Darwin Initiative
Final Report

*To be completed with reference to the Reporting Guidance Notes for Project Leaders (http://darwin.defra.gov.uk/resources/) it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)*

Darwin project information

Project Reference	21-017
Project Title	Community-based conservation for livelihood development in Lake Ossa Manatee Reserve
Host Country/ies	Cameroon
Contract Holder Institution	Zoological Society of London
Partner institutions	Ministry of Forestry and Wildlife (MINFOF) Cameroon, Watershed Task Group (WTG), Cameroon Wildlife Conservation Society (CWCS),
Darwin Grant Value	£297,211
Funder (DFID/Defra)	DFID
Start/end dates of project	April 1, 2014-March 31, 2017
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Project website/blog/Twitter	• *http://www.zsl.org/conservation/regions/africa/lake-ossa-wildlife-reserve-cameroon;* • *http://net-works.com/locations/cameroon/;* • *@sormenog1*
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1 Project Rationale

Freshwater biodiversity is among the most threatened and neglected biodiversity in Africa, yet vital for the well-being of human communities. Cameroon has among the highest number of threatened freshwater species in Africa. The country also ranks 150 out of 187 countries on the Human Development Index. At 4,000 ha, the Lake Ossa wetlands complex (a nationally designated Faunal Reserve) and the neighbouring reaches of the Lower Sanaga River Basin are freshwater and terrestrial ecosystems of regional and global importance. Lake Ossa is an unusual satellite lake connected by a narrow channel to the ancient Sanaga River. The freshwater species are rich and distinctive in the lake and it is critical habitat for the West African manatee.

Located on the edge of the Douala-Edéa Faunal Reserve (proposed as a national park), the complex provides a refuge for endangered West African manatee and threatened freshwater turtles, many fish species, and migratory birds. The Ossa catchment ranks 7th out of 1,256 catchments that qualify as Key Biodiversity Areas within the Guinean Forest Hotspot based on the number of vulnerable species (IUCN pers. comm.). Lake Ossa also provides a range of vital ecosystem services on which people rely. Over 200 of 1,350 households (~15%) are dependent on fisheries, while almost 25% of the total population (~5,300 people) carry out subsistence and small-scale agriculture in the decreasingly available land surrounding the lake to support their households. The complex provides additional essential services, such

as fish and timber to the nearby urban centre of Edéa, and local communities depend on a healthy, functioning and biodiverse ecosystem in the Lake Ossa complex for subsistence and livelihoods.

Lake Ossa's biodiversity and human population face substantial threats due to severe anthropogenic pressures. The proximity of the Lake Ossa communities to the city of Edéa increases the levels of unsustainable levels of exploitation of the complex's resources. Illegal poaching of wildlife is a significant threat to species like the manatee and soft-shelled turtle. Unsustainable fishing practices, such as small net size, aggressive fishing practices and ghost fishing by abandoned fishing gear, are threats to the diminishing fish resources and other species that depend directly or indirectly on the lake. Poor management of the steep lake shore, particularly due to the proximity of agroindustry and agroindustry workers practising small scale farming, and increasing demand from population growth is contributing to the degradation of the reserve and its resources. Known locally as 'the forgotten reserve', capacity to manage these threats to biodiversity and livelihoods is low, leaving both people and freshwater biodiversity vulnerable.
These threats were identified during a Darwin Initiative funded scoping trip to the Lake Ossa Reserve and neighbouring Douala-Edéa Faunal Reserve in June 2013. During this trip discussions and consultations were held with representatives from the Ministry of Forestry and Wildlife (MINFOF), local NGOs and local communities to better gauge interest in and capacity for conservation and development-related activities.

The Darwin project "Our Lake, Our life" started in March 2014 and was implemented by the Zoological Society of London in partnership with the Ministry of Forests and Fauna (MINFOF), local communities and the local organization Watershed Task Group (WTG) and Cameroon Wildlife Conservation Society (CWCS). The project focused on bringing together communities and MINFOF's Conservation Service to implement a clear co-management plan for Lake Ossa Faunal Reserve to enhance livelihoods and reverse declines in food fisheries, endangered species, and habitats. The project aimed at contributing both to an improvement of local livelihoods and environmental protection trough establishing clear linkages among freshwater conservation and wise use and community development in villages largely reliant on declining fishery resources. The achievement of this goal was expected through the adoption of clear management practices for the fishery and land uses, the development of village savings and loans associations (VSLAs) connected to sustainable business models, and the engagement of agroindustry to improve environmental management practices affecting the shore

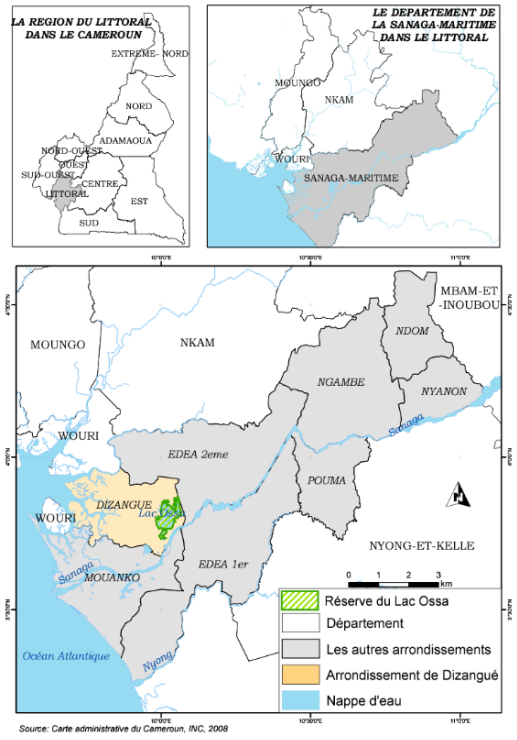

Figure 1. The Lake Ossa Reserve is located in Dizangue, Littoral Region of Cameroon, and is a satellite lake of the Sanaga River connected by a narrow channel.

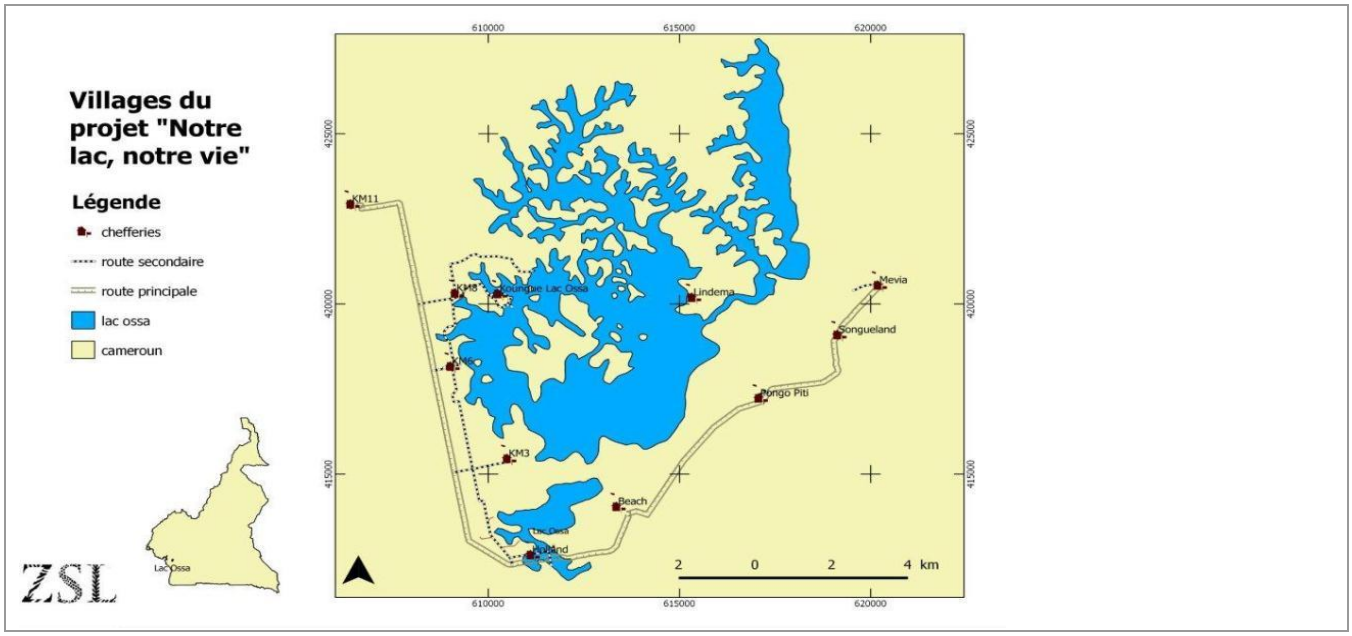

Figure 2. "Our Lake, Our Life" works in 11 villages surrounding Lake Ossa. The project office is located in Beach.

2 Project Partnerships

A collaborative approach was proposed in the project document based on the assumption that protected area management relies not only on agencies formally responsible for its management, but also on local communities and private and public sector stakeholders who are influencing their use. This methodology responds well to management challenges in Lake Ossa, where access is not restricted, multiple tenure systems coexist (agroindustry, reserve area and community land) and regulatory capacity is split across various government agencies.

The project focused in building a unified vision among stakeholders on management principles for the reserve ecosystem that could be translated into clear practices easy to implement and to monitor by reserve users and managers after the project was completed. Project implementation provided stakeholders the possibility of learning-by-doing, connecting discussion and training exercises on management, freshwater ecology, and research to practical action related to reserve management (anti-poaching, fishery management, ecotourism, and shoreline forest management).

A) Partnerships for co-management: MINFOF, communities and private sector.
MINFOF's Conservation Service – the government agency responsible for the management of the reserve – and local communities are considered as the central actors in the co-management process. We worked closely with both of them as project implementation partners, involving them in the decision-making and delivery of all activities. A constructive relation with agroindustry was established to develop good practices to manage pressures coming from agroindustry activities around the Lake Ossa ecosystem.

We assumed that the agency formally responsible for the management of the reserve (MINFOF) might have less capacity and legitimacy to lead and enforce management decisions than other actors in the area. For example, the adoption of a local bylaw that establishes freshwater no-take zones for fish reproduction in critical manatee hotspots had to be developed within the context of the Cameroonian regulatory framework and endorsed and supported by the Sub-Divisional Officer and the Ministry of Fisheries. At the same time, the adoption of these regulations is only possible if communities themselves take ownership of them, given the fact that the enforcement capacity of the Conservation Service will always be behind the capacity of communities to break or abuse those laws that they do not consider legitimate, especially given the pressure they suffer due to the hardship of living conditions around the lake.

Darwin funding has been catalytic in devolving to fisher communities the capacity to take ownership of lake resources through a participatory code of fishing. However, embedding conservation in fishery management from a community point of view, and establishing community organizations, required a higher

than expected level of investment in mediation and conflict resolution throughout year 2 and year 3 of the project.

Practical capacity-building for co-management was also achieved through Village Savings and Loans Associations (VSLAs), which started with three groups in pilot communities. These evolved into a dynamic network of multiple self-support associations connected to income generating opportunities related to environmental management and sustainable business models. VSLAs were directly involved in reforestation efforts and forest monitoring in collaboration with SAFACAM (an oil palm plantation company; Output 1, Output 4).

Whereas the delimitation of the terrestrial perimeter of the lake reserve requires to be gazetted by MINFOF, the prevention of encroachment requires active support from the agroindustry company SAFACAM, whose oil palm plantations surround a good proportion of the lake. SAFACAM has a large capacity to influence practices of communities neighbouring the lake living in settlements within its concession. A MoU with SAFACAM drafted during Year 2, enabled us to work with managers and plantation workers through VSLAs on demonstrating improved management procedures for the lakeshore habitats.

B) Technical partners for project delivery: original project partners and subcontractors.

Watershed Task Group (WTG) - The project partner WTG facilitated member elections of local fisher committees in Year 1, compiled a baseline report of the fishery in Lake Ossa, and participated in the discussion of the local fishing by-law (code-of-fishing). WTG developed participatory maps of no-take zones, fishing areas, and species biodiversity and later worked with ZSL, communities, and the conservation service to develop the final reserve map that was endorsed by local stakeholders and submitted to MINFOF for demarcation.

Cameroon Wildlife Conservation Society (CWCS) - CWCS developed an initial assessment of the forest cover around the reserve (Year 1). Following this, they trained the Conservation Service of Lake Ossa and Douala-Edéa Faunal Reserves (through co-funding) in mapping techniques and use of GPS. CWCS led on the management of conversations with MINFOF and MINEPED (Ministry of the Environment) to advance a landscape-level management approach and mapping for the proposed RAMSAR site (important global wetlands) that includes the Lake Ossa and Douala-Edéa protected areas. An operational plan was developed in December 2016 for the Douala-Edéa/Lake Ossa landscape that served as the basis of a preliminary management document and an updated map for the RAMSAR site that will be used in the designation process.

