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Project Name: Mapping Critical Habitats for the Shoebill in the Awoja-Agu Wetland Sub-Catchment, Kyoga Basin – Mid-term Report.

Grant type: 1st Rufford Small Grant

Project ID: 45792-1

Grant Recipient/Project Lead: Oreret Erasmus Tukei

Project Summary

The Shoebill (*Balaeniceps rex*), a globally Vulnerable species, is facing increasing threats from wetland degradation, fire, and human disturbance across Uganda's Kyoga Basin. This project, implemented under the leadership of Oreret Erasmus Tukei through Terra-NatureWild Conservation with support from the Rufford Foundation, aims to map critical habitats and strengthen community-led monitoring of Shoebills within the Awoja-Agu Wetland Sub-catchment, a Key Biodiversity Area in Eastern Uganda. The initiative integrates science, community participation, and education to secure long-term protection of the species and its wetland ecosystem.

Objectives

1. Assess Shoebill population, distribution, and nesting habitats within the Awoja-Agu catchment.
2. Identify and map key habitat zones and threats to the species and wetland ecosystem.
3. Build local capacity for Shoebill monitoring through a citizen science model.
4. Promote conservation awareness and sustainable wetland practices among local communities and schools.
5. Lay the foundation for a community-driven Shoebill Conservation Action Plan.

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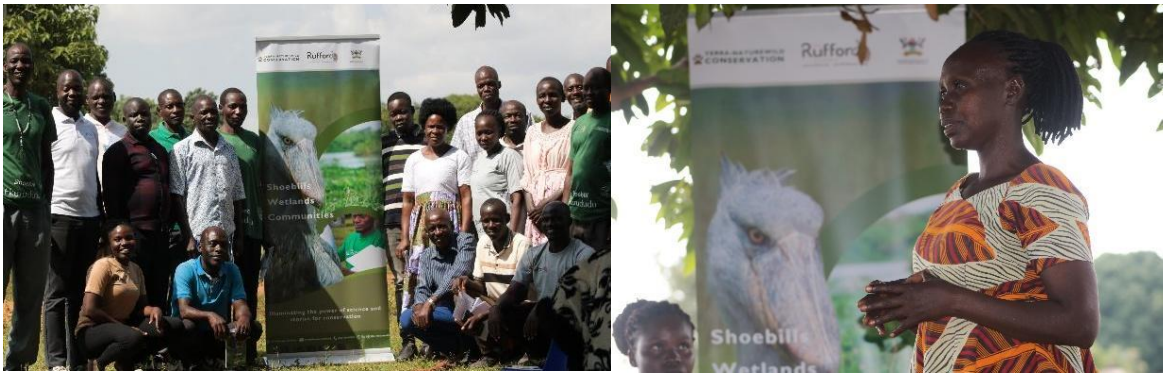
Approach and Methodology

The project employs a participatory and scientific approach, combining field-based surveys - transect walks, boat counts, nest searches, and opportunistic observations with citizen science. Local fishermen, herdsmen, papyrus, grass and firewood harvesters, and women are being identified and trained as community monitors (Citizen Scientists). Data was georeferenced using GPS and analysed to determine Shoebill distribution and nesting sites alongside complementary stakeholder engagements, community and school outreach programs to promote conservation education and awareness.

Work Done So Far

1. Conducted stakeholder and community consultations involving local leaders, wetland users, and teachers from 10 schools along the sub-catchment.
2. Conducted a community survey for 112 respondents along the sub-catchment and six focus group discussions to collect data on Knowledge and Attitudes on shoebill and Wetland Conservation practices, and as a participatory way to map shoebill habitats, rank threats and suggest ways to better conserve the shoebill and wetlands.
3. Mapped ~15,912.4 hectares of wetland with Shoebills found within ~8,935.8 hectares, and ~340.1 hectares identified as breeding/nesting zones.
4. Estimated ~5-9 individual Shoebills within the sub-catchment.
5. Identified, recruited and trained 12 local citizen scientists (4 female and 8 male) who now contribute to monthly Shoebill monitoring and community sensitization efforts voluntarily.
6. Identified fire, human disturbance and climate change as major threats disrupting breeding processes.
7. Participated in the Run for Birds Marathon organized by Avian Conservation Uganda Society at Sheraton Hotel Kampala - the first of its kind in Uganda.
8. Community Awareness Workshops: We have conducted four workshops to educate 162 local community members about Shoebill ecology, threats, conservation importance, and sustainable wetland use practices.
9. School-based Conservation Campaigns: Through science and biology teachers, we distributed educational posters, flyers and stickers as teaching aid for integration of shoebill and wetland conservation into routine teaching.
10. Development and Distribution of Educational Materials: We printed 500 A3 posters, 2,000 flyers, and 2,000 stickers about Shoebill conservation and distributed them to local communities, schools and the administrative units.

1. Stakeholder and community consultations, and project launch on 27th July 2025 held in Agirigiroi Sub-County Headquarters, Ngora District.



Left: *A group picture with the different stakeholders after Stakeholder Engagement and Project Launch in A girigiroi Sub-County Head Quarters.* ***Right:*** *Mrs. Awekonimungu Margaret, the Ngora District Natural Resources Officer giving her speech while Officially Launching the Project. (Photos by Samuel Onep).*

During the stakeholder engagement, participants were grouped into three major groupings; wetland users, educators and local leaders and made to discuss and come up with points on five key areas around shoebill and wetland conservation: 1. threats facing shoebills and wetlands; 2. perceived opportunities/importance of shoebills and wetlands; 3. their respective roles in conserving shoebills and wetlands; 4. Their respective roles in sharing shoebill and wetland conservation information; and 5. Their respective roles in sustainable wetland use. These points were captured and later used to develop educational and training materials for communities and schools.

a) Local Leader (Village Local Council Ones-LC1s, Community Development Officers-CDOs, and Women representatives on the LC1 committees):

Ms. Aluka Brenda, a Community Development Officer (CDO) for Agirigiroi Sub-County presenting to the rest of the stakeholders on behalf of the Local Leaders. . (Photos by Samuel Onep)

- **Threats facing shoebills and wetlands according local leaders;** Fishing activities, Overgrazing, wetland encroachment for cultivation, Natural calamities (drought, floods and

hail storms/strong winds), Unstable floating islands, and threats of predation from other bigger wildlife such as crocodiles, hippopotamus and egg predatory snakes.

- **Perceived opportunities or importance of shoebills and wetlands by local leaders;** Tourist attraction, Wetlands are a source of food to humans, Source of income, source of construction materials (papyrus and grass), learning purposes, and Shoebills are an indicator species showing the ecosystem health and balance of the wetland.
- **Roles of Local Leaders in Conserving shoebills and wetlands;** Community sensitization, guiding other leaders and stakeholders, making and implementing environmental bylaws, and updating other stakeholders about the progress of the shoebill and wetland conservation programs/projects.
- **Role of local leaders in information dissemination/sharing;** Information sharing through landing site management committees, Incorporation of the message during radio talk shows for CDOs, announcements during community/public social gatherings (churches and burial ceremonies), aiding in the display of posters in key landing sites, churches and schools, through community wildlife association and wetland user groups, wearing shoebill and wetland conservation branded t-shirts, and identification of the willing and able locals to lead shoebill and wetland monitoring as citizen scientists.
- **Role of local leaders in sustainable wetland use;** Guiding on good farming practices (knowing what to and not to plant), aiding wetland demarcation to avert encroachment, enforcement of bylaws to regulate wetland use and resource access, spearheading tree planning/restoration initiatives, fishpond farming using finger pond technique, regulating fishing gears to reduce over fishing, and leading community sensitization on sustainable wetland use.

b) Wetland Users (Fishermen, Herdsmen, farmers, and papyrus and grass harvesters

Mr. Eraru Dan being interviewed by Mr. Tolbert Edait, a journal (Photo by Samuel Onep)

- **Threa nd users;** Human disturbance within shoebill feeding and breeding sites, wetland degradation through over harvesting of

resources (fish, papyrus and grass), climate change (prolonged drought and floods), and uncontrolled burning of the wetlands.

