Final Evaluation Report

Your Details	
Full Name	C Abdou Orou-Seko
Project Title	Understanding Community Perception on Threatened Fish Species Conservation and Promoting Sustainable Aquaculture in White Volta Basin's Fishing Villages, Ghana
Application ID	43601-1
Date of this Report	May 19, 2025

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
1. Assess threats to endangered fish species and the knowledge level of fishing communities on threatened fish species conservation			■	The detailed final project report describes the method used and the results obtained.
2. Determine factors influencing fishing communities' perceptions towards sustainable aquaculture			■	The detailed final project report describes the method used and the results obtained.
3. Identify suitable sites for pond aquaculture development			■	The detailed final project report describes the method used and the results obtained.
4. Create awareness of fishpond farming adoption for livelihood diversification			■	The detailed final project report describes the method used and the results obtained.
5. Train fishing communities on approaches to developing pond aquaculture without interfering with biodiversity			■	The detailed final project report describes the method used and the results obtained.

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

a). There was critical gap in awareness of global conservation frameworks, with only 2.5% of respondents having knowledge about the IUCN Red List, despite 86.3% recognizing the importance of fish biodiversity conservation. Furthermore, in-depth understanding was limited generally. Regulatory awareness was also low, with 58.3% of the respondents being unaware of conservation laws, which could hinder enforcement. The major threats to fish biodiversity included unsustainable fishing

practices (small mesh nets, overexploitation) and environmental degradation (pollution, habitat destruction). Endangered fish species such as *Synodontis macrophthalmus* and *Fundulopanchax gularis* were commonly reported. In the study setting Conservation participation was low (35.0%), with economic benefits being the main motivator, while key barriers included lack of awareness (72.1%) and financial constraints (58.8%). Additionally, key factors influencing perceptions of aquaculture feasibility were identified. Older respondents were significantly more likely to see aquaculture as feasible compared to younger ones. However, uncertainty about market demand drastically reduced feasibility perceptions. Interestingly, those unsure about aquaculture's profitability were more likely to view it as feasible, suggesting that motivations beyond direct profit, such as sustainability, may play a role. Cultural identity and integration were crucial, as respondents who did not see aquaculture aligning with their cultural values were far less likely to support it. Additionally, those who did not recognize aquaculture's biodiversity benefits were significantly less likely to perceive it as viable.

b). Suitability map was produced using suitability analysis using GIS for potential pond aquaculture sites development in the White Volta Basin based on environmental and socioeconomic factors. The land was categorized into three classes: Not Suitable (34.4%), Moderately Suitable (60%), and Most Suitable (5.6%). Field visits with local authorities validated the identified sites, reinforcing the model's accuracy and practical applicability. Also, the suitability map, along with the geographic coordinates of the most suitable sites, was shared with fishing community members to facilitate informed decision-making.

c). The awareness creation and training activities successfully introduced fishing communities to fishpond farming as a sustainable livelihood alternative while promoting fish biodiversity conservation. Key outcomes included increased community interest in conservation, engagement with local authorities on sustainable fisheries management, and enhanced knowledge of responsible aquaculture practices. Community members were trained on site selection, pond management, fish feed production using local ingredients, and aquaponic systems. A suitability map for aquaculture site identification and specially developed information materials, including pamphlets and posters, were shared with district assemblies. These tools serve as practical guides for policymakers and organizations working on biodiversity conservation and sustainable fisheries management in the White Volta Basin.

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

During the project implementation, the survey on factors influencing fishing communities' perceptions of sustainable aquaculture and the awareness campaign coincided with Ghana's electoral period. This created challenges in executing the activities as planned, as it was difficult to schedule fixed interview times with participants. To address this, we adapted our approach by extending our stay in the communities, allowing us to complete the survey despite the disruptions. For the awareness campaign, we rescheduled the activities to take place after the elections, ensuring full participation and successful implementation. These

adjustments allowed us to overcome the challenges and achieve our project objectives effectively.

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

Local communities were actively involved in all phases of the project, including surveys, suitability mapping and validation, awareness creation, and training sessions. Fishermen, fishmongers, local authorities, and district assemblies played key roles in the implementation process. The strong commitment of fishermen was a direct result of the reconnaissance survey and public consultations conducted before the project began, ensuring their engagement from the outset. Stakeholders took ownership of the project, contributing to its success. Through their involvement, community members gained valuable knowledge on sustainable fishing practices, fish biodiversity conservation, and pond aquaculture as an alternative livelihood. They also received training on site selection, pond management, and fish feed production using locally available resources. Additionally, the suitability maps and training materials developed during the project were shared with district assemblies, providing a lasting resource for future conservation and aquaculture initiatives. These efforts have strengthened local capacity for sustainable fisheries management and improved economic opportunities for fishing communities.