The project foresaw the involvement of another NGO, Cameroon-Ecology, to lead the social aspects of the project. However, following the commencement of the project they chose not to participate in the first year and therefore new project partnerships were developed to ensure certain project activities and consultants were engaged.

Importantly, the forestry component of the project (Output 3 and 4) was developed in partnership with the NGO APADER, an agroforestry NGO from the Western Region, that provided valuable transfer of knowledge to local stakeholders in agroforestry and capacities in community work and tree planting.

C) *Co-funding, Outreach, capacity building and knowledge sharing partners:*

African Marine Mammals Conservation Organization (AMMCO) /Edge Fellows - AMMCO, a research association chaired by former EDGE fellows of the project, Aristide Kamla and Rodrigue Ngangfack, participated in manatee monitoring through co-funding obtained from IUCN PPI and their EDGE fellowship that provided information of manatee presence in no take zones. They advised on the establishment of freshwater protected areas, tourism management and lake zoning.

Council of Dizangue - In the spirit of the Darwin Initiative, the project advocated also to build local awareness on species conservation and to present biodiversity values as an opportunity for local development. The project engaged with the Council for the development of a local tourism plan to develop guidelines to prevent aggressive tourism investment from the private sector in the Reserve area, to promote the sustainability of tourism operations, and to establish a framework for the participation of local communities in tourism benefits.

University of Douala / Institute of Aquatic Sciences - We worked with the University of Douala through a MoU to bring attention to freshwater conservation, co-management and local wellbeing, from an academic perspective. An aquatic conservation day was organized to share experiences and present results at the university. Since 2016, ZSL hosts a yearly field school to present and share project advancements in Lake Ossa.

Evergreen - This small and local organization, experienced in tree plantings and agriculture, received trainings in agroforestry and tree nursery development. Their members facilitated the establishment of relations with communities around SAFACAM for the development of the forestry component of the project. The organization has been supported by ZSL to draft a proposal for the GEF Small Grants Programme to develop agroforestry and tree plantings in collaboration with VSLAs following the model developed by the project.

2.2. Lessons, challenges and partnerships

a. Working with the Conservation Service and Government

The project provided the Conservation Service with basic equipment for policing the reserve, including an outboard engine, boat, and patrol gear, as well as capacity building on information management and reporting tools, outboard and freshwater ecology training and operational support to patrols. A major challenge was the unavailability of ecoguards due to staff changes that led to a reduced presence of the Conservation Service on the ground during certain periods of the project. When addressing the need for enforcement of the code-of-fishing in its early stages, we integrated the importance of effectiveness and worked toward developing an incentive-based system for the payment of patrol efforts according to the monitoring objectives, alternative to the usual mission based scheme. The needs of sustainable funding sources for conservation was acknowledged and integrated in the Tourism Management Plan and the Conservation Service's MoU with the Council. With the support of the MINFOF Conservator of the Reserve, the project established a good channel of communication with the department, regional and national representatives of MINFOF through yearly monitoring visits, in order to make them aware of our efforts, improve their awareness of the reserve and the long-term national funding needs of the Conservation Service.

b. Working with communities

'Learning by doing' through lake clean-ups, tree plantings, and zoning activities was the preferred approach to build trust and keep communities motivated and involved in project delivery. Working with communities requires supporting them to organize and manage conflict. We knew that day-to-day contact and support of technical staff from the project with communities was critical. Unlike most peoples from the northern and western regions, most fishers from Lake Ossa come from Bantu coastal groups (Bassa', Bakoko, Malimba). Their social structure is horizontally organized and decision-making needs to be made by broad consensus, with few traditional institutions and elites able to influence choices. This was an important element in designing and discussing the co-management framework. Two field agents were recruited. One of them was responsible of guiding the consultation process and, afterwards, taking them through the development of legitimate co-management institutions, and the development of their organizational and financial capacity. It was a learning journey for communities, administrations and practitioners. Another officer was responsible for providing support and overseeing to VSLAs and livelihood alternatives, including net collection and export and agroforestry. Community groups also received support from interns from the University of Douala doing research work and internships with ZSL and the Conservation Service.

c. Working with project partners, contractors and local NGOs

Originally, the project was designed to involve three organizations – WTG, CWCS and Cameroon Ecology –, capitalizing on the local knowledge and capacities of them, although Cameroon Ecology later decided to not participate. We agreed to provide logistic and technical support to NGOs to develop their assignments from the field office in Dizangué as well as to engage new partners, such as APADER. The strategic focus of partner activities was enhanced to focus on those areas where they had strong expertise, for example support in participatory mapping and community consultation in the case of WTG, and trainings and reserve management from a landscape level perspective in the case of CWCS. Pending secured funding, we plan to cooperate with them into the future, to advance the management of the RAMSAR site that encompasses Lake Ossa and the Sanaga River delta. We have learned that it is important to work with local partners based on the assessment of capacities of each other to best support project implementation.

4. Working with the Private Sector:
The project encouraged SAFACAM to engage in environment-friendly practices related to the management of the lake reserve and its shores. The project has provided mapping and zoning of shoreline areas around the plantation and demonstrated improved shoreline management practices through tree planting activities and improved agriculture. This practice not only benefits Lake Ossa biodiversity, but also mitigates business risks for their agricultural operations related to uncontrolled bushfires in their periphery. SAFACAM has agreed to continue to invest in environmental regeneration activities with smallholder farmers organized in VSLAs participating and organizing tree planting activities. ZSL is providing advisory and support to the company in mechanisms to improve the stewardship of HCVs from a corporate level. ZSL has also shared project initiatives and results with The Forest Trust, the consultancy firm that is advising the SOCFIN Group (parent company for SAFACAM) on the improvement of the sustainability of their operations.

Partners are likely to keep in touch to deliver new spin-off projects funded by a GEF Small Grants Programme– that seeks to encourage networking and cooperation among local entities in Lake Ossa – and will use the community structures and village agents trained by ZSL in the development of new projects. Community Management Committees (CMCs) are officially recognized as co-management bodies and VSLAs are now recognized entities for development actors. The Tourism Management Plan and forestry project have served as tools to mobilize additional partners.

Project partners have contributed and reviewed this report.

3 Project Achievements

3.1 Outputs

Output 1. Community Management Committees that are representative of lake users and encompass all 11 villages surrounding Lake Ossa are formally established and supported to develop and implement co-management plans for Lac Ossa that includes sanctuary zones for priority species (manatees, freshwater turtles) and sustainable fishing zones.

The project has achieved this output in full. Six Community Management Committees (originally seven committees were planned, but we found that six committees were enough to represent all groups of fishery users) have been established and have been supported to incorporate all 11 villages and these are recognized as legitimate co-management associations by a legally ratified local by-law (Indicator 1; Annex 13, Year 3, Chapter IV, articles 23-27). Through these CMCs a fisheries management plan for the Reserve has been agreed and signed off by all the communities, MINFOF and authorities. This 'code of conduct' establishes rules and regulations around different types of fishing allowed in the lake, times of year and sets aside more than 200 ha of the lake (approximately 5%) as sanctuaries and no take zones (Indicator 2; Annex 13 Y3, Annex 2). These were identified as priority sites for manatees and breeding grounds for fish through participatory consultation with communities (Annex 2 Y2, Annex 1, 2 Y3) and biomonitoring (Annex 1, 14, 16 Y2; Annex 6, 8 Y3). The initial target was to establish a 15% of the lake as no take zone and 70% as managed areas, but during discussions, we considered that numeric targets were less important than ensuring that communities took ownership of the decision and were eager to respect the proposed restrictions in the long term. We also proposed specific management measures for channels and mouths as sensible habitats for fisheries and manatees, which enabled the organization of clean-up campaigns and the restriction of aggressive fishing gears that were enforced during the project (Annex 18 Y2, Annex 1 3.5. Y3). Collaborative mechanisms for the prevention of illegal practices have been established – including the provision of basic patrol equipment for the conservation service, such as boats, and engines – the development of awareness raising and enforcement patrols (Indicator 3, Annex 1 3.7. Y3), and the establishment of an informal community informant network in 4 committees leading to the identification of 8 cases of poaching and one community establishing formally a surveillance committee (Annex 6 3.6. Y3). It was decided that community self-enforcement mechanisms, and information sharing in a confidential manner organised in parallel with regular surveillance from the conservation service would be more effective and culturally appropriate than joint patrols. The local NGO AMMCO started collecting data on manatee populations through co-funding (Annex 8 Y3) (Indicator 5) which is still ongoing but to provide reliable trends on manatee populations require larger timeframes than the project period. ZSL

supports the collection of fisher/manatee conflict (Annex 6 Y3 3.4). ZSL has monitored CPUE data and average fish size (Indicator 4), that, up to now, have not yet shown the positive increase that the project expected (note: most fishery improvement projects around the world require at least 5 years before improvements can be measured) (Annex 6 Y3, 3.2), although average size of 6 out of 11 indicator fish species was increasing one year after the implementation of the bylaw (Annex 6 Y3 3.3.). We are also concerned that the establishment of new hydropower dams upstream in the Sanaga River has impacts on water levels of the lake that make fish less available during the fishing seasons. That potential impact was not accounted in the project document. At the end of the project, socio-economic surveys (Annex 12 Y3) evidence that co-management is positively perceived across communities to increase fish catch (82% of positive replies against 9% negative replies) and no-take zones are generally seen as a way of increasing fish productivity (52% positive replies against 20% of negative replies) while allowing free access to fish is perceived negatively by 61% of respondents against 29%. All this shows an overall positive perception among communities of co-management measures proposed by the project.

Indicators, including metrics and references are discussed in full in the logframe in annex.

Output 2. VSLAs established and integrated into Community Management Committees, increasing the financial security of poor men and women living around Lake Ossa and acting as a platform for community engagement in the management and conservation of the lake.

We have achieved this Output in full. The project was innovative in applying VSLAs – broadly used in development projects – to community-based conservation in Central Africa, and ZSL has replicated this approach in other projects in Cameroon. In the course of the project, VSLAs passed from 3 pilot groups encompassing 68 people (Indicator 1, Annex 5 Y3, 3.1.) to 17 groups, encompassing 424 members (289 women, 135 men) from 345 households (target 200 households) (Indicator 2, Annex 5 Y3 3.2.), with more than a 68% percentage of female members. They have been an effective instrument to engage women in project activities and decision making – a typical challenge in fisher communities. 37% per cent of fishers are members of VSLAs, against an expected target of 50%. Since they meet regularly, VLSAs have served as an important platform for awareness-raising and training to communities in lake ecology and management, contributing to the achievement of Output 1 (establishment of community management committees, Annex 1 Y3, 3.4), Output 4 (reforestation activities, Annex 4 Y2, Annex 4 Y3, 3.3.), and the development of activities in Output 3 and Output 5, related to the Net-Works business models (Annex 5 Y2, Annex 9 Y3) (Indicator 3). VSLAs have also proven to be a mechanism to prevent possible conflict within fisher groups, caused by financial mismanagement, an enabler for business transactions and sustainable business models, and an instrument to build social capital and cohesiveness among fishers. Average yearly savings of VSLA members increased on average from 26,319 FCFA per person (during the first cycle) to 41,736 FCFA in their second cycle (target = 20,000 FCFA) (Indicator 4).
Indicators, including metrics and references are discussed in full in the logframe in annex.

Output 3. Three business models assessed, taking lessons from initial pilots, and training provided for potential new sustainable enterprises to diversify the livelihoods of local communities in a) community-based native tree nurseries, b) Net-Works and c) wildlife tourism (migratory birds, manatees and freshwater turtles – building on the existing local government priorities for ecotourism development).