- **Perceived opportunities or importance of shoebills and wetlands by wetland users;** Tourist attraction bringing ecotourism revenue and opportunities, opportunities to promote cultural and agricultural tourism, chance for knowledge sharing with tourists, improvement of livelihoods through ecotourism activities, and expansion of social networks.
- **Roles of wetland users in conserving shoebills and wetlands;** Sensitizing fellow wetland users on sustainable wetland use, monitoring and protection of shoebills and their habitats, and understanding shoebill behavior (feeding, nesting & breeding, and movement/ranging patterns).
- **Role of wetland users in information dissemination/sharing;** Holding information sharing meetings with fellow wetland users, using LC structures to share information in public gatherings, aiding in strategically erecting posters and sign posts showing shoebill and wetland conservation messages, joining and participating in community conservation clubs, forming wetland user group associations and getting involved in citizen science.
- **Role of wetland users in sustainable wetland use;** Regulating the type and size of fishing gears used to avoid overfishing, becoming stewards of conservation (citizen science), regulating the rates of wetland reclamation through responsible agriculture, and participating in tree planting/restoration initiatives.

c) Educators (Science teachers of 9 primary schools and a biology teacher of one secondary school).

The project Lead, Oreret Erasmus Tukei (Standing in a grey t-shirt) monitoring progress of the teachers during the break out group discussions at the stakeholder engagement. (Photo by Samuel Onep).

- **Threats facing shoebills and wetlands according to educators;** Wetland burning, uncontrolled fishing, poaching/illegal hunting, water drainage for domestic and agricultural use, wetland encroachment, and wetland reclamation for crop agriculture.

- **Perceived opportunities or importance of shoebills and wetlands by educators;** Tourist attraction, shoebills regulate fish species population in the wetland, shoebills are a major/keystone/species for the wetland, and intact wetland indicate and ensure a balance in ecosystems functioning.
- **Roles of educators in conserving shoebills and wetlands;** Sensitizing pupils/students about shoebill and wetland conservation, forming and leading wildlife conservation clubs at school level, using pupils/students as messengers of conservation to communities, ranking and rewarding best performing wildlife club members, Making follow-ups with citizen scientists shoebill monitoring efforts, and taking pupils/students for wetland educational walks.
- **Role of educators in information dissemination/sharing;** Communicating to pupils/students during school assemblies, organize school debates with conservation based motions, video recording and sharing on social media, use of educational materials like posters, nature walks to wetlands, designing radio announcements, and integration of shoebill and wetland conservation into the routine teaching curriculum.
- **Role of educators in sustainable wetland use;** Participating in tree planting/restoration initiatives, reinforcement of bylaws, controlled/regulated resource harvesting, and proposing translocation of shoebills to safer zones.

2. Community Surveys and Participatory Mapping of the Shoebill habitats and threats.

Left: *The Project Lead, Erasmus (in a green t-shirt) interviewing a herdsman in Kakor.* ***Right:*** *Erasmus (seated at the center in a grey t-shirt) engaging fishermen during a focus group discussion in Agule-Kopege. (Photos by Samuel Onep)*

We conducted a household survey for 112 households along the sub-catchment and six focus group discussions to collect data on Knowledge and Attitudes on shoebill and Wetland Conservation practices, and as a participatory way to map shoebill habitats, rank threats and suggest ways to better

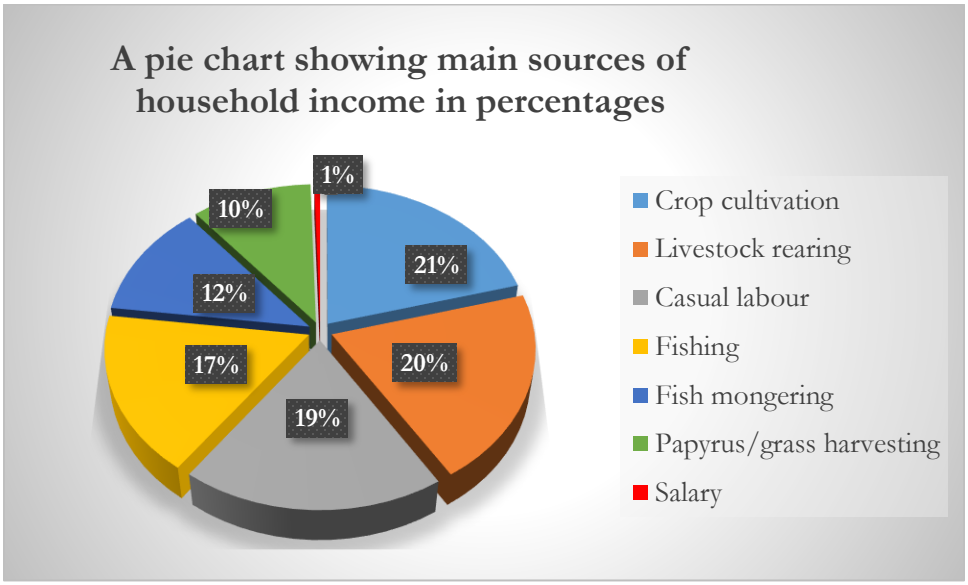
conserve the shoebill and wetlands and the survey outcomes are as showed bellowed in the different themes:

a) Demographics

We conducted in depth interviews with different wetland users and households neighboring the Awoja-Agu Wetland Sub-catchment mixed with six focus group discussions with different wetland users including fishermen, herdsmen, resource harvesters and women and youths. Out of the 112 (n=112) surveys conducted, 85% of the respondents were male and 15% were female, 85% and 11% had attained formal education up to primary and secondary respectively while 4% did not have any formal education. And on average, the respondents came from households with a mean of nine (9) members each with 14 and 1 being the largest and smallest households respectively (SD=3.58).

