# Project Update: September 2025

**Project ID: 44008-1**

**Project Title:** Community Sensitization and Mobilization for Conservation of Vulnerable Rukwa Tilapia (Oreochromis rukwaensis) in Tanzania

## 2.0 Project Activities Update

During this period from (April to September 2025); the following major activities were done

**2.1** To improve the development of sustainable resource use practice through training and establishment of alternative and resilient economic activities for the sake of protecting *Oreochromis rukwaensis* and its ecosystem.

2.1.1 Training on Beekeeping

To reduce overfishing on Rukwa Tilapia and other fish species in lake Rukwa, beekeeping as one of the alternative livelihoods was introduced to Lake Rukwa communities to diversify their income and reduce pressure on fishing.

The beekeeping training provided participants with hands-on skills to diversify their income beyond fishing. The training was championed by leaders from CHAUGOMA, a local association committed to beekeeping and environmental protection in Muze Ward. The training was attended by more than 50 attendees from various villages around Lake Rukwa.

The trainers encouraged the participants to join the association, suggesting that it would be more feasible to start up the venture if they were members of the association. The trainers also discussed startup costs (one beehive costs approximately 120,000 TZS), with a potential yield of up to 10 litres of honey per hive after 6 months depending on the strength of the individual colony. They also discussed market access and the challenges it presents. Trainees were trained about appropriate techniques for beekeeping, friendly and aggressive bee behaviours, beekeeping farm management and areas suitable for beekeeping.

Following the training, the project provided 10 beehives to CHAUGOMA group as a motivation to expand their initiative and association. Moreover 10 extra beehives were distributed to individuals who were very interested in starting this activity and earn extra income to cover their family. Many training participants seemed excited by this opportunity and promised to seek further clarification so that they could establish their ventures.

Plate 1: Participants listening tentatively to the presentation by Dr. Happiness Anold during beekeeping training

Plate 2: One of the leaders of CHAUGOMA group, sharing his beekeeping experience with the participants

2.1.2 Training on Aquaculture/fish farming

Fish farming training was provided to local communities to diversify their income and reduce pressure on wild fishing in Lake Rukwa. More than 60 fisheries stakeholders particularly fishermen in Ilanga, Muze and Ukia villages attended the training.

A training session was led by Mr. Julius Assam (Principal Fisheries Officer) from Tanzania Fisheries Research Institute (TAFIRI)- Kigoma. The training focused on farming Oreochromis rukwaensis in ponds. Oreochromis rukwaensis was selected because it is readily available in Lake Rukwa, allowing participants of easy access to farming. Apart from the technical details on the farming of *Oreochromis rukwaensis*, the presenter reminded the participants that fish farming is a form of entrepreneurship. Therefore, they need to embody the key values of a good entrepreneur, such as resilience, creativity, patience, and a willingness to learn new knowledge and skills. Mr Assam also emphasized the participants on the importance of reflecting realistically on their position regarding fish farming and to question whether they have the required capital and determination to start farming.

Mr. Assam presented different topics about fish farming including how to find suitable location to begin farming by considering availability of sufficient and quality water, soil, and the tranquillity of the place. Furthermore, the trainer instructed on the best way to prepare the fishpond. He also shared his knowledge on fish feeds and fingerlings and insisted that quality food and fingerlings is key to a reasonable growth rate of the fish.

Moreover, Ms. Theresia Temba trained the participants about pond maintenance. She presented that the farmer needs to check their pond at least twice a week for oxygen level, pH level, water organisms, nutrients, debris, and solid wastes. He further provided the optimal parameters that the farmer needs to observe. The temperature should ideally range between 20 °C and 30°C, dissolved oxygen level should not be below 3 mg/L and the pH should range between 6.5 and 8.5. Furthermore, she insisted the participants that the pond needs regular cleaning and measures to ensure the safety of the fish reared.

Plate 3: Mr. Jullius Assam providing training on fish farming to participants

2.2 A Study on the Social, economic, political and Environmental Threats Facing Rukwa Tilapia and its ecosystem in Lake Rukwa.

The study on the social, economic, and environmental threats facing Rukwa Tilapia was conducted as an essential step to collect data needed for management and conservation interventions. The study employed the following methods for data collection: surveys, focus group discussions, key informant interviews, and observations. A total of 120 fisheries stakeholders and other community members actively participated in the survey.

The preliminary findings revealed that, there is a strong dependency on fisheries resources among the community members in the studied area with 81.3% of respondents relying on fishing for their livelihoods. Many participants were fishers, processors and traders with modest educational backgrounds and income levels, indicating limited economic diversification. While some openness to alternative livelihoods was noted (33.7% willing to explore other activities apart from fishing), the overall dependency highlights the urgency of providing sustainable options to reduce pressure on Lake Rukwa's fisheries.

This study revealed that the key environmental and management threats facing *Oreochromis rukwaensis* and its Lake Rukwa ecosystem include deterioration of water quality due to agricultural runoff, livestock keeping around the lakeshores, mining activities upstream, deforestation, decline in the level and size of the lake due to siltation and climate change impacts. Social and governance issues, such as the use of destructive fishing gears for instance small mesh size nets, overfishing due to increase in number of fishers from Lake Tanganyika especially during its closed season, poor compliance with regulations, lack of conservation programs and minimal community involvement further exacerbate the problem. These findings highlight the need for integrated conservation strategies that combine regulatory improvements, environmental education, pollution control, and active community engagement. Due to observed water pollution in the lake, further research is required to understand the extent of the pollution and its influence on this vulnerable specie (Oreochromis rukwaensis).

Plate 4: Livestock keeping around lake Rukwa

Plate 5: Observed water pollution and mud shores in Lake Rukwa

Plate 6: Mr. Yona Mwakiluma (TAFIRI - Fisheries socio-economist) moderating a focus group discussion.