Most of this Output has been achieved and agribusiness, recycling and tourism business models were assessed in Dizangué to generate incentives to participate in conservation and reduce the excessive reliance of communities on fisheries. However the uptake of business models by fishers was less than expected. ZSL organized and delivered training courses with VSLA members and communities on Net-Works (Annex 5 Y2) and tree nurseries (Annex 5 Y1; Annex 4, 9, Y2, Indicator 1). The Net-Works business model for the removal, storage and export of discarded fishing nets through VSLAs was integrated in Community Management Committees and VSLAs (Annex 5 Y3, 3.2, Indicator 2) to sustain clean-up activities, and contributed to consolidate good practices among fishers – awareness on pollution control (Output 5), reaching 1,123 kg of fishing nets, with 75 fishers (27%) actively selling net waste - below the target of 50% (Annex 9 Y3 3.1; Indicator 3). Three nursery business models produced 5,384 fruit and reforestation trees that were integrated in tree planting exercises (Annex 4 Y2; Annex 4 Y3, Output 4), two of them were run by fishers. Trainings were combined with the promotion of agroforestry and zero-burning agricultural practices for improved riparian management (Annex 4 Y3, 3.1, 3.2; Indicator 2) After the initial

training phase, three of the six nurseries initially supported by the project continued to be operational and self-sufficient, producing 1,860 fruit trees and 8,000 plants of African black pepper (Annex 4 Y3, 3.5). Agroforestry and livelihood business models have been assessed at the end of the project (two meetings, 11 participants from three Fishery Management Committees and five VSLAs) (Annex 4 Y3, 3.5) and will continue to be supported through additional funding from the GEF Small Grants Programme through VSLAs in Lindema, Mevia and Plantation areas. Further investment was confirmed from ZSL to upscale net collection across the Douala-Edéa protected area in order to achieve a sustainable level of net collection. A tourism management plan was developed with the involvement of the Council and local stakeholders, and approved by the Ministry of Tourism and the Conservation Service to ensure that the demand for lake tours could be met on a sustainable way with the involvement of fishers. Guidelines for concession mechanisms were also developed (Annex 10 Y3, Annex 15 Y3, Indicator 4).

Indicators, including metrics and references are discussed in full in the logframe in annex.

Output 4. A multi-stakeholder management committee established by year 1 that includes agro-industry (palm oil companies), Community Management Committees, MINFOF and NGOs to agree the boundaries of the reserve and develop and implement a Reserve Management Plan; and with 10ha of the Reserve's degraded shore reforested and 5ha under agroforestry of the Reserve's lake shore is restored in priority areas of lake shore habitat to reduce siltation/runoff through the development of community-based native tree nurseries and replanting of native species.

We have achieved this Output. This project contributed to clarify the boundaries of the reserve, through participatory mapping and zoning exercises with communities developing a common vision on land use restrictions and limits by MINFOF, agroindustry, local authorities and communities, and has agreed with stakeholders on clear management guidelines and maps.
Multi stakeholder consultation meetings were more regular than planned (8 meetings in total, 6 meetings planned) to address specific aspects of reserve management (Annex 2, 11, 18 Y2; Annex 2 3.2, Annex (3 3.2, 3.4), Annex 10 Y3; Indicator 1). A map proposal (Annex 3, 14, Yr 3) following participatory consultation establishing land uses (Annex 21 Y2, Annex 3 Y3 (3.1, 3,2, 3.4), Annex 4 Y3 (3.4)) and aquatic protection areas around the lake (Annex 2 Y2, Annex 2 Y3), endorsed by local authorities was handled to MINFOF officers so that it can serve as a basis for the official gazetting of the reserve (Indicator 2). A pilot experience for the regeneration of degraded riparian forests was developed with communities, combining reforestation with the promotion of sustainable land management practices alternative to slash and burn (Annex 4 Y3 3,1, 3.2, Annex 16 Y3). Approximately 7.5 ha were reforested in the immediate 50 to 100 meters of the lake (Indicator 3), and partial reforestation and agroforestry techniques alternative to slash and burn agriculture were applied in 14 ha (target = 15 ha, 10 for reforestation and 5 for agroforestry –modified from the original project proposal in 2015) using trees produced by tree nurseries (5,384 trees produced, from an initial goal of 500 with 142 farmers involved in tree planting and forest management) (Indicator 4). 76 % of the trees planted were demonstrating good health at the end of the project, according to the monitoring plan developed within the project that included 80 village patrols and 26 patrols from the conservation service (Annex 4 Y3 (3.3) (Indicator 5). SAFACAM and ZSL agreed on a MoU for the management of the riparian areas during the project and best practices and recommendations have been produced for SAFACAM to mitigate risks of their operations to biodiversity (Indicator 6) beyond project closure along 224 ha of their plantation, including the establishment of designated agroforestry areas where farmers could access land for livelihood activities in a sustainable way (132 farmers registered, 59 farms using eco-fallow techniques) (Annex 4 Y3, (3.4), Annex 16 Y3). SAFACAM agreed to support the continuation of tree planting activities. Indicators, including metrics and references are discussed in full in the logframe in annex.

Output 5. Community-based lake clean-ups of abandoned fishing gears is undertaken regularly with local communities generating income from the sale of old fishing nets collected during the lake clean-up for recycling into carpet tiles as part of ZSL and Interface's proven Net-Works project.

We have mostly achieved this Output, as we have successfully established a sustainable business model, but not fully achieved net collection goals. The project successfully conducted a clean-up campaign of discarded fishing nets (Annex 5, 23 Y2, Annex 9 Y3) later extended to other non-net waste (indicators 3

and 6) with local communities that resulted in a 37% decrease of net waste in the lake (Indicator 7) from the baseline (Indicator 2, Annex 2 Y17, Annex 7 Y3). Results are 13 % below the target of 50 % (Indicator 2). This was caused by the relative inaccessibility of certain areas where nets are cumulating that could not be reached through clean-up campaigns. Although the focus of the project was net waste, it was decided with local communities to also address and support removal of abandoned bamboo fishing (removing 20,413 bamboos from critical habitats of the lake, Annex 18 Y2) in important fishing areas (Output 1). The same model was used to address the pressing issue of invasive species (*Salvinia sp.*) at the end of year 3 (Annex 1 Y3, 3.2). Clean-ups were encouraged by awareness creation programmes and events throughout the project (Indicator 1). Clean-up mechanisms and restrictions of areas for bamboo fishing were institutionalized by the code of conduct (Annex 2 Y3, Annex 2 Y3) (Output 1) and supported by the Net-Works business model (discussed in Output 3) generating revenue of 280,750 FCFA to local fishers and VSLAs retaining benefit of 56,150 FCFA for net collection (Annex 9 Y3, 3.1.) (Indicator 4) and bailing (Indicator 5).
Indicators, including metrics and references are discussed in full in the logframe in annex.

3.2 Outcome

Outcome: Local communities and MINFOF Conservation Service are implementing a clear co-management plan for Lake Ossa Wildlife Reserve to enhance livelihoods and reverse declines in food fisheries, endangered species, and habitats.

As a result of project activities, MINFOF and local communities are working together for the management of the lake Ossa reserve following clear and simple guiding principles. This is achieved through a Code of Conduct (Code of Fishing or Code de Pêche) that establishes community management committees, regulates fishing techniques and establishes no-take zones for fish replenishment and manatee conservation and improved surveillance (Annex 7 Y2, Annex 13 Y3). Clear practices for the management of the riparian area – respect of lake shore, replanting of degraded areas, and adoption of agricultural techniques alternative to slash-and-burn around the lake - are also developed and have been integrated in the environmental management of agroindustry operator SAFACAM. Additionally, a way forward for the development of tourism activities has been agreed through a local tourism development plan. Conservation costs for communities are offset through improved capacity to accede capital and income streams related to tree plantings and sale of discarded fishing nets. Within the context of freshwater biodiversity conservation initiatives around the world, these achievements, taken together, are unique for tropical lake ecosystems, if not for lakes anywhere in the world. This project serves as a model for freshwater lake conservation globally in its holistic approach and emphasis on sustainability.

Each outcome indicator is discussed below:

Indicator 1. Baseline was collected after November 2015 through co-funding from IUCN by the NGO AMMCO (Annex 16 Y2, Annex 8 Y3). A Conservation paper will only be available later in the year – and will be shared with the Darwin Initiative.

Indicator 2. Socio-economic survey indicates a negative trend in wellbeing (-8), while VLSLA members in the sample experienced a slightly more moderate decrease (-6). 32 % of respondents diversified their livelihoods during the project period. This indicator correlated with Indicator 5 (CPUE) which portrays the high vulnerability of local livelihoods to alterations in the Lake Ecosystem and flooding cycles. It is probable that this situation will be found in the whole Sanaga watershed due to expected disturbances coming from hydropower development upstream, which will require communities to adapt. ZSL and partner NGOs will share these results with hydropower development companies to address these challenges.

Whilst disappointing, these results are not entirely surprising as people dependent on the Reserve have been asked to make compromises or sacrifices with regards to land usage and fishing practices which may have impacted negatively on their wellbeing (although, as mentioned above, there may be several other factors influencing these results). It is likely that some of the intended positive impacts of the project may not be felt over the duration of the project (e.g. improved fisheries). We therefore intend to continue

monitoring this indicator beyond the end of the project to determine if the project has more positive medium to long term wellbeing impacts.

This results are obtained through a paired t-test was conducted to compare the material style of life score in 2015/16 and 2017. The study is based on a sample of 14 locally relevant indicators of material wellbeing in fishing communities from Lake Ossa (Pongo, Beach, Mevia, Ekite and Kounguelac) all of them highly reliant on fishing. Originally we planned to sample 400 household but that goal proved very ambitious given the small size of these communities (only 269 fishers in Lake Ossa, according to Census). In total 176 interviews were developed.

Indicator 3. Thematic maps of the Lake Ossa Reserve, designating protected terrestrial areas and establishing boundaries and land uses have been developed based on stakeholder consultation (Annex 14 map) and legally endorsed by local stakeholders and authorities. The maps have been handled to MINFOF to be used for the gazettment of the Lake Ossa Wildlife Reserve. Approximately 7.5 ha were reforested in Yr 2, and 14 ha were replanted with agroforestry techniques, we decided to establish a larger agroforestry area in order to prevent bushfires in that areas and be consistent to the best practices that were going to be enforced by the palm oil company (Indicator 8) (3,149 trees surviving after the first agricultural season Yr 2) (Annex 4 Y3, 3.1, 3.2). A register of fields and a programme for the prevention of slash and burn agriculture is established and supported by SAFACAM (132 fields registered, 59 farms using improved eco-burning techniques). A surveillance mechanism to avoid illegal practices has been established in 224 ha of the SAFACAM buffer zone (Annex 4, 3.4.2).

Indicator 4. 5% of the lake has been designated in six community based freshwater protected areas and approximatively 74 ha have been designated as migration corridors (two in total) (Annex 14 Y3). The initial target was to establish a 15% of the lake as no take zone and 70% as managed areas, but during discussions, we considered that numeric targets were less important than ensuring that communities took ownership of the decision and were eager to respect the proposed restrictions in the long term. A Code of Fishing that regulates gear, fishing zones and fishing practices in the whole lake is enforced and has been revised in Yr 3 (Annex 7 Y2, Annex 13 Y3). A results-based law enforcement protocol has been established by MINFOF since June 2016 (Annex 1 Y3 3.7), with MINFOF and communities collaborating through informant networks (Management Committees) (Annex 1 Y3, 3.6; Annex 1 3.5) and community-based patrols to prevent encroachment in riparian protected forests (Annex 4 Y3, 3.4).

Indicator 5. CPUE data has been recorded since mid-2015 (Annex 6 Y3). We recorded an average decrease in catch of 1.19 kg, with very sharp reductions in the landing sites of Mevia (-1.47 kg) and Lindema (-3.05 kg). This may be due to the existence of zoning restrictions of fishing areas and the abnormal high water level during the 2017 fishing season that has made fish less available due to late rains. The modification of the Sanaga River's flood cycle due to Lom Pangar dam becoming operational may also be a factor. Average size of indicator and commercially valuable species (an indicator of overfishing) has slightly decreased, on average (-0.71 cm). However, six of the 11 indicator species have increased their average size on a year-to-year basis.

Indicator 6. 104 fishers from seven villages (below the target of 200 fishers) are participating in VSLAs (out of a total of 269 fishers. The mobile nature of fishers during the fishing season and very low income during low season are barriers for them to join VSLAs, so the uptake was slower. The project was aware of this issue and important progress was achieved in VSLA development targeting fishers (through integrating VSLAs in CMCs and Net-Works) specially after year 2 VSLA. Members saved an average of 26,319 FCFA during their first cycle, increasing their savings to 41,736 FCFA in their second cycle (Annex VSLA Yr3).