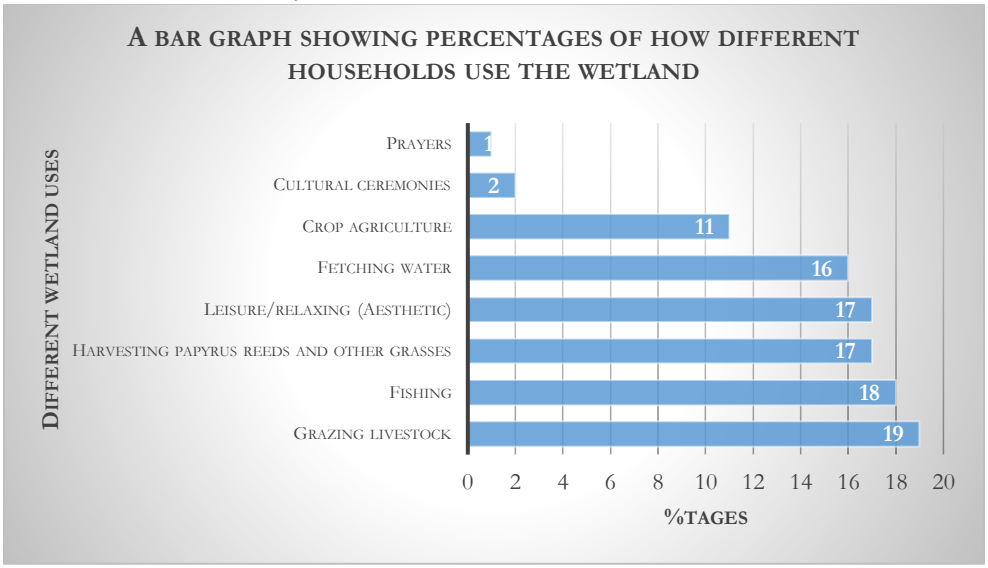
Most respondents had their households within a distance of 6-10kms from the wetland while 32% and 17% had their households in arrangements of 1-5kms and >10kms from the wetland respectively and only 4% had their households at 0kms to the wetland. The distance of households reflects the field observations of respected settlement from the demarcated wetland boundaries. It also reflects that the wetlands are not only used by households closest to them, but also those at a distance as fishing and grazing grounds mainly – a clear sign that the wetland is a shared community resource with no restricted access and use for permitted uses.

b) Main Source income



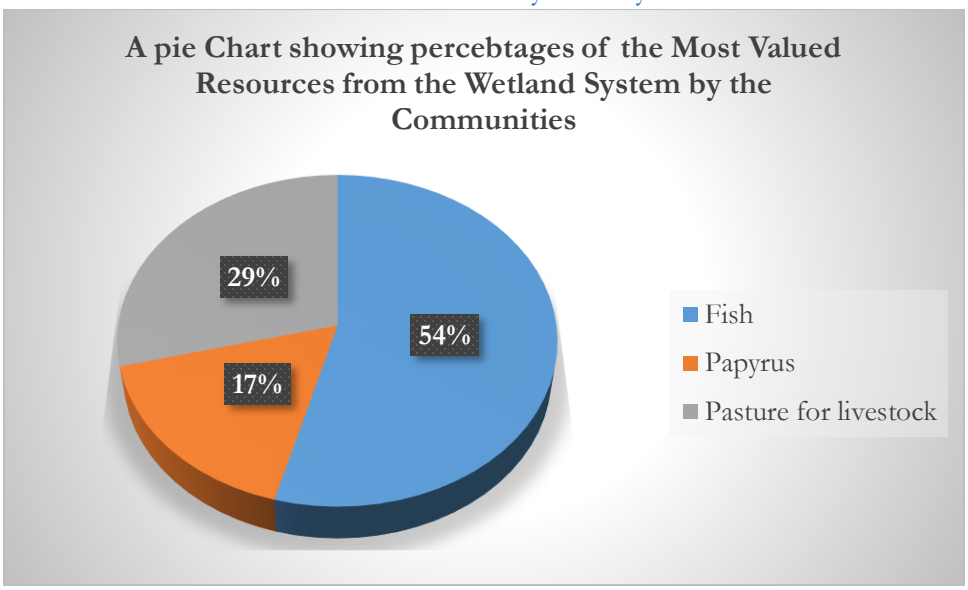
The households along the sub-catchment communities are predominantly subsistence crop cultivators, livestock keepers, casual laborers and fishermen with a few dependent on resource harvesting (papyrus, grass and firewood) and salaries. This shows a high dependency on the wetland system within these sub-catchment for livelihood.

c) How different community members use the wetlands in their households



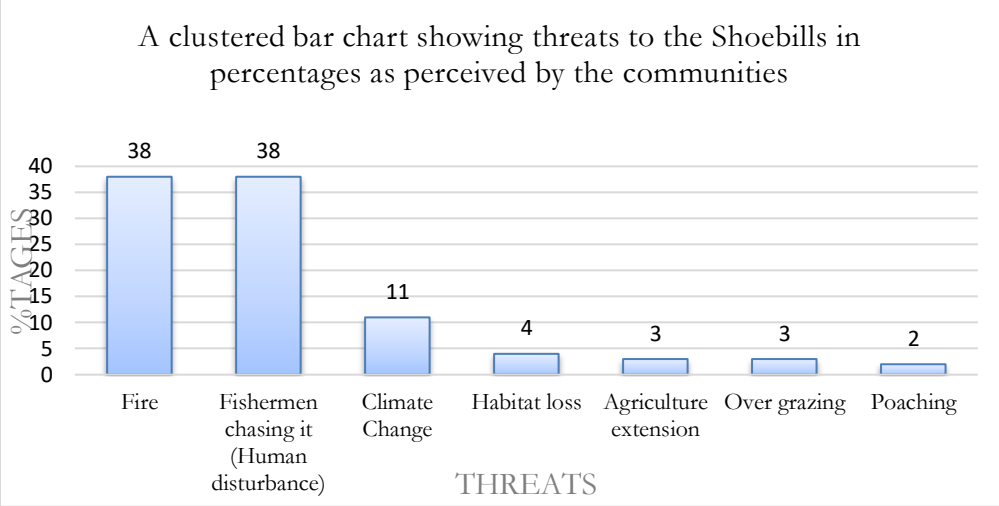
These match with the household major source of income/livelihood – which are predominantly wetland dependent.

d) Most Valued Resources from the Wetland system by the communities



Communities valued most the fish, pasture for livestock and papyrus from the wetland system. Other resources valued include; Trees, Water, firewood, Wildlife, Land for crop agriculture and the aesthetic services in terms of leisure, mainly mentioned during focus group discussions. Women valued most the water, papyrus and firewood given their gender roles in the households, and men predominantly valued pasture for livestock, while both valued the fish resources.

e) Participatory mapping of threats facing shoebills



Fire, human disturbance and climate change were highly ranked by the community surveys that matched our field observations and information gathered during focus group discussions with different wetland users including fishermen, herdsmen, youth and women.

Left: *A freshly burnt area in one of the breeding/ nesting sites of the shoebills.* ***Right:*** *Cows grazing in one of the wetland sections with a degraded riparian zone. (Photos by Oreret Erasmus Tukei).*

Left: *A degraded section with risen limited buffer vegetation affected by a previous flood.* ***Right:*** *A hip of charcoal burning. (Photos by Oreret Erasmus Tukei)*

f) What should be done to better conserve the shoebill?

