

Discussion

To reduce the threats to crocodiles and hippos it is necessary to:

- State involvement in the application of laws governing the protection of biodiversity, its environment and the sound management of wetlands;
- The involvement of landholders for the wise management of wetlands and the respect of the texts for their well-being and for future generations;
- Strengthen scientific research to determine who can and who should do what;
- Maintain permanent vegetation around ponds, along rivers, lakes, and streams for sustainable productivity;
- Delineate a protected wetland area with one or two rows of bamboo as a sustainable solution to the plant and animal productivity of ecosystems;
- To supply earthlings along wetlands in bamboo cuttings to be reforested in delimitation of their fields and wetlands (Bamboo Project);
- Submit wetlands for designation as a protected area, park or Ramsar site.

Conclusions

The study demonstrated that:

- Following the disappearance of wetlands, crocodiles and hippos are threatened and may disappear;
- Wild animals roam along rivers, in ponds, on lake shores, in household gardens and in fields where they are injured and killed, and where they also injure and kill people;
- The disappearance of crocodiles and hippos is a danger of loss of fish production, macroinvertebrates and micro-invertebrates, phytoplankton and zooplankton necessary for the nutrition and survival of fish and humankind.

Recommendations

The sensitized public recommends:

- Compliance with biodiversity laws and decrees (CPR, 2002, Vundu & Kalambay, 2013);
- Review of other existing laws on the environment and biodiversity;
- Full protection of the Kyamvubu pond to mitigate crocodile and hippo attacks on the population;
- Maintaining a permanent protective vegetation belt of ponds, rivers, streams and the lake shore for the sustainability of crocodiles, hippos and biodiversity and for human well-being;
- Creation of a protected wetland along the Ruzizi River including adjacent natural ponds from Kamanyola to the mouth of small Ruzizi River, including the Kyamvubu pond.

References

- CPR (Office of the President of the Republic), 2002, Law No. 011/2002 of 29 August 2002, on the Forestry Code. Official Journal, No. 43, 38 pages
- Vundu and Kalambay, 2013. The Forest Code, Law No. 0011/2002 of 29 August 2002, renewed and completed.

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Public awareness on the reduction of threats to crocodiles and hippopotamuses in the Ruzizi Plain and the lake shore in Uvira DRC, North-end Region of Lake Tanganyika

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Key message

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Wetlands along the Ruzizi River, ponds and Lake Tanganyika, ecological habitats for crocodiles and hippos, have been degraded. Scavenging crocodiles and hippos are injured and killed; they too wound and kill. The project aims to raise public awareness about the reduction of threats to crocodiles, hippos, birds and biodiversity in general, in application of the law n ° 011/2002 of 29/8/2002, for the protection of the wetlands (CPR, 2002; Vundu and Kalambay, 2013).

Kiswahili

Makao ya mamba na kiboko yanayopatikana nafasi za majimaji pembezoni ya muto Ruzizi, visima, na pembezoni ya ziwa Tanganyika, vimevamiwa. Mamba na kiboko vimetawanyika na mara kwa mara huumizwa na kuuwawa. Nyama hizo nazo huumiza watu na kuwauwa. Muradi huu umelenga kuelimisha watu juu ya kupunguza mazara yenyikuelemea mamba, kiboko, ndege na viumbe kwa jumla, kufuatana na sheria n° 011/2002 ya tarehe 29/8/2002 (CPR, 2002;Vundu et Kalambay, 2013).

Overall objective

Raise public awareness of the Ruzizi Plain and the shoreline of Lake Tanganyika in Uvira on reducing threats to crocodiles, hippos, birds and biodiversity in general.

Specific objectives

Popularize:

- The interest of crocodiles in maintaining and recycling ecosystems;
- The importance of hippopotamus in the fish productivity of the lake and ponds;
- The harmful effects of the disappearance of wetlands, ecological habitats of crocodiles, hippos, birds and biodiversity;
- The socio-economic and cultural benefits of crocodiles, hippos, birds and biodiversity;
- The advantage of respecting the legal texts in terms of conservation of biodiversity;
- The urgency and need for a protected area for local, provincial, national and regional interest in the Ruzizi Congolese Plain, and on the shoreline of Lake Tanganyika.