Indicator 7. 37.02 % (target 50%) reduction in observed net waste, with all transects showing a reduction in the levels of pollution between 22% and 67% (Annex 7 Y3). 1,123 kg of net waste have been collected in Lake Ossa (Annex 9 Y3). There is a strong relation between areas where net waste removal effort has been supported by lake clean-ups (Sanaga Channel and Great Lake section of Ossa), more accessible to communities where reduction reaches 44% and 67%, respectively, and those areas that have been cleaned up directly by fishers without additional project support. Existing bamboo fishing gear was eradicated from channels of Lindema, Sanaga River and the mouth of the Great Lake section of Ossa (20,400 bamboo steaks were removed, both from the area and from the bed of the lake (Annex 18 Y2).

Zoning of the lake to avoid an uncontrolled proliferation of bamboo fishing traps has been established (Annex 1 Y3 3.5).

Indicator 8. Following the tree planting campaign developed within the framework project, SAFACAM and ZSL agreed on a MoU (Annex16 Y3) for the improvement of the environmental management of the surrounding area around the plantation. SAFACAM has agreed with specific management recommendations compliant with RSPO (Annex 4 3.6 box SAFACAM) for the lakeshore area to prevent destructive agricultural techniques in their shores, protect an area of closed canopy in the shores, as well as specific measures to avoid fertilizers in the plantation areas of less than 100 m distance to the lake and to monitor water parameters. A declaration form for the practice of subsistence agriculture in the shores under its management was agreed with the conservation service and ZSL and produced prescribing specific techniques (Annex16). SAFACAM provided in-kind resources to prevent slash and burn agriculture in the shores (firefighter and truck) (Annex 4) and committed resources for environmental management and sustainability of tree plantings after March 2017, including planting of 1000 trees (sourced locally) engaging VSLAs as labour. A university student is in the process of being recruited by SAFACAM to produce an HCV management document based on the work developed by the project.

Impact: achievement of positive impact on biodiversity and poverty alleviation

Impact statement from log-frame: Lake Ossa Reserve communities benefit from enhanced livelihoods and ecological protection associated with RAMSAR designation, and the Reserve becomes an important site for freshwater biodiversity within the Douala-Edea protected landscape.

The project has supported fish-dependent communities facing low fisheries productivity through the establishment of a network of 17 self-support VSLAs in seven villages. They have been able to save 26,872 £, and loaned 25,244 £ among members for productive investment and to cover household needs. Communities are legally recognized the capacity to decide and participate in the management of the lake through representative bodies. Alongside with the conservation service and representatives of the Ministry of Fisheries, they have established locally-relevant regulation measures like the restriction of destructive fishing practices or the establishment of freshwater protected areas for fish replenishment in critical manatee habitats channels and mouths of the lake.

Drivers of habitat degradation coming from encroachment, invasive species, and pollution from fishing gear are addressed through clear management guidelines, with 95.5 ha of aquatic and riparian habitats successfully rehabilitated through clean-ups. Mechanisms to offset conservation costs and generate buy-ins for communities have been established through the introduction of additional income opportunities from cash-work for environmental regeneration, recycling of discarding fishing nets and ecotourism. The reserve has gained national relevance, with an increased number of tourism visits (Annex 10 Y3), the government has started the process to confirm clear official boundaries (Annex 3 Y3), and a report and draft action plan have been made to update the proposal of RAMSAR site for the Lower Sanaga delta (Annex17) and the Lake Ossa Wildlife Reserve (Annex 11 Y3, Annex 18 Y3). Manatee conservation relevance is better known in Cameroon through media (Annex 22 Y3 Communication).

From a global conservation perspective, few, if any, freshwater conservation projects have achieved the conservation gains of this project for a tropical lake and its biodiversity. The Lake Ossa project presents a holistic approach to freshwater biodiversity conservation, tailored to tropical lake, that has achieved community-designated no-take zones (very few exist in the world for tropical lakes), use zoning of the lake and lakeshore, lakeshore vegetation buffer management, lake-friendly land use practices developed with agroindustry and local farmers, best fishing practices, a community-derived Code of Fishing Practices, an effective surveillance and enforcement approach, a tourism plan and guidelines designed to reduce impacts on threatened species (manatee), cooperative community and government management systems and agreements, and targeted and practical monitoring of fisheries, community well-being, and ecosystem indicators. Simply stated, there are no other examples of such a holistic and well-considered conservation project for a tropical lake anywhere in the world presently. We thank Darwin Initiative for its support of this work.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

Goal 1: Through VSLA development, promotion of livelihood development and preservation of provisioning environmental services on which communities rely for subsistence (1.1., 1.2, 1.5, 1b and 1b). Output 2, 3, 4.

Goal 2: Through food crop diversification, increase of agricultural productivity through agroforestry areas, and improving access to food through tree-nurseries and conservation agriculture (2.2, 2.3 and 2.4). Output 3, 4.

Goal 6: Water quality in the lake can be kept in acceptable levels through the implementation of a waste management fishery policy that prevents dumping of fishing material in the lake (Net-Works and restrictions of bamboo fish traps), community-based response plans for invasive species, and prevention of agricultural pollutants through sustainable forest management measures and riparian buffer zones implemented by agroindustry (6.3, 6b). Output, 1, 3, 4, 5.

Goal 13: Through the adoption of better agricultural practices, improved fishery management and enhanced social capital through VSLAs the project contributed to strengthen resilience and adaptation capacity among communities, as well as to improve education on climate change through education on forest conservation and awareness on the effects of deforestation (13.1, 13.3), Output 1, 2, 3, 4, 5.

Goal 15: Through ensuring the conservation of freshwater resources and promoting the conservation and sustainable use of riparian forest around Lake Ossa Wildlife Reserve. Improving the surveillance framework to diminish poaching and trafficking of wildlife, and working to integrate biodiversity protection in the Dizangue local development plan (i.e. through the definition of management practices for sustainable tourism). In year 3, the work is expected to inform prevention policies for alien species through water quality research (15.1, 15.2, 15.3, 15.5, 15.7, 15.8, 15.9) (Output 1, 4)

4.2 Project support to the Conventions or Treaties (CBD, CMS, CITES, Nagoya Protocol, ITPGRFA))

This project is supporting Cameroon to meet their objectives under the CBD, CMS and CITES. Specifically:

The project is supporting CBD's Aichi Strategic Goals by raising awareness of the Lake Ossa Reserve, as a key freshwater habitat (Targets 1-4), and by providing improved data to support national policies and plans by providing data and reports to the MINFOF on a regular basis (Targets 17-20). The project contributes to sustainable management of fish resources through the enforcement of management practices, and the sustainable management of agricultural areas to ensure biodiversity protection (Targets 6 and 7). The application of management measures and the establishment of no fishing zones and restriction of fishing in the lake channels contribute to the conservation of threatened species (Target 11 and 12). The implementation of the management plan is also contributing to target 14 and 15, by protecting ecosystem services on which vulnerable communities rely for subsistence.

By supporting the protection and conservation of the project's flagship species, the West African manatee (*Trichechus senegalensis*) which is listed on Appendix II of CMS COP7 (2002), the project assists Cameroon with delivering on its obligations under the UNEP-CMS Action Plan for the Conservation of the West African Manatee. The project contributes directly to Objective 2 (Improve understanding of the West African Manatee and use information for its conservation management) and Objective 3 (Reduce pressures on the West African Manatee through the restoration and safeguarding of its habitats). The manatee is also listed on Appendix I of CITES so the project supports Cameroon with information on this species to assist them with CITES reporting requirements.

4.3 Project support to poverty alleviation

In Dizangue, rural poverty is intimately related to the decline in fish resources and local livelihoods of communities largely dependent on them. Environmental degradation is linked to the need of using increasingly aggressive fishing techniques on one side, challenging traditional customs of wise use of resources. The lack of available land for agricultural activities and the decreasing productivity of the fishery accelerates land degradation and loss of riparian forests around the reserve. The absence of alternatives

and security for young people creates a pervert incentive to engage in wildlife crime and illegal fishing practices.

The project was designed from a human well-being perspective, bringing to communities the capacity to agree on basic measures to sustain fish stocks and protect endangered fauna. The creation of a self-support network of village savings and loans associations that provide poor households dependant on fisheries the opportunity to respond to income shocks and sustain the basic needs of their household even in hard times, which directly contributes to alleviate poverty.

Participating in VSLAs and support in adopting improved farming techniques offer a way forward to vulnerable women in agro industrial communities to be able to best cater for the needs of their homes, diversifying food production, and enhancing food security in Dizangue. The financial literacy provided to these vulnerable groups empowers households and communities to best manage their income to face adversity. Associated business models and training opportunities provided legitimacy and opportunities for growth to VSLA groups.

It will take time to regenerate fish resources, and communities will still suffer from external stressors affecting the productivity of the fishery, like the presence of invasive species and changes in the water levels, but the project has contributed to increase social capital to face these challenges. It is a great lesson of the project that co-management has more chances to be perceived as legitimate across beneficiary communities if it is related to a tangible livelihood benefit within these communities.

4.4 Gender equality

The project has advocated for several issues related to gender equality: (1) including women perspectives and participation in decision-making on local fishery issues; (2) working with women, as important resource users in riparian forests in sustainable land management; and (3) strengthen vulnerable women's capacity to manage their income to best cater to the needs of their household.

Achieving gender balance and representation in fishery management was challenging due to the culture of male dominance in fisheries decision-making. To some extent, women involvement in the fishery as resellers balances power relations. Project metrics show reduced women involvement in fishery decision-making. For example, only 175 women participants out of 831 participated in revision of the Code of Fishing and regular meetings of fishery management committees. VSLAs in the four management committees that have them (that tend to be more active) are more inclusive with 23 women participating with 44 men.

The situation reverses in the forestry component of the project, where female participation is much higher. Most of the people doing farming in the shores of the lake are women, 30 out of the 42 people that have been involved in forest restoration and monitoring are women and most of the people declaring their farms in agroforestry areas are women. The project has continued to support female engagement in all outreach activities and public awareness like the International Women's Day, the rural women day event with 17 women from seven VSLAs promoting shoreline management and ecotourism and the National Women Day, and the National Youth Day.

Percentage of women in VSLAs has grown from 56%in April 2016 to 68% in 2017 (289 women). 22 women hold responsibility positions in their VSLAs (treasurer, president, and secretary) out of a total of 51. Five VSLAs out of 17 are chaired by a women.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

Yes. Six CMCs are operational and 111 fishers are registered through identification cards, they are recognized by the government agency responsible of the reserve (out of 269 fishers). 831 participants attended 46 meetings for the drafting, validation and amendment of a local code of conducts and delimitation.

- **Were any management plans for biodiversity developed? Were these formally accepted?**

Yes. We developed a local code of conduct for fisheries establishing freshwater protected areas restricted to fishing in areas relevant to manatees. We also developed a local tourism plan to organize tourism activities in the Lake Ossa Wildlife Reserve, a manual of shoreline procedures for agroindustry as well as thematic maps for biodiversity, land use, tourism and a reserve map project that was shared with MINFOF for legal endorsement. We also agreed and produced an operational guidelines document for the reserve, and contributed to inform the management of the RAMSAR Site of the Lower Sanaga River that encompasses Lake Ossa through the development of a preliminary management document, and action plan, and updated map.

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structure**

We used a participatory approach (bottom-up) for the development of management plans as described in Annex with the goal of engaging the largest possible number of resource users in management planning. Our consultation processes were designed from the basis, developing consultative discussion in all villages before being adopted at a Reserve level. Women are represented in the board of each Community Management Committee and in VSLAs involved in forest restoration. Sixty-eight percent of all members of local tourism plans are women. Two VSLAs are led by women and a total and 22 members of VSLA boards (out of a total of 51).

Were there any positive gains in household (HH) income as a result of this project? How many HHs saw an increase in their HH income?

424 members of VSLAs (345 households) saved a total amount of 26,872 £ pounds, and 25,244 £ have been loaned among members. 48 households benefited from additional revenue coming from involvement in forestry project activities (seven tree nurseries, 41 tree plantings and surveillance).

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

25,244 £ generated in interest of VSLAs, 374 £ generated in net transaction, 2,106 £ have been paid to labour in tree planting activities. People involved in tree planting activities received an average of 34,190 FCFA per worker throughout 1 year, (average of 360,000 FCFA salary per month). Additionally, 75 fishers received income from the sale of fishing nets, and farmers received in-kind contributions of pineapple stomps and natural fertilizers for 266 £.

4.6 Transfer of knowledge

Knowledge transfer has been an important aspect of the project, with a MoU signed between ZSL and the University of Douala for 'Outreach and Excellence in Aquatic Conservation' with the goal of improving awareness and scientific attention to wetland conservation at a national and international level (Annex 19, 20Y3). The project has kept senior officials at the National level from MINFOF, MINEPDED and MINEPIA informed of project activities and advancements.