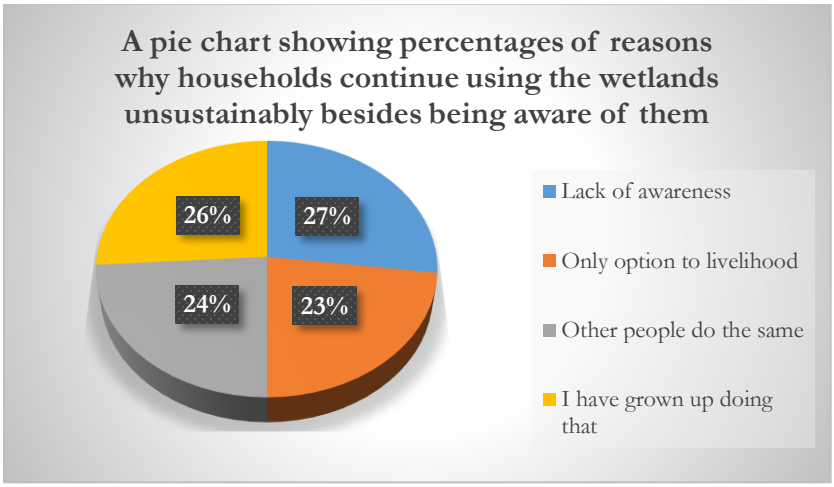
While 42% suggested creating more awareness about shoebill conservation in communities and among all wetland users, and 35% suggested Sensitizing fishermen not to chase the shoebills, 23% suggested protecting shoebill breeding sites by not burning and limiting human activities during active seasons.

g) Community Knowledge level and participatory Mapping of the Shoebill habitats.

83% of the community members knew the Shoebill, and 100% of those who knew the Shoebill also knew it existed in the neighboring wetland with 100% of them also agreed that it is important to conserve it in the neighboring wetlands. And when asked about the shoebill population trend in the last 10 years, 38.5% said it was the same (not changing), 38.5% said it was decreasing while 23% said it is increasing. This shows that the communities are always keen to observe the shoebill trends even when it is actually hard to tell the exact trend given its predominantly solitary behavior while feeding.

h) Awareness of the dangers of some of the activities done within the wetlands to the wetlands.

Besides 96% being aware that some of the activities they use the wetland for degrade the wetland, they continue using the wetland in the same way because of the following reasons shown in the pie chart below:



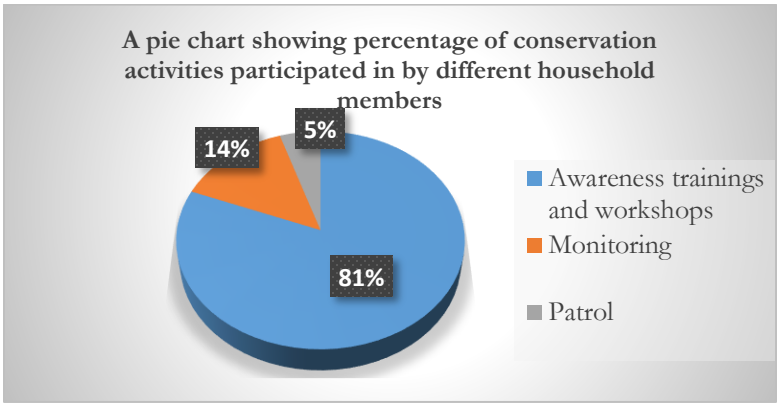
This therefore calls for more sensitization efforts for mindset change and alternative livelihood sources for the communities dependent on this wetland system.

i) Awareness about the laws that govern and ensure sustainable wetland use and management.

Whereas 98% were aware about this laws, only 15% of them had ever reported an illegal activity that degrades the wetland and harms the shoebill to an authority. And of those that have ever reported, most reported to the authorities of Local Council 1 (LC1), District Environment Officer, Parish and Sub-county chiefs, and once to a parent.

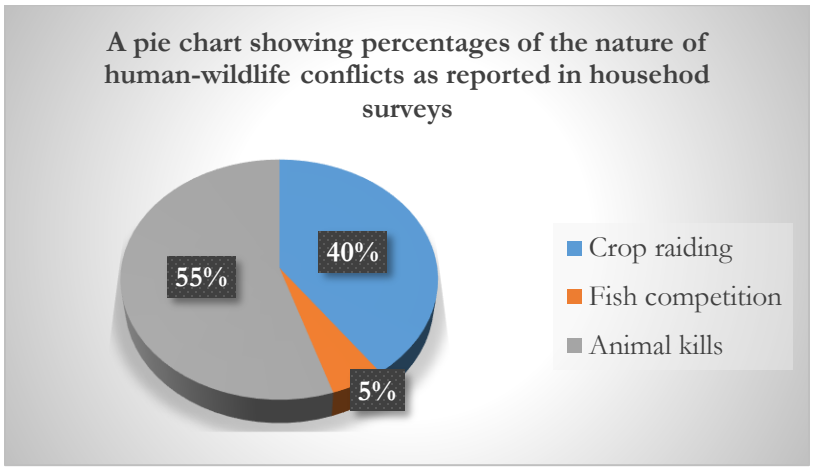
j) Participated in Conservation Activities

Only 23% of the responded has ever or has a person in the household who has ever participated in a conservation activity about shoebill and wetland conservation. And of those that ever participated, participated in at least one of these: Awareness trainings and workshops, monitoring and patrolling as shown on the pie chart below:



k) Human-Wildlife Conflict

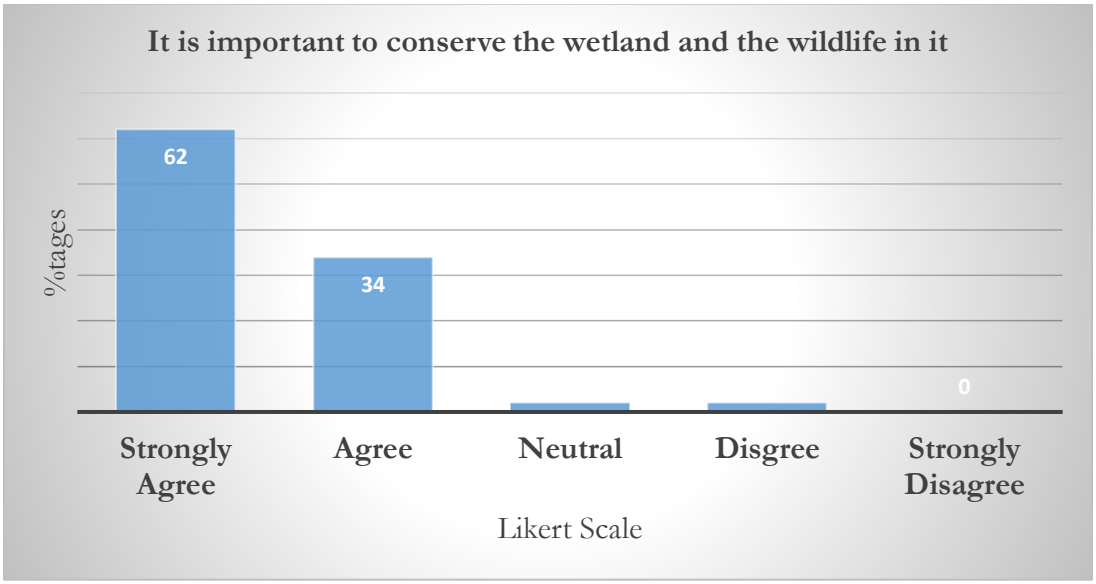
Only 23% of the respondents said yes to having ever experienced Human-Wildlife Conflict with the wildlife living in the wetland system, and 73% have never experienced the conflict. Most reported Hippopotamus followed by crocodiles and weaver birds as wildlife involved in the conflicts. However, Shoebills were mentioned to be involved in fish competition during FGD with fishermen. And when the 23% were asked about the nature of the conflict, the following were mentioned as shown below on the pie chart:

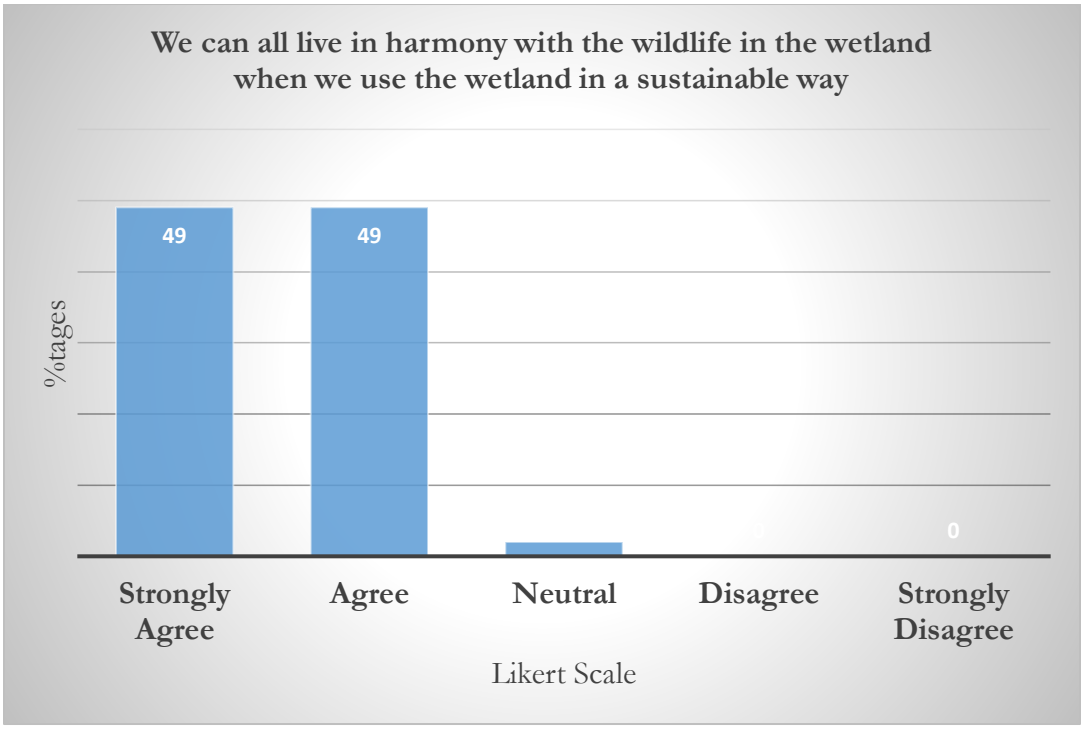


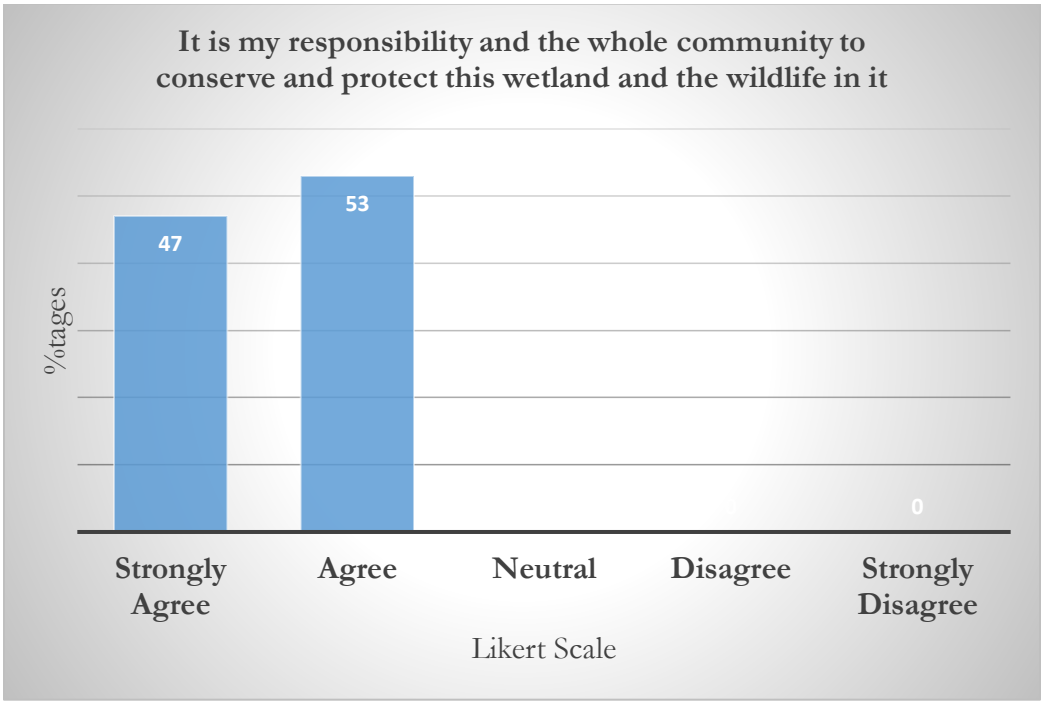
Whereas crocodiles are mainly involved in domestic animal kills, Hippopotamus are also involved to a small extent, and Hippopotamus and weaver birds are mainly involved in crop raids. Then shoebills and crocodiles were both named for fish competition.

