Darwin Initiative Main & Extra: Final Report

To be completed with reference to the "Project Reporting Information Note": (https://www.darwininitiative.org.uk/resources/information-notes/).

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes.

Submission Deadline: no later than 3 months after agreed end date.

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Darwin Initiative Project Information

Scheme (Main or Extra)	Main
Project reference	29-022
Project title	Community-led fisheries management in the Mara Wetlands, Tanzania.
Country(ies)	Tanzania
Lead Organisation	WWF-UK
Project partner(s)	WWF-Tanzania, IHE Delft, Tanzania Fisheries Research Institute (TAFIRI), Victoria Farming and Fishing Organization (VIFAFIO), Lake Victoria Basin Water Board (LVBWB), Mara Regional Administration and Local Government Authorities
Darwin Initiative grant value	£ 517,303
Start/end dates of project	June 2022 - March 2025
Project Leader name	Katherine Elliot (Tanya Smith, Interim lead as maternity cover)
Project website/blog/social media	https://www.wwf.org.uk/what-we-do/projects/sustainable-fisheries-mara-wetlands
Report author(s) and date	WWF-TCO: Mr Christian J. Chonya and Mr Enock Edward WWF-UK: Ms Tanya Smith and Ms Mae Tortajada-Suils 30 June 2025

1. Project Summary

The Mara Wetland, covering 387 km^2, are among the largest tracts of intact papyrus swamp in sub-Saharan Africa. Located in Tanzania where the Mara River flows into Lake Victoria (See Annex 5 for the maps of the project area), the wetland hosts globally important biodiversity and provides important ecosystem services including fisheries that underpin local food security supporting around 110,000 people across 27 villages. The project was designed in response to threats including overfishing, habitat degradation, pollution, and weak institutional coordination. An integrated Management Plan (IMP) for the Mara Wetlands published by the Tanzania government in 2018 identified the same threats and called for action. The inventory of flora and fauna that was undertaken to support the IMP revealed significant data gaps, especially on fish diversity, populations, behaviour and habitat use. These data gaps preclude design of effective

management interventions to protect biodiversity while improving livelihoods. During initial community consultations with villages surrounding the wetland, the use of illegal fishing methods and perceived declining fish stocks were highlighted as key challenges to address.

The project worked hard in response to IMP towards increasing the fish stocks, reducing vulnerability of endangered species and enhancing local livelihoods. It also tried to address the data gaps in fish biodiversity, enhancing community participation in governance and targeting gender-based livelihood inequalities.

The project addressed four outputs; i) development of the first fisheries situation assessment (Baseline information of the wetland) and supported preparation of co-management and sub-catchment plans to reduce biodiversity threats across at least 190 km² of the wetland (50% coverage Outcome 0.1). ii) Capacity building for sustainable fishing practices and strengthened community institutions such as Beach and Community Management Units (BMUs/CMUs) and Water Users Associations (WUAs) to implement the co-management plans. iii) Community empowerment particularly women on fisheries value chain to improve local livelihoods and iv) create enabling conditions for scaling up the best practices. Responding to the Integrated Wetlands Management Plan (IWMP) and building on previous initiatives, this project established a baseline information for fish habitats and biodiversity that serve as a foundation for future management of the wetland.

2. Project Partnerships

WWF-UK worked in close collaboration with all partners to develop and implement project across all three years, including leading regular project working group calls. WWF-Tanzania Country Office (WWF-TCO) remained responsible for in-country coordination and regular contact with TAFIRI, VIFAFIO, LVBWB and the Mara Regional Secretariat. The WWF-TCO Project Coordinator maintained regular contact with local partners and stakeholders through email, phone and in-person meetings. WWF-TCO supported these local partners with capacity building, training, mentoring, and resources for effective project implementation, including training on developing high-quality financial reporting, facilitated by WWF-TCOs grants and compliance staff.

The project was rooted in strong local demands and key stakeholders participation, with formal partnerships with international and local institutions engaged throughout the project. The initiative emerged from prior consultations with local communities, particularly fisherfolk, BMUs & CMUs, WUAs, and local government authorities, who identified the degradation of fisheries and loss of income as key issues.

Project planning was deeply participatory, adapting from initial fisheries situation assessments and socio-economic baseline surveys conducted by Tanzania Fishery Research Institute (TAFIRI) with support from WWF, which informed the development of co-management and sub-catchment plans. All formal partners; Mara Regional Secretariat (RS), TAFIRI, Victoria Farming and Fishing Organization (VIFAFIO), local/district authorities (LGAs), IHE Delft institute for water education, Lake Victoria Basin Water Board (LVBWB), WWF-TCO and WWF-UK were fully engaged in the planning, implementation, monitoring and evaluation process through data-sharing mechanisms like electronic Catch Assessment System (e-CAS), stakeholder meetings (physical and virtual were weekly), joint field assessments and execution of works. Additionally, the partnership with communities like Women fishmongers contributed to the formation and implementation of local activities such as formation and/or strengthening of VICOBA (Village Community Banks)/VSLA (Village Savings and Loan Associations).

Throughout the project, each partner had clearly defined roles: WWF - UK worked in close collaboration with all partners to develop and implement the project through visits to the project and regular individuals and group calls. WWF-TCO remained responsible for in-country

coordination and regular contact with all local formal and informal partners including government and communities without forgetting women and people with disability (PWD) through in-person meetings, phones, and emails. WWF Tanzania supported these local partners with capacity building, training, mentoring and resources for effective project implementation. The project received support from international partnership with IHE Delft, who contributed technical assistance and staff expertise to achieve the project's objectives. IHE Delft's support aimed to build the capacity of TAFIRI, VIFAFIO and local fishers on aspects of wetlands situation analysis, ecological survey, community fisheries monitoring, natural resource governance, value chain enhancement and gender issues.

TAFIRI with support from IHE Delft and WWF-TCO dealt with technical fisheries research and monitoring - completing the juvenile, frame and larvae survey, and the ecological survey of the wetland. VIFAFIO supported the formation of and provided training to women's groups and value chain enhancement; while LVBWB supported the development of Sub-catchment management plans (SCMPs) and water quality assessments through community led approach. LGAs/District supported the development of District Environmental Action plans (DEAPs), also provided institutional backing to the BMU and CMU operationalization in protecting the key biodiversity areas like the breeding sites. LGAs are the custodian of the developed DEAPs and ensured BMUs/CMUs perform their duties including the patrols. Given the established local governance structures, co-management plans, financing strategy, formation of 20 VICOBA registered women's groups, data collection through e-CAS, and monitoring of the protected areas, shows strong evidence that partnerships will endure beyond the project end, while stakeholders are expressing strong commitment to continue implementing the best practices beyond this project period.

From during the second year of the project alone, several in-person collaborative activities took place involving all project partners, including: (1) Ecological field work collaboration between TAFIRI, IHE Delft, VIFAFIO and WWF-Tanzania, (2) a mid-term partner reflection meeting with 17 attendees (see annex 6 for the report); (3) Ongoing strong engagement and collaboration between all stakeholders including regular local government meetings and increased engagement with Community Management Units (CMUs) and Women's Groups. In the final year, we hosted a final end project partners meeting which followed a data consolidation and analysis workshop between IHE Delft and TAFIRI in October 2024, attended by all partners, as well as representatives from local and regional government, as well as the women's groups, BMU's and CMU's (See Annex 6 for the agenda of the final partner reflection and exit planning meeting held).

WWF-TCO developed a strong collaboration with the Tanzanian Mara Regional Office, which led to a deeper understanding of the importance of wetlands and inland fisheries by the regional government. Consequently, they hired a Regional Fisheries Officer to serve as the focal person for fisheries in Mara region and this project - this position did not exist before the project.

Over the past two years, further emphasis was placed on a collaborative management approach for wetlands conservation, empowering communities as central decision-makers regarding wetlands resource conservation. WWF, Local Government Authorities (LGAs), VIFAFIO, and TAFIRI have served as facilitators during a total of 23 meetings, with decisions and solutions emerging primarily from grassroots resource users. This approach facilitated the development of management plans and by-laws, which were then shared from regional management levels to the village and community levels, ensuring widespread participation and ownership.

3. Project Achievements

The project achieved nearly all its intended outputs and largely achieved the intended outcome, as laid out in the logframe, with clear evidence of progress across strengthening of fisheries co-management, improved sustainable practices, value chain enhancement, and enabling conditions for scale-up. Outputs were tracked using the MEL framework, socio-economic surveys, eCAS data, and partner reports, with regular validation through follow-up monitoring, in person discussion, emails, joint physical and virtual meeting and other communications by all project staff and partners.

3.1 Outputs

Inception Phase

The project successfully completed its inception phase, establishing strong foundations for implementation through institutional partnerships, capacity building, and inclusive stakeholder engagement. WWF-Tanzania sub-granted two key local implementing partners (TAFIRI and VIFAFIO) following comprehensive due diligence and capacity training on WWF's operational policies and safeguards. A dedicated Project Executant (PE) was recruited to coordinate project delivery across all districts, ensuring effective collaboration with government, community leaders, and local organizations.

Stakeholder engagement was a central outcome of the inception period. Major consultation events including the project launch (19 September 2022) and all-partners meetings (September 2022 and October 2024) ensured alignment across actors, applying WWF's Environmental and Social Safeguards Framework (ESSF) and Free, Prior and Informed Consent (FPIC) principles. These engagements strengthened stakeholder ownership and buy-in for co-management processes and value chain interventions. (See Annex 7 for the project inception workshop report). To promote transparency and accountability, a project grievance mechanism was designed and implemented, enabling individuals or community groups to report concerns about potential project-related impacts. No grievances were received throughout the project cycle, reflecting positive community relations and strong local support for project activities. (See Annex 8 for the grievance mechanism in place for the duration of the project)

Output 1: By 2025, adoption of one community-led fisheries co-management plan, based on initial fisheries situation assessment for the Mara Wetlands, and incorporating i) measures to protect habitat and breeding sites for fish stocks and refugee/threatened species, and ii) measures for ongoing monitoring and adaptive management of fish catch, indicator and threatened species and wider wetland health.

Output Indicator 1.1 *Fisheries situation assessment for the Mara Wetlands completed and disseminated to fisherfolk and relevant local authorities*

The baseline ecological survey was conducted in December 2022 at nine sites across the Mara wetlands, representing the Lower, Middle and Upper Catchment. Two MSc thesis were produced through these year 1 studies (see Publications list below in Table 2, Annex 2) One of these was an investigation that supported the distribution of fish and their use of the wetland (De La Cruz Alvarez, 2023). Initial research findings of this work were shared across all project partners during 2023.

Summary points of main findings from the fish ecological survey by De La Cruz Alvarez (2023) are:

- This study sampled 9 sites across the Mara Wetland to determine fish abundance and diversity following the dry season in stream, wetland, and backwater ecosystems for a period of two weeks using monofilament gillnets.
- There is evidence that the Mara Wetland acts as a refuge for Lake Victoria fish species, and that haplochromine cichlids breed in the wetland.
- A total of 21 species were collected belonging to 17 genera and 8 families during the survey, but previous work suggests that at least 40 species occur there. The survey work showed that there was a clear divide between fish communities of wetland (predominantly cichlids, lungfish, and catfishes) and stream (predominantly mormyrids, mochokids and cyprinids) habitats.
- Diversity in the Mara Wetland was highest in stream ecotones, though low when compared with observations in the Mara River.

- The riparian vegetation was the most diverse refugium, with small fish species not observed in sites cleared of papyrus and aquatic macrophytes.

- Alien tilapiine species were prevalent throughout the sampled sites, indicating possible displacement of endemic species and/or hybridization of *O. niloticus* and *O. leucostictus.*

The wider ecological survey done by TAFIRI in year 1 was completed to provide a situational assessment of fish and fisheries of the Mara Wetland (see Annex 9 for the full Mara Wetlands Situation Assessment), which covered:

- An update on the biodiversity and fish abundance of the fishes of the Mara wetland.
- Biological information of fish species e.g. fecundity and diet composition;
- Total number of fishing effort units in terms of fishers, fishing crafts and fishing gears;
- Information on water chemistry; and
- Information on relative abundance and species distribution of phytoplankton and macro benthos.

Output Indicator 1.2 *Community-led fisheries co-management plan agreed by local communities (with minimum 60% fisherfolk participation from 27 villages) and authorities, with specific measures for habitat/population protection*

Baseline Fish frame surveys were completed by TAFIRI in year 1 of the project, with a follow-up ecological survey taking place in December 2023 with TAFIRI and IHE Delft. The results have been compiled in a consolidated report by IHE that includes the comparative results between the two surveys (See Annex 10, pages 19 and 48 of IHE Delft's final report for key insights from both surveys). Larval surveys by TAFIRI took place in March 2024 which were key in identifying fish breeding areas to be protected from fishing and to be included in the co-management plan developed (See Annex 10, pages 22 to 26 for a summary of the results of the fish larvae survey and Annex 11 for the full report from TAFIRI). The identification of fish distribution from year 1, mapping of larvae fish breeding sites from year 2, and mapping of the wetland extent (and changes in its hydrology patterns over time), along with local community knowledge, guided the co-management and the protection of sensitive areas from over-exploitation from fishing and other disturbances.

An Electronic Catch Assessment Survey (eCAS) conducted in the Mara Wetlands with support from CMUs provided an understanding of fish species abundance, diversity and distribution, vital for both local communities and regional biodiversity. See (see eCAS 2024 report annex 12). The surveys underscore the ecological and economic importance of the Mara river and wetlands fishery, emphasising the need for sustainable management practices to ensure long-term viability and benefit to local livelihoods and biodiversity.

The project made strong progress in building local capacity for sustainable fisheries governance through the development and operationalisation of the Mara Wetlands Fisheries Co-management Plan (See Annex 13 for the full plan). Between July and September 2024, over 510 fisherfolk across five districts were trained through a cascading model led by 27 Trainers of Trainers (ToTs) facilitated by TAFIRI. This training focused on sustainable fishing practices, gear legality, and community-based monitoring techniques, significantly enhancing local understanding and enforcement capacity.

The Mara Wetlands Fisheries Co-management plan was developed by TAFIRI with the involvement of communities on the ground. Although the co-management plan remains under formal review for sign-off, its principles are already being implemented by four CMUs and two BMUs. These governance structures are enforcing sustainable practices through regular patrols, e-CAS data collection, and the management of landing sites. The early adoption of the plan's provisions has contributed to improved compliance, better coordination with authorities, and a

tangible reduction in illegal fishing activity, thereby reinforcing both ecological integrity and community resilience. For example, the second socio-economic survey indicates a 10% reduction in the number of people seeing and/or reporting illegal fishing activities (including the use of illegal gear).