The project has also worked with national media, including the largest television networks in the country CRTV and Canal 2. Lake Ossa has received attention from public radio and television with two documentaries (one TV and one radio) (Annex 22 Communication) focusing on project activities and Lake Ossa and two news clips covering activities of the project. We have made use of social media to author (two) articles for the Darwin Newsletter, four blog posts and 16 tweets referring to project activities published by ZSL official accounts and partner Net-Works official accounts.

We have also developed/participated in several publications for dissemination and knowledge sharing, including Blue Solutions for Africa, the Darwin Newsletter and blog, the Net-Works blog, and the edition of a publication on conservation approaches in Lake Ossa – in print – in English and French for national and international dissemination (Annex 22 Communication).

Internationally, the project has been presented at the Marine Conservation Work University of Exeter (United Kingdom) (Annex 23) and the Centre for Biodiversity of the Viln Island (Germany). We presented the Lake Ossa experience to senior officials Abidjan Convention, and linked with the ongoing Mammy Watta project. One of the members of the team, Constant Ndjassi developed a poster on 'Fishery-manatee

interactions in Lake Ossa and Douala-Edea' (Annex 24). A conservation paper discussing the project is being drafted and will be submitted to international journals.

With Dizangue being only one hour away from Douala, Lake Ossa has the capacity to become a place where urban Cameroonians can experience and be educated about the importance of wildlife and freshwater ecosystems – which in this cultural context is mainly perceived as an aspirational source of food, contributing to mainstream conservation across the Cameroonian public opinion.

Did the project result in any formal qualifications?

Three people achieved MSc level qualification developing their thesis in relation to project activities (three men). Four people (two men, two women) obtained BSc through BSc thesis related to the project. All of them are from Cameroon.

4.7 Capacity building

Cameroon is one of the most biodiverse countries in the world and also has great cultural diversity. The rich biodiversity works as a safety net for rural populations that depend on it for subsistence. Although the political discourse to conservation increasingly takes into consideration the importance of community involvement in the conservation of natural resources, the practical knowledge on how to involve communities in protected area management and conservation is often not available in country. As in many other countries, these questions are even more complex to answer in the context of coastal areas, where communities suffer from external pressures related to development, environmental change, and declining livelihoods and weak local governance systems.

Social approaches to conservation are generally not included in academic curricula and there is very little experience on the sustainable management of inland waters. Cameroon is also in the process of developing ambitious hydropower projects that will compromise freshwater fisheries and ecosystems. Blocking tropical rivers with dams prevents seasonal movements of important fish species up and down rivers, often essential for their reproduction, as well as lateral migrations into flooded habitats, again essential for survival and reproduction. Major impacts on the tropical rivers and associated fisheries are anticipated from the dams present and planned to be built potentially having high impacts on poverty in fish dependent communities in the edge. The pioneering nature of this programme provided an important opportunity for capacity-building of people and institutions at different levels around the critical aspect of involving communities in natural resource management.

The project engaged in professional capacity-building. Early career conservationists were recruited to support project activities. After year 2, three (two men, one woman) were recruited and received professional training within the framework of the project. One project officer is part of the USFWS Mentor Manatee programme, sharing information and data on manatees in the area. Partner organizations CWCS engaged early career professionals in the delivery of their activity (two local agents to facilitate consultation in Yr1, by WTG) and a junior field agent who supported data collection for the RAMSAR site management plan (CWCS, Yr 3).

Through a MoU with the Institute of Aquatic Sciences of the University of Douala, ZSL worked with the Conservation Service professors and academia to train Aquatic sciences students and Engineers in aquatic conservations and fishery management. Seven students (six men, one woman) of the Institute of Aquatic Sciences from BSc and MSc level have worked with ZSL and the Conservation Service. Additionally, four students from the Faculty of Agronomy and Agricultural Sciences (FASA) from the University of Dschang (two men, two women) have finalized BSc and MSc studies doing research thesis related to the project. ZSL hosted two visits to the project site from the University of Douala and, organized in partnership with the local marine conservation organization Tube Awu a seminar on aquatic conservation in the Institute of Hallieutic Sciences of Yabassi in December 2016 and hosted two students' visits in 2016 and 2017.

Sixteen eco-guards (13 men, three women) and one MINFOF Conservator have received capacity-building from the project receiving basic patrolling materials, but also on freshwater ecology, results-based

surveillance tools, GIS, GPS, outboard driving, and integrated management of protected areas. They have been supported by the project in developing regular patrols and implementing co-management of the protected area.

Through the EDGE fellowship and co-funding, ZSL initially supported the local conservation organization AMMCO in the monitoring of manatees in Lake Ossa. Additionally, one of the former interns of the project created a local association M&N (Madiba and Nature) to address the problems of plastic waste following his internship at ZSL. Both organizations will be working together in an IUCN-funded project for community based conservation in the Northern coast of the country. Evergreen, a local family association supported by the project, has improved their pepper agroforestry business providing employment to five people thanks to the knowledge transfer from APADER facilitated by the project. Evergreen has also received support from the project to develop, in collaboration with ZSL and VSLAs, a project for the community conservation of riparian forests around the Lake Ossa protected area.

The project has supported the capacity development of communities in co-management. The financial literacy provided to community members and ability to manage savings is the basis for the establishment of community based enterprises that can potentially be engaged in co-management directly. CMCs are well recognized in the management of the reserve and there is a chance that upcoming projects will continue working with them, contributing to strengthen community based fisheries management.

5 Sustainability and Legacy

Among the achievements that are more likely to endure, we believe that when management interventions are based on community ownership they have a much better chance to be sustained. However, community capacity to manage the fishery and freshwater protected areas is still weak. There is a risk of demobilisation of the community organizations that are involved in the co-management process if organizational support was withdrawn too early, especially, since communities in Lake Ossa are facing mounting pressures related to alterations in the Lake Ossa ecosystem that directly impact livelihoods. Inland fisheries will be increasingly challenged by alterations in the water levels and communities will continue to require support to adapt. Socio-economic studies show that manatee-human conflict remains high, and enforcement mechanism for local bylaws and anti-poaching for manatees are still very recent.

The capacity of the conservation service to sustain patrol effort without additional funding, as the funds coming from MINFOF are very limited especially in light of the levels of wildlife crime reported, and high unitary costs of patrol efforts in aquatic environments. Management measures proposed by the project – like community surveillance committees and informal informant networks – are still at their early stages and would require further development - at a landscape level - to ensure the sustainability of achievements.

ZSL has received additional resources from Interface to sustain the establishment of networks business model through VSLAs, and support community based management for a short period of time, consolidating co-management institutions.

ZSL will continue to work with local communities to extend and strengthen the VSLA network, especially in those areas critical for conservation, to apply the participatory management approaches that have been developed within the framework of the project to wetland and marine conservation in Lake Ossa and the Douala-Edea landscape and beyond. All the technical and operational project staff recruited and trained in this project will continue to work with the ZSL Cameroon programme.

The project has served as a catalyser for the mobilization of additional funding for local NGOs. The existing collaboration framework developed by this project has led the GEF Small Grants programme to cluster their grant making in Lake Ossa, with 3 local NGOs benefiting from support (AMMCO, Evergreen, ERD). As previously said, the local association EVERGREEN received funding to continue developing agroforestry and reforestation activities. A third organization (ERD) will support livelihood diversification and ecotourism following the tourism management plan developed within the framework of the project.

SAFACAM is committed to support shoreline management as part of their HCV and HCS management plan and has committed resources for forest surveillance and tree plantings. CWCS (through funding from

the Rain Forest Trust) is now involved in a large conservation programme in Douala-Edea and is working with ZSL to progress on the Lake Ossa and the Sanaga River delta designation as a RAMSAR site. Many of these interventions will be implemented in partnership with the existing community platforms established by the project and VSLA groups.

6 Lessons learned

This project demonstrated a complex intervention in a socially challenged region, with a high number of beneficiaries and project partners, including communities, NGOs, government agencies, private sector and communities. Project stakeholders had very little cooperation with each other at the beginning of the project. The delivery of the project has required adaptive management.

What worked well?

Adaptive management and field office: A key element of the success of the project was the establishment of trust relations among project staff and partners with communities. Trust building and mediating capacity is a critical element in co-management and participatory protected area management and it can only be achieved with proximity to the local communities and long term interventions. The incorporation of two project staff (a Livelihood Officer and a Field Coordinator, responsible for community-based fishery management) after Year 2 was a key element of the success of the project's approach of daily work with communities. Recent socio-economic surveys (Annex 12 Y3) demonstrate community understanding and acceptance of co-management approaches and no-take zones.

Linking research to community practices: Our MoU with the University of Douala allowed us to educate students in the challenges of communities in the ground. Many of these students supported data collection and monitoring and evaluation aspects of the project, gaining practical perspectives of the use of science for ecosystem-based management and wildlife conservation and engaging with communities. Involving the University in practical conservation work also contributed to build capacity in institutions that are aimed at leading research and public outreach in countries like Cameroon, with weak institutional capacity, but high biodiversity.

What did not work well? Many of the NGO partners on which the project initially relied were not based in Dizangue (with the exception of AMMCO) and required additional support and logistics to effectively develop some of their assignments. We secured technical support (extending the period of APADER's commitment) and human resources (in the form of students and early career professionals). We focused our efforts on the capacity-building of local partners and the delivery of results with partners based on the specific strengths of each of them.

Although the project has been highly collaborative with many fishers participating in regulation, we have not been able to have consistent impacts on income levels from fishers and, given their high mobility, only a minority of them are engaged in VSLAs during the short period of project implementation. Our reports show that this trend is changing and we are in the process of assessing better mechanisms to impact fishers through fishery centred sustainable business models. Gender inclusiveness has been an important challenge along the project, especially with fishing. Funding available for women micro-enterprises by GEF through VSLAs may serve to reverse this situation.

What would we do differently? It takes time to have a positive impact on community wellbeing and our project was too short for that. The interrelations of biodiversity conservation and human well-being are complex and community processes have their own timing that may not be within the realm of our short project implementation period. Also is not possible to rush communities with several project interventions. If we had to start again, and this is also a recommendation for similar projects, we would give ourselves more time to build trust and understanding within communities through VSLAs first, and field research on fisheries and manatee, and later, based on experience from practical engagement, build co-management institutions from a more practical point of view.

High level dialogue and monitoring mechanisms at the watershed level will need to be developed, in order to better integrate watershed management perspectives in the Lake Ossa ecosystem. The legacy products, evidence of this challenges available, and partnerships created will help address these question in upcoming months.

What are some key lessons? Proximity to the project site is a key pre-requirement for co-management. Having a field office gave us great legitimacy and the possibility to establish honest relations with communities and local stakeholders. It also provided an opportunity to identify problems and adapt project management accordingly. From a practitioner perspective, we also consider that conversations about wildlife conservation in local communities shall start with the social and economic challenges that the communities are experiencing.

It is also important to have a unifying management vision. Communication on management approaches with the conservation service and local partners were fluid. Many of the project management orientations came from the initiative of project partners stemming from a demand from the communities (like developing a local bylaw to manage fisheries) or were advices as a congruent procedure within the Cameroonian framework – like the development of the participatory map that would be handled to the national delegation responsible for gazetting the reserve – so that it could later be used by management partners. We believe that cooperating with partners and aligning points of view is a key requirement for any co-management project. Agreeing on a practical and mutually beneficial buffer forest management approach between agroindustry and the Conservation service is an example of this.

Learning by doing is a key approach for success. The best way to implement co-management is by doing it, consultation processes and public awareness are only possible if they are connected to practical activities in the form of clean-ups of no-take zones, business models or tree planting activities that provide communities the opportunity to participate and own the process in a practical way.

6.1 Monitoring and evaluation

We employed a Before-After-Control-Impact (BACI) design to monitor the biodiversity and socio-economic indicators. Financial reporting was carried out on a monthly basis to ensure careful budget monitoring. A detailed and factual monthly progress report was produced following the Darwin Logframe and important activities are also reported in specific reports.

Biophysical: All remaining baseline indicators were collected during Yr2 and Yr3, and we have continued to collect indicators with support from a small grant. The project cycle is too short to present consistent data on project output. The project needed to refine/adapt the CPUE methodology to also develop a baseline inventory of fish species, develop biophysical measurements of fish specimens, and collecting data on fishing zones that would later in the year be used to inform the discussion on no-take zones. The methodology also improved biophysical measurement of fish specimens and integrated manatee sighting. The reality is that it typically takes five to ten years to confidently observe trends in local fisheries and long-lived species (manatee) improvements resulting from project interventions, if any occur.

