Final Evaluation Report

Your Details	
Full Name	Selamawit Negassa Chawaka
Project Title	Assessing status of wetland biodiversity for conservation planning and sustainable use in southwestern Ethiopia
Application ID	33543-1
Date of this Report	30/11/2022

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
to conduct in-depth biodiversity assessment in Haro and Bulbul wetlands in southwestern Ethiopia			✓	In depth biodiversity assessment was conducted in both Bulbul and Haro wetlands. Biodiversity data was collected from the two wetlands including bird data, mammal data, aquatic invertebrates, fish, insects and vegetation during both wet and dry season. The wet season data was collected in November 20221 and dry season data was collected in April 2022. In total, five researchers conducted field assessment and identification: Dr. Selamawit Negassa (aquatic macroinvertebrates, birds and human disturbance assessment), Dr. Chemeda Abedeta (adult insects identification and collection), Dr. Tibebu Alemu (plant identification), Dr. Seid Tiku (fish identification), Dr. Tariku Mekonnen (mammals survey and identification) Ahmed Mohammed (mammal survey) and six field and laboratory assistants: Abdo A/Jebel (bird survey), Seyoum Derib (fish sampling), Robera Negassa (vegetation sampling), Biftu (adult insect collection), Elias Haile(aquatic macroinvertebrates sampling), Dinkina Mijena (adult insect collection) were participated. Four local communities also participated in collection of mammal data in the selected wetlands and the buffer zones. The herp data was not collected due to lack of expert and equipment. The expert at Jimma University was moved to another place.
to identify the current status of wetland biodiversity and flag ship species in these wetlands			✓	The current status of the collected biodiversity was identified according to IUCN criteria and the flagship species were also identified. A total of 32

species of birds and 1685 individual were recorded from the two wetlands. Among them four of them are vulnerable species (black-crowned crane, wattled crane, Socotra cormorant, blue winged goose) and the rest are least concern according to IUCN category. Yellow billed duck is the most abundant with the relative abundance of 45% followed by white faced duck and black crowned crane with the relative abundance of 44.5% and 4.7% respectively. About 80 individuals of black crowned crane, eight wattled crane, one Socotra cormorant and three blue winged geese were recorded at the studied wetlands. These species are listed as vulnerable species according to IUCN list at the same time their population is decreasing. This makes the wetland conservation priority.

A total of four species of mammals and 26 individuals were recorded in the Bulbul and Haro wetlands. Among them 10 individuals of hippopotamus which is listed as Endangered species according to IUCN were recorded at Haro wetland. Six guereza and 10 spotted hyaenas which is least concern were also recorded.

A total of three species (African catfish, tilapia and *Labeobarbus acutirostris* (endemic to Ethiopia) and 172 individuals of fishes were recorded at Bulbul and Haro wetlands. African catfish which categorised as least concern is the most abundant species with the relative abundance of 75% followed by tilapia 16%. Only two individuals of *Labeobarbus acutirostris* which is endemic to Ethiopia and also a vulnerable species were recorded. Among 172 individual fishes 147 individuals were recorded in Bulbul wetland during wet season. Whereas no fish were recorded in Bulbul wetland during the dry season as the wetland was dried. Although the local peoples

are fishing in this wetland, they are more practising cultivation and grazing around this wetland. High abundance of fish in the Bulbul wetland indicated that this wetland is habitat for economically important fishes. Three species (African catfish, tilapia and *Labeobarbus acutirostris* were also recorded at Haro wetland during the dry season.

A total of 14 families of macro invertebrates with individual of 824 were identified. Among them, Notonoctidae families were the most abundant followed by Gerridae and Coenagrionidae families with the relative abundance of 44, 17 and nine respectively. Identification of macro-invertebrates at species level was not possible due to lack of key for Ethiopian macro-invertebrates and autonomous taxonomist in this area.

Ten plant families were identified in the studied wetlands namely: *Sacciolepis africana*, *Persicaria senegalensis*, *Cyperus assimilis, Neohyptis paniculata, Thelypteris confluens, Ludwigia stolonifera, Nymphaea nouchali, Nymphaea lotus, Myriophyllum spicatum, Persicaria senegalensis*.

In Haro wetland, *Sacciolepis africana* is dominant family whereas, *Ludwigia stolonifera* is dominant in Bulbul wetland.

Four families of dragonfly namely, Gomphidae, Lestidae, Coenagrionidae and Aeshnidae were identified. Among them, Gomphidae family is family for endangered species of *Notogomphus cottarellii*.

Regarding butterfly, four families of butterfly namely Nymphalidae, Lycaenidae, Papilionidae and Pieridae were identified in both wetlands.

Wattled crane and black crowned cranes are selected as flagship species for Haro wetland and Bulbul wetland respectively.