Output Indicator 1.3 *At least 4 Community Management Units (CMUs) and 2 Water User Associations (WUAs) develop and start to implement citizen science approaches (such as existing e-CAS platform) to monitor fish catch & stock, indicator/ threatened species and wider wetland health, providing quarterly data updates to the Mara Regional and Local Government Authorities and TAFIRI*

At the beginning of the project there were no community-led fisheries groups or monitoring systems formally operating in the Mara wetlands. The project has supported the formation and strengthening of 4 Community Management Units (CMUs) (2 in Butiama, 1 in Rorya, and 1 in Serengeti district). The CMUs assist in data collection and sustainable fisheries management and comprise 320 community members (27% female). 65 individuals (28 female and 37 male) were identified as executive committee members of the CMUs. 2 Water User Associations have been supported to develop and implement citizen science approaches through the e-CAS system to monitor fish catch and stock, and the River Health Assessment to measure wider wetland health. The project worked with two BMU's (Beach Management Units) on the shores of Lake Victoria

The project contributed to building local capacity for environmental monitoring by training 39 citizen scientists from two Water User Associations (WUAs) in North and South Mara on the use of River Health Assessment (RHA) tools. These citizen scientists began monitoring water quality across 18 sites, enabling communities to participate directly in the detection of pollution and the protection of freshwater ecosystems critical to fisheries.

While this initiative laid the groundwork for long-term community-led monitoring, consistent data collection proved challenging. WUAs were unable to maintain the planned monthly monitoring schedule due to logistical constraints. Despite this, the introduction of RHA tools has fostered local awareness of water quality issues and created an entry point for more structured citizen science approaches in future conservation efforts (See Annex 16 for the WUA's River Health Assessment training report, 2023).

A training held in Musoma in August 2024 equipped 16 enumerators and 6 CMU/BMU representatives with skills in smartphone-based data collection, data entry protocols, and community feedback mechanisms. This significantly improved the accuracy and timeliness of catch data, which is now being collected and submitted on a monthly basis.

Output 2: Fishing practices - By 2025, increased fisherfolk capacity on sustainable fishing and monitoring practices, leading to reduced overfishing and declining pressure on refugee and threatened fish species.

By project completion, significant progress was made in reducing unsustainable fishing practices and building capacity for legal, biodiversity-friendly methods. At baseline, the Mara Wetlands faced high levels of illegal net use and limited community awareness on sustainable fishing. Through targeted training and community engagement, 510 fisherfolk (exceeding the target of 504) were equipped with knowledge and tools for responsible fishing (Output indicator 2.1). This directly contributed to improved gear compliance, with 530 illegal nets surrendered and destroyed and 289 replaced with legal sized nets through voluntary exchanges supported by 101 participants (Output indicator 2.2). Due to budget constraints, some fisherfolk who surrendered multiple nets only received one net in return.

Indicators DI-B09 and DI-D01 confirmed measurable improvements in legal gear use and local enforcement capacity, supported by BMU/CMU patrol data and socio-economic monitoring. (Output indicator 2.3) Though initial resource constraints limited the scale of net replacement, the project adapted by piloting a VICOBA/VSLA-based system to support fisherfolk in acquiring proper gear, laying the foundation for long-term sustainability through economic strengthening.

These efforts not only reduced pressure on fish stocks but also built stronger linkages between fisher communities, enforcement bodies, and livelihood support systems advancing both conservation and poverty reduction goals in the Mara Wetlands.

Output Indicator 2.1 *At least 504 fisherfolk trained on sustainable fishing practices such as legal nets, off seasons, no take zones, etc.*

The project strengthened local leadership and compliance with sustainable fishing practices across the Mara Wetlands. In July 2024, 27 Trainers of Trainers (ToTs) from five districts were trained by TAFIRI and local authorities, who subsequently reached 510 fisherfolk slightly surpassing the initial target of 504. This cascading model enabled wide dissemination of knowledge on legal gear use, closed seasons, and ecological monitoring techniques.

Endline socio-economic evaluations showed that both CMUs and BMUs reported improved awareness and adherence to sustainable practices, including increased use of legal gear and greater respect for seasonal restrictions. This outcome underscores the effectiveness of localised training in building long-term capacity for co-management and conservation enforcement. (See Annex 17 , page 17, section 4.4.3 in the repeat Socio-Economic survey report).

The project enhanced community-based biodiversity monitoring by training 27 BMU-affiliated enumerators in basic species identification using both scientific and indigenous names. This initiative strengthened the integration of traditional ecological knowledge into formal data systems, improving the quality and cultural relevance of monitoring practices.

A key outcome of this training was the improved data submitted through the electronic Catch Assessment Survey, which supports real-time decision-making in fisheries management. The ability of local enumerators to identify species across knowledge systems has significantly contributed to better tracking of biodiversity trends and catch composition in the Mara Wetlands (See Annex 12 for the 2024 eCAS data report).

Output Indicator 2.2 *At least 151 fisherfolk have exchanged illegal fishing gear for legal gear and have adopted sustainable fishing practices by year 3*

The project significantly improved community-based fisheries data management by training 16 enumerators and 6 CMU/BMU members on the e-CAS mobile application. This led to enhanced local capacity in accurate, daily fish catch data collection and submission to the TAFIRI database. The training also addressed previous inconsistencies in data reporting, and a collaborative monitoring plan was developed with local fisheries officers to ensure ongoing data quality. This has resulted in more reliable, decision-ready information to support adaptive fisheries management and enforcement across the Mara Wetlands. (See Annex 12 for the 2024 eCAS data report).

The project achieved a measurable increase in community awareness and support for sustainable fishing practices. As a result of targeted sensitisation efforts led by ToTs and supported by LGA officials, community members particularly fisherfolk demonstrated a stronger understanding of the ecological and socio-economic consequences of using illegal fishing gear. Endline surveys revealed a marked shift in attitudes, with increased recognition of the link between legal gear use, biodiversity conservation, and long-term livelihood security. There was also broader endorsement of co-management enforcement measures including surrendering the illegal gears, indicating enhanced community ownership and compliance with sustainable fisheries governance across the wetlands.

The project enhanced local capacity to sustainably finance and access legal fishing gear through community-based financial structures. As a result of integrating gear financing into Village Saving and Lending Associations (VSLAs) as facilitated by WWF and VIFAFIO, women's groups and fishing cooperatives are now better positioned to independently procure legal nets through revolving funds. This locally owned mechanism has laid the groundwork for long-term, community-driven solutions to gear accessibility, reducing dependency on external funding and promoting compliance with sustainable fishing practices despite initial financial limitations. The endline evaluation (See Annex 18 for the executive summary of the endline evaluation) and socio-economic reports (Annex 17, page 14, Section 2.3.3) confirmed that most women in VSLAs are now contributing to their households by using loans accessed through the groups to support their husbands and relatives in purchasing fishing gear, as well as investing in businesses along the fishing value chain.

Output Indicator 2.3 *At least 2 Beach Management Units and 4 Community Management Units across 9 villages / 7 landing sites engaged in the promotion and enforcement of sustainable fishing practices.*

The 2024 gear exchange initiative resulted in increased voluntary compliance with sustainable fishing regulations. Facilitated by TAFIRI and local government, the event led to the surrender of 530 illegal nets, 289 replaced through voluntary exchanges supported by 101 participants (See Annex 19 for the TAFIRI report on the gear exchange). Thus, reflecting a growing willingness among fishers to adopt lawful practices. The public destruction of illegal gear reinforced community perceptions of accountability and fairness, strengthening trust in fisheries management. The strong turnout and active participation signaled significant community buy-in, positioning the initiative as a replicable model through future expansion.

The establishment of a peer-led surveillance and enforcement system within CMUs and BMUs has significantly improved compliance with legal fishing gear regulations. Regular community-led patrols, supported by the regional fisheries office, have led to a noticeable decline in illegal practices, as evidenced by patrol logs and socio-economic follow-up surveys. The adoption of updated enforcement protocols and a directive promoting non-violent, community-friendly approaches has enhanced trust and reduced tensions between enforcement teams and local fishers. This shift toward participatory and respectful enforcement has strengthened legitimacy and community cooperation in resource governance. (See Annex 20 for the community surveillance and enforcement training report)

Output 3: By 2025, enhanced fisheries value chains provide more resilient (i.e. diversified and/or increased incomes) livelihoods, especially for women.

Output Indicator 3.1 *At least 10 People with Disability (PWD) and 521 women are engaged on and using training and equipment to reduce post-harvest losses and develop market strategies to enhance income from the fish value chain.*

A total of 60 women fishmongers (ToTs), as well as 9 PWD were identified, engaged and trained to reduce post-harvest losses. A total of 458 women are engaged and using training and equipment to reduce post-harvest losses. (Annex 21 for the summary breakdown of the women's groups from VIFAFIO).

The fisheries gendered value chain analysis conducted in mid-2024 enhanced understanding of the economic potential of women's involvement in post-harvest fisheries activities across the Mara Wetlands. By engaging 23 women fishmonger groups comprising 458 members, the study identified five viable income-generating opportunities, including processed and dried fish trade, cross-border market expansion into the Democratic Republic of Congo, and alternative product development using papyrus and water hyacinth. As a result, stakeholders now have actionable insights to guide targeted support for women's economic empowerment. The analysis confirmed that with proper investment and capacity building, women's participation in the fisheries value chain can significantly strengthen household and community-level economic resilience.

The capacity of women and marginalized groups in the fisheries value chain was significantly strengthened through a cascading training model. Sixty women leaders were trained as Trainers of Trainers (ToTs) in value chain development, financial literacy, and improved post-harvest practices. These ToTs successfully transferred knowledge to 498 additional women and 9 persons with disabilities (PWDs). As a result, 75.5% of participants adopted at least two improved practices such as hygienic handling, solar drying, and proper storage while over 60% enhanced their business record-keeping. These outcomes reflect increased technical competence and entrepreneurial readiness among women fish traders, contributing to improved product quality, income stability, and inclusive participation in the fisheries economy.

Case studies from women's groups (Kirumi and Buswahili) and communities have been compiled to demonstrate livelihood impacts (see annex 22 for community member testimonials) ahead of the more detailed repeat socio-economic survey completed at the end of the project. Women have reported increased incomes due to reduced post-harvest losses following the implementation of techniques including solar-drying and the provision of chest freezers.

Output Indicator 3.2 *At least 40 women's groups are active, with at least 20 women's groups practicing VICOBA strategies to facilitate investment in new market opportunities to enhance incomes from the fishery value chain*

Twenty-three women's groups, with 458 members have been empowered and supported to practice VICOBA strategies (Village Savings and Loans Associations), of which 19 groups have fully developed constitutions (See Annex 23 for the constitution of the Kiwasanya women's group as an example), are registered at district level, and are active (they have started saving and opened bank accounts and are paying out dividends and loans to members). VIFAFIO undertook consultations with Women's Groups to identify priority solutions for reducing post-harvest losses from fisheries. As a result, four deep freezers to be used by Women's Groups for the storage of fish, and for storing horticulture crops during periods of low fish catch were purchased and strategically placed to support as many of the groups as possible.

Membership per group was larger than expected (20 people per group), meaning that there was a smaller number of groups than anticipated, but a similar number of women were reached and engaging in VICOBA strategies to enhance income.

Women's cooperatives have emerged as critical actors in community-based fisheries governance and trade, following targeted capacity-building interventions. Through training in business planning, marketing, and bookkeeping provided by VIFAFIO and WWF, these groups now function effectively as the financial arms of BMUs. As a result, they facilitate bulk fish sales and aggregation at the community level, enhancing women's collective bargaining power and reducing dependence on exploitative middlemen. This shift has improved income predictability, promoted economic agency among women, and strengthened the role of cooperatives in driving inclusive and sustainable fisheries value chains.

As a result, VICOBAs such as Kitasakwa, Lyamisanga, and Kirumi accumulated savings of TZS 11.7 million, TZS 9.8 million, and TZS 6.7 million respectively. These funds have been reinvested into members' businesses and used for emergency loans, enhancing women's financial resilience, access to capital, and overall participation in the local economy.

Output 4: Enabling conditions for scaling-up: By 2025, enabling conditions (plans, finances, lesson-sharing) are in place to facilitate sustained impacts from the project, and to facilitate scaling-up of fisheries co-management for the benefit of livelihoods and biodiversity across the entire Mara Wetlands.

Output Indicator 4.1 *18 plans and / or guidelines have been developed and agreed by local government and communities (by Y3), incorporating project lessons, that will help to sustain impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands*

18 plans and guidelines were developed; as they were developed in collaboration with all actors, including the communities, they will help sustain impacts in terms of fisheries co-management, livelihoods and biodiversity.

Fisheries and environmental governance frameworks in five districts Butiama, Rorya, Serengeti, Tarime, and Musoma were strengthened through the integration of conservation priorities and co-management objectives. WWF and local partners facilitated a comprehensive review of existing plans, identifying key gaps and using lessons from the Mara Integrated Management Plan to inform updates. As a result, District Environmental Action Plans (DEAPs) were developed and are now being implemented by district councils. This alignment has enhanced institutional coordination and mainstreamed sustainable fisheries management into district-level planning and budgeting processes. The District Environmental Action Plans (DEAPs) were revised and approved by district directors and district councils in their respective districts. WWF-TCO collaborated with the two WUAs to review, update and implement two Sub-Catchment Management Plans (SCMPs), which have been distributed for community-led implementation, as well as review and strengthen their respective constitutions. The SCMPs (annex 14 and 15) are now being implemented by the WUAs.

BMU and CMU governance structures were strengthened through the revision of their constitutions and by-laws, with support from WWF. The updated legal instruments now institutionalize key co-management principles, including formalized revenue-sharing mechanisms and mandatory reinvestment in enforcement and resource protection. As a result, these community governance entities are better equipped to sustainably manage local fisheries resources, with clearer legal authority and accountability frameworks that align with long-term conservation and livelihood goals.

