

# Research Report on Human Elephant Conflict in the Okavango Kopano Mokoro Community Trust villages (NG 32), Ngamiland

## Abstract

In 2004 Living with Elephants Foundation conducted a human-elephant conflict (HEC) survey in a community-based natural resource management area in Ngamiland, Botswana. The area is located in the southern part of the Okavango Delta and identified as the Wildlife Management Area NG32. A community of six villages govern the area which is bordered by the southern Okavango Delta veterinary fence and by the Moremi Game Reserve to the north. Two of the villages are located inside the fence (one in NG32 itself, one in NG27b); the other four villages are just outside the veterinary fence in NG35.

We conducted our research during the planting season of 2004 between January and June, by monitoring 59 fields (29 inside the veterinary fence and 30 outside), interviewing farmers, and using a Geographical Information System for spatial analysis.

Some of our discoveries were as follows:

- 1) HEC occurs in this area with the principal problem being crop raiding (others include water access restriction, sleep disturbance, threats to human safety and competition for wild plants).
- 2) Information provided by farmers shows that HEC is increasing in this area and affects over 80% of sampled fields, with an average of two to three crop raids per field annually. However, HEC in this area can not be considered severe, and no injuries were recorded in the human population during the preceding five years.
- 3) Elephants cause very limited problems among herders of domestic stock in this community.
- 4) HEC occurs inside and outside the veterinary fence. The intensity, slightly less severe outside, is on average more than two elephant incursions per field annually, as per the farmers. HEC outside the fence occurs in areas south of the veterinary fence (see map below).
- 5) An elephant migratory pattern from north to south in NG32 can be detected during the rainy season. This pattern, which needs to be confirmed by further investigation, could help explain the spatial and temporal distribution of HEC in these communities.
- 6) Crop raids occur mainly at night, 91.7% of fields versus 26.7% of fields during the day among farms sampled.
- 7) Male elephants seem to cause more damage than breeding herds (89.2% of fields raided by bulls versus 47.5% by cows). This was especially true outside the fence, where 90% of fields were raided by bulls versus less than 40% by cows. The fence itself and higher human density outside the fence might be deterring breeding herds from crossing the veterinary fence.
- 8) Although most complaints are about elephant incursions, elephants probably cause no more crop damage than species such as baboons, vervet monkeys and porcupines.

9) Mitigation strategies utilized in this area include both passive methods (guarding fields, palm lines with plastic bags) and active (clapping, drumming etc.). Fields inside the fence are clustered together and create a clear boundary. Palm frond lines with cans and plastic bags are utilized inside the fence, and may prove at least partially efficient. Outside the fence, fields are much more isolated making them an easier target for wild animals. Frequency of use of human guards is comparable outside and inside the fence during the daytime, but at night 92.9% of farmers employ this method inside the fence versus 9.7% outside).

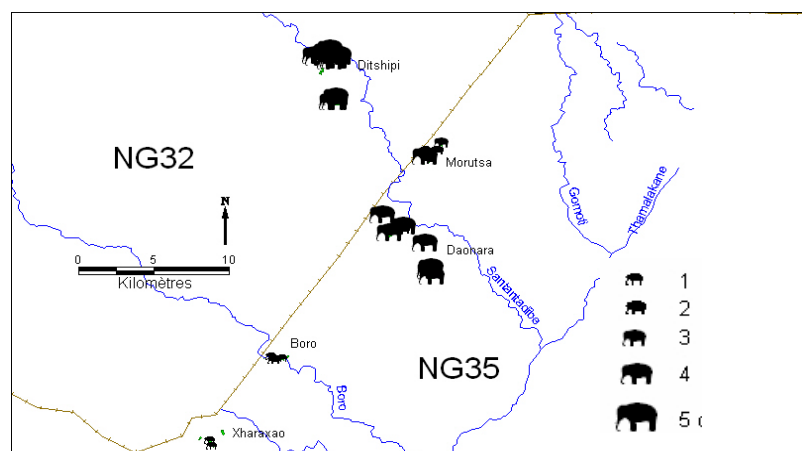
10) Complaints about HEC in this area are probably exaggerated. Villages face other problems such as unemployment and bad harvests, but tend to focus on HEC.

In conclusion, it seems that HEC occurs in this community both inside and outside the veterinary fence at comparable levels. However, proximity of fields and increased utilization of mitigation strategies inside the fence may explain why crop raiding levels there are not much higher than outside the fence, where fields are less protected. The pressure is probably a lot higher inside the fence, where villagers are using mitigation strategies more intensely (e.g. palm frond line).

In the southern region of the Okavango Delta, HEC probably occurs at lower levels than in northern areas. Relatively simple measures could be employed to handle elephant-related problems. We would like to suggest the following additional considerations:

- Inside the fence, ecotourism should be encouraged, to create job opportunities outside of agriculture, which will always result in some conflict between villagers and wild animals. There are already several Mokoro trip operators, as well as a small basket-making industry that could be further developed.
- The fence itself could be used to create a hard edge between the rural and wildlife areas. Fields outside the fence should be clustered together, and both passive and active mitigation strategies could be implemented to a greater degree. Agricultural yields could also be improved through education to make agriculture more viable, and create greater incentives for farmers to protect their fields.

The map below shows the intensity of HEC in the surveyed area for 2003 (for fields experiencing between one and five elephant incursions per year):



Reference for quotation: Marchais, Julien (2004). Research Report on Human Elephant Conflict in the Okavango Kopano Mokoro Community Trust villages (NG 32), Ngamiland, Botswana. Living With Elephants Foundation.