In general, 32 bird species (four listed as

			vulnerable) with total of 1685 individuals, four species of mammals (one listed endangered) with total of 26 individuals, three species of fish (one listed as vulnerable) with total of 172 individuals, 14 macroinvertebrate families (Gomphidae are family for endemic species of Notogomphus cottarellii) with total of 824 individuals, 10 plant families and four butterfly families were identified in the studied wetland. Four families of dragonfly were identified. Macroinvertebrates, plants and butterflies were identified at family level due to shortage of budget and lack of autonomous taxonomist in this area in Ethiopia. Whereas birds, fishes and mammals were identified at species level.
to assess threats in and in the buffer zone of Bulbul and Haro wetland			Human disturbance in and around the wetlands was assessed by looking hydrological modifications, habitat alteration and land-use practices. Hydrological modifications included ditching or draining, filling and abstracting of water in the wetland. Habitat alteration included grazing, tree plantation and vegetation removal. Land use practices in the wetlands included farming, waste dumping, bathing and swimming. Among the above listed human disturbances, eucalyptus plantation, ditching, water abstraction, waste dumping, washing clothes, bathing, swimming, grazing, and vegetation removal are the major threats. These human disturbances are degrading the wetland and their biodiversity is under high pressure.
to create awareness for local communities living around the wetland on sustainable wetland use			Awareness for local community was created by conducting workshop for 50 people. Accordingly, the training including, religious leaders, kebele administration, youth association, bonafide, women representative were participated in the workshop and awareness creation on the value, threats and conservation of the

				wetland.
to prioritize and plan conservation action for wetland species				Conservation plan was prepared by considering the importance of wetland for endemic and endangered species. Accordingly, the following conservation plan was prepared for future conservation: • Conserving both Haro and Bulbul wetlands as they are habitat for numerous bird species including birds of global concern such as black-crowned crane (Bulbul wetland) and wattled crane and endangered mammals such as hippo. • Reducing cultivation at the edge of wetland by consultation with local community and government bodies. • Stopping and filling drainage and ditching in the Haro wetland. • Removing eucalyptus plantation at the edge of Haro wetland. • Develop ecotourism for Haro wetland as it is site for religious activity such as Irrecha and habitat for mammals such as hippo and birds. • Establish community-based wetland conservation for both Bulbul and Haro wetlands. • Introduce eco-friendly alternative livelihood activity such as small-scale fishery and agroforestry. • Continuous awareness creation through workshop and training for local communities and relevant stakeholders.

2. Describe the three most important outcomes of your project.

a). Collected and identified the status of 32 bird species, three fish species, four mammal species, four butterfly families, four dragonfly families, 14 macro-invertebrate families and 10 plant families.

b). Awareness created for 50 local people living around the wetland.

c). Conservation plan and data (biological, human disturbance and water quality) was prepared for the next step and publication respectively.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

Generally during the work of this project, we faced two challenges: COVID 19, and high economic inflation. Using maximum number of car seats was not possible during field trip for prevention of COVID 19. We managed this by increasing number of cars carrying fewer people and by increasing number of field trips when there were not enough cars. The price of living and materials including fuels increased three to four times due to high inflation and the pandemic. Identification of some collected organisms at species level was not possible due to lack of autonomous taxonomist in the area, turnover of expert and shortage of budget. Thus, macro invertebrates, butterflies, dragon flies and plants were identified at family level.

4. Describe the involvement of local communities and how they have benefitted from the project.

The local community were involved in this project in data collection, training and planning conservation plan. They were involved in the data collection especially during night by serving as a guard and showing the direction and giving information regarding the occurrence of the mammals. In addition, they were involved in training and planning the conservation plan.

5. Are there any plans to continue this work?

Yes. Based on the conservation plan prepared during the first round of grant, we plan to implement the intervention and conduct additional research for the restoration of the degraded wetland, continue awareness creation, facilitating ecotourism, introduce alternative livelihood activities of low impact such as small-scale fishery and agroforestry, establishing community-based wetland conservation. In addition to identify to the species level for the organisms that were identified at family level such as dragonfly, butterflies and plants.

6. How do you plan to share the results of your work with others?

The result will be shared to relevant stakeholders such as international organisations working on wetlands such as Wetland International, IUCN, International Crane Foundation and Endangered Wildlife Trust through email. The result is already communicated to Jimma town tourism office to establish community-based wetland conservation and to facilitate ecotourism. The website will be developed, and the website of Jimma tourism office will be also used to post important findings of this project. The result will be published on international peer reviewed journals. The local media such as FM radio will be used to disseminate the result.

7. Looking ahead, what do you feel are the important next steps?

The next step is implementing the conservation plan prepared by this project together with stakeholders including scientists, local communities, government agencies, international communities and all relevant stakeholders

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

Yes indeed! the logo of the foundation was used and promoted in every prepared material as well as during the training session on t-shirts and banners.

9. Provide a full list of all the members of your team and their role in the project.

A total of 15 people were participated in this project to collect data, identification of the biological data, conduct training and as field guide

Dr. Selamawit Negassa (aquatic macro invertebrates, birds and human disturbance),

Dr. Chemeda Abedeta (adult insects' identification and collection),

Dr. Tibebu Alemu (plant),

Dr. Seid Tiku (fish identification),

Dr. Tariku Mekonnen and **Ahmed Mohammed** (mammals survey and identification)

Five field and laboratory assistants:

- Abdo A/Jebel (bird survey),
- Seyoum Derib (fish sampling),
- Robera Negassa (vegetation sampling),
- Biftu Endale (adult insect sampling),
- Elias Haile (aquatic macro invertebrates sampling)
- Dinkina Mijena (Adult insect collection) were participated.

Four people from local communities (Awol A/Garo, Gali A/Garo, Aliyi A/Garo and Aba Rashad) were also participated in collection of mammal data in the selected wetlands and the buffer zones

10. Any other comments?

I would like to thank The Rufford foundation for financially supporting this project and for its commitment on biodiversity conservation all over the world. Specially, this project will not be completed without the support of the foundation. I would like to thank the foundation as female early career scientist for contributing to my career development that helped me to conduct research and achieve my passion of

biodiversity conservation. I would like to thank all team members, government officials at Jimma town and district and Jimma University for their cooperation during the project implementation.