The following plans or guidelines were either developed or updated and agreed to:

- 5 District Environmental Action Plans (DEAPs) (Annex
- 2 WUAs Constitutions
- 6 BMUs / CMUs guidelines / by-laws
- 2 Sub-Catchment Management Plans
- Co-management Plan (one plan) (Annex 13)
- Financing Strategy for BMUs and CMUs (one document to cover all) (Annex 24)
- Mara Wetland Integrated Management Plan (IMP) reviewed

Output Indicator 4.2 *By Yr 3, a co-management funding strategy has been developed that outlines sustainability plans for CMUs and BMUs in the Mara wetlands, which includes plans for sharing of revenues from fishing licences*

A co-management funding strategy was formulated through participatory engagement with BMUs, CMUs, and the Local Government Authority, providing a structured framework for sustainable resource mobilization. The strategy identifies funding sources such as local landing fees and integration into LGA budgets to support fisheries co-management. As a result, the fisheries division committed to allocate 10% of landing site revenue from four CMUs and two BMUs toward conservation activities. While this commitment marks a critical step toward financial sustainability, disbursement of the pledged funds to BMUs and CMUs is still pending, highlighting the need for continued advocacy and follow-through to operationalize the strategy in the future. (See Annex 24 for the Co-management funding strategy)

Output indicator 4.3 *By Yr 3, increased engagement of the national Tanzanian government towards gazettement / designation of the Mara wetlands as a Ramsar site.*

Also at National level, there has been an increased engagement of the Tanzanian government towards the gazettement of the Mara wetlands as a RAMSAR site. The proposal is currently with the ministry waiting for endorsement.

Lessons from the Mara Wetlands project were shared across several forums, including WWF's Freshwater Practice, Ramsar/CBD secretariat, stakeholders meeting, and regional secretariat forums. Webinars and workshops were organized to disseminate findings, and communication products such as technical briefs and social media content were produced to raise awareness and encourage replication including the involvement of the television channels like starTv, and WWF's online blogs (whatsApp, Instagram, website) (See section 4.4 for additional information on transfer of knowledge).

3.2 Outcome

The project made significant achievements in understanding the ecology and biodiversity distribution in the wetland, as well as in promoting community-led, sustainable fisheries management and strengthening the ecological resilience of the Mara Wetlands.

Ecological assessments, including drone, satellite, and field-based monitoring, revealed dynamic wetland changes and established biodiversity baselines of 17 fish and 132 macrobenthic species (**Outcome Indicator 0.0)**. Citizen scientists from Water User Associations (WUAs) began monitoring water quality across 18 sites using River Health Assessment (RHA) tools, fostering community ownership of environmental stewardship despite some logistical challenges.

Ecological and socio-economic data played a central role in shaping a participatory fisheries co-management plan, developed with input from over 60% of fisherfolk across 24 villages. This plan, although awaiting approval, is already being implemented by newly instituted CMUs and strengthened BMUs on the ground. Where no formal governance structures previously existed, four Community Management Units (CMUs) were established and two Beach Management Units (BMUs) strengthened across 12 villages. These institutions, supported by revised by-laws and a co-management funding strategy, now lead enforcement of sustainable fishing practices, catch monitoring through the electronic Catch Assessment System (e-CAS), and protection of biodiversity hotspots, covering 55% of the total area of the Mara wetland with improved management **(Outcome Indicator 0.1)** (See Annex 5, map 3 for the coverage of the CMUs and BMUs across the wetland and surrounding catchment)

Over 510 fisherfolk, including a substantial number of women, were trained through a Training of trainers (TOT) cascading model, resulting in improved compliance and an estimated 10% reduction in the use of illegal fishing nets, showed by a perceived change from 34% to 24% people reporting seeing neighbours using illegal nets **(Outcome indicator 0.2**). Community trust in enforcement also grew through participatory patrols and non-violent enforcement approaches, while 530 illegal nets were voluntarily surrendered. In addition, the proportion of respondents in the repeat socio-economic survey, who viewed the regulations favourably ("Good/Yes") more than doubled, increasing from 134 out of 502 (27%) in 2022 to 351 out of 412 respondents (85%) in 2025 (See Annex 17, page 17, section 4.4.3) This change indicates that regulatory improvements, enforcement, and community outreach efforts have played a role in fostering greater acceptance and recognition of fishing regulations

The project made significant strides in improving livelihoods through value chain enhancement and financial inclusion. A total of 458 women trained in savings and post harvest losses, with 19 women led VCOBA/VSLA groups fully operational, some accumulating savings of over TZS 10 million, which they reinvested into legal fishing gear, small businesses, and household needs. An estimated 328 (of 458) women within 19 VICOBA (or VSLA) groups around the wetland report more resilient livelihoods through sustainable fish stocks, increased /diversification of income and/or value chain enhancement and improved governance (**Outcome indicator 0.3**) (Annex 21 for the summary breakdown of the women's groups from VIFAFIO)

The proportion of individuals relying solely on fishing as their primary income source increased from 11% in 2022 to 23% in 2025 (55/502 to 93/412), indicating a growing dependence on fishing. Meanwhile, the percentage of individuals engaged in both fishing and Any other Business (AoB) saw a substantial rise from 30% in 2022 to 70% in 2025 (153/502 to 289/412), reflecting a significant trend of livelihood diversification within the fisheries sector. In contrast, those not

involved in fishing activities decreased sharply from 59% in 2022 to just 7% in 2025 (294/502 to 30/412), further highlighting the shift toward fishing-related livelihoods **(Outcome Indicator 0.3**) (See Annex 17, page 11, section 2.2.5 (Income Sources))

This has resulted in an improvement in livelihoods validated through the survey results, with an increase in resilient livelihoods change from 29% to 80% people reporting a medium income (50% increase >50k Tzsh) and an increase in people involved in fisheries, as a primary or secondary activity, from 41% to 93%, and an increase in fish trade up to 43% from baseline. This increase in the fishery sector may indicate an improvement in the sustainability of the fisheries, though it should be verified down the line.

The project also supported increased coordination, strategy and capacity (resourcing / staffing) by regional, local government agencies and communities to sustain the impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands **(Outcome Indicator 0.4)**; this is demonstrated by:

a) Increased budget and deployment of fisheries officers: There are now new Fisheries Officers engaged at District level, 1 per district in the wetland, promoting awareness of policies and sustainable practices, providing capacity and also to support engagement and enforcement of the new plans agreed during the project - 18 in total (Output 4.1);

b) A new role (Fisheries Advisor to Regional Secretariat) has been created and filled within the Mara regional government office

c) A request of governance of a potential RAMSAR site supported by BMU / CMU guidelines, which have gone to the Ministry level for endorsement. The project team met with the Deputy Secretary of the Fisheries Ministry, awaiting responses on next steps. There is discussion with the RAMSAR focal person under the Vice President's Office, learning from challenges at other sites in Tanzania.

3.3 Monitoring of assumptions

Outcome and Output-level assumptions were actively monitored throughout the project, primarily through quarterly technical meetings, partner updates, socio-economic surveys, and e-CAS data reporting.

Following reflections during the project's internal mid-term reflection workshop and monitoring review visit, we added two additional assumptions to the project's logframe:

- Pollution from agriculture and livestock is not so significant as to impact freshwater biodiversity and the ecological integrity of the Wetlands (Outcome).
- Fishers can be persuaded to fish with only a single panel (depth) of legal net, through improved messaging and CMU enforcement in the wetland (Output 2)

Outcome assumptions

Assumption 1: With appropriate preventive measures against Covid-19 (eg social distancing, outdoor meetings, provision of Personal Protective Equipment) and by working closely with appropriate health experts at a local level in providing education and awareness to communities and project staff and stakeholders, the risks to health will be mitigated and communities will feel comfortable working with project staff.

Comments: This assumption held true. Through the project Tanzania maintained a low covid risk. Activities were able to continue as planned without covid restrictions.

Assumption 2: Through participatory consultations and co-creation processes, community members around the Mara Wetlands perceive potential for more resilient and equitable benefits from fisheries co-management of the Mara Wetlands, and have increased understanding on the value of sustainable fisheries for the resilience of their livelihoods.

Comments: This assumption held true. There was good ongoing collaboration with community members who reported an increased understanding on sustainable fisheries, with feedback on increasing fish size catches and improved incomes.

Assumption 3: Capacity building on citizen science and provision of equipment will increase participation of Community Management Units, Water Users Associations and collaboration with Local Government Authorities and the Mara catchment committee will result in improved fisheries co-management.

Comments: This assumption held true. Ongoing close collaboration between project partners, Local Government Authorities, Community Management Units (CMU), and Water Users Associations (WUA) fostered a robust system for the co-management of wetland resources. The continuous monitoring of fisheries catch and water quality through CMU and WUAs has ensured the effective management of wetland resources.

Assumption 4: Fisheries situation assessments and other lessons learnt from this and other relevant projects will enable communities and local authorities to reach agreement on fisheries co-management plans.

Comments: This assumption held true. With support from TAFIRI, community and LGA, a Mara River Wetlands Fisheries Management plan has been developed, which was shared further amongst wetland villages during year 3 (See Annex 13 for the Mara River Fisheries Management Plan)

Output 1 Assumptions

Assumption 5: Alternative remote systems of engagement to gather data will allow the timely completion of situation assessment in case of Covid or extreme events such as floods.

Comments: We did not need to implement remote systems of engagement, as all activities took place in person as planned.

Assumption 6: Offline data collection on smartphones will allow effective information sharing in case of failure of telephone network coverage or power cuts.

Comments: This assumption held true. The e-CAS citizen science monitoring has smartphone capability to collect data in an offline mode when data connectivity is poor and allowed for upload at a later stage with connectivity or when power was restored. All other monitoring surveys collected also used digital data collection in smartphones, for more efficient data collection, the reduction of transcribed errors, and time saving.

Output 2 Assumptions

Assumption 7: Beach Management Units / Community Management Units have the capacity to enforce improved fishing practices, and fisherfolk perceive shared benefits and are willing to adopt new practices collectively.

Comments: This assumption was updated (in Year 2) to include the Community Management Units. Four new CMUs were established as the structure for enforcing fishing practices in the

community, although new in structure and role this assumption mostly held true for CMU's and held true for BMU's.

Assumption 8: Supplementary income from engagement in improved fisheries, participation in the design of restrictions, and provision of equipment such as replacement fishing gear, phones and internet access for CMU members as citizen scientist for biodiversity monitoring, will be enough to compensate for any initial losses from the application of legal practices.

Comments: This assumption mostly held true, following the mid-term project evaluation we reviewed the voluntary time commitments required from community members for eCAS data collection during the final year of the project to reduce the time commitment required thus more closely aligning the cost-benefit to a citizen scientist collecting the eCAS data.

Output 3 Assumptions

Assumption 9: The 50 women trained as trainers are selected communally with the condition to train others and that will give them enough motivation to train the rest of the women engaged in fisheries in each group.

Comments: This assumption held true, 60 TOT were closely supported and monitored by their respective Village Executive Officers and VIFAFIO, which has enabled 458 women to be reached through the project.

Assumption 10: Women's groups are motivated to take up the opportunities and have support from the community to do so.

Comments: This assumption held true. The project supported the formation of 23 women's groups, of which 19 groups were formalised and were very active, which indicates willingness to continue activities post-project.

Assumption 11: Effective enforcement and BMU/CMU cooperation ensures demand for undersized/illegal sized nets reduces.

Comments: This assumption held true. Project partners worked closely with CMUs to establish and enforce by-laws and provide training to fisherfolk on sustainable fisheries management, as well as supporting a voluntary gear exchange process. Through eCAS, monitoring of illegal activities to report was possible and there was a perception from CMUs and BMUs that the use of illegal sized nets had reduced.

Output 4 Assumptions

Assumption 12: Regional and Local Government Authorities are willing and capable to develop the Environmental Management Plans, including increase of budget allocation.

Comments: This assumption held true. Regional and Local Government Authorities are implementing the District Environmental Action Plans, and they have shown the willingness for budget allocation to sustainable fisheries management - for example there is now budget allocation for one fisheries officer per district around the wetland.

Assumption 13: Equitable participation in resource governance, decision-making and benefit sharing is accepted/ implemented as co-developed by the same communities.

Comments: This assumption held true. Each of the 19 registered/formalised women's groups which operate as a VSLA (VICOBA) have a constitution which outlines benefits sharing ensuring equitable participation. See Annex 23 for a scanned copy of the Kiwasanya women's group constitution - please note this is in Swahili).

Assumption 14: Village governments are supportive and include the initiative in the Village Development Plan for scaling up.

Comments: This assumption held true.

3.4 Impact

The project's intended impact after three years was: Protected fish habitats, sustainable fishing methods and improved value chains enhance the resilience of local livelihoods, sustain freshwater biodiversity and help to secure the ecological integrity of the Mara Wetlands.

The project has successfully achieved positive impacts for both biodiversity conservation and poverty reduction in targeted communities. Key outcomes include the establishment of no-take zones that promote biodiversity integrity with no reported cases of degradation, alongside an increase in the size of fish caught, indicating improved ecosystem health. Additionally, women fishmongers have experienced increased income through Women's Groups established VICOBA systems demonstrating economic empowerment. Community engagement has led to a reduction of destructive fishing practices, supported by local government initiatives promoting sustainable fishing. Testimonials and documentary evidence compiled in the communication strategy (See annexures 22 and 25, respectively) provide compelling evidence of these transformative achievements, highlighting the project's success in fostering sustainable development and inclusive growth.

Contribution to Biodiversity Conservation:

The project made a significant contribution to biodiversity conservation in the Mara Wetlands through the establishment of improved fisheries co-management practices across more than 190 km² around 55% of the Wetlands (Indicator 0.1). This included the formation of 4 CMUs and strengthening 2 BMUs, the development of co-management plans, and training on sustainable fishing practices. Key habitats were mapped, and critical biodiversity indicators such as the distribution of threatened native fish species (e.g. *Labeo victorianus, Haplochromis nubilus*) were monitored via citizen science approaches and the e-CAS platform. Evidence from habitat and fish stock surveys indicates that key fish species' populations are being better protected, and harmful practices such as illegal net use have begun to decline (See Annex 26 for the abstract of the TAFIRI presentation at the Fisheries and Aquaculture Research for a Vibrant Blue Economy (Far4Vibe) conference), with over 530 illegal nets surrendered and 289 swapped for legal gear. Also, protection of no-take zones for breeding sites incorporated into the CMU and BMU management ensures adequate re-stocking.

All of this contributed to sustainable fisheries, ensuring conservation of resources. The increase in the number of people with fisheries as a primary or secondary activity (from 41% to 93%), paired with an income increase could potentially be considered a proxy for increased fish stock and conservation as this would only take place if the stock is sustainably managed, to promote either a maintenance or increase in fish numbers, though it should be demonstrated by a more empirical methodology. (See annex 17 for the Socio-Economic Study report)

Contribution to Human Development and Wellbeing (Poverty Reduction):

The project contributed directly to improved livelihood resilience for over 400 direct beneficiaries (Indicator 0.3), including vulnerable and marginalized groups such as women and persons with disabilities. This was achieved through training in sustainable fishing and market strategies, the expansion of 22 active women's groups (19 of which practice VICOBA strategies), and post-harvest value chain support. Socio-economic surveys show increased income diversification, improved market access, and greater awareness of legal fishing benefits. Furthermore, increased community governance capacity and the development of 10 conservation and fisheries-related plans at the district and community levels lay the foundation for sustained poverty reduction. Further validated by the results of the socio-economic survey, where there has been an increase from 29% to 80% on the number of people reporting a medium income. (O0.3) Map 02 on page

13 of the repeat socio-economic survey results report (Annex 17) shows the distribution of changes in household income between the start of the project and at the end).