5. Are there any plans to continue this work?

Moving forward, we plan to continue this conservation efforts for threatened fish species within inland fishing communities in the White Volta Basin. A key priority will be conducting further ecological and biological studies on the populations of *Synodontis macrophthalmus* and *Fundulopanchax gularis*, which are critically endangered in the region. Additionally, research on the migratory pathways of these species, impact of existing dams on fish biodiversity and strategies for their restoration or restocking in the White Volta Basin will be essential. Building on the findings of this project, we also aim to reassess the conservation status of commercially and economically important fish species currently listed as near-threatened in Ghana, due to the growing environmental pressures they face. Furthermore, there is a need to explore the traditional medicinal and cultural significance of threatened fish species, as understanding their role in local practices could contribute to more effective conservation strategies. Strengthening collaboration with local communities, researchers, and policymakers will be crucial in ensuring the long-term sustainability of these conservation initiatives.

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

The results of this project have already been shared with fishing communities through awareness creation toolkits, sensitization and training materials developed from our findings. To further share our findings, we plan to present oral communications at the University for Development Studies' scientific conference in August 2025. Additionally, two scientific papers based on the project's results have been drafted and submitted to peer-reviewed journals indexed in Scopus. All educational materials developed, including checklists, pamphlets, training guides, and awareness posters, will be made publicly accessible online to support future

research, conservation efforts, and community education initiatives. We also aim to engage with stakeholders through workshops, webinars, and collaborative platforms to extend the reach and impact of our work.

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

The next crucial steps for this project involve expanding conservation research and implementing targeted actions/interventions to protect threatened fish species in the White Volta Basin. With additional funding, including potential support from The Rufford Foundation, we aim to launch a pilot phase of community-based pond aquaculture in the project sites. This initiative will provide alternative livelihoods for fishing communities while reducing pressure on wild fish stocks.

To ensure the long-term sustainability of conservation efforts, we plan to establish a local monitoring committee within the intervention communities. This committee will oversee natural fish stock preservation and promote sustainable fishing practices. Additionally, we seek to explore opportunities for integrating education on threatened fish species into primary school curricula, fostering early awareness and engagement in biodiversity conservation.

Another key priority is expanding the promotion of fish farming as a supplementary income-generating activity in other inland fishing communities across the White Volta Basin. Furthermore, we aim to develop a comprehensive set of conservation guidelines, including regulatory measures to support policy development for fish biodiversity conservation. A policy brief will be drafted to guide decision-makers in strengthening conservation strategies at both local and national levels. Through these efforts, we hope to create a lasting impact on fish biodiversity conservation while improving the livelihoods of fishing communities.

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, The Rufford Foundation logo was prominently displayed on all materials produced for this project, including awareness-raising and training materials, as well as the pictorial checklist. The logo was also featured on t-shirts designed and printed specifically for project activities, ensuring visibility during community engagements. Additionally, we have acknowledged The Rufford Foundation's financial support in the scientific papers derived from the results of this research. Through these efforts, the Foundation received recognition among local fishing communities, stakeholders at the district and municipal level, and the broader scientific community.

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

C Abdou Orou-Seko: Principal investigator of the project was involved in all the activities related to the project

Haruna Alhassan: He was involved in all activities related to the suitability modelling of pond aquaculture locations utilising GIS and remote sensing, as well as stakeholder awareness activities. He was also involved in the design of the checklist

Abdul-Latif Fuseini Napps: He was involved in the development of training materials and the implementation of training sessions on different approaches to developing

fishpond farming. He also participated in the design of the brochure and pamphlet aimed at raising awareness of the adoption of fishpond farming to protect aquatic habitats and critically endangered and endangered fish in the WVR.

Iddrisu Yusif: He was involved in the creation and management of the digitization of questionnaires and assisted in conducting activities related to threats and knowledge level assessment, as well as the assessment of factors influencing fishing communities' perceptions towards sustainable aquaculture development (surveys). He also assisted with the development of the brochure and pamphlet, data processing, and statistical analysis.

Prof. Martin Nyaaba Adokiya; Supervised all activities related to the project and managed the necessary permission related to the project with the Savelugu Municipality and Kumbungu District Assembly. He also ensured that the project was implemented according to the guidelines of the University for Development Studies.

10. Any other comments?

We sincerely thank The Rufford Foundation for funding this conservation project, which has uncovered valuable insights and critical realities about fish biodiversity and sustainable aquaculture in the White Volta Basin. We look forward to building on these findings through future initiatives, as outlined in our next steps. Our deep appreciation also goes to the dedicated project team, whose commitment and expertise were instrumental in the successful execution of this work. Additionally, we extend our heartfelt gratitude to the fishing communities for their active participation, collaboration, and willingness to embrace sustainable practices. Finally, we acknowledge the invaluable support of the municipal and district assemblies, whose involvement played a key role in facilitating project activities and fostering a shared commitment to conservation efforts.