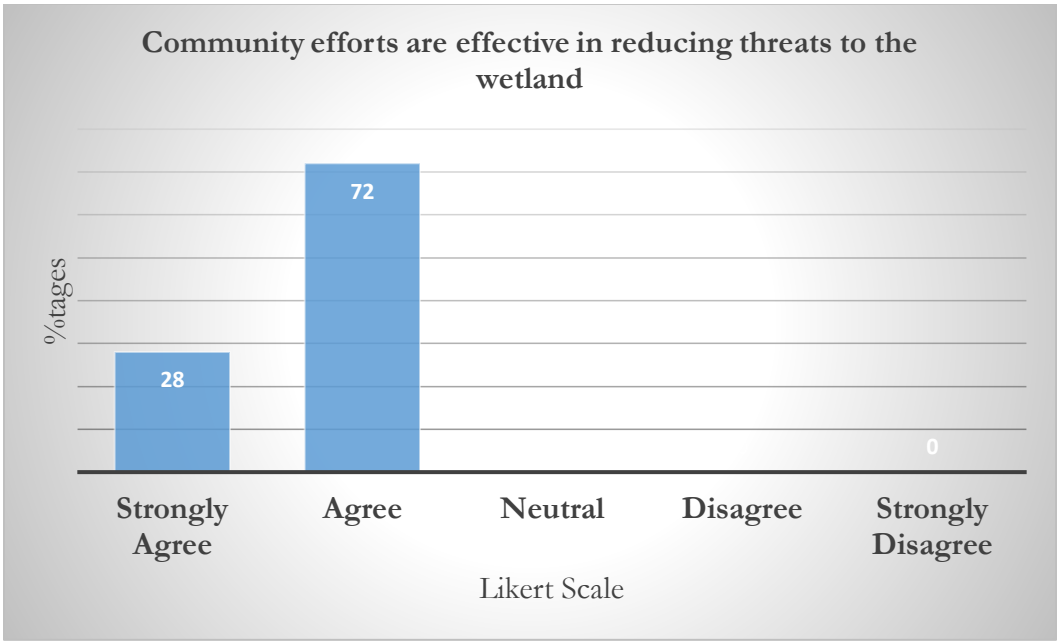
l) Attitudes and perceptions

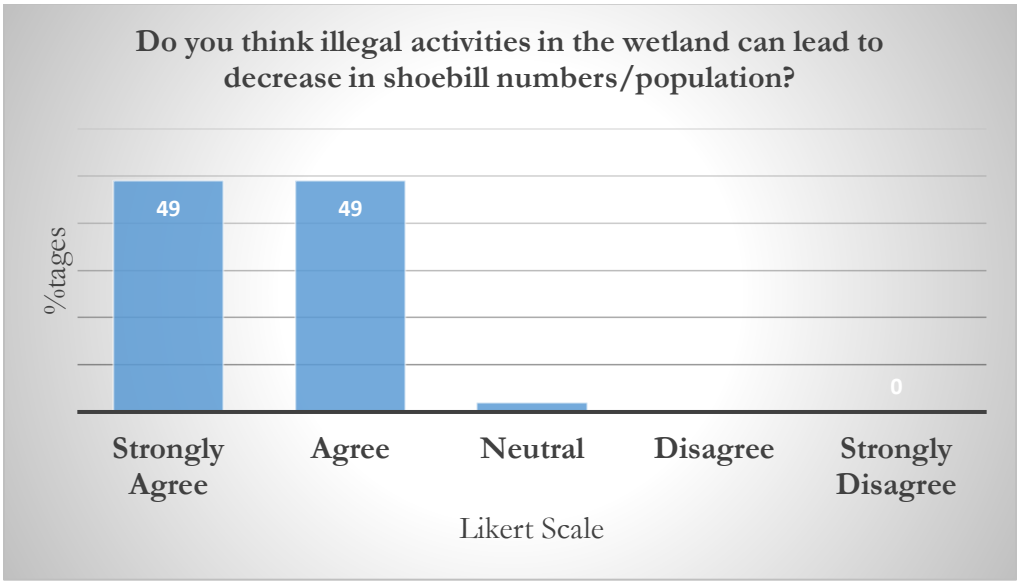
Generally, the community members' attitudes and perceptions are positive and good towards wetland and shoebill conservation given that 94% of the respondents feel connected to the wetland and 98% of the respondents agreed that the wildlife in the wetland system can attract tourists who bring money to the community. The other questions were asked and gauged on a Likert Scale of; Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree and the responses are shown below in the different graphs:


It is important to conserve the wetland and the wildlife in it
%tages
62
34
0
Strongly Agree
Agree
Neutral
Disgree
Strongly Disagree
Likert Scale


We can all live in harmony with the wildlife in the wetland when we use the wetland in a sustainable way
%tages
49
49
0
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
Likert Scale


It is my responsibility and the whole community to conserve and protect this wetland and the wildlife in it
%tages
47
53
0
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
Likert Scale


Community efforts are effective in reducing threats to the wetland
%tages
28
72
0
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
Likert Scale



3. Shoebill Population Baseline Surveys

Equipped with Binoculars, GPS devises, hats and life jackets on together with site specific local Citizen Scientists, we conducted field surveys to estimate the Shoebill population and distribution across the Awoja-Agu sub-catchment using standardized survey methods, including transect walks, boat surveys, and opportunistic sightings leading to an estimation of ~5 to 9 mature shoebill individuals in the sub-catchment with 5 all at once being the highest recorded number of shoebills observed in August and one as the lowest and commonest recording from July to November monitoring period.

Left: *A picture of a Shoebill on floating vegetation taken from Atapar-Kokong sector.* ***Right:*** *A picture of a Shoebill on a shrub taken in the Kopege-Orisai sector. (Photos by Oreret Erasmus Tukei)*

Other bird species sighted:

While conducting the shoebill survey, our teams also sighted and noted 37 other bird species listed below:

1. African Jacana
2. Long-toed lapwing
3. African Openbill
4. Malachite kingfisher
5. Black crake
6. Mourning collared-dove
7. Black headed heron
8. Piapiac
9. Black-headed gonolek
10. Pied kingfisher
11. Black-winged kite
12. Pink backed pelican
13. Blue-headed coucal
14. Red eyed dove
15. Bronze mannikin
16. Reed cormorant
17. Chubb's Cisticola
18. Singing Cisticola
19. Cinnamon-chested Bee-eater
20. Trilling Cistocola
21. Common bulbul
22. Village weaver
23. Goliath heron
24. Water Thick-knee
25. Great Egret
26. Western cattle egret
27. Green backed Camaroptera
28. Whistling Cisticola
29. Green Crombec
30. Yellow-billed egret
31. Grey-backed Fiscal
32. Helmeted guineafowl
33. Grosbeak weaver
34. Fox's Weaver
35. Little egret
36. Hadada ibis
37. Spur-Winged Goose

Up: *Malachite kingfisher, Pied kingfisher, Fox's Weaver & Spur-Winged Goose (Left to Right).* ***Down:*** *African Jacana, Cinnamon-chested Bee-eater, Whistling Cisticola & Long-toed lapwing (L to R) (Photos by Samuel Onep).*

4. Shoebill Habitat and Nesting/Breeding Sites Mapping

Mapped ~15,912.4 hectares of wetland; Shoebills were found within ~8,935.8 hectares, with ~340.1 hectares identified as nesting/breeding zones as guided by locals. Documented 5-9 individual Shoebills within the sub-catchment. Two key breeding sites were mapped in Kopege-Orisai and Atapar-Atirwai sectors with the shoebill being centrally ranging in the sub-catchment with absence recorded at both ends. The zones of absence had intense fishing, agricultural and grazing activities, correlating to the major threats facing the shoebills within the sub-catchment.

5. Threat Assessment

Key threats identified include; fire, human disturbances (fishermen chasing it) mainly affecting and disrupting breeding and destroying breeding sites of the shoebills – a major challenge documented. We also documented climate change leading to irregular changes in water levels within the wetlands with floods, poaching and indiscriminate hooking of the shoebills in the fishing nets and hooks set by fishermen.

6. Citizen Science Training Programs

We have so far identified and trained a network of 12 Citizen Scientists (4 females and 8 males) from across the sectors (Agule-Kopege, Orisai, Kokong and Atapar) of the sub-catchment where we mapped the shoebills from. We gave the Citizen Scientists basic training on how to monitor shoebills in the wetlands, capturing data like numbers, behavior (feeding, nesting, brooding, resting, mating, flying, etc), assessing habitat conditions, sensitizing other communities about shoebill and wetland conservation.

