botanical trails; (3) assessment of initial flora and some ecosystem services; (4) Creation of nursery garden (growing up of rare, endemic species seeds). The status of species were identified (rare, threatened and endemic species). Local communities were also interviewed on plant species uses.

Figure 7: A view of the nursery

Results

Meetings to obtain approval and membership of traditional leaders, chiefdoms and stakeholders of closer five villages (Figure 2). Villages Chiefs selected 30 young for community volunteers. They help in achieving the development phases.

Figure 2 : Meeting between scientists, the mining society and local population

Figure 3: collection fruits of *Cola lorougnonis*

Figure 4: Branch of *Drypetes singroboensis*

Table 1: List of species with particular status : endemic to ivorian flora (GCi), endemic to west african forest (GCW), endemic to upper guinean forest (HG); Vu = vulnerable, EN = endanger

Espèces	Statuts	Mature stems
Albertisia cordifolia	GCi	5
Arthabotrys insignis	HG	1
Baphia bancoensis	GCi	2
Cola caricaefolia	GCW	2
Cola lorougnonis	HG, EN	6
Drypetes singroboensis	GCi, Vu	2
Milicia regia	HG, Vu	2
Terminalia ivorensis	Vu	1
… …	…	…
… …	…	…
Xylopia villosa	HG	1

Mapping demonstrate that this forest covered 136.5 ha in 1998. In 2013, it remains only 8.05 ha (actually protected). 358 plant species of which 30 (Table 1) are among those classified as rare, threatened by IUCN (2014) or with different levels of endemism (Aké-Assi, 2001-2002, Poorter *et al*., 2004). *Cola lorougnonis* and *Drypetes singroboensis* (Figures 3 and 4) are considered by national botanists as very rare in Ivorian flora. Also, 24% of species can be used in the treatment of various diseases, food, crafts or firewood. for all these species, demand is high and this creates overexploitation. *Elaeis guineensis* (Figure 5) is variously used for its roots, leaves, seeds and sap. Sap is very popular and intensely extract in all regions of Cote d'Ivoire. Seeds of *Garcinia kola* (Figure 6) named locally "Petit cola" are cited in the food industry and for their aphrodisiac and fortifying virtue in the fight against erectile dysfunction. Some of these species with special status and priority for local communities have been in the nursery (Figures 7 and 8).

Conclusion

The study suggests that development of the botanical reserve should consider the needs of local communities, as their traditional knowledge may be key factor in preservation of species. In the second phase of the project, we will assess faunal diversity (avifauna and mammals). We need to continue reforestation and nursery activities.

The example of the "Dekpa Botanical Reserve" deserves to be repeated on all mine sites in Cote d'Ivoire. All ecological zones of the country require protection, but special attention should be paid to areas vulnerable to erosion and land degradation (savannah regions of northern and central) that are fragile and are gateways to the desert.

Figure 5: Collection the sap of *Elaeis guineensis*

Figure 6: Seeds and fruits of *Garcinia kola*

Figure 8: Reforestation and nursery activities

Bibliography

Aké-Assi L. 2001-2002. Flora of Cote d'Ivoire 1, catalog, systematics, biogeography and ecology. Conservatoire and Botanical garden of Geneva. Boisseria 57 et 58. **Poorter L., et al. 2004**. Biodiversity of West African Forests: An Ecological Atlas of Woody Plant Species. CABI Publishing, Nederland, Pays-Bas, 521 p. **IUCN 2014**, UICN Red List of Threatened Species. Version 2014.1. <www.iucnredlist.org>. **Vroh B.T.A., et al., 2014**. Agbaou Dekpa Reserve, an example of plant biodiversity conservation on mine sites in Cote d'Ivoire. International Journal of Innovation and Applied Studies, Vol. 6 No. 2, 162-171.