Together, these results support the project's higher-level contribution toward both biodiversity conservation and human development, contributing to the overall goal.

4. Contribution to Darwin Initiative Programme Objectives

This project has significantly advanced the Darwin Initiative Programme Objectives by strengthening biodiversity conservation, sustainable resource use, and community resilience in the Mara Wetlands. It directly supports Tanzania's commitments under the Convention on Biological Diversity (CBD) and aligns with NBSAP II priorities through the co-development of fisheries co-management plans, integration of ecological data into Sub-Catchment and District Environmental Action Plans, and the use of citizen science platforms like e-CAS. These efforts have improved the governance of freshwater ecosystems while ensuring inclusive participation, particularly among women and marginalized groups. Over 450 women have been empowered through training in fish processing, storage, and marketing, leading to increased incomes and reduced post-harvest losses. The formation of functional CMUs and VSLAs, with 27% female representation and 40% of trainees being women, reflects the project's gender-responsive and capacity-building approach. By embedding local knowledge, enhancing institutional partnerships, and promoting equitable benefit-sharing, the project has created durable pathways for conservation impact and poverty reduction core to the Darwin Initiative's mission.

4.1 Project support to the Conventions, Treaties or Agreements

This project directly contributes to Tanzania's obligations under the Convention on Biological Diversity (CBD), especially Targets 2, 3, 10, and 14 of the Post-2020 Global Biodiversity Framework, through improved governance of freshwater ecosystems and inclusive conservation planning. The co-development of the Mara Wetlands Fisheries Co-Management Plan, alongside local authorities and community institutions, supports CBD objectives on sustainable use and participatory management of biodiversity resources. The project also aligns with priorities set out in Tanzania's National Biodiversity Strategy and Action Plan (NBSAP II), particularly in relation to freshwater biodiversity protection, community-based natural resource management, and value chain enhancement for nature-based livelihoods.

At the district level, the project has contributed to updating District Environmental Action Plans (DEAPs) in five districts and has supported development and implementation of two Sub-Catchment Management Plans, strengthening integration of biodiversity into local planning instruments. Regular engagement has been maintained with regional and district fisheries departments and the Ministry of Livestock and Fisheries, including through TAFIRI, a national research institution. Although no formal report has been submitted to CBD focal points, evidence from ecological surveys, e-CAS and co-management planning has been shared with local and regional authorities and feeds into national biodiversity reporting systems like CAS database.

During year 2 and 3, WWF-TCO engaged with Tanzania's Ramsar national focal person (Dr Deogratius Nyangu) under the Vice President Office (VPO). He has been willing to engage further and provide more experiences (based on Minziro Wetlands) on how to designate the wetlands into Ramsar site. WWF-Tanzania continued to prioritise receiving feedback from local communities, including from some people who are sceptical about designation. Recommendations to the government were closely informed by continuing engagement with these communities.

There is strong alignment between the project objectives and several of the targets set out in the Kunming-Montreal Global Biodiversity Framework agreed by parties to the CBD in December 2022. In particular, Targets 9 (on sustainable harvests and benefits to people) and 10 (on sustainable fisheries) resonate with the project Outcome. At the national scale, the Tanzanian government reviewed and updated the NBSAP. WWF-TCO through the Voices for Diversity (V4D) project coordinated inputs and support to the Government for reviewing and setting out

priorities for implementation of the Kunming-Montreal framework - this included inputs from this project.

4.2 Project support for multidimensional poverty reduction

The project has generated tangible contributions to multidimensional poverty reduction, particularly through livelihood improvements, increased incomes, and strengthened governance systems. Over 400 women fishmongers have received training and some equipment to improve fish processing, storage, and marketing, significantly reducing post-harvest losses. Women in Kirumi and Buswahili have reported increased earnings following training on solar drying and the use of freezers although the family's economic growth due to participating in fishing is still not good enough, even if it has increased as mentioned before. Additionally, 23 women's groups have been formed and operating, with 19 active groups that have begun saving, opened bank accounts, and are operationalizing VSLA, laying a foundation for long-term financial inclusion and empowerment.

Indirect contributions include enhanced access to natural resources under better governance structures. The project facilitated the creation and operationalisation of four CMUs, strengthening 2 BMUs engaging 320 members (27% women), who are now participating in fisheries monitoring and enforcement. Improved ecosystem health, seen through increases in fish catch size and reduction in illegal fishing, contributes to food security and income sustainability. These outcomes align with Standard Indicator 6 (beneficiaries trained), Indicator 7 (livelihoods improved), and Indicator 8 (ecosystem services maintained or enhanced).

4.3 Gender Equality and Social Inclusion (GESI)

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered, and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups, and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	X
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

During year 2 of the project, we gained valuable insights on gender aspects of value chains in the Mara wetlands, through a study supported by IHE Delft assessing fisheries-related value chains in the larger and more complex context of rural livelihoods. Fisheries activities are interlinked with farming and livestock value chains, and livelihood outcomes are influenced by context characteristics and gender dynamics. The study clarified in more detail the pathways through which ecosystem deterioration, fisheries management and other interventions affect livelihoods in the Mara Wetlands. "Gendered" value chains imply that livelihood outcomes of men

and women are impacted differently, depending on the specific inputs required for their primary activities, and access to alternative livelihood strategies. To contribute to the project's gender equality and social inclusion, detailed mapping of value-generating activities was used to reveal non-monetary changes in livelihood outcomes, including aspects such as physical wellbeing and nutrition, the distribution of risks and vulnerability between men and women, as well as links between specific activities and social status. The results highlighted a broader range of gendered challenges created by changes in fish stocks, suggesting gender-targeted action areas for the new community managed groups, and enable gender impact considerations in decision-making or the drafting of bylaws (which was done for each group).

The project has implemented a **GESI-empowering approach**, integrating women into project implementation like the VSLA operationalization. Community Management Units and women's groups were deliberately formed to include women (27% CMU membership), whereas VIFAFIO and Village Executive Officers played active roles in supporting 60 women ToTs who have in turn trained hundreds of others. Attention to inclusive livelihood design (e.g., fish storage tools, solar drying, savings schemes) has strengthened women's agency and economic resilience.

Project participation was built on communal selection and inclusive outreach. Women now lead 19 formally registered women's groups, and several hold leadership roles within CMUs and local VSLA systems. While the project does not yet address systemic or policy-level GESI transformation, it has created enabling conditions for equitable participation in fisheries governance and local economic planning. Lessons include the importance of linking skills development to financial services and ensuring sustained mentorship support through district-level institutions.

4.4 Transfer of knowledge

The project has contributed significantly to knowledge transfer and policy influence at both community and regional levels. Key knowledge products include the Fisheries Co-Management Plan for BMUs and CMUs, citizen science via the e-CAS platform, BMU/CMU bylaws and ecological data that have informed both Sub-Catchment Management Plans (SCMPs) and District Environmental Action Plans (DEAPs). These documents were co-produced and validated through participatory workshops involving regional authorities, CMUs, and TAFIRI, ensuring integration into existing governance frameworks.

At the grassroots level, CMU members and Water User Associations are applying citizen science approaches in real time to monitor fish catch and wetland health, creating a continuous feedback loop between data collection and decision-making. Information has also been shared through public awareness campaigns in nine villages, media engagements, and gear exchange events, which helped demystify policy messages and promote legal gear use. This evidence-based community engagement has been a critical driver of both behaviour change and improved biodiversity outcomes.

In addition, we hosted a webinar focused on the achievements of the project and key learnings. This formed part of WWF's Freshwater week and all partners shared as part of a panel discussion to over 70 people (freshwater scientists, policy and advocacy specialists, ecologists, project managers) across the WWF network/globe. See Annex 27, page 2 for the details of the webinar as part of the schedule for the water week.

4.5 Capacity building

Capacity building has been integral to the project's implementation, with meaningful impact at individual, community, and institutional levels. A total of 65 CMU executive committee members (28 women) have been trained in fisheries governance, citizen science, and enforcement practices. Local ToTs have cascaded training on sustainable fishing to over 300 participants, and training on post-harvest techniques has reached 60 women trainers and hundreds more indirectly. These efforts have enabled grassroots actors to participate effectively in managing and protecting the Mara Wetlands.

Nationally, TAFIRI staff involved in the project have gained visibility and credibility, participating in regional decision-making forums and co-authoring technical documents that influence district- and regional-level policies. Some TAFIRI personnel have been consulted by the Ministry of Livestock and Fisheries for broader fisheries policy inputs, recognising the value of community-linked data and the co-management framework tested in this project. Capacity building has been designed to be gender-responsive, with 40% of trained individuals being women and all training materials adapted to local languages and contexts.

5. Monitoring and evaluation

The Monitoring & Evaluation (M&E) plan is managed by WWF-Tanzania and maintained as a live Google document accessible to all project partners for collaboration and contributions. WWF-UK's Design and Impact Advisor provides ongoing support and works closely with the project team, particularly WWF-Tanzania's M&E expert.

Monitoring activities have been consistently carried out throughout the project, supplemented by targeted surveys designed to collect data for specific indicators.

At the **outcome level**, various surveys have been conducted to guide interventions and assess project success. As explained under the Achievements sections for Output 1.These include:

- **Socio-economic surveys**: assessing awareness of policies, fishing practices and results, and perceived economic benefits
- **Gendered value chain study**: providing deeper analysis of gender-related impacts
- **Ecological studies**, including:
    - **Drone surveys**: mapping wetland vegetation and spatial distribution
    - **Fisheries surveys**: assessing fish abundance and distribution
    - **Larvae studies**: identifying potential breeding areas to propose as "no-take zones"

The project team held weekly internal meetings, as well as bi-weekly progress meetings with partners, to share updates on field activities and ensure alignment with the project's deliverables. In partnership with local organizations, WWF-Tanzania developed Key Performance Indicators (KPIs) and milestones to track progress.

These meetings also serve as a platform for partners to discuss challenges, share opportunities and learnings, and make adaptive management decisions.

An internal **mid-term review** in 2023 reaffirmed the project's theory of change and led to greater emphasis on strengthening CMU capacity and improving gender equity outcomes.

In early February 2024, the project underwent a **Monitoring Review (MR)** commissioned by NIRAS to gain an external assessment of its progress in February 2024. The project team found the review highly valuable. And, following the MR's recommendations, a major revision of the project's **logframe** was completed in 2024. This included updates to terminology (e.g., changing "Beach Management Units" to "Community Management Units"), revised targets, and clearer indicators. A formal Change Request was submitted in April 2024. While awaiting approval, reporting for Year 2 continued using the original logframe.

A final evaluation took place in conjunction with other Fresh water projects in the area to reassess results, sustainability and provide recommendations for future interventions in the area. See Annex 18 for the executive summary of the endline evaluation, we will conduct a reflection

session based on the endline evaluation to take on board any learnings for future projects or the scaling of this project should the opportunity arise.

The project's M&E system is practical and well-integrated. It leverages the **e-CAS citizen science platform** for real-time tracking of ecological and fisheries data, while socio-economic indicators are monitored through structured surveys (mentioned above) and community reports.39 citizen scientists from two Water User Associations (WUAs) in North and South Mara were trained on the use of River Health Assessment (RHA) tools. These citizen scientists began monitoring water quality across 18 sites, enabling communities to participate directly in the detection of pollution and the protection of freshwater ecosystems critical to fisheries.

Monitoring responsibilities are shared for the organizations: TAFIRI leads ecological monitoring with support from IHE, while VIFAFIO and local CMUs handle community-level data. Regular coordination meetings and a shared data repository promote learning across partners providing the base for adaptive management.

6. Lessons learnt

Several lessons have been compiled from the ecological surveys. The spatial and temporal extent of the ecological surveys revealed the difficulty in doing this work in the physical settings of the wetland, where access for sampling can be restricted and where sampling techniques employed for fish and invertebrates based on open water or littoral zones are not ideal. The habitat structure of these areas changes seasonally. Hence, one-off surveys can only provide a snapshot of ecological community structure and taxa lists. The latter would be expected to increase cumulatively with more surveys, maybe considerably before reasonable total taxa richness can be estimated.

Seasonal sampling is restricted through resources and logistics. However, the work undertaken enabled the consideration of new design for such settings, and in relation to high flow through the wetland that prevented meaningful sampling of zooplankton. Further development of fish larvae surveys provides a promising way for monitoring. Satellite imagery has shown to be effective for assessing changes of wetland area and vegetation structure across larger scales. Other groups such as birds may also provide useful overall ecological indicators for the conservation value of the wetland. Such surveys have occurred but are not currently a regular feature of monitoring.

Detailed reflections on the project undertaken during the mid-term project evaluation and external monitoring review was essential in supporting what was very effective adaptive management and informing year 3 work-plans, as well as adapting the project log frame to ensure more realistic targets/indicators could be achieved.

The project team has also gained valuable lessons about the e-CAS platform developed by TAFIRI to record and monitor fish catch and stock. Initially individuals trained to collect the data (two people for each of six landing sites) were spending up to 15 days/month on this work with little reward beyond their contribution to the development of fisheries co-management plans, this was affecting commitment and buy-in. Based on the MTR the project team reduced this down significantly.

A key achievement of the project was the participatory co-development of the fisheries co-management plan with local communities, which significantly improved local ownership and facilitated a smoother validation process at district and regional levels. The inclusive support of BMUs/CMUs and supporting them to collect e-CAS data enabled sustained community engagement, even in remote wetland areas with poor connectivity. Empowering BMUs/CMUs and women's groups through training, provision of equipment, and financial literacy initiatives proved to be a strategic entry point for promoting behaviour change and driving uptake of conservation practices. The project recorded a notable improvement in community participation

in fisheries governance from 30% in 2022 to 38% in 2025 indicating struggling progress and the need for continued investment to deepen engagement.