Socio-Economic and management: Baseline collection of well-being indicators was also carried out in those villages directly connected to the fishing economy (Beach, Mevia, Pongo Pitti, Lindema and Kounguelac) and repeated in March – May 2017. The questionnaire was adapted in Year 3, to include normalized questions related to food security (FAO, http://www.fao.org/in-action/voices-of-the-hungry/fies/en/) and also included questions that provided evaluation of the management approach and willingness to contribute financially to management efforts (willingness to pay). We also developed specific reporting templates for use in CMCs and meeting reports.

Forestry: A change request form was accepted in November 2015 to modify Output 4 and activity 4.5. It was expected to reduce the number of hectares to be regenerated and monitored. The three villages located in the plantation that were part of were not included in the survey since they are less exposed to fishing activities but baseline data was also collected among VSLA members and farmers participating in forest regeneration and conservation agriculture activities. We also developed a community-based mechanism to monitor tree growth and encroachment.

Law Enforcement: A change request form as accepted in November 2015 to modify activity 1.7, and reallocate funds to cover needed patrol materials from MINFOF. We also developed a monitoring template tool to monitor the enforcement of the Code of Fishing that was handled to Conservation Service officers

in February 2016, however, following feedback from the Annual Progress report, we updated the template so that it could be more generalized for a range of patrol activities so that ecoguards had better guidance to direct patrol efforts.

6.2 Actions taken in response to annual report reviews

We made partners and collaborators aware of the results of the Darwin Report. We have also addressed the need to improve reporting on MINFOF patrols (discussed in 6.1.) and Darwin Identity in all project documents.

6.3. Darwin identity

All documents produced for the project include the Darwin Initiative logo, including all those that are distributed to government officials and published online. Reports produced under the grant include the Darwin logo. All maps, presentations and publications produced for distribution include the logo. The Net-Works website also uses the Darwin logo to showcase its support to both ZSL projects in the Philippines and Cameroon.

UK officers have visited the project and gotten personally familiar with its outcomes. ZSL was invited to present its work in Cameroon in the 'Conservation of Fauna, Forest and Wildlife in Cameroon" in April 2016, including the Lake Ossa project. We also ensure that the contribution of Britain is highlighted to community members and authorities as in the project literature that we produce, in order to present UK as a reliable and solid partner for Cameroon in wildlife conservation.

We recognize the Darwin Initiative as a distinct programme connected to the overall component that ZSL is leading. We are building the understanding of the Darwin Initiative principles within the country through our focus on biodiversity conservation and wellbeing development. The Darwin logo is featured in all publications from the project as well. It will continue to be featured in all online media we will publish.

7 Finance and administration

7.1 Project expenditure

Project spend (indicative) since last annual report	**2016/17 Grant (£)**	**2016/17 Total actual Darwin Costs (£)**	**Variance %**	**Comments (please explain significant variances)**
Staff costs (see below)			-2.6%	Variance < 10%
Consultancy costs			0%	N/A
Overhead Costs			8.9%	Variance < 10%
Travel and subsistence			9.0%	Variance < 10%
Operating Costs			-5.3%	Variance < 10%
Capital items (see below)			9.5%	Variance < 10%
Others (see below)			-9.7%	Variance < 10%
TOTAL	85,456	85,456		

Staff employed (Name and position)	**Cost (£)**
Santiago Ormeno (Project Manager)	
Dieudonne Songue (Driver-Logistician)	

Community support officer	
Field biologist	
Field ecologist / EDGE fellow	
TOTAL	**36,666**

Capital items – description	**Capital items – cost (£)**
4x4 vehicle and insurance gas and vehicle maintenance	
TOTAL	2,737

Other items – description	**Other items – cost (£)**
Other<£1,000	
TOTAL	3,234

Source of funding for project lifetime	**Total (£)**
Programme de Petites Initiatives du Fonds Français pour l'Environnemen Mondial – secured by Edge fellow	
TOTAL	32 043 £

Source of funding for additional work after project lifetime	**Total (£)**
SAFACAM – secured by ZSL for VSLAs	
Small Grants Programme – Secured by Evergreen	
Bidwell Family donation	
InterfaceTM	
TOTAL	**64 65 £**

8.3 Value for Money

We decided to work with early career professionals who received training by the project, our decision helped us in rationalizing the cost of international consultancies and build practical capacities in country. We also decided to work with Cameroonian consultants, local partners and service providers who may have better knowledge of the local realities for the provision of certain services (agroforestry trainings, local tourism plan as well as communication and publications). By ensuring the involvement of local communities in the provision of services planned by the project, we managed to rationalize our project costs.

Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Lake Ossa Reserve communities benefit from enhanced livelihoods and ecological protection associated with Ramsar designation, and the Reserve becomes an important site for freshwater biodiversity within the Douala-Edea protected landscape.			
Outcome: Local communities and MINFOF Conservation Service are implementing a clear co-management plan for Lake Ossa Manatee Reserve to enhance livelihoods and reverse declines in food fisheries, endangered species, and habitats.	1. Decreasing trends in populations of fish and freshwater turtles (e.g. African softshell turtle, *Trionyx triunguis,* status unknown) and manatee (*Trichechus senegalensis, IUCN Red List VU; upgraded to CITES Appendix I in March 2013)* are halted or reversed within the sanctuary zones by year 3. 2. Achieve an average of at least 20% improvement in locally-defined wellbeing scores and material style of life indices for 400 fishing households surrounding Lake Ossa by year 3 (baselines set in year 1 through household baseline surveys). Well-being will be assessed using subjective quality of life approaches applied to fisheries (Britton and Coulthard 2013, Coulthard et al 2011) and locally defined quantitative indicators (e.g. the proportion of households with tin roofs). 3. Boundaries of the Reserve are clearly demarcated, understood and endorsed by local communities and agroindustry, 10ha of reforestation and 5ha of agroforestry established by year 3. 4. 15% of lake area established as refuges (no-take sanctuary zones) for fish, manatees and freshwater turtles (nesting sites) and 70% of lake area effectively implementing sustainable fishing practices, actively enforced with watch-towers and enforcement protocol in place by year 3 (from a baseline of 0%). 5. Decreasing trends in fisheries indicators (Catch or Value Per Unit Effort – CPUE/VPUE) of fishers from local communities (baseline to be set in year 1) are halted or reversed by year 3. 6. At least 200 of the estimated 400 fishers in 11 villages within the Lake Ossa Reserve are engaged in VSLAs with an average of at least	1. Turtle and manatee survey reports; annual report to UNEP-CMS Action Plan for West African Manatees; annual report to relevant IUCN Specialist Groups. 2. Socioeconomic profile survey report of 11 communities; report of baseline and annual changes in wellbeing. 3. Legally ratified reserve map approved by MINFOF; Lake Ossa Manatee Reserve Management Plan; vegetation survey report; map of vegetation rehabilitation priority zones; reports from training workshops; report and photos of nurseries and number of native trees planted and monitored for successful establishment. 4. Report of a) biological surveys and b) local ecological knowledge surveys; training workshop reports. 5. Fisheries survey reports.	1. Private sector industry positively engages with the project and takes action within the timeframe of the project. 2. The zoned map of the reserve can be approved by all relevant authorities within the timeframe of the project. Communities have already engaged in this zoning system and are supportive. 3. Land tenure can be resolved with palm oil company to enable habitat restoration to be implemented in the Reserve's land mass around the lake within the timeframe of the project. 4. There's a risk surrounding the replacement or rotation of members of MINFOF Conservation Service, including the Conservator. The project will put in place appropriate mechanisms to ensure continuity of project actions even in the eventuality that the Conservator and his team are rotated to another site, and by working with well-established local NGOs we will ensure there are the support systems necessary to ensure continuity of project actions. 5. Communities remain supportive of project efforts, particularly lake clean-up actions and community-based enforcement. 6. Fishing nets collected for recycling can be exported relatively easily from Cameroon to Slovenia for appropriate recycling into carpet tiles (the only place in the world where the appropriate technology for high-grade recycling this valuable engineering grade plastic exists. Note that cost-benefit analyses of shipping for recycling vs generating new material from oil products still gives a positive result for recycling). Initial investigation indicates that there should be no custom problems with this.

	20,000 cfa (£25) each in savings (based on the average for VSLAs elsewhere in Cameroon) by year 3 (from a baseline of zero in Year 1). 7. At least 50% of abandoned fishing nets and bamboo fishing gear in the lake (baseline to be set in Year 1) is removed by Year 3 through a series of stakeholder events that generate income and awareness, and clean-up is ongoing. 8. At least one palm oil company with direct influence on Lake Ossa water quality have and are implementing protocols for habitat restoration as part of the management plan.	6. Members of VSLAs; reports from training workshops; savings books; annual report on savings and loans. 7. Survey report of abandoned fishing gear in lake; tons of nets collected; accounts of funds received by VSLAs for nets sold; report of number of bamboo fishing gear removed. 8. MoUs with industry partners; environmental impact assessment report; workshop reports; manual with protocols; development and implementation of management plans.	
Outputs: **1**. Community Management Committees established and supported to develop and implement co-management plans for Lac Ossa.	1a. Seven Community Management Committees encompassing all 11 Lake Ossa villages and representative of Lake Ossa users (as defined in baselines) are formed and meeting regularly with MINFOF Conservation Service by the end of year 1. 1b. Co-management plans established by Community Management Committees through participatory planning covering fisheries species, freshwater turtles and manatees with at least 15% of the lake gazetted as refuges for these species by year 2. 1c. Enforcement structures are in place and joint patrols by eco-guards and local communities initiated by year 2. 1d. Declines in fisher's CPUE and VPUE (baseline condition) are halted or reversed by year 3 based on monitoring of CPUE and VPUE throughout the project period. 1e. Decreasing trends (baseline condition) in populations of freshwater turtles (e.g. African softshell turtle, *Trionyx triunguis*, status unknown) and manatee (*Trichechus senegalensis,* IUCN Red List VU; upgraded to CITES Appendix I in March 2013*)* are halted or reversed within the sanctuary zones by year 3, based on monitoring of these populations throughout the project period.	Community Management Committee and Multi-Stakeholder Management Committee records and documents (e.g. co-management plans, map of Reserve) Biological and socioeconomic survey reports with photos documentation where relevant (e.g. for replanting/restoration of lake shore). VSLA record books and records contributed to the online global database (SAVIX). Training manuals produced for co-management and replanting, with documented monitoring system Business models produced for livelihood interventions Transaction records and quantity of nets exported for recycling	Communities have the will to manage their natural resources effectively and get involved in lake clean-ups. Government authorities (particularly MINFOF) remain consistently agreeable to proposed co-management arrangements and reserve delineation. Private sector actors remain consistently agreeable to proposed management arrangements including Reserve delineation. Business models for Net-Works and tree nurseries are viable. Sufficient numbers of households are interested and able to engage in VSLAs.

2. VSLAs established and integrated into community management committees	2a. At least 3 VSLAs established with 10-25 members each through community management committees by end of year 1. 2b. Village Agents replicate the VSLA approach in year 2, taking the total number of VSLAs to at least 10 with at least 200 households engaged by year 3. 2c. Training modules on lake ecology and management developed and integrated into VSLA training programme by year 1. 2d. Households engaged in VSLAs saving an average of at least 20,000cfa (£25) per year by year 3 from a baseline of an average of 0 cfa in savings.	Monthly reports from extension workers and project partners Annual project progress reports Peer-reviewed papers	
3. Three business models assessed and training provided for potential new sustainable enterprises to diversify the livelihoods of local communities	3a. Training modules developed and delivered through the VSLAs for community tree nurseries and Net-Works by year 1 3b. Business model for Net-Works and community tree nurseries developed and refined based on practical experience by year 2. 3c. 50% of fishing households engaged in either tree planting or Net-Works by year 2 from a baseline of 0%. 3d. Feasibility study and associated business model (if appropriate) for wildlife-based tourism completed by year 3, including plan for appropriate training of local community members to work in this sector.		
Output 4: A multi-stakeholder committee formed to define and agree boundaries of the reserve, with 10ha of the Reserve's degraded shore reforested and 5ha under agroforestry.	4a. Multi-stakeholder management committee including agroindustry, Community Management Committees and MINFOF is formed and meeting at least twice per year starting at the end of year 1. 4b. A reserve map of Lake Ossa with boundaries clearly demarcated and zoning system included is agreed by the multi-stakeholder management committee by year 2 and legally ratified by MINFOF by year 3. 4c. Participatory mapping completed and 15 ha of priority lake shore area within the reserve identified and agreed for restoration with any land clearing required completed by year 2. 4d. At least 3 community tree nursery is established and providing at least 500 native trees a year by year 3 to support restoration of lake shore		

	4e. Participatory implementation of management plans for restoration of lakeshore habitat and planting of trees produced by community nurseries by male and female community members with support from industry (*10ha of reforestation and 5ha of agroforestry*), supported by finance from industry. 4f. Neighbouring industry participates through contributions made in kind and through direct purchase of tree seedlings from community tree nursery for restoration activities.		
5. A community-based lake clean-up of abandoned fishing gears is undertaken with local communities	5a. Outreach programmes on the impact of discarded fishing gears on Lake Ossa is developed and implemented through VSLAs and Community Management Committees by year 1. 5b. Participatory mapping and inventory of abandoned fishing gears in Lake Ossa completed by year 1. 5c. Community Management Committees and VSLAs engaged in lake clean-up activities by year 1. 5d. Net-Works business model operational by year 2, with fishers selling end-of-life nets into the supply chain (preventing further discards) and nets collected through the lake clean-up sold into the supply chain and benefits distributed equitably through VSLAs as per the established and tested Net-Works model. 5e. Mechanisms for bailing and exporting the nets for recycling are piloted with one test shipment completed by year 2. 5f. Other abandoned fishing gears are being recycled or sustainably disposed of by year 2. 5g. At least 50% of inventoried abandoned fishing gears are removed from Lake Ossa by year 3.		

