

The Impact of Elephants on Agricultural Productivity: a Socio-Economic Evaluation of Farmer/Elephant Conflict in Wakyato Sub-County, Luwero District, Uganda

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African elephants (*Loxodonta africana*) can have huge impacts on agricultural productivity when they cross paths with human settlements. Such problems are common in Wakyato Sub-county, Luwero District, Uganda. Literature, direct measurements and household interviews were used to evaluate crop damage by elephants, assess the methods used by farmers to deter elephant raids, learn about attitudes to wildlife, and lastly, to examine the potential benefits that the local communities have with respect to the presence of elephants and other wildlife.

Farmers' losses were assessed and evaluated for four cash crops (cassava, maize, bananas and potatoes) over eight months in three parishes of Wakyato Sub-county, using measurements of damage and expected yields. At the time of study there was no capacity for assessing and evaluating crop damage, so this attempted to capture the costs born by society from such human-wildlife conflict. Beyond income costs, crop damage often has intangible effects, such as intermittent schooling as children have to guard crops and sleepless nights are spent chasing elephants out of gardens.

Human/elephant conflict in the region was a significant problem, causing major losses in food and income; the costs of living with the elephants was high, with a per year loss of 100,744 UGX per household. Of the 122 household examined, about 73% depended on agricultural activities as a source of income and the majority saw no value in wildlife and were not willing to live with elephants. All three parishes studied were equally susceptible to crop raiding, as were the four crops studied. Raids have affected inhabitants' welfare, which was reflected in their attitudes towards elephants. Deterrent methods were critical and a variety of methods were used, including physical barriers, physical guarding, and a combination of both, which proved to be the most effective.

Socio-economic problems caused by this highly endangered and protected species require urgent attention. The study area is rich in wildlife, yet is not tended by UWA as it is located away from a protected area. Wildlife management in such areas is essential, particularly when human-wildlife conflict arises, and should be a priority of district and national governments. Organisations should seek to develop an integrated conservation and development plan, reducing human-wildlife conflict, alleviating poverty and conserving wildlife. Appropriate planning of human settlements to accommodate elephants would also likely reduce human-elephant interaction and conflicts. Conservation incentives for local communities are essential (e.g. infrastructure development and assistance with defence mechanisms). The study area, being rich in wildlife and close to Kampala could be a promising eco-tourism destination, satisfying the needs of an integrated conservation and development plan. Eco-tourism ventures could provide flows of funds back to the community as well as employment (providing incentives), which could modify their attitudes towards elephants and compensate for crop losses.

Crop damage due to elephants is a pertinent, urgent problem. Government organisations and NGOs need to work towards developing clear policies on human-wildlife conflict and mitigating the impact of problem elephants and wildlife in general outside of protected areas, ultimately encouraging wildlife to be seen as a valuable asset rather than a nuisance, creating a more harmonious relationship between humans and wildlife.

Summary written by Lucy Sangster