Left: *Project Lead, Erasmus (in green t-shirt) giving Citizen Scientists (Opio, center and Eraru Dan, right) on field training on how to identify birds using a Bird book.* ***Right:*** *A picture of me (with no stick) with Citizen Scientists, Ewatu and Okiror to my right and Engesu to my right after field work. (Photos by Samuel Onep).*

7. Anti-Poaching Patrols

Together with Citizen Scientists from Orisai village, were able to recover a fishing net and two (2) pieces of wood which had been set to trap the shoebills from the nest, which the shoebills abandoned after escaping leading to unsuccessful breeding. The recovered hunting gear were handed over to the Chairman Local Council One (LC1) of Orisai Village, Mr. Okodi Silver. We later traced for the fisherman who had set the trap in the shoebill nest (Name withheld) in order to sensitize him and to find out the motivation behind his action and he pointed towards illegal wildlife trade where by someone had promised him millions of Uganda Shillings for each shoebill captured alive – indicating illegal wildlife trade as one of the big threats facing shoebills within the Kyoga Basin.

Left: *A picture with Citizen Scientist Okello on site of an old Shoebill nest holding a fishing net which had been set around the nest.* ***Left:*** *A picture of the Erasmus removing the nest from the old nest. (Photos by Samuel Onep).*

Left: *(L to R), Agiriaun, Erasmus, Okello and Okodi (LC1) after recovering the fishing net from the nest.* ***Right:*** *Erasmus officially handing over the recovered fishing net and the sticks to Mr. Okodi Silver, the LC1 Chairman of Orisai Village to be kept in his custody as exhibits of the illegal activities against the shoebills. (Photos by Samuel Onep).*

We also rescued and released back to water two tortoises from fishermen who had trapped them using their fishing hooks and had parked together with fish in their canoes taking home, and when we asked,

they claimed taking even the tortoises home for consumption, which poses a danger to all the aquatic wildlife and a potential for zoonotic disease transmission. We made sure to sensitize all the fishermen around about the dangers of trapping aquatic wildlife indiscriminately and why we should fish in a sustainable manner using appropriate fishing gears.

Left: *With a fisherman holding a tortoise hooked in his fishing hook.* ***Right:*** *Releasing a tortoise back into water after rescuing. (Photos by Samuel Onep).*

8. Run for Birds Marathon.

Seven team members from Terra-NatureWild Conservation participated in the Run for Birds marathon themed "Every Step Saves a Species", a first one of its kind, a marathon dedicated for birds in Uganda held in Uganda's capital Kampala and hosted in Sheraton Hotel Kampala on the 19th of October 2025. All proceeds from the marathon were meant for powering a National Conservation Awareness Campaign. The Marathon was organized by Avian Conservation Uganda. During the marathon briefing and debriefing, we were able to display our Shoebill project poster with our Project Research Lead, Twinomujuni Dennis and Head of Conservation Programs, Birungi Julian responding to inquiries by the marathon participants. Our Organization mentor and advisor, Dr. John Bosco Amuno, also one of Uganda's top ornithological professionals had a chance to deliver a keynote speech during the marathon debrief where he highlighted our ongoing Shoebill Conservation work in the Kyoga Basin.

Left: *Part of Terra-NatureWild Conservation team during (Photo by Aiita Joshua Apamaku).* ***Right:*** *A group photo of the marathon participants during official flag off at the Run for Birds Marathon in Sheraton Hotel Kampala (Photo by Avian Conservation Uganda Society)*

9. Community Awareness Workshops

A group photo of the participants after a community awareness workshop in Atapar Village. (Photo by Oreret Erasmus Tukei).

We organized four community awareness workshops across four village zones within the shoebill home range along the sub-catchment i.e.; Agule-Kopege, Orisai, Kokong and Atapar villages bringing together a total of 162 community members both male (101) and females (61) comprising of different age groups, youth and elderly people inclusive. The attendees also comprised different wetland users from fishermen, herdsmen, farmers, papyrus/grass harvesters and households that are zero inch to the wetland.

The trainings were co-led and co-facilitated together with the communities just like the training contents were co-developed during the stakeholder engagement. Participants were grouped into 4 groups and each group was made to discuss one major issue and later made to present to the rest – community members led and trained each other using poster guides. Major areas of training were: Importance of wetlands and shoebills; Threats to the shoebill; How to protect/conserve the shoebill and wetlands; and how community members can spread the information about wetland and shoebill conservation. The training poster guides were mainly written in "Ateso" (the local language spoken in the area) with brief English translations in brackets and the pictures were in infographics. After each group presented, the floor was opened for discussion with questions, supplements and knowledge sharing.

Representatives of a breakout group presenting on the importance of shoebills and wetlands (Photo by Oreret Erasmus Tukei).

Each community member who participated in the workshops left with at least one A6 flyer and sticker with the picture of Ekurududu having an Ateso phrase, "Arai Eong Edaran Ekurududu" meaning, I am a custodian of the Shoebill. The bigger posters of A3 with the training contents and shoebill pictures together with a few more A6 flyers and stickers were strategically given to LC1s and Citizen Scientists for use during continuous community awareness campaigns in public gatherings like churches, community meetings, funerals and in the landing sites. LC1s and Citizen Scientists were also given Shoebill branded t-shirts with the Rufford Foundation and Terra-NatureWild Conservation logos to increase publicity.

We worked together with the Natural Resources Office of Ngora District Local Government to deliver these trainings. More educational materials were delivered to the office of the Resident District Commissioner (RCD), Chief Administrative Officer (CAO), Office of the Local Council Five (LC5 Chairperson), Sub-county headquarters for the three sub-counties of Kapir, Agirigiroi, and Odwarat.

Left: *A picture with the Ngora District Local Government Natural Resources Office's team after delivering educational materials (Photo by Aiita Joshua Apamaku).* ***Right:*** *Nathan Okurut (left), a volunteer at the Natural Resources Office of Ngora District delivering educational materials to Kapir Sub-county (Photo by Nathan Okurut).*

We also distributed stickers in major trading centers along the sub-catchment in strategic locations such as busy shops, boda boda stages, and also stacked them on the motorcycles of boda bodas. Stickers were also put on major landing sites and boats of fishermen.

10. School-based Conservation Campaigns

Six primary schools and one secondary school along the sub-catchment benefited from the shoebill educational materials given through their science and biology teachers respectively so as to enable these teachers to integrate shoebill and wetland conservation into their routine lessons of ecology and environment. Each school received 50 A3 posters, 200 stickers and 200 flyers as teaching aids. The teachers had earlier been engaged about shoebill and wetland conservation during stakeholder engagement, and further taken through how to use the educational materials as teaching aids during delivery. The primary schools include; Grace Junior, Orisai, Kokong, Atapar, Kopege and Odwarat primary schools, and the secondary school as Ngora Seed Secondary School. Responsible teachers were also given Shoebill branded t-shirts to motivate them and increase publicity.

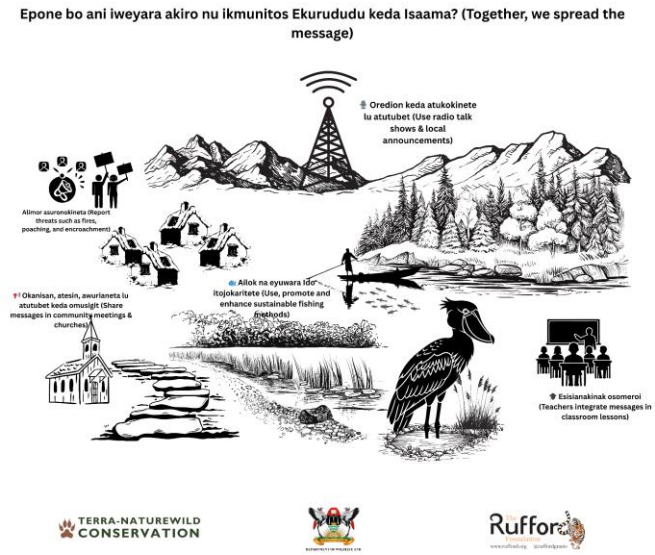
Delivering Educational and publicity materials to Orisai Primary School and Ngora Seed Secondary School (Photos by Nathan Okurut).