However, the project also faced several implementation challenges. Delays in the gear exchange program, caused by procurement and coordination issues, hindered timely progress. Additionally, the voluntary nature of citizen science placed a time burden on community members, affecting data consistency and long-term participation. Future initiatives should consider budgeting for stipends or introducing incentive mechanisms to retain citizen scientists and enhance data reliability. Limited access to affordable fishing gear and formal financial services slowed the transition to legal fishing practices. Most fishers lacked the capital to acquire legal gear or the knowledge to understand the ecological and economic risks of illegal practices. Embedding adaptive management from the outset, conducting early gender and power analyses, and co-developing enforceable by-laws can help communities take more decisive action. BMUs and CMUs also require ongoing support to fulfil their conservation mandates, including guaranteed reimbursement of 10% of conservation gains by the districts through fisheries sent back to BMUs/CMUs for supporting their operational matters. Expanding awareness campaigns and introducing microfinance and savings schemes will be essential for ensuring the sustainability of both livelihoods and wetland ecosystems.

7. Actions taken in response to Annual Report reviews

The project team has carefully reviewed and responded to feedback from previous Annual Report reviews. This included greater clarity in reporting outcomes versus activities and improved articulation of how monitoring data informs adaptive management. The feedback also prompted a mid-term review and partners meeting workshops, where partners contributed and agreed on updated assumptions, M&E improvements, and clearer alignment with the Global Biodiversity Framework.

These changes were discussed and agreed upon in coordination meetings with TAFIRI, VIFAFIO, the Mara Catchment Committee, and district authorities. The constructive feedback loop has strengthened internal project learning and the quality of reporting, with all outstanding issues now addressed.

We provided responses to the Year 2 report feedback, in our Year 3 Half Year report, but have included them here as well for reference and completion.

Yr 2 Feedback: The project has not selected Darwin Initiative Standard Indicators for the reporting. Please clarify if there are any specific project related reasons for that.

Response: The *lack of Darwin Initiative Standard Indicators* for the reporting is because at the time of the proposal the Standard indicators were not compulsory, however the team reported against some of the standard indicators retrospectively in Y1 and Y2, and we included the standard indicators in the logframe changes that were submitted as part of a change request that followed the Mid-term review evaluation of the project. Standard indicators have been included in this report in Annexure 2.

Year 2 Feedback: Gear exchange: the project reports that it has not been possible to provide "as many nets as originally anticipated, due to high demand for the gear exchange initiative." Please explain in the next AR how you dealt with this challenge.

Response: The project was unable to provide the originally promised number of nets due to budget constraints and the unexpected take up of the opportunity to exchange illegal gear for legal nets. As a result, we utilised match funds in year 3 to purchase additional fishing nets.

Year 2 Feedback: The project reports that "the legal nets are much smaller than the illegal nets they are replacing, so fishers are using up to 6 of them to replace one illegal net, which is an illegal practice in the wetland". The team plans to deal with this issue in Year 3 and inform the community about this illegal practice and collaborate with involved

agencies to enforce regulations about the joining of nets. Please explain in AR3 how you dealt with this challenge and if there are any specific lessons you learnt through this process.

Response: The fishermen were educated before the second fish net exchange, and they were explicitly informed that joining multiple nets together would render them illegal. They agreed to these terms, and the Community Management Units (CMUs) were assigned the responsibility of monitoring and ensuring compliance. Additional outreach took place during year 3 as part of the gear exchange.

Year 2 Feedback: Regarding the E-CAS platform developed by TAFIRI to record and monitor fish catch and stock: Currently the individuals trained to collect the data (two people for each of six landing sites) are spending up to 15 days/month on this work with little reward beyond their contribution to the development of fisheries co-management plans. This report claims that the amount of time is unsustainable and that it is a priority to review this situation with TAFIRI to find a solution. Please explain in AR3 which solution you have found and implemented with your partners.

Response: All enumerators are fishermen who voluntarily collect eCAS data during their fishing trips. WWF and TAFIRI conducted a workshop with the enumerators, where it was agreed, and formalised through signed agreements, that each enumerator would participate in data collection a maximum of three times per week. However, the average time spent collecting data using eCAS now is 8 days a month (2 days a week).

8. Risk Management

The project's risk register and issues log has been updated as submitted with this final report. To note the following risks / issues were identified in Year 2 of the project following the MTR and are/were addressed:

A new initiative for a sugarcane plantation at the Mara Wetlands, spearheaded by the Livestock and Fisheries division in the Rorya Local Government Authority, carries potential implications for the fisheries community and ecology surrounding the Wetlands. WWF-Tanzania engaged with the relevant authorities to advocate for a comprehensive EIA involving all relevant stakeholders of the Mara wetlands. This did not proceed any further in the final year of the project.

We identified risks with the sustainability of the gear exchange with the legal nets being much smaller than the illegal nets being replaced, so fishers are using up to 6 of them to replace one illegal net, which makes the new net illegal. Further efforts were undertaken during year 3 to inform the community about this illegal practice and collaborate with CMUs and other agencies to enforce regulations about the joining of nets.

As outlined in section 8, a newly identified issue is the continuity of e-CAS in its current form, as it takes 15 days per month per enumerator, which is not a sustainable practice. This is a priority for TAFIRI and WWF-Tanzania to review during year 3 to find a sustainable solution. For example, efforts were made to reduce the time volunteered by the enumerators or introduce an income generating process to maintain it.

Finally, a major risk to the project which materialised was the sudden withdrawal of USAID funding from the Mara River Catchment office/team. Many of the project team members working on the Darwin Main Mara Wetlands Project were part covered by USAID funded projects in the upper catchment of the Mara River. This executive order was issued soon after the inauguration of the new President of the USA and meant WWF-TCO lacked the funding to keep staff in post to the end of the project. We mitigated the impact of this as much as possible by trying to secure other sources of funding to keep some key project staff in place to support the last few months of the project, the project endline evaluation and the final report writing. However, we still lost three key staff members which had an impact on completing the endline evaluation and several other reports within the project timeframe.

9. Scalability and Durability

The project has built a strong legacy through its institutional partnerships and community-level governance structures. The BMUs, CMUs, WUAs, and registered women's groups are embedded in district development and fisheries plans and strategies. Five revised DEAPs and two active SCMPs, CMU and BMU by-laws ensure continuity of wetland governance beyond project closure. The validated fisheries co-management plan will become a foundation policy for Mara wetlands fisheries governance. See section 2 (Partnerships) for additional information on how the project team and partners worked together to ensure success and laid the foundation for long term durability. Section 3.1 (Achievements against Outputs), specifically Output 4 (Enabling conditions for scaling-up), covers achievements and steps specifically related to scaling up and sustaining impacts

TAFIRI and district authorities have expressed commitment to continue oversight, with BMUs and CMUs being supported through the district fisheries departments. Key outputs such as ecological datasets, training manuals, and co-management plans have been shared via open-access repositories and physical distribution to stakeholders. The Mara regional office (government) has invested in staff positions to support the gains of this project, these include a Regional Fisheries advisor, as well as fisheries officers within each of the 5 districts that cover the wetland and its catchment.

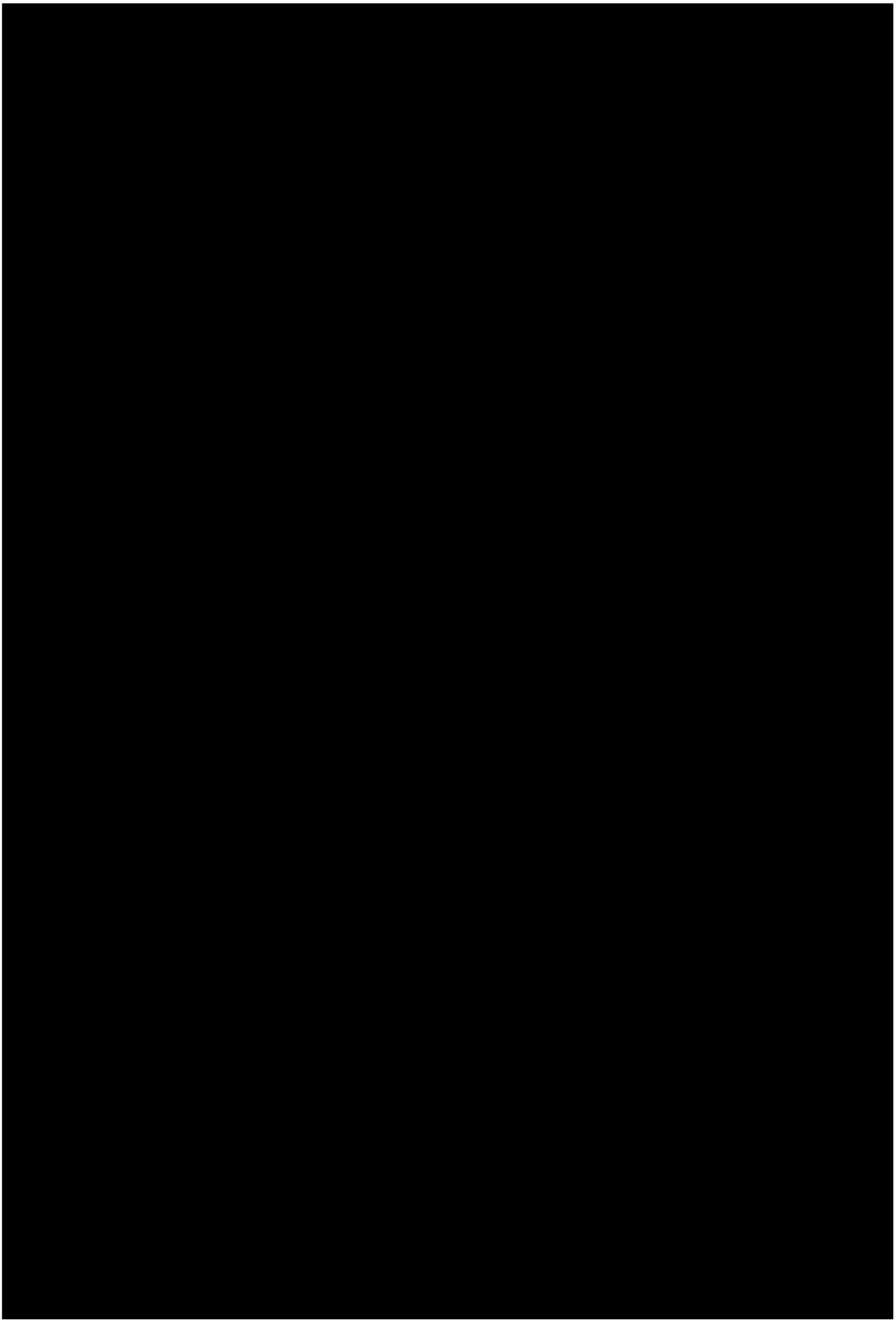
10. Darwin Initiative identity

The Darwin Initiative has been prominently acknowledged throughout the project, with its logo and funding attribution displayed on all training materials, communication campaigns, and the project's signage in wetland communities. Media coverage, social media posts, and awareness campaigns have referenced Darwin funding, including through district-level events and stakeholder consultations. The project's identity as a distinct Darwin-funded initiative has been maintained throughout, even when embedded in broader wetland conservation strategies.

Our project has actively publicised the Darwin Initiative through various means. The Darwin initiative logo has been displayed on printed materials, sign boards, and banners at events and presentations in Tanzania. Through in-person discussions, stakeholders and partners engaged in our project have indicated a good understanding of the objectives of the Darwin Initiative.

We have utilised social media platforms such as Instagram to showcase project activities. Our engagement on these platforms includes links back to the Darwin Initiative and BCF's official social media channels to enhance visibility and reach. We also developed an article about the project focused on the theme of intersection of food, biodiversity, and livelihoods, which was featured on the BCF website and newsletter. WWF-TCO also produced a mini-documentary about the project which was promoted during year 3 of the project. We also developed a project page on the WWF-UK website, featured the project in WWF-UK's e-newsletter and members magazine. Full details of the project's communications strategy and links to communications outputs are available in annex 25.

11. Safeguarding



[redacted]

12. Finance and administration

a. Project expenditure

Project spend (indicative) since last Annual Report	2024/25 Grant (£)	2024/25 Total actual Darwin Initiative Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
TOTAL	**£172,516**	**£172,516**		

Staff employed (Name and position)	Cost (£)
Kathrine Elliot - Project Lead, Senior Programme Advisor, WWF UK (t July 2024)	[redacted]

Tanya Smith - Project Lead, Senior Programme Advisor, WWF UK (from August 2024 onwards)	[redacted]
Mae Tortajada-Suils, M&E Lead,Design and Impact Advisor,WWF UK	
Debs Mackay, Grants Specialist, WWF UK	
Dave Tickner, Freshwater Lead, WWF UK	
Prem Shrestha, Finance Analyst, WWF UK	
Christian Chonya, Freshwater Technical Adviser, WWF Tanzania	
John Kimaro, Project Lead, Project Manager, WWF Tanzania (to Nov 2024)	
Kanuni Kanuni, Project officer, Project Lead when John Kimaro left), WWF Tanzania	
Baraka Greyson, Project driver, WWF Tanzania	
Manyerere Wajama, Finance Officer, WWF Tanzania	
Venance Dominic, Grant Coordinator, WWF Tanzania	
Majula Maingu, Project Manager, VIFAFIO	
Ken Irvine, Situational Analysis Lead, IHE	
Francesco Bregoli, Spatial Mapping Expert, IHE	
John Simaika, Wetlands Ecologist, IHE	
Following adjustments to Y2 salaries previously reported (revaluation due to correction in exchange rate applied to Y2 for IHE)	
John Simaika - Wetlands Ecologist - IHE	
TOTAL	

Capital items – description	**Capital items – cost (£)**
Fishing nets	[redacted]
TOTAL	

Other items – description	**Other items – cost (£)**
Consumables (stationery, photocopying, printing)	[redacted]
Partner reflection meeting (TAFIRI, WWF, IHE, VIFAFIO, LGA) - costs include venue, refreshments, participant costs, transport cost and stationery)	

Audit / Financial Assurance certification (end of project)	[redacted]
TOTAL	

b. Additional funds or in-kind contributions secured

Matched funding leveraged by the partners to deliver the project	**Total (£)**
Year 1: FY 2022-2023	[redacted]
Year 2: FY 2023-2024	
Year 3: FY 2024-2025	
** *WWF UK was providing match funds of £11,724 towards the final evaluation, which was rescheduled to April/May 2025 - which was after the end date of the Darwin Mara project. As it was not incurred before 31 March 2025, it has not been shown in Y3 match total. Match funds for project closeout and evaluation, however, incurred in April-June 2025 are equal to approximately GBP 14,971.* This was included in the Change request submitted and approved in March 2025.	
TOTAL	

Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project	**Total (£)**
TOTAL	

c. Value for Money

Yes. The project has demonstrated good value for money, if using the 4 Es of value for money, by efficiently utilizing resources to achieve the desired outcomes, as the interventions were built on work that had proven to deliver in the past**.** Just under half of our total Darwin spend (44%) was on project activities (comprising Travel and Subsistence, Operating costs and other costs, including M&E), whereas the other half comprised staff (43%) and overhead costs (13%). The project has been economical, efficient and effective with resources available. **(Efficiency).**

Evidence includes the successful completion of most of the project milestones within budget and timeline, as well as reaching almost all the expected results, and positive feedback from stakeholders and beneficiaries **(Effectiveness)**.