Problematic

The problem is summarized in various issues:

- Poor management of wetland resources;
- Overexploitation of vegetation for less profitable uses due to lack of processing and conservation industries;
- Demographic pressure that attacks natural resources for lack of adequate livelihoods based on ecotourism, business and entrepreneurship;
- The mutilation of hippos in wandering;
- Non-compliance with the texts on the conservation of biodiversity;
- Rural poverty.

These issues lead to the disappearance of wetlands, ecological habitats of crocodiles and hippos. These wanderers attack the man, destroy the crops and elect homes in the gardens of households, it's dangerous!

Indeed:

Increasing demand for protein, fish and other plant products is rife in cities and rural areas as a result of poverty;

- Fishing, agriculture and animal husbandry prove to be the most available and accessible source of protein due to outdated livelihoods;
- Fish capture is declining, agricultural production is declining and livestock production is not producing enough for consumption and sale.

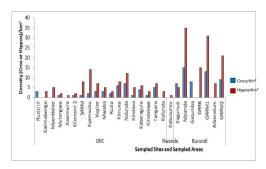
Methodology

The present analysis based on studies carried out in the Ruzizi plain and on the shoreline of Lake Tanganyika, in Kagunuzi (Rwanda) and in the Rusizi National Park (Burundi) by direct observations and interviews of the landholders, popularized threats to crocodiles, hippos and sustainable solutions to protect ecological habitats for wildlife and biodiversity.

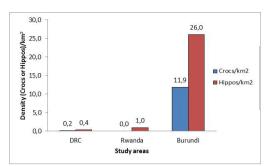
Results

1.The density of crocodiles and hippopotamuses in the DRC, Rwanda and Burundi

These data are the result of our observations and our MRV surveys carried out from January to August 2017 in 18 sites of the DRC, one Rwanda site and seven Burundi sites. The phage fish crocodiles are more endangered than herbivorous hippopotamus.

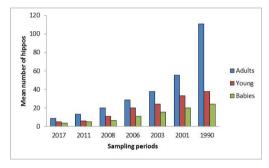


In the DRC non protected areas, crocodiles and hippos are more at risk of extinction than in Burundi protected areas and Ramsar site. Similarly, in the DRC, hippopotamuses are more threatened with extinction for non-compliance with legal texts than in Rwanda, where the regulations are respected.

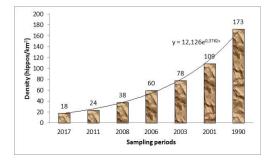


2. Hippopotamus Population Structure of Kyamvubu Pond (DRC)

The Kyamvubu pond was the favorite habitat of hippos in eastern DRC before the wars of 1998 to 2003. Nowadays, adult hippos, youngsters and babies are more at risk of extinction compared to the years preceding.

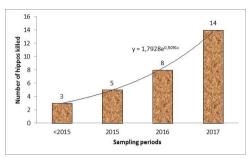


The density of hippopotamuses decreases at the exponential pace from 1990 to 2017 in the pond of Kyamvubu following its subdivision and its shattering fragmentation in 2003. To remedy this, the sensitized public proposes the return of the pond of Kyamvubu to hippopotamuses by its full protection against human activities.



3. Hippopotamuses killed between 2014 and 2017

In nine sites out of 18, our investigations reveal the death of hippopotamuses; some killed by men with the knife, the rifle; the others killed at the result of combats of the males against the young males.



4. Number of people killed by hippos.

Our surveys reveal that 55 people were killed in the 18 sites sampled, with an average of three people killed per site in the last four years. Hippos kill people following the degradation of wetlands areas, their ecological habitats, yet protected by articles 13 Title 2, Chapter 2 and 48 Title 4 Chapter I of the Forest Code, Law 011/2002 of 29/08/2002 (CPR 2002; Vundu and Kalambay 2013).