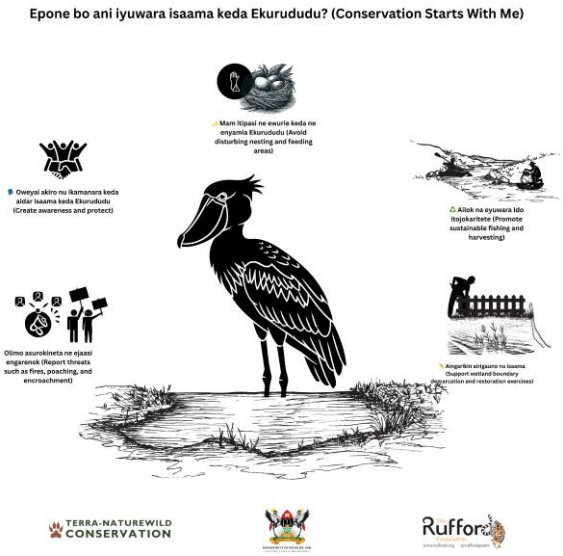
Challenges faced and Adaptive Management Applied

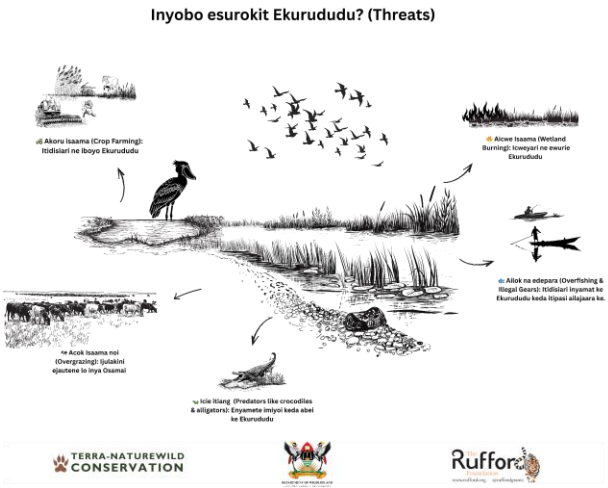
- A very large spatial area to be covered during field work that made field teams spend more time on field for more than 10 days than expected, but thanks to the efforts of the citizen scientists who cooperated with us and helped cover the area with the limited resources.
- Had to navigate areas especially on flooding wetland vegetation during transect walks and nest searchers where canoe boats would not sail through making field teams take higher risks of walking in deep water levels with aquatic animal risk, but thanks to the handy teams of citizen scientists who always guided us on where to pass and giving a hand through the tough areas.
- Limited funds to fully fund costs like educational materials, and community and school awareness campaigns, but we instead distributed educational materials to 7 schools and conducted community training only in 4 village zones where the shoebills had been mapped from. We for now forewent the schools and communities where shoebills were not mapped in, though we are still in touch with identified citizen scientists for updates in case the shoebills are sighted, but to date, none has been sighted yet. Future projects activities will definitely be targeted to address issues around wetland degradation, fire, over fishing and over grazing around those zones for the shoebills to hopefully return. Instead of conducting direct individual school outreach, we invited teachers to community training sessions and took them through the educational materials and handed the materials to them.
- Resistance from some fishermen and herdsmen, but through their LC1s we were able to convert 14 fishermen into pro-shoebill conservation stewards and recruited 4 into the citizen science network as local monitors.

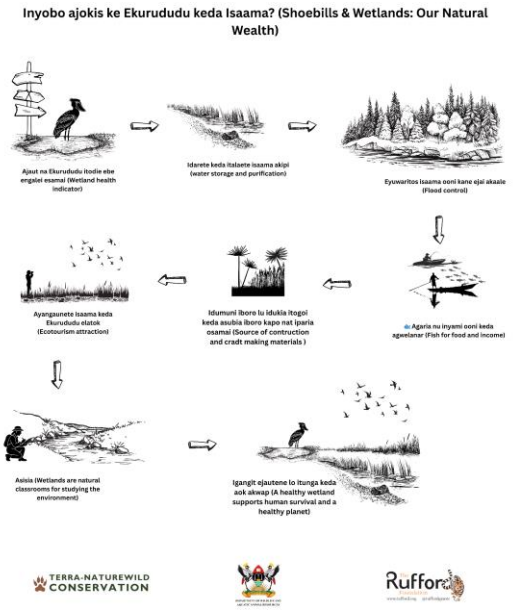
Appendices

i. Educational and publicity materials used









From top left: *Educational materials used for community awareness and sensitisation, translated into Ateso; conservation messages (top left), individual conservation actions (top right), threats facing the shoebill (bottom left) and the importance of protecting wetlands and shoebills.*

Illustrative poster designs used for community awareness and sticker designs

ii. Important links to follow this work

1. Shoebill project 2-pager pitch: Shoebill Project Pitch
2. Project Images: Oreret Erasmus Tukei 45792-1 - Field Pictures
3. Shoebill post on Terra-NatureWild Conservation LinkedIn: https://www.linkedin.com/feed/update/urn:li:activity:7349092172672991232
4. LinkedIn posts from Oreret Erasmus Tukei, project Lead: https://www.linkedin.com/posts/oreret-erasmus-tukei-7a07a11bb_shoebills-wetlands-communities-activity-7347220195679076353-nw8w?utm_source=share&utm_medium=member_desktop&rcm=ACoAACDmsc4BCUSQaubbqccpVVxcEkzuTaBQcWs
5. Rufford blog post: https://www.rufford.org/projects/oreret-erasmus-tukei/mapping-critical-habitats-for-the-shoebill-in-the-awoja-agu-wetland-sub-catchment-kyoga-basin/
6. Article blog post on Shoebill Conservation: https://tnnug.com/stories/shoebill-conservation-in-eastern-uganda-gets-boost-from-the-rufford-foundation/

iii. How you can support this work

At its current stage, the project is laying the foundation for a long-term, sustainable, community-led and citizen science driven approach to conservation within the watershed. This early phase focuses on building trust, generating shared understanding, and establishing the conditions necessary for local stewardship to thrive over time. There are several meaningful ways to support the continuation and growth of this work, including:

1. **Institutional Partnerships:** Collaboration with organizations and institutions that align with the vision and values of this initiative, and that recognize the importance of community-centered conservation - reach out to Erasmus, the project lead via eoreret@gmail.com or even through the Rufford Foundation.
2. **Donations:** Financial contributions play a critical role in sustaining the project and shaping the scope of its next phase. Donations can be made through Terra-NatureWild Conservation's partner organization, the WILD Foundation, a U.S.-based nonprofit, via the following link or scanning the code linked below (also as in the awareness poster): https://tinyurl.com/Terra-Donate