

Valorisation of the indigenous knowledge of the melliferous plants in the vicinity of the Virunga National Park (DRC) to contribute to an enhancement of its conservation.

Habumugisha, Hitimana, M. I.*, Muhashy Habiyaremye, F.**, Ruremesha Kinyata, S.* & Ntahobavuka Habimana, H.*** & Ayobangira Samvura, F.*



1. Eléphants in the Virunga National Park (Verschuere, APNCB)
2. Family of mountain gorillas in the Virunga National Park (Delvingt *et al.*, 1990)
3. Bees harvest pollen and nectar from the flowers of *Coleopsis scandens*.
4. Bees on the flowers of *Vernonia lasiopous*

1. Introduction & Generalities

An investigation on the knowledge of the melliferous plants by the inhabitants of the Rugari area was completed in 2009. This region located in the eastern part of the DR Congo partially includes the southern sector of the National Park Virunga (VNP).



Fig. 5. Fragment of the "map of the North Kivu", the locality of Rugari is represented by the big yellow point.

Due to the high richness and endemism of the fauna and to the numerous and magnificent habitats in the park, this one has been recognized as a World Heritage since 1975. (Fig. 1 & 2)

An extraordinary biodiversity threatened

Apart from the massive wildlife poaching and habitat destruction due to wars taking place in the region since two decades, deforestation is practiced particularly heavily in favor of pastoralism or of timber coal trade. VNP was declared endangered by UNESCO from 1994. Can optimising beekeeping activities contribute to alleviate these pressures?

2. The interest of the study

- To contribute to reporting on the degree of knowledge

plants that produce honey and on their multiple uses by people neighbouring the VNP;

- To show the importance of wild plants for pollination of crops;
- To foresee the dissemination of information obtained in order to raise the awareness to the protection of these plants species as well as of their habitats within the park.

3. Methodology

Interview

Categories of respondents	Number	%
Beekeepers	50	42
Non Beekeepers	70	58
Total	120	100

Table 1. The sample of respondents

Main questions

- Do you attach an importance to melliferous plants?
- If so, which kind of plant (wild, domestic, both the 2 categories) do you consider more?
- What is the fraction of income that is due to beekeeping ?

Plants identification

The specimens of plants that were recognized melliferous by the inhabitants were collected to serve to confirm their identification. We referred in particular to the herbarium of the Institute of Scientific Research in Central Africa (IRSAC) Lwiro.

4. Results

The species inventory

The analysis of all the data generated a list of 152 plant species (Fig. 3 & 4).

Knowledge of the role of pollination

- 64% of respondents among the beekeepers state that bees visit flowers to feed themselves.
- 36% say that it directly increases the production of honey.
- 65.8% of honey plants are wild.
- beekeeper harvest up to 100L of honey/year ~ 500\$ US additionally to the income from subsistence agriculture (Fig. 6).



Fig. 6. Harvesting honey from a hive installed in a mixed culture (cassava, banana).

Consideration of the habitats



Fig. 7. Beekeeping in the forest (a).

The hives were located mainly in forests and sometimes in wasteland (Fig. 7 & 8). The monitoring of beekeeping sites extends inevitably on the habitats, which is an asset to the preservation of biodiversity VNP.



Fig. 8. Beekeeping in the forest (b).

5. Conclusion

Apart from the evidence that plants pollinated by bees are the source of honey and that this resource contributes much to alleviate poverty, the study can be used to remind people neighbouring the park the following other facts: - The majority of the plants inventoried are wild - without this category of species, the production of honey would be very low - Bees would not be strong enough to ensure good pollination - Yields from subsistence or commercial agriculture would be very low. For these reasons, melliferous plants are to be safeguarded; this depends on the conservation of the entire habitats and thereby their honey plants. The beekeeper is an interested actor who is alleged involved in such initiative.