The project has focused on maximizing the impact of each pound spent, ensuring that resources are used effectively to achieve the intended conservation outcomes. It also considered march funding and considerable in-kind match from other partners, demonstrating a high commitment and confidence in the delivery. Paired with WWF's procurement procedures ensured that

competitive tendering was used to find the most cost-effective way to purchase inputs locally and internationally as needed. **(Economy).**

To promote sustainable fishing practices, a total capital investment of [redacted] was made over the lifetime of the project, sourced from both BCF and match sources. This included:

- [redacted] from BCF for fishing nets
- [redacted] from match funding for a boat engine used in patrols
- [redacted] from match funding for fishing nets, fish drying equipment, and cold storage solutions (e.g. freezers and cool boxes)

This investment supported 510 fisherfolk, resulting in a cost of [redacted] per beneficiary.

As part of the initiative, fisherfolk have voluntarily exchanged illegal fishing gear for legal alternatives and have adopted sustainable fishing practices, contributing to the long-term health of freshwater ecosystems and improved livelihoods.

The design and implementation of this project involved close collaboration between WWF, partners and stakeholders to ensure that financial resources were adequately and appropriately assigned to project inputs like staff, training and capacity building to achieve the project outcomes, and that benefits were distributed fairly, e.g. in the way the project prioritized working with women, and ensuring fair governance of all committees and structures e.g CMUs, BMUs, WUAs, women groups, etc **(Equity).**

The project has supported 23 women fishmonger groups (of which 19 are active), helping them to register at the district level, develop constitutions, and open formal bank accounts. Through ongoing support, follow-up and training, funded by both BCF and match sources under Activities 3.2.1, 3.2.2 and 3.3.1 [redacted] 458 women participating in savings groups have been empowered to strengthen their financial and organizational capacity.

The total investment translates to a cost of [redacted] per beneficiary, reflecting a cost-effective approach to promoting women's economic inclusion and group sustainability.

Local capacity was built to continue owning and maintaining the results obtained, this together with better enabling conditions, such as the presence of fisheries officers, and management plans in place will secure long term benefits.

Annex 1 Report of progress and achievements against logframe for the life of the project

1. Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2025

Project summary	Progress and Achievements June 2022 - March 2025
Impact Protected fish habitats, sustainable fishing methods and improved value chains enhance the resilience of local livelihoods, sustain freshwater biodiversity and help to secure the ecological integrity of the Mara Wetlands.	Anecdotal evidence of increasing uptake of sustainable fishing methods and improved livelihoods. Impact will be determined by the end of the project upon comparison of data on ecological integrity and livelihood results.
Outcome By 2025, community-led sustainable fisheries and improved value chains have increased resilience of livelihoods and have started to reduce threats to freshwater biodiversity in the Mara Wetlands	
Outcome indicator 0.0 0.0 By 2025, habitat distribution and biodiversity abundance and distribution of native (including identified threatened species) and non-native (including Nile perch and hyacinth) species are known and maintained	**Partially achieved:** **Year 1:** Ecological surveys completed in December 2022. 17 fish species were identified in the Mara wetlands covering 330.42sqkm, primarily in the lower catchment. 132 species of macrobenthos were located in 8 sites, 3 sites were depleted due to low water quality. Catchment per unit effort (CPUE) provided a relative biomass of 9.2kg/net (lower catchment), 0.25kg/net (middle catchment), 1.9 kg/net (upper catchment) Drone survey completed March 2023, raw data is currently being analysed by IHE, due to be completed March 2024. **Year 2:** Follow-up ecological surveys took place in December 2023 with TAFIRI and IHE Delft. Consolidation and assembly of the mapping data for analysis of how the wetland extent and habitat have changed since previous updates. Water chemistry results and nutrients have been analysed by TAFIRI - water quality results are largely similar to those of the 2022 survey. Four macroinvertebrate samples and five vegetation samples were collected from each site. A fewer number of zooplankton samples were collected for processing by IHE. Low abundance suggested by field observations have been confirmed by processing in the lab by IHE. Results of phytoplankton and macrobenthos samples processed by TAFIRI are completed. Mostly moderately or highly tolerant macroinvertebrate taxa were observed in the samples. eCAS data collection is underway. Initial fish size frequency catch data and distribution will be analysed by TAFIRI in 2024.

	Year 3: Studies were completed, so species status, abundance and distribution are now known. The wetland showed a great fluctuation between dry and wet season, with an overall expansion trend as identified during the drone survey, total current area covers 38,800ha, though the official published extension remains as 29,237ha (NAFORMA 2015). As per **vegetation distribution**, the burning of the swamp, starting with the papyrus, greatly reduced the vegetation area, sometimes more than 60 km2, this potentially has a major impact on the habitat and ecosystem of the wetland. Diversity of aquatic plants was low throughout the sampled sites. Emergent vegetation was dominated across the site by either papyrus (Cyperus papyrus) or hippo grass (Echinochloa stagnina) (Table 4). Many sites had patches of broadleaf cattail (Typha latiflolia) as well as woody shrubs (particularly black wattle, Acacia mearnsii) occurring within the emergent wetland vegetation. Water hyacinth (Eichhornia crassipes) was the dominant floating vegetation across all sites, with water lilies (Nymphaea cf lotus) only present in S1, where it was abundant, and S9 where it was rare and occurred sporadically and away from the bank margins. Azolla sp. was observed in all but S1, S4, S5 and S7 in patches along the shore, and sometimes in clumps within the water hyacinth patches. Ceratophyllum demersum was the most abundant submerged plant found. **For fisheries**, the repeat fish study conducted does not allow for an accurate assessment of whether the species have been maintained. Though it provides confidence on the species status, several fish on the IUCN Red List were identified in the wetland, including the critically endangered Labeo victorianus and the vulnerable Haplochromis nubilus, as well as other species of importance, Protopterus aethiopicus, Clarias gariepinus, Schilbe intermedius, Synodontis victoriae and S. afrofischeri. None of the endemic species of tilapia (Oreochromis esculentus and O. variabilis) were observed, but O. niloticus and O. esculentus were present at nearly all the sites sampled, although prevalence of O. niloticus declined away from the lake area. eCAS data will continue and future reports will be able to be compared to the 2024 report to understand trends
Outcome indicator 0.1 0.1 By 2025, at least 190 km2 (~50%) of the Mara Wetlands is under improved fisheries co-management, with measures in place to protect identified fish habitats and breeding sites; benefiting Lake Victoria refugee species and threatened species (eg haplochromine cichlids, endangered native tilapias); and a monitoring regime is established based on indicators of fish stocks, threatened species distributions and populations, and wider wetland health.	**Fully achieved**: **Year 1**: Initial identification of the wetland as a breeding site and refuge for threatened species - more data required to confirm. **Year 2:** River Health Assessment (RHA) data collection in progress, citizen science data is being shared with LVBWB monthly. Water quality is measured once per month at 18 sites across the wetland. Fish larvae surveys completed indicating breeding sites. Development of fisheries co-management plans carried out by TAFIRI (Jan - March 2024). **Year 3:** The area under improved management, covered by CMUs and BMUs with active eCAS data collection is equivalent to 55% of the total area for the Mara wetland. Additionally, almost every district in the region now

	has got a fisheries officer, fully engaged and enforcing regulations in the whole wetland; and several sites have been identified as breeding sites through a larval study along the entire wetland.
Outcome indicator 0.2 0.2 At least 20% fewer illegal undersized nets (<3 inches) are being used by fishers in the Mara wetlands compared to the updated baseline established in Yr 1.	**Partially achieved:** **Year 1:** Baseline identified through socio-economic TAFIRI research - 49% undersized nets (<3 inches) in survey area in December 2022. **Year 2:** Through TAFIRI led gear exchange, 51 fishers across 4 villages voluntarily surrendered 242 illegal gears (91 undersized nets, 125 monofilament nets, 1 beach seine, 2 traps, 18 hooks and 5 mosquito nets). These were exchanged with 229 legal gears (165 gillnets and 64 other legal sized nets). After the TAFIRI gear exchange scheme, 52 fishers in Kwibuse CMU voluntarily surrendered an additional 306 illegal fishing gears. **Year 3:** Based on perception surveys, an estimated 10% reduction in the use of illegal fishing nets, a perceived change from 34% to 24% people reporting seeing neighbours using illegal nets. But data availability on the actual use of nets makes it difficult to quantify this. Even if there has been a “notable” reduction in illegal practices
Outcome indicator 0.3 0.3 By 2025, at least ~400 (40% of direct beneficiaries) around the Wetland including vulnerable poor people (504 men, 521 women and 10 persons with disability) report more resilient livelihoods through sustainable fish stocks, increased /diversification of income and/or value chain enhancement and improved governance.	**Fully achieved** **Year 1**: Household socio-economic survey completed. 28% report climate resilience on the baseline, though not yet development of resilient livelihoods. **Year 2:** Case studies from women's groups (Kirumi and Buswahili) collected to demonstrate livelihood impacts ahead of impact survey in year 3. **Year 3:** 458 women in saving groups, and 1101 hanging nets, as well as the capacity to CMUs. Validated by the results from the socio economic survey to the whole population with >500 direct beneficiaries reported more resilient livelihoods, based on a change from 29% to 80% people reporting a medium mincome (50% increase >50k Tzsh); there has also been an increase in the % people involved in fisheries from baseline (from 41% to 93%) as a primary or secondary activity, and a 43% increase in fish trade across the whole communities.
Outcome indicator 0.4 0.4 By 2025, there is increased coordination, strategy and capacity (resourcing / staffing) by regional, local government agencies and communities to sustain the impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands	**Fully achieved** **Year 1:** 2 sub-catchment management plans developed for 2 Water Users Associations. 3 District Environmental Action Plans developed, implementation is required. **Year 2:** 6 District Environmental Action plans (DEAP) reviewed (5 through this project and 1 through the Mara River catchment project) and approved by district directors and district councils.

	2 sub-catchment Management Plans finalised and now being implemented with WUAs in respective sub-catchment (North and South Mara WUAs). Templates prepared for Water User Associations to develop their constitutions. **Year 3: Increased** engagement and awareness at regional level of Mara region **Through:** 1. Increased budget and deployment of fisheries officers, There are now a number of new Fisheries Officers engaged at District level, 1 per district in the wetland, for awareness, capacity and also to support engagement and enforcement of the new plans agreed during the project - 18 in total Output 4.1) 2. The role Fisheries Advisor to Regional Secretariat has now been created 3. Governance of a potential RAMSAR site would be supported by BMU / CMU guidelines, which has gone to the Ministry level for endorsement. Met with the Deputy Secretary of the Fisheries Ministry, awaiting responses on next steps. Discussion with RAMSAR focal person under Vice Presidents Office, learning from challenges at other sites in Tanzania. Results of situational analysis (ecological survey, drone survey, larvae survey, socioeconomic survey etc) of wetland came late - this data would have been useful to present the evidence base for this proposal and to support this engagement.
Output 1 Fisheries co-management By 2025, adoption of one community-led fisheries co-management plan, based on initial fisheries situation assessment for the Mara Wetlands, and incorporating i) measures to protect habitat and breeding sites for fish stocks and refugee/threatened species, and ii) measures for ongoing monitoring and adaptive management of fish catch, indicator and threatened species and wider wetland health	
Output indicator 1.1 1.1 Fisheries situation assessment for the Mara Wetlands completed and disseminated to fisherfolk and relevant local authorities (by end Yr 1). Baseline: No assessment in place.	**Fully achieved**: **Year 1**: Initial ecological surveys carried out by TAFIRI and IHE in December 2022 to monitor habitat and biodiversity and assess updated baselines. TAFIRI conducted a socio-ecological survey providing the fisheries situation assessment from December 2022 to February 2023. **Year 2:** Follow-up ecological surveys took place in December 2023 with TAFIRI and IHE Delft. Larval survey for identification of breeding sites took place in March 2024. Evidence provided in section 3 and annexes 8,9,10,12. **Year 3:** Second survey was completed but had to be reduced in scope due to budget constraints, which limited ability to compare results over time. A larvae survey was done to validate results. The extent of the wetland and changes over time was mapped by drones. TAFIRI was involved in studies and is fully across the results. Dissemination of the results (in a simplified, accessible form) with the communities (CMUs and BMUs) could have been improved to validate scientific

	results with local community knowledge. The results of these surveys were used as the basis of the co-management plan and identifying breeding sites for protection with communities.
Output indicator 1.2, Community-led fisheries co-management plan agreed by local communities (with minimum 60% fisherfolk participation from 27 villages) and authorities, with specific measures for habitat/population protection, e.g., no take zones, off seasons, minimum net mesh sizes (by end Yr 2). Baseline: No community-led fisheries co-management plan in place	**Fully achieved**: **Year 2:** 4 Community Management Units (CMUs) established and operating (2 in Butiama, 1 in Rorya, and 1 in Serengeti district). The CMUs assist in data collection and sustainable fisheries management and comprise 320 community members (27% female). 65 individuals (28 female and 37 male) have been identified as executive committee members of the CMUs. CMUs have developed by-laws for conserving the wetland resources, with two no-take zones established at Kukona landing site in Rorya, and Kirumi landing site Butiama 2 BMUs supported with equipment for surveillance (Jan-March 2024) who will also help in mentoring the 4 newly formed CMUs. 2 sub-catchment Management Plans developed. Mara River Wetland Fisheries Management Plan (MRWFMP) co-developed in February 2024 **Year 3:** Co-management plans developed by TAFIRI with the involvement of communities on the ground, the CMUs and BMUs already established in Y2. Variable understanding of the details of the co-management plans by the CMUs and BMUs.
Output indicator 1.3 At least 4 Community Management Units (CMUs) and 2 Water User Associations (WUAs) develop and start to implement citizen science approaches (such as existing e-CAS platform) to monitor fish catch & stock, indicator/ threatened species and wider wetland health,	**Fully achieved**: **Year 2:** 27 enumerators from CMUs and BMUs were provided training on fish species identification using indigenous names. 14 enumerators representing seven landing sites were trained on how to collect catch and effort data using the mobile application Electronic Catch Assessment Survey (eCAS). 4 Community Management Units (CMUs) are implementing eCAS. Fisheries catch data is uploaded daily to the TAFIRI server.