	Activity	No of Months	Year 1				Year 2				Year 3			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1														
1.1	Free, prior informed consent (FPIC) carried out in 11 villages.	3 months	x											
1.2	Biological baseline surveys carried out for manatee and freshwater turtles, including compilation of biodiversity reports, fisheries reports, and community perception surveys	6 months	x	x										
1,3	Training and implementation of baseline surveys for fisheries CPUE and VPUE in 11 villages.	6 months	x	x										

1.4	Re-establishment of seven Community Management Committees, including member election, ensuring gender, age, and occupational equality	6 months	x	x	x									
1.5	Workshop, training-of-trainers and advocacy on community-based management approaches for Community Management Committees and VSLAs, MINFOF Conservation Service, and the private sector.	9 months			x	x								
1.6	Participatory development of management plans and mapping of lake management areas through Community Management Committees.	9 months				x	x	x						
1.7	Implementation of management plans, including the construction of watchtowers, training of Community Management Committees and monitoring of enforcement activities by MINFOF.	18 months							x	x	x	x	x	x
1.8	Collaborative write-up of a five year simple management plan and approval by Conservation Service and Community Management Committees for post-project	9 months									x	x	x	
1.9	Biological and fisheries impact assessments through collection, analysis and feedback of data for manatee and freshwater turtles, and for fisheries CPUE and VPUE	6 months										x	x	
1.10	Reporting and preparation and submission of peer-reviewed paper.	6 months											x	x
Output 2														
2.1.	Workshop and training-of-trainers on VSLAs.	3 months		x										
2.2	Establishment of socioeconomic baselines through community consultations with 11 communities, and collection, analysis and feedback of data from household surveys and participatory rural appraisal.	3 months		x	x									
2.3	Establishment and fostering of first VSLAs in three pilot communities.	12 months			x	x	x	x						
2.4	Development of training modules on lake ecology and management developed and integrated into VSLA delivery	12 months		x	x	x	x							
2.5	Replication of VSLAs through Village Agent model and monitoring, ensuring that at least 11 communities have at least one VSLA group functioning	18 months							x	x	x	x	x	x
2.6	Socioeconomic impact assessment through collection, analysis and feedback of data from household surveys and participatory rural appraisal (linked also to output 3).	6 months										x	x	
2.7	Reporting and preparation and submission of peer-reviewed paper	6 months											x	x
Output 3														
3.1	Participatory assessment of enterprise opportunities and capabilities in 11 communities (done in conjunction with activity 2.2) and site selection for implementation of tree nurseries and Net-Works.	9 months	x	x	x									
3.2	Development of outline business model for Net-Works and tree nurseries.	6 months	x	x										
3.3	Development and implementation of training modules for tree nurseries and Net-Works through VSLAs (in conjunction with activity 5.1)	9 months		x	x	x								
3.4	Pilot phase for tree nurseries implemented in up to three communities, including exchange visits, material purchase, community engagement, trainings, marketing, and monitoring	12 months			x	x	x	x						

3.5	Participatory establishment of community-management mechanism, payment mechanisms and benefit sharing for Net-Works.	6 months				x	x							
3.6	Initiate net collection through lake cleanup and start buying discarded nets (ongoing)	24 months					x	x	x	x	x	x	x	x
3.7	Evaluation and assessment of community tree nursery businesses through development of business model and continued support as necessary	21 months						x	x	x	x	x	x	x
3.8	Develop export plan for collected nets and obtain relevant export documents and permits.	6 months					x	x						
3.9	Re-assess the business model for Net-Works based on monitoring of net collection and adapt as necessary.	6 months							x	x				
3.10	Expansion of Net-Works into all 11 communities and ongoing collection of nets.	12 months									x	x	x	x
3.11	Wildlife tourism feasibility study through external consultation and dissemination of results to multi-stakeholder platform(as established in output 4)	9 months									x	x	x	
Output 4														
4.1	Workshop on Lake ecology and management with senior representatives of neighbouring agro-industries, MINFOF and Community Management Committees	3 months			x									
4.2	Establishment of multi-stakeholder platform, involving agroindustry, Community Management Committees, MINFOF Conservation Service, (meeting regularly once established).	6 months			x	x								
4.3	Mapping of Reserve boundaries and agreement on boundaries by multi-stakeholder platform, formulated through establishment of MOU between multi-stakeholder platform members and decree from MINFOF.	6 months				x	x							
4.4	Identification of 15ha of degraded priority lake shore habitat for restoration through multi-stakeholder committee, and development of management plan for these areas (including plans for clearing illegal land-uses from these areas	6 months					x	x						
4.5	**Participatory implementation of management plans for restoration of lakeshore habitat and planting of trees produced by community nurseries by male and female community members with support from industry (*10ha of reforestation and 5ha of agroforestry*), supported by finance from industry.**.	18 months							x	x	x	x	x	x
4.6	Participatory follow-up of replanted tree progress and monitoring on the ground, including replanting where necessary	25 months								x	x	x	x	x
Output 5														
5.1	Outreach and education training modules focused on Net-Works, lake ecology, and fishing practices is developed for delivery by VSLA Village Agents	12 months	x	x	x	x								
5.2	Training modules delivered as part of VSLA model within initially implemented VSLA groups and with Community Management Committees (replicated in new VSLAs once up and running)	30 months			x	x	x	x	x	x	x	x	x	x
5.3	Participatory mapping and baseline inventory of abandoned fishing gears in Lake Ossa carried out and results delivered to VSLA groups and Community Management Committees	9 months		x	x	x								

5.4	Initiate and sustain lake clean ups for Net-works with VSLA groups and Community Management Committees to remove nets and other abandoned gear, including bamboo with benefits distributed back to participating groups	24 months					x	x	x	x	x	x	x	X
5.5	Establishment of recycling facilities, including designing and construction of baler machines for nets, establishment of warehousing for dealing with waste	9 months					x	x	x					
5.6	Test-shipment of nets for implementation of export processes.	3 months								x				
5.7	Developing mechanisms for recycling or sustainable disposal of non-net waste	6 months						x	x					
5.9	Impact assessment of lake cleanups through repeat inventory of abandoned fishing gears.	12 months			x			x			x			x

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

Project summary	Measurable Indicators	Progress and Achievements
Impact: Lake Ossa Reserve communities benefit from enhanced livelihoods and ecological protection associated with Ramsar designation, and the Reserve becomes an important site for freshwater biodiversity within the Douala-Edea protected landscape.		Communities in the Lake Ossa reserve benefit from the existence of VSLA institutions at a community level that enable productive savings and have been involved in the protection of the reserve biodiversity and associated ecosystem services through community designated and legally endorsed reserve zoning, fishery regulation, tourism plan and map of the reserve, as well as inclusive mechanisms for the control of pollution and degradation of riparian forest habitats backed by the private sector. Lake Ossa has gained national relevance and is included in the Douala-Edea protected landscape within the future Sanaga Delta RAMSAR Site.
Outcome Local communities and MINFOF Conservation Service are implementing a clear co-management plan for Lake Ossa Manatee Reserve to enhance livelihoods and reverse declines in food fisheries, endangered species, and habitats.	Indicator 1 Decreasing trends in populations of fish and freshwater turtles (e.g. African softshell turtle, *Trionyxtriunguis*, status unknown) and manatee (*Trichechussenegalensis*, IUCN Red List VU; upgraded to CITES Appendix I in March 2013) are halted or reversed within the sanctuary zones by year 3.	Baseline data collected (Annex 8 Y3, Annex 16 Y2) by AMMCO. Preliminary analyses from NGO AMMCO based on pointscan observation indicate continuity of manatee presence since observation (pers comm. Rodrigue Ngangfack, AMMCO). A final report is expected later in the year.
	Indicator 2 Achieve an average of at least 20% improvement in locally-defined wellbeing scores and material style of life indices for 400 fishing households surrounding Lake Ossa by year 3 (baselines set in year 1 through household baseline surveys). Well-being will be assessed using subjective quality of life approaches applied to fisheries (Britton and Coulthard 2013, Coulthard et al 2011) and locally defined quantitative indicators (e.g. the proportion of households with tin roofs).	**Indicator 2.** Socio-economic survey indicates a negative trend in wellbeing (-8), while VLSLA members in the sample experienced a slightly more moderate decrease (-6). 32 % of respondents diversified their livelihoods during the project period. This indicator correlated with Indicator 5 (CPUE) which portrays the high vulnerability of local livelihoods to alterations in the lake ecosystem. This results from a paired t-test was conducted to compare the material style of life score in 2015/16 and 2017. The study is based on a sample of 14 locally relevant indicators of material wellbeing in fishing communities from Lake Ossa (Pongo, Beach, Mevia, Ekite and Kounguelac) all of them highly reliant on fishing. Originally we planned to sample 400 household but that goal proved very ambitious given the small size of these communities (only 269 fishers in Lake Ossa, according to Census). 176 interviews were carried out.

	Indicator 3 Boundaries of the Reserve are clearly demarcated, understood and endorsed by local communities and agroindustry, 10ha of reforestation and 5ha of agroforestry established by year 3.	Thematic maps of the Lake Ossa Reserve, designating protected terrestrial areas and establishing boundaries and land uses has been developed based on stakeholder consultation (Annex 14 map) and legally endorsed by local stakeholders and authorities. The maps has been handled to MINFOF to be used for the gazettment of the Lake Ossa Wildlife Reserve. Approximately 7.5 ha were reforested in Yr 2, and 14 ha of fields (12 farms) were replanted with agroforestry techniques (3,149 trees showing signs of growth after the first agricultural season). Sustainable management, including regulated access and community-based surveillance mechanism to avoid illegal practices has been established in 224 ha of the SAFACAM buffer zone and integrated in the management protocols of the agroindustry company (Annex 4 Y3 3.4)
	Indicator 4 15% of lake area established as refuges (no-take sanctuary zones) for fish, manatees and freshwater turtles (nesting sites) and 70% of lake area effectively implementing sustainable fishing practices, actively enforced with watch-towers and enforcement protocol in place by year 3 (from a baseline of 0%).	More than 5% of the lake has been designated in six community based freshwater protected areas (271 ha) and 74 ha have been designated as migration corridors (two in total). A Code of Fishing that regulates gear, fishing zones and fishing practices in the whole lake is enforced and has been revised in Yr 3 (Annex 2 Y2, Annex 2 Y3). A results-based law enforcement protocol has been established by MINFOF since June 2016 (Annex 1 Y3 with MINFOF and communities collaborating through informant networks (Management Committees) and community-based patrols to prevent encroachment in riparian forests (Annex 1 y3 3.6 3.7).
	Indicator 5 Decreasing trends in fisheries indicators (Catch or Value Per Unit Effort – CPUE/VPUE) of fishers from local communities (baseline to be set in year 1) are halted or reversed by year 3.	CPUE data has been recorded since mid-2015 (Annex 1 Y2, Annex 6 Y3) We recorded an average decrease in catch of 1.19 kg, with very sharp reductions in the landing sites of Mevia (-1.47 kg) and Lindema (-3.05 kg). This may be due to the existence of zoning restrictions of fishing areas and the abnormal high water level during the 2017 fishing season that has made fish less available due to late rains. The modification of the Sanaga River's flood cycle due to Lom Pangar dam becoming operational may also be a factor. Average size of indicator and commercially valuable species (an indicator of overfishing) has slightly decreased, on average (-0.71 cm). However, six of the 11 indicator species have increased their average size on a year-to-year basis.
	Indicator 6 At least 200 of the estimated 400 fishers in 11 villages within the Lake Ossa Reserve are engaged in VSLAs with an average of at least 20,000cfa (£25) each in savings (based on the average for VSLAs elsewhere in Cameroon) by year 3 (from a baseline of zero in Year 1).	104 fishers from seven villages are participating in VSLAs (out of a total of 269 fishers). VSLA members saved an average of 26 319 FCFA during their first cycle, increasing their savings to 41,736 FCFA in their second cycle (Annex 5 Y3)

