

Project Update: March 2024

1.0 Introduction

This report highlights major activities carried out from December 2023 to February 2024. These activities include transportation of field materials to the forest-farm interphase (project site), setting of wooden posts at the forest-farm interphase, hands-on training on setting up beehives and installation of beehive fence, formation of Beehive Fence Stewardship Committee, monitoring of bee occupation and elephant visitation, and mid-term review.

2.0 Transportation of Field Materials to the Forest-Farm Interphase

Field materials such as 50 beehives, 100 wooden posts, and 200 wooden braces were transported on 5th December 2023 to the project site through the voluntary assistance of 19 community members and three wildlife guards. Due to the rough nature of the terrain, a tractor had to be hired for this exercise (Plate 1).



Plate 1. Transportation of field materials to the project site using a tractor. Credit: Ishmael Hashmiu

3.0 Setting of Wooden Posts at the Forest-Farm Interphase

A day after transporting field materials, the community members and wildlife guards helped to dig holes (Plate 2) and firmly set 100 wooden posts. The posts were set on the elephants preferred route into neighbouring farmlands based on the experiential knowledge of community members and wildlife guards. Each wooden post measured 10 feet. Two feet was embedded into the hole, while 8 feet remained above the ground. Prior to that, the lower part of the posts was painted with used engine oil to protect the wood from insects, particularly termites (Plate 2). In addition, a 2 foot wooden brace was nailed 1 foot from the top of each post to provide a platform for holding the connecting

wires. Each 2 foot brace was reinforced with another wooden brace (1 foot long) that was nailed diagonally to the wooden post. Following advice from community members, the use of cement was avoided in setting the posts firmly. Community members reasoned that using cement could make it very difficult for the wooden posts to be removed and replaced in the future if the need arises. A 1-week time interval was allowed for the posts to naturally set more firmly.



Plate 2. Digging of holes and treatment of wooden posts against insects using used engine oil. Credit: Ishmael Hashmiu

4.0 Hands-on Training on Setting up Beehives and Installation of the Beehive Fence

A local beekeeping specialist, Mr. Amos Mensah, was tasked to train community members and wildlife guards to set up the 50 beehives. Mr. Mensah is a beneficiary of the Bees for Development Project. He trained and guided the community members and wildlife guards to clean the hives, apply beeswax, and fix the top bars (Plate 3). To fully equip community members and wildlife guards with beekeeping skills, it was unanimously agreed that Mr. Mensah would continuously provide hands-on training and technical advice throughout the project cycle.



Plate 3. Setting up of beehives by a local beekeeping specialist and community members. Credit: Ishmael Hashmiu

With technical guidance from Dr. Ishmael Hashmiu, the 50 beehives were connected with high tensile wires and hung on the wooden posts by community members and Wildlife Guards (Plates 4 and 5). Each beehive was hung between two wooden posts. The hives were connected with long high tensile wires on the farm side of the fence. It was explained to trainees that should an elephant attempt to enter the farm, it will push out the connecting wires. That would cause the beehives to swing erratically and if occupied, cause the bees to fly out in defence to attack the elephant. The length of the beehive fence was 500 m.



Plate 4. Hands-on training by Dr. Ishmael Hashmiu on beehive fence installation. Credit: Ishmael Hashmiu



Plate 5. A 500 metre beehive fence installed between the Digya National Park and Neighbouring Farms. Credit: Ishmael Hashmiu

Some of the wildlife guards learned that the benefits of the beehive fence could go beyond the prevention of elephant raids to safeguarding the Digya National Park against encroachment and poaching. The guards underscored agricultural encroachment and poaching as some of the major anthropogenic threats confronting the sustainable management of the park. For instance, several used bullet cartridges were found at the forest-farm interphase during the installation of the beehive fence, which confirmed the high incidence of poaching. From the perspective of one of the guards, the beehive fence could serve as a physical barrier to prevent farmers from encroaching into the park. Besides, the bees could attack any poacher that accidentally runs into the fence at night. On that note, one guard underscored the need for the beehive fence to be expanded to surround the whole park. To safeguard the fence from wildfire, community members and wildlife guards used early burning to create a fire belt around the fence.

5.0 Formation of Beehive Fence Stewardship Committee

To ensure long-term sustainability of the beehive fence project, a stewardship committee known as the Beehive Fence Stewardship Committee (BFSC) was formed in January 2024 to steer the affairs of the project during and after the implementation phase. Membership of the committee was determined by two key factors: interest and dedication. Community members and guards from the Wildlife Division who showed keen interest in the project by consistently volunteering during the installation of the beehive fence were self-selected to form the committee. The committee comprises of 19 members made up of two community leaders, 14 community members, and three guards (Ex officio

members) from the Wildlife Division of the Forestry Commission who patrol around the park on regular basis.

6.0 Monitoring of Bee Occupation and Elephant Visitation

Monitoring of the beehive fence by Dr. Ishmael Hashmiu and the stewardship committee for bee occupation and elephant visitation has been ongoing since December 2023. According to the project assistants, two of the beehives were observed to have been occupied by bees about 2 weeks after installation but those hives were found to have been abandoned by the bees when Dr. Hashmiu visited the site for confirmation. A lot of bees have been flying around the hives but are yet to occupy any of the hives. No elephant visitation and crop raiding have so far been observed around the project site and the control sites (Osompa and Nsarie). Crop raiding by elephants have, however, been reported by park managers near the Aguom Camp, which is several km from the Nsogyaso Camp. Park managers have corroborated that the movement pattern of the elephants and incidence of elephant raids around the park are becoming erratic and unpredictable. According to the wildlife guards, the elephants have been coming in large numbers to a pond inside the park but have recently not been crossing to the farming landscape. Nevertheless, some community members anticipated that crop raiding by the elephants is likely to occur in April when mango fruits begin to ripen. Community members maintained that the elephants are sometimes attracted to farmlands by ripe mango fruits.

7.0 Mid-Term Review

The mid-term review of the project was undertaken in late February 2024 with the Beehive Fence Stewardship Committee to understand and resolve key challenges facing the project. The failure of bees to occupy the beehives emerged as the most pressing issue. The committee attributed that mainly to the drying of water bodies and water scarcity around the project site. Another plausible reason cited was excessive sunlight at the project site as neighbouring trees defoliate. To resolve this challenge, it was agreed that water has to be supplied weekly to the project site to attract and influence the bees to occupy the hives. Fifty empty 25 litre gallons have therefore been bought. Committee members have been using these gallons to carry water from home to the project site almost every Tuesday. Prior to the review, some committee members had voluntarily supplied water to the site using old gallons (Plate 6). It was also agreed that the thickness of the straw roof on top the beehives should be increased to sufficiently shield the hives from sunlight. The stewardship committee has therefore been tasked to weave a more robust straw roof to serve that purpose.



Plate 6. One of the old gallons used by committee members to voluntarily supply water to attract bees. Credit: Ishmael Hashmiu

8.0 Conclusion and the Way Forward

The project has been very participatory. A bottom-up approach that actively involves community members and wildlife guards in decision making and project implementation has been adopted. Participatory monitoring of the project site for beehive occupation and elephant raids would be ongoing.