Project ID: 43102-1:

Project title: Mapping Land Use Land Cover Change (LULC), Elephant Distribution, and Implications on Human-Elephant Interactions around Mkomazi National Park, Tanzania:

Project Progress Report:

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Submitted to;

1.0 INTRODUCTION

African savanna elephants are both ecologically and socio-economically vital and have their intrinsic right to survive. In the former, they provide manure, aid in seed dispersal, and open habitats to facilitate grazing of other species whereas in the latter they provide sustainable national income through photographic tourism. Furthermore, elephants are of conservation concern and have experienced significant population declines in Africa mostly due to ivory poaching African savannah elephant populations are also threatened by human-elephant conflict and habitat loss. For instance, human-elephant conflict threatens elephant populations through retaliatory killing and increased hostility towards elephants, leading to tolerance of illegal commercial poaching.

Human-elephant conflict has been a pressing conservation and socio-economic issue in areas where elephants reside. Among its vivid and cascading impacts have been poverty mainly through crop raiding, human casualties through injuries even death. These in turn have raised the anger to retaliate against elephants by killing and injuring elephants, hence a conservation problem. Prevailing studies have depicted that the underlying reason for the escalation of human-elephant conflicts is mostly Land Use Land Cover changes.

2.0 THE PROJECT; GOAL, OBJECTIVES, AND APPROACH

This project was proposed to assess the LULC, distribution of elephants across village lands and the way these variables interact to escalate the conflicts between humans and elephants. Through remote sensing, ground truthing, questionnaire surveys, key informant interviews and Focused group discussions the project aimed to unlock the intriguing connection among variables and depict the prevailing situation around Mkomazi National Park.

Figure 1: A summary of the project's methodologies; Top left shows the team after a questionnaire survey with two depicted farmers in Kwakoa village, top right shows the team conducting a focused group discussion in Misufini village, bottom is the ground truthing officer conducting ground truthing of elephant routes in Mkomazi village.

3.0 PROJECT AREA

Mkomazi National Park is typically surrounded by five districts and one district that borders the Tsavo West National Park which forms a vital ecosystem for elephants, the Tsavo-Mkomazi Ecosystem. Therefore, as I mentioned, the project is gathering data from all six districts namely; Rombo, Mwanga, Same, Lushoto, and Korogwe.
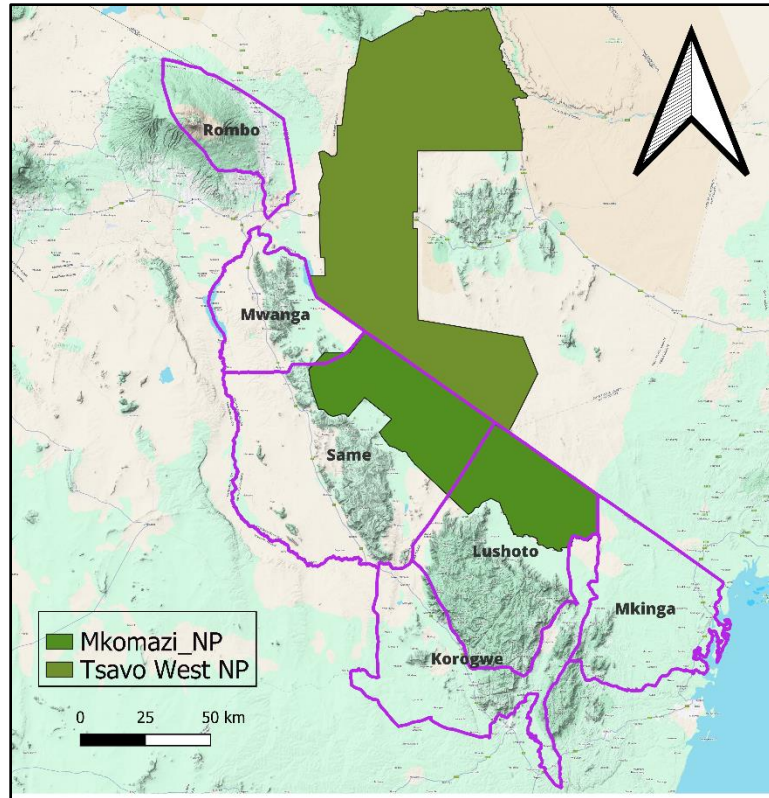
Figure 2: The Tsavo-Mkomazi ecosystem with the surrounding districts on the Tanzanian side

4.0 PRELIMINARY RESULTS

Recently we have surveyed 5 districts where the situation on the ground about human-elephant conflict (HEC) is intense in four districts: Mwanga, Same, Lushoto, and Korogwe from two different regions. Mapping of the LULC started this July, for Mwanga district, and preliminary results reveal vividly that most of the natural habitat has been converted to firstly settlements and secondly agricultural fields. For example, we have found over 80% change in the presence of dense vegetation (decrease) in the Mwanga district and about a 5-fold increase in settlements from 2015 to 2023. Moreover, in the mentioned four highly-affected districts, we found year-round elephant distribution which intersects with these human-dominated lands hence increasing the probability of interacting with humans and causing conflicts.

Figure 3: Summary of obtained findings; top left is a maize farm raided by elephants just the night we were about to arrive in Mazinde village as shown by the farm owner. Top right me with an elder whose young brother was killed by an elephant in December last year, just in front of us is the grave. The bottom is the destruction of water infrastructure which has caused water scarcity in Mkundimtae village.

Most forms of human-elephant conflict that we have encountered include crop raiding, human injuries, human deaths, destruction of properties, and induction of fear. While most communities recommend the use of armed rangers in mitigating human-elephant conflicts, the awareness about the impact of LULC in escalating HEC is very low, calling for action in both awareness creation and mitigating HECs.

Figure 3: An apprehensive list of local mitigation measures people use to reduce HECs; on the left is the watch tower, whereas on the right is the fencing using galvanized wires all of which have been less than 10% effective in avoiding elephants.

5.0 PLANS

I am looking forward to our last fieldwork in the remaining district, which I plan to do in late July. Upon finishing the data collection, August and September will be spent on data analysis and necessary consultations then September and October will be used for report writing and submission.

6.0 ACKNOWLEDGEMENT

I am grateful that The Rufford Foundation has funded this work, which afterward might be essential in designing and implementing conservation projects for elephant conservation and community livelihoods. I am attaching some of the field photos for your perusal.

My Sincere Heartfelt Gratitude.