	Indicator 7 At least 50% of abandoned fishing nets and bamboo fishing gear in the lake (baseline to be set in Year 1) is removed by Year 3 through a series of stakeholder events that generate income and awareness, and clean-up is ongoing.	37.02 % reduction in observed net waste, with all transects showing a reduction in the levels of pollution between 22% and 67% (Annex 7 Y3). 1,123 kg of net waste have been collected in Lake Ossa (Annex 9 Y3). There is a strong relation between areas where net waste removal effort has been supported by lake clean-ups (Sanaga Channel and Great Lake section of Ossa), more accessible to communities where reduction reaches 44% and 67%, respectively, and those areas that have been cleaned up directly by fishers without additional project support. Existing bamboo fishing gear was eradicated from channels of Lindema, Sanaga River and the mouth of the Great Lake section of Ossa (20,400 bamboos were removed, both from the area and from the bed of the lake (Annex 18 Y2). Zoning of the lake to avoid an uncontrolled proliferation of bamboo fishing traps has been established (Annex 1 Y2 3.3) and included in final maps.
	Indicator 8. At least one palm oil company with direct influence on Lake Ossa water quality have and are implementing protocols for habitat restoration as part of the management plan.	SAFACAM and ZSL agreed on a MoU (Annex 16 Y3) for the improvement of the environmental management in the boundary area between the plantation and the reserve. SAFACAM has agreed with specific management recommendations compliant with RSPO (Annex 4 3.6 box SAFACAM) for the lakeshore area to prevent destructive agricultural techniques in their shores, protect an area of closed canopy in the shores, as well as specific measures to avoid fertilizers in the plantation areas of less than 100 m distance to the lake and to monitor water parameters. A declaration form for the practice of subsistence agriculture in the shores under its management was agreed with the conservation service and ZSL and produced prescribing specific techniques (Annex 4, 3.6 Table SAFACAM). SAFACAM provided in-kind resources to prevent slash and burn agriculture in the shores (fire control) (Annex 4 3.2) and committed resources for environmental management and sustainability of tree plantings after March 2017, including planting of 1000 trees (sourced locally) engaging VSLAs as labour. A university student is in the process of being recruited by SAFACAM to produce an HCV management document based on the work developed by the project.
Output 1.	**Seven Community Management Committees encompassing all 11 Lake Ossa villages and representative of Lake Ossa users (as defined in baselines) are formed and meeting regularly with MINFOF Conservation Service by the end of year 1.**	At the end of the project six community management committees encompassing fishers from 11 villages are recognized as legitimate co-management associations by a legally ratified local by-law (code-of-fishing, Annex 13, Chapter IV, articles 23-27). • 111 fishers (total = 269 fishers) are registered as members of management committees through identification cards (Annex 1 Y3, 3.3.). • Members of community management committees have demonstrated active co-management practice through 29 monthly meetings (448 participants, 345 men, 103 women) (Annex 1 Y2, 3.1, 3.2., 4). Committees have participated in the drafting and

		amendment of a code-of-fishing (Annex 2 Y2, Annex 2 Y3) and participated on its implementation, making decisions on the management of bamboo fishing (Annex 1 Y3, 3.5), invasive species (Annex 1, 3.2), and delimitation of no-take zones (Annex 2 Y2, Annex 1 Y3, 3.5). • Committees have developed local strategies for conflict management (Annex 1 Y3, 3.1) and reporting. • VSLAs have been introduced as an efficient form of financial management system in five committees (Annex 1 Y3, 3.4). Six meetings with 160 people (127 men,33 women) for conflict resolution were organized with the assistance of ZSL (Annex 1 Y3, 3.1).
	Co-management plans established by Community Management Committees through participatory planning covering fisheries species, freshwater turtles and manatees with at least 15% of the lake gazetted as refuges for these species by year 2.	**Indicator 2.** A local fishery bylaw (code of fishing) was established in Yr2 following a participatory process in 11 villages (Annex 2 Y2) that establishes 5% of the lake as community designated no-take zones (200 Ha, goal 15%). • A local fisheries by-law was approved in December 2015 by fishers, conservation services, MINEPIA and the Sub-Divisional Officer of Dizangue following 35 consultation and validation meetings with fisher groups and community members (6 villages, 642 participants, 170 women) (Annex 2 Yr 2) • One year after, based upon the experiences obtained from practical on the ground management with the communities, the code of fishing was amended with fishers and ratified by the Conservation Service and the Divisional Officer (11 meetings, 6 villages, 189 participants, of which 25 are women) (Annex 2 Y2, 4).. • Following its validation, specific decisions were made on its collaborative implementation between fisher associations and the Conservation Service on: zoning of bamboo fishing areas (June 2016) organization of the “sambo” fishing in the channels (Annex 1 Y3, 3.4); clarification of the boundaries of riparian buffer forests in the lake (October 2016) (Annex 3, 3.3); identification of fishers (Annex 1, 3.3.; and seasonal openings of the channel (Annex 1, 3.2.) (July 2016). • Freshwater protected areas of relevance for manatees and fisheries were also established and demarcated by committees followed by seven participatory demarcation sessions with communities in the lake (Annex 1, 3.5).

	Indicator 3. **Enforcement structures are in place and joint patrols by eco-guards and local communities initiated by year 2.**	Enforcement mechanisms for co-management based on direct surveillance of the conservation services, cooperation of communities in the denunciation of wildlife crime and forest surveillance are in place. • The Conservation Service has appropriate surveillance material for policing the lake. In total 42 surveillance patrols were organized as a part of the enforcement campaign for the fishing bylaw (16 lake patrols, 26 terrestrial patrols). 22 fishers fishing illegally have been identified, three of them faced action by the Conservation Service and 19 illegal gear were seized (Annex 1 Y3, 3.7). Twenty-three illegal farms were also identified. • An informal alert system from co-management groups exists in four committees (Annex 1 Y3, 3.6) and a surveillance committee is in place in 1 community. • Communities in plantation areas have participated in community-based forest monitoring, and prevention of illegal activities in forest regenerated areas (42 community members, 80 patrols – Output 4) (Annex 4 3.3).
	Indicator 4. **Declines in fisher's CPUE and VPUE (baseline condition) are halted or reversed by year 3 based on monitoring of CPUE and VPUE throughout the project period.**	CPUE (Catch Per Unit Effort), according to data collected since 2015 showed a slight negative year-on-year trend between Jan-Feb 2016=8.97 kg/trip (95) to Jan-Feb 2017=7.78 kg/trip (82) • CPUE varied among landing sites with a more pronounced decrease in captures in Lindema (-3.05 kg) and more consistent CPUE in Kounguelac (-0.3 kg). Despite the high number of fishers, Mevia and Lindema,remain as two of the more productive landing sites in the lake. (Annex 6, 3.2) • Average fish size of 11 indicator species remains stable although slightly decreasing (-0.71 cm), with six species increasing their average size between January 2016 and January 2017 (Annex 6, 3.3).
	Indicator 5. **Decreasing trends (baseline condition) in populations of freshwater turtles (e.g. African softshell turtle, *Trionyx triunguis,* status unknown) and manatee (*Trichechus senegalensis, IUCN Red List VU; upgraded to CITES Appendix I in March 2013)* are halted or reversed within the sanctuary zones by year 3, based on monitoring of these populations throughout the project period.**	Since November 2015, AMMCO collects data on manatee presence in Lake Ossa. Preliminary data shows that manatee observations remain stable (pers comm Rodrigue Ngangfack; a scientific paper will be available later in the year (Annex XX, AMMCO) • ZSL completed a bird inventory with 99 species identified in November 2015. A fish inventory was also completed (36 spp. in total) (Annex 13 Y2, Annex 6 Y3) • Since January 2016, a monitoring mechanism has been established by ZSL based on fisher/manatee interactions (destroyed nets, dung, feeding traces, direct observations, and fish eaten in nets by manatees). Forty-four fishers reported manatee interactions out of a total of 338 landings. (Annex 4 Y3, 4.4).)

		• Informants have reported eight cases of dead manatees since January 2016 in Lake Ossa (four cases of poaching and one natural death). (Annex 6 3.6).
Activity 1.1. Free, prior informed consent (FPIC) carried out in 11 villages.		**Completed.** The free, prior, and informed consent process has been carried out in all 11 villages (Yr 1).
Activity 1.2. Biological baseline surveys carried out for manatee and freshwater turtles, including compilation of biodiversity reports, fisheries reports, and community perception surveys		Completed. Community perception/biological baseline surveys were completed by AMMCO (Annex 16 Y2) in Yr 1 and manatee baseline report was completed in Yr3 (Annex 8 Y3) through co-funding. A baseline report about the Lake Ossa ecosystem (Annex 14, Y2), a bird inventory with 99 species identified (annex 13 Y2), and a fish inventory (Annex 6 Y3, 3.1) was also completed whilst carrying out the CPUE data collection in Year 2 and Year 3.
Activity 1.3. Training and implementation of baseline surveys for fisheries CPUE and VPUE in 11 villages.		**Completed.** CPUE baseline survey data was collected between June-August 2015, 9.13 kg/trip (111 landings). Jan-Feb 2016= 8.97 Kg/trip (95) and May-June 2016= 6.00 Kg/trip (86). (Annex 1 Y2)
Activity 1.4. Re-establishment of seven Community Management Committees, including member election, ensuring gender, age, and occupational equality		Completed. Six Community Management Committees were re-established across all 11 communities (6 committees were enough to represent all fisher communities and respectful of specificities), with 197 fishers participating in the process n Yr1 (Annex 2 Y1)
Activity 1.5. Workshop, training-of-trainers and advocacy on community-based management approaches for Community Management Committees and VSLAs, MINFOF Conservation Service, and the private sector.		Completed. In Yr1 a five-day workshop was delivered to the Conservation Service, with a focus on training ecoguards and to deliver similar modules to VSLAs, Community Management Committees, and the private sector (Annex 10 Y1). A planning workshop on sustainable fishery management with members of MINFOF and local NGOs was held in August 2015 (Annex 6 Y2), and participatory mapping discussions were held in six communities with 152 participants in June 2015 (also referred to in Output 4) (Annex 4 Y2). A SMART Training was organized for the conservation services in June 2016 (Annex 1 Y3, 3.7) (7 participants). CWCS organized a training event in March 2016 for the Conservation Services of Douala-Edea and Lake Ossa (Annex 15, Y2). A training of trainers in agroforestry was organized as well on best management practices of the lake (11 participants) in Banganté,(Annex 4 Y2, Annex 9 Y2)
Activity 1.7. Participatory development of management plans and mapping of lake management areas through Community Management Committees.		Completed. A local fisheries by-law was approved in December 2015 by fishers, conservation services, MINEPIA and the Sub-Divisional Officer of Dizangue following 35 consultation and validation meetings with fisher groups and community members (6 villages, 642 participants, 170 women) (Annex 2, 7, Y2). One year after, based upon the experiences obtained from practical on the ground management with the communities, the code of fishing was amended with fishers and ratified by the Conservation Service and the Divisional Officer (11 meetings, 6 villages, 189 participants, of which 25 are women) (Annex 2 Y3).

	Following its validation, specific decisions were made on its collaborative implementation between fisher associations and the Conservation Service on: zoning of bamboo fishing areas (June 2016) (Annex 1 Yr 3.5)); organization of the "sambo" fishing in the channels (Annex 1 3.7); clarification of the boundaries of riparian buffer forests in the lake (Annex 3 Y3); identification of fishers (Annex 1 Y3 3.3); and seasonal openings of the channel.
Activity 1.8. Implementation of management plans, including the construction of watchtowers, training of Community Management Committees and monitoring of enforcement activities by MINFOF.	Completed. Surveillance: A clear result reporting mechanism was adopted for the monitoring of infractions of the code of fishing