providing quarterly data updates to the Mara Regional and Local Government Authorities and TAFIRI (From Yr 3). Baseline: No citizen science project in place. **Community Management Units are a structure more suited to the Mara wetlands context.*	Training and equipment for 39 citizens (18 female, 21 male) from two Water Users Associations (WUAs) in North Mara and South Mara areas, to collect monitoring data on wetland and river health. Data is being collected using the citizen science River Health Assessment (RHA) once per month across 18 points, to monitor the health of the Mara River catchment. **Year 3:** Ongoing support provided to 4 CMUs; 2 BMUs and 2 WUAs for data collection and monitoring.
Output 2. Fishing practices: By 2025, increased fisherfolk capacity on sustainable fishing and monitoring practices, leading to reduced overfishing and declining pressure on refugee and threatened fish species	
Output indicator 2.1. At least 504 fisherfolk trained on and engaged in sustainable fishing practices such as legal nets, off seasons, no take zones, etc. (By end of Yr 2). Baseline: 0	**Fully achieved** **Year 2:** Training provided by TAFIRI, LVBWB and VIFAFIO to 12 CMU/BMU members using a ToT model, on natural resources management (with a focus on sustainable fishing practices); governance and leadership, and conflict resolution. The 12 ToTs have cascaded the training to a further 310 participants across 9 villages. **Year 3:** 510 fisherfolk trained in total by the TOT, contributing directly to the gear exchange. 101 people surrendered 530 nets.
Output indicator 2.2. At least 151 fisherfolk have exchanged illegal fishing gear for legal gear and have adopted sustainable fishing practices by year 3 (Yr 2: 51 fishers exchange gear, Yr 3: 100 fishers exchange gear)	**Largely achieved:** **Year 2:** A campaign on the impact of improper fishing gear on livelihoods and biodiversity was led by TAFIRI engaging 504 individuals (30% women), including fishers, traders and processors and consumers.10 riparian villages were reached through 4 public events, and 160 brochures, 51 posters and 4 signboards were produced. Gear exchange for 51 fishers, with voluntary surrender of 242 illegal gears. A further 52 fishers in Kwibuse voluntarily surrendered an additional 306 illegal fishing gears. The 4 operational CMUs are now enforcing sustainable fishing practice through community involvement, monitoring and surveillance. **Year 3:** 530 illegal nets were surrendered and 289 replaced through voluntary exchanges by 101 fisherfolk. Over the full course of the project, 530 illegal nets were destroyed. Due to budget constraints, some fisherfolk who surrendered multiple nets only received one net in return.
Output indicator 2.3	**Fully achieved** Year 2: This activity will be done in year 3 after the co-management plans are developed.

At least 2 Beach Management Units and 4 Community Management Units across 9 villages / 7 landing sites engaged in the promotion and enforcement of sustainable fishing practices. (By end of Yr 1).	**Year 3:** 2 BMUs and 4 CMUs actively engaged in the promotion and enforcement of sustainable fishing practices
Output 3. Value chain enhancement: By 2025, enhanced fisheries value chains provide more resilient (i.e., diversified and/or increased incomes) livelihoods, especially for women.	
Output indicator 3.1 At least 10 People With Disability (PWD) and 521 women are engaged in and using training and equipment to reduce post-harvest losses and develop market strategies to enhance income from the fish value chain. (Yr 2: 321 women and 10 PWD, Yr 3: 200 women). Baseline: 0	**Largely achieved** **Year 1:** 30 fishmongers trained on fisheries value chains, selected from 6 communities, out of an initial 140 fishmongers (128 female, 12 male). VIFAFIO carried out an analysis of the value chain, with identification of the gaps through participation of all stakeholders. **Year 2:** 60 women fishmongers (ToTs) provided training on fisheries livelihoods, particularly on post-harvest strategies to reduce fish spoilage. They helped reach 321 women fishmongers (including 6 people with disabilities) from 17 registered women fishmonger groups. 4 deep freezers for fish and horticulture storage have been purchased. IHE Delft has supported further mapping of the main value-generating activities of subsistence communities in the Mara wetlands (fishing, farming, livestock keeping) to support livelihood-based value chain analysis. **Year 3:** the 60 TOT engaged and trained further 498 women, including 9 PWD to reduce post harvest losses. A total of 458 women are currently engaged and using training and equipment to reduce post harvest losses.
Output indicator 3.2 At least 40 women's groups are active, with at least 20 women's groups practicing VICOBA strategies to facilitate investment in new market opportunities to enhance incomes from the fishery value chain (Yr 2: 10 groups, Yr 3: 10 groups). Baseline: 3 women groups linked to VICOBA	**Partially achieved:** **Year 1:** 7 newly instituted Women's groups of fishmongers. **Year 2:** Local Government has facilitated 20 Women's Groups (Wanawake Wachuuzi) to develop constitutions and become registered at district level. 17 groups have started saving and opened bank accounts, 10 of these groups are trained and linked to VICOBAs. **Year 3:** 23 fishmonger groups are formed and practising VSLAs. 19 of these are active (registered at district level, developed constitutions, and have bank accounts) as VICOBA groups. Membership per group was larger than expected (20 people per group), meaning that there was a smaller number of groups than anticipated, but a similar number of women was reached.
Output 4 Enabling conditions for scaling-up: By 2025, enabling conditions (plans, finances, lesson-sharing) are in place to facilitate sustained impacts from the project, and to facilitate scaling-up of fisheries co-management for the benefit of livelihoods and biodiversity across the entire Mara Wetlands	

Output indicator 4.1 18 plans and / or guidelines have been developed and agreed by local government and communities (by Y3), incorporating project lessons, that will help to sustain impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands	**Year 1:** 6 District Environmental Assessments (DEA) took place as a first step for the development of management plans. (5 through this project and 1 through the Mara River catchment project). **Year 2:** 6 District Environmental Action Plans (DEAPs) have been revised and approved by district directors pending district council approval. Fisheries co-management plans revised (Feb-March 2024). WWF-Tanzania collaborated with WUAs to review, update, and implement two Sub-Catchment Management Plans (SCMPs), which have been distributed for community-led implementation. **Year 3:** 18 plans or guidelines developed and agreed ● 5 District Environmental Action Plans (DEAPs) ● 2 WUAs Constitutions ● 6 BMUs / CMUs guidelines / by-laws ● 2 Sub-Catchment Management Plans ● Co-management Plan (one plan) ● Financing Strategy for BMUs and CMUs (one document to cover all) ● Mara Wetland Integrated Management Plan (IMP) reviewed
Output indicator 4.2 By Yr 3, a co-management funding strategy has been developed that outlines sustainability plans for CMUs and BMUs in the Mara wetlands, which includes plans for sharing of revenues from fishing licences.	**Fully achieved** **Year 2:** Co-management funding strategy for financing the CMUs has been developed. **Year 3:** A range of funding streams identified eg. landing fees; toilets; processing tables, 10% of fees from district to be returned to CMU / BMU but this proposal needs to be signed off at District level.
Output indicator 4.3 By Yr 3, increased engagement of national Tanzanian government towards gazettement / designation of the Mara wetlands as a Ramsar site. Baseline: Limited engagement	**Largely achieved:** **Year 1:** First initial information-sharing webinar within the WWF-Zambia on the Kafue flats project. **Year 2:** WWF and VIFAFIO learning exchange with WWF's RUMAKI+ seascape programme to discuss cold chain storage approaches in Kilwa, as a strategy to reduce post-harvest loss. Project communications materials developed including social media materials, e-newsletter content, a project film and website page. Engagement with Tanzania Ramsar focal point. **Year 3:** Increased engagement and awareness at regional level of Mara region Governance of a potential RAMSAR site would be supported by BMU / CMU guidelines, which have gone to the Ministry level for endorsement. Met with the Deputy Secretary of the Fisheries Ministry, awaiting responses on next steps. Discussion with RAMSAR focal person under Vice Presidents Office, learning from challenges

	at other sites in Tanzania. Results of situational analysis (ecological survey, drone survey, larvae survey, socioeconomic survey etc) of wetland came late - this data would have been useful to present the evidence base for this proposal and to support this engagement. There are several new Fisheries Officers engaged at District level, which also helps support engagement.

2.

3. Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Community-led fisheries management in the Mara Wetlands, Tanzania.

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
Impact: Protected fish habitats, sustainable fishing methods and improved value chains enhance the resilience of local livelihoods, sustain freshwater biodiversity and help to secure the ecological integrity of the Mara Wetlands.			
Outcome: By 2025, community-led sustainable fisheries and improved value chains have increased resilience of livelihoods and have started to reduce threats to freshwater biodiversity in the Mara Wetlands.	**0.0** By 2025, habitat distribution and biodiversity abundance and distribution of native (including identified threatened species) and non native (including Nile perch and hyacinth) species are known and maintained. [DI-B11] **Baseline:** Updated Yr 1 baseline: 17 fish species were identified in the Mara Wetlands covering 330.42sq km, primarily in the lower catchment. 132 species of macrobenthos were located in 8 sites, 3 sites were depleted due to low water quality. 0.1. By 2025, at least 190 km^2 (~50%) of the Mara Wetlands is under improved fisheries co-management, with measures in place to protect identified fish habitats and breeding sites; benefiting Lake Victoria refuge	0 Fish size frequency catch data and distribution in the Wetlands; drone surveys of wetland habitat extent; Catch per unit effort (CPUE) survey data from TAFIRI to assess fisheries benefits. 0.1. Fisheries co-management plan in place; annual monitoring reports of management changes adopted; compliance with habitat protection measures such as no-take zones; repeated habitat surveys.	With appropriate preventive measures against Covid-19 (eg social distancing, outdoor meetings, provision of Personal Protective Equipment) and by working closely with appropriate health experts at a local level in providing education and awareness to communities and project staff and stakeholders, the risks to health will be mitigated and communities will feel comfortable working with project staff. Through participatory consultations and co-creation processes, community members around the Mara Wetlands perceive potential for more resilient and equitable benefits from fisheries co-management of

	species and threatened species (eg haplochromine cichlids, endangered native tilapias); and a monitoring regime is established based on indicators of fish stocks, threatened species distributions and populations, and wider wetland health.[DI- D01] Baseline: Wetland area is 387 km^2 with no formal fisheries management or monitoring. 0.2 By 2025, at least 20% fewer illegal undersized nets (<3 inches) are being used by fishers in the Mara wetlands compared to the updated baseline established in Yr 1. [DI-B09] Baseline: Yr 1 updated baseline: 49% undersized nets (<3 inches) in survey area in December 2022. 0.3. By 2025, at least ~400 (40% of direct beneficiaries) around the Wetland including vulnerable poor people (504 men, 521 women and 10 persons with disability) report more resilient livelihoods through sustainable fish stocks, increased /diversification of income and/or value chain enhancement and improved governance. [DI-D16] Baseline: 0 people currently benefiting.	0.2. Data on number of fisherfolk using illegal fishing gear including undersized nets (<3 inches) from physical observation during household survey reports (table 16). 0.3. Household survey reports (Yr 1 and Yr 3) to assess poverty reduction, around economic improvement such as income, access to loans and market capacity on direct beneficiaries.	the Mara Wetlands, and have increased understanding on the value of sustainable fisheries for the resilience of their livelihoods. Capacity building on citizen science and provision of equipment will increase participation of Beach Management Units, Water Users Associations and collaboration with Local Government Authorities and the Mara catchment committee will result in improved fisheries co-management. Fisheries situation assessments and other lessons learnt from this and other relevant projects will enable communities and local authorities to reach agreement on fisheries co-management plans. Pollution from agriculture and livestock is not so significant as to impact freshwater

	0.4 By 2025, there is increased coordination, strategy and capacity (resourcing / staffing) by regional, local government agencies and communities to sustain the impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands. Baseline: No dedicated resources provided.	0.4 Allocation of resources e.g. staffing, budget by regional, local government agencies to support Mara wetlands conservation.	biodiversity and the ecological integrity of the Wetlands.

1. Fisheries co-management By 2025, adoption of one community-led fisheries co-management plan, based on initial fisheries situation assessment for the Mara Wetlands, and incorporating i) measures to protect habitat and breeding sites for fish stocks and refugee/threatened species, and ii) measures for ongoing monitoring and adaptive management of fish catch, indicator	1.1 Fisheries situation assessment for the Mara Wetlands completed and disseminated to fisherfolk and relevant local authorities (by end Yr 1). [DI-C04] Baseline: No assessment in place. 1.2 Community-led fisheries co-management plan agreed by local communities (with minimum 60% fisherfolk participation from 24 villages) and authorities, with specific measures for habitat/population protection, e.g. no take zones, off seasons, minimum net mesh sizes (by end Yr 3). [DI- B04]	1.1 Baseline fisheries situation assessment survey. 1.2 Documented fisheries co-management plans, signed off by relevant community groups and local authorities.	Alternative remote systems of engagement to gather data will allow the timely completion of situation assessment in case of Covid or extreme events such as floods. Offline data collection on smartphones will allow effective information sharing in case of failure of telephone network coverage or power cuts.

and threatened species and wider wetland health.	Baseline: No community-led fisheries co-management plan in place. 1.3 At least 4 Community Management Units (CMUs) and 2 Water User Associations (WUAs) develop and start to implement citizen science approaches (such as existing e-CAS platform) to monitor fish catch & stock, indicator/ threatened species and wider wetland health, providing quarterly data updates to the Mara Regional and Local Government Authorities and TAFIRI (From Yr 3). [DI- A03] Baseline: No citizen science project in place.	1.3 Quarterly data updates submitted by CMUs/WUAs to authorities and TAFIRI.	

2. Fishing practices: By 2025, increased fisherfolk capacity on sustainable fishing and monitoring practices, leading to reduced overfishing and declining pressure on refugee and threatened fish species.	2.1. At least 504 fisherfolk trained on sustainable fishing practices such as legal nets, off seasons, no take zones, etc. (By the end of Yr 2). Baseline: 0. 2.2. At least 151 fisherfolk have exchanged illegal fishing gear for legal gear and have adopted sustainable fishing practices by year 3 (Yr 2: 51 fishers exchange gear, Yr 3: 100 fishers exchange gear) [DI-B09] Baseline: 0	2.1. Training course registers; follow-up survey on fishing practices. 2.2. Beach Management Unit / Community Management Unit records on fish landings and enforcement patrols.	Beach Management Units / Community Management Units have the capacity to enforce improved fishing practices, and fisherfolk perceive shared benefits and are willing to adopt new practices collectively. Supplementary income from engagement in improved fisheries, participation in the design of restrictions, and provision of equipment such as replacement fishing gear,

	2.3. At least 2 Beach Management Units and 4 Community Management Units across 9 villages / 7 landing sites engaged in the promotion and enforcement of sustainable fishing practices. (By end of Yr 1). Baseline: 1 Beach Management Unit.	2.3 Beach Management Unit / Community Management Unit records on fish landings and enforcement patrols.	phones and internet access for BMU / CMU members as citizen scientist for biodiversity monitoring, will be enough to compensate for any initial losses from the application of legal practices. Fishers can be persuaded to fish with only a single panel (depth) of legal net, through improved messaging and CMU enforcement in the wetland.
3. Value chain enhancement: By 2025, enhanced fisheries value chains provide more resilient (i.e. diversified and/or increased incomes) livelihoods, especially for women.	3.1. At least 10 People with Disability (PWD) and 521 women are engaged on and using training and equipment to reduce post-harvest losses and develop market strategies to enhance income from the fish value chain. (Yr 2: 321 women and 6 PWD, Yr 3: 200 women, 4 PWD). [DI-A04] Baseline: 0. 3.2. At least 40 women's groups are active, with at least 20 women's groups practicing VICOBA strategies to facilitate investment in new market opportunities to enhance incomes from the fishery value chain (Yr 2:	3.1.Training report; survey report including women's income from women's groups records and household survey. 3.2. Survey of women's groups, VICOBA membership records, and market monitoring study to identify percentage of value added fishery products in the market and market access.	The 50 women trained as trainers are selected communally with the condition to train others and that will give them enough motivation to train the rest of the women engaged in fisheries in each group. Women's groups are motivated to take up the opportunities and have support from the community to do so. Effective enforcement and BMU cooperation ensures demand for undersized/illegal size fish reduces.

	10 groups, Yr 3: 10 groups). [DI-A03] Baseline: 3 women groups practicing VICOBA strategies.		
4. Enabling conditions for scaling-up: By 2025, enabling conditions (plans, finances, lesson-sharing) are in place to facilitate sustained impacts from the project, and to facilitate scaling-up of fisheries co-management for the benefit of livelihoods and biodiversity across the entire Mara Wetlands.	4.1. 18 plans and / or guidelines have been developed and agreed by local government and communities (by Y3), incorporating project lessons, that will help to sustain impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands [DI- C01] Baseline: 1 district plan in progress. 1 existing plan - the Mara Wetlands Integrated Management Plan which needs to be updated and guidelines agreed.	4.1. Copies of conservation plans agreed by communities and ratified by regional governments which have been informed by fisheries situation assessment and lessons learnt from this project, including: ● Updated Integrated Wetland Management Plan (1). ● Community-led fisheries co-management plan (1). ● Beach Management Unit / Community Management Units guidelines with bylaws for their functioning) (6). ● Community-led River Health Assessment Guideline (1). ● Sub-catchment management plans for Mara North and South Water User Associations (2) ● District Environmental Management Plan (5). ● Water User Associations (WUAs) Constitutions for 2 WUAs (2).	Regional and Local Government Authorities are willing and capable to develop the Environmental Management Plans, including increase of budget allocation Equitable participation in resource governance, decision-making and benefit sharing is accepted/ implemented as co-developed by the same communities. Village governments are supportive and include the initiative in the Village Development Plan for scaling up.

	4.2: By Yr 3, a co-management funding strategy has been developed that outlines sustainability plans for CMUs and BMUs in the Mara wetlands, which includes plans for sharing of revenues from fishing licences. 4.3 By Yr 3, increased engagement of national Tanzanian government towards gazettement / designation of the Mara wetlands as a Ramsar site. Baseline: Limited engagement	4.2. Co-management funding strategy document. 4.3. Documentation of policy briefings, technical papers and forums shared with or presented to key audiences.	

Activities

0. Inception phase:

- 0.1 Stakeholder consultations with Beach Management Units (BMUs), Water User Associations (WUAs), women's groups, village leaders, women's groups, persons with disabilities, local and regional government.
- 0.2 Inception Meeting with all partners and stakeholders including community representatives.
- 0.3 Grievance mechanisms established.

1. Facilitate fisheries co-management plans, drawing on a fisheries situation assessment:

1.1 Undertake a fisheries situation assessment adapting methods used in the Kafue Flats, Zambia, including:

- 1.1.1 Review existing data on the fishery; boat and gear type; fishing methods; preferences in size/life-stage of species caught; preferences and constraints to fish trading;
- 1.1.2 Fish market surveys: number of fishers by gender/age/location/tenure; governance dynamics and regulation of fishing; reliance on fish for food and livelihoods.
- 1.1.3 Socio-economic surveys assessing poverty reduction including economic (income and market improvement), social (equity, legitimacy and governance participation) and poverty and biodiversity perceptions.
- 1.1.4 Seasonal ecological surveys to assess diversity, distribution and abundance of species, and to identify indicator species.

- 1.1.5 Habitat mapping of fishing “hotspots”, reproduction sites, niche habitats for refugee and threatened species.

1.2 Support communities and local authorities to design co-management plans, drawing on the situation assessment:

- 1.2.1 Develop measures: no-take zones/off-seasons for stock recovery; catch diversification; minimisation of threatened species catch; regulation of fishing gear and enforcement by BMUs.
- 1.2.2 Documentation of measures in a Mara Wetlands fisheries plan and dissemination to fisherfolk and other stakeholders.

1.3 Co-design a method for future management and monitoring of regulations with local authorities (MRFRU-Mara Regional Fisheries Resources Protection Unit & TAFIRI) and communities (BMUs, CMUs WUAs):

- 1.3.1 Strengthen WUAs as community groups for effective sub-catchment management plans (SCMPs).
- 1.3.2 Training to 2 WUAs on citizen led wetland and water quality monitoring.
- 1.3.3 Mara Regional Fisheries division (MRFD) and TAFARI train 6 BMUs / CMUs to support enforcement of fisheries regulations
- 1.3.4 Develop a business case for MRFD to finance BMUs.
- 1.3.5 Facilitate BMUs / CMUs to conduct regular patrols through provision of equipment.

2. Build capacity for sustainable fishing practices, to help implement the co-management plan:

2.1 Capacity building on sustainable fishing practices and monitoring methods/citizen science for fish catch and biodiversity for fisherfolk through BMUs:

- 2.1.1 Train 6 BMU leaders as Trainer of Trainers (TOT) to train 504 fishers.
- 2.1.2 Identify 27 enumerators from BMUs to train on basic species identification using indigenous names.
- 2.1.3 Training 13 fisher folk on Electronic Catch Assessment Survey (eCAS) for data collection on fish catch. Data delivered to TAFIRI database daily.

2.2 Co-creation of a system for the implementation and engagement of fisherfolk on sustainable fishing practices including the use of legal nets, off seasons and no take zones:

- 2.2.1 Campaign to wider community over the impact of improper fishing gear (including net size) on long term community livelihoods, poverty and biodiversity.
- 2.2.2 Develop a business plan through VICOBA for the provision of proper equipment and support the procurement of the proper size fishing nets.
- 2.2.3 Facilitate fishing gear exchange with the destruction of unsustainable gear.

- 2.2.4 Create a system of control / surveillance over the use of proper gear within the BMUs.

3. Enhance fisheries value chain to improve local livelihoods:

3.1 Value chain analysis to identify key opportunities for diversifying/increasing incomes.

3.2 Capacity building for 521 women and 10 persons with disability (PWD) fishmongers and entrepreneurs on value chain enhancement, post-harvest technologies and financial management:

- 3.2.1 Train 60 women in the Training of Trainers on value chain enhancement and post-harvest technologies to train another 521 women and 10 PWD.
- 3.2.2 Strengthen cooperatives as a financial arm of BMUs to sell fish products and facilitate training on financial skills/record keeping.

3.3 Support strengthening of women-based village community banks (VICOBA) to support loans, savings and business investment, seed funding and cooperatives:

- 3.3.1 Strengthen the governance of women-based village community banks (VICOBAs) to support loans, savings and business investment.
- 3.3.2 Provide seed funding to VICOBAs.

4. Facilitate enabling conditions for scaling up:

4.1 Develop/update local and district plans to incorporate lessons from the project:

- 4.1.1 Review the current District plans (4 Districts).
- 4.1.2 Influence/lobby District plans to incorporate lessons learnt from the project, including the Mara Integrated Management Plan

4.2 Support identification of potential finance for future fisheries co-management:

- 4.2.1 Development of a future fisheries co-management funding strategy
- 4.2.2 Share the fisheries co-management funding strategy with potential development partners.
- 4.2.3 Review of BMU and cooperative by laws and constitution - ensuring 10% goes to resource protection.

4.3 Exchange insights with at least 10 international / national forums including WWF's Freshwater Practice, Ramsar/CBD secretariats, InFish global professional network, Darwin Initiative secretariat:

- 4.3.1 Organize online workshops/conferences/webinars for sharing lessons learnt.
- 4.3.2 Develop/package information materials (technical papers, policy briefs, etc) on lessons learnt/ insights.
- 4.3.3 Disseminate and share project stories through global communication mechanisms including social media platforms and the WWF supporter magazine.

WWF's Environmental and Social Safeguards Framework will be used to manage risks, uphold human rights, and support better outcomes.
Regular stakeholder feedback opportunities will be built into project design, and grievance mechanisms will be established.

Annex 3 Standard Indicators

Table 1 Project Standard Indicators

Please see the Standard Indicator Guidance for more information on how to report in this section, including appropriate disaggregation. N.B. The annual total is not cumulative. For each year, only include the results achieved in that year. The total achieved should be the sum of the annual totals.

DI Indicator number	Name of Indicator after adjusting wording to align with DI Standard Indicators	If this links directly to a project indicator(s), please note the indicator number here	Unit	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project.
DI-B11	0.0 Area identified as important for biodiversity (ha) in the Mara wetlands	0.0	#	None	38,800	38,800	38,800	38,800	38,800 per drone survey or 29,237 (official NAFORMA 2015))
DI- D01	0.1 Hectares of habitat in the Mara Wetland under sustainable management practices	0.1	ha	None	0	0	16,148.79 / 29,237 ha (Tz Official LULC (NAFORMA 2015),)	55%	19,000 (50%) calculated (based on drone survey 38,800ha)
DI-B09	0.2 % of individuals/hh reporting a presence of unsustainable practices such as the use of destructive fishing methods as a result of project activities	0.2	%	None	34% use unsustainable gears	NA	24% use unsustainable gears	10% perceived reduction	20%
DI-D16	0.3 Number of people around the wetland whose disaster/climate resilience has been improved through sustainable fish stocks, increased /diversification of income and/or value chain enhancement and improved governance	0.3	#	Women	29%	NA	80%	50% increased (~500 direct beneficiaries)	400 (40% of direct beneficiaries)
DI- C04	1.1 Fisheries situation assessment for the Mara Wetlands completed and	1.1	#		1	2	2	2	2

DI Indicator number	Name of Indicator after adjusting wording to align with DI Standard Indicators	If this links directly to a project indicator(s), please note the indicator number here	Unit	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project.
	disseminated to fisherfolk and relevant local authorities								
[DI-B04]	1.2 Community-led fisheries co-management plan agreed by local communities and authorities	1.2	#		0	0	1	1	1
[DI-A03	1.3 Number of organizations (WUAs/CMUs/ BMUs) develop and start to implement citizen science approaches (such as existing e-CAS platform) to monitor fish catch & stock, indicator/ threatened species and wider wetland health, providing quarterly data updates to the Mara Regional and Local Government Authorities and TAFIRI	1.3	#		0	8	8	8	8
[DI-B09]	2.2 Number of fisherfolk have exchanged illegal fishing gear for legal gear and have adopted sustainable fishing practices	2.2	#		0	51	101 fisherfolk, surrendered 350 nets, 289 nets were exchanged	101	151
DI-A04]	3.1 Number of people engaged on and using training and equipment to reduce post-harvest losses and develop market strategies to enhance income from the fish value chain	3.1	#	Women	0	321	458	458	521
DI-A04]	3.1 Number of people engaged on and using training and equipment to reduce post-harvest losses and develop market	3.1	#	PWD	0	6	9	9	10

DI Indicator number	Name of Indicator after adjusting wording to align with DI Standard Indicators	If this links directly to a project indicator(s), please note the indicator number here	Unit	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project.
	strategies to enhance income from the fish value chain								
[DI- A03]	3.2 Number of women's groups are active, with at least 20 women's groups practising VICOBA strategies to facilitate investment in new market opportunities to enhance incomes from the fishery value chain	3.2		VSLA / VICOBA	7	17	23 VSLA groups, 19 active VICOBA groups	23 VSLA groups, 19 active VICOBA groups	40 groups, Of which 20 linked to VICOBA
[DI- C01]	4.1 plans and / or guidelines have been developed and agreed by local government and communities (by Y3), incorporating project lessons, that will help to sustain impacts of the project in terms of fisheries co-management, livelihood resilience, and biodiversity in the Wetlands	4.1	#		5	8	18	18	18

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Sustainable fisheries in the Mara wetlands	Website	Published Jan 2024	Female	British	N/A	https://www.wwf.org.uk/what-we-do/projects/sustainable-fisheries-mara-wetlands
Protecting the Mara Wetlands	Website blog post	Published Jan 2024	Male	Tanzanian	N/A	https://www.darwininitiative.org.uk/news/2024/01/11/protecting-the-mara-wetlands/
Developing a community profile to inform co-design processes of community-based water management projects.	MSc Thesis WSD.24-1066730.	Mncube, T. (2024)	Male		IHE Delft. , Institute of Water Education, Delft, The Netherlands.	IHE Delft.
Who hides in the Mara Wetland? Dry season fish biodiversity and habitat use in the Lower Mara Wetlands, Tanzania	Unpublished MSc thesis IHE Delft	De la Cruz, L. (2023)	Male		IHE Delft., Institute of Water Education, Delft, The Netherlands.	IHE Delft.

4. Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the **correct template** (checking fund, scheme, type of report (i.e. Annual or Final), and year) and **deleted the blue guidance text** before submission?	Yes
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	No
Is your report more than 10MB? If so, please consider the best way to submit. One zipped file, or a download option, is recommended. We can work with most online options and will be in touch if we have a problem accessing material. If unsure, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	Yes
If you are submitting photos for publicity purposes, **do these meet the outlined requirements** (see section 14)?	NA
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Have you provided an updated risk register? If you have an existing risk register you should provide an updated version alongside your report. If your project was funded prior to this being a requirement, you are encouraged to develop a risk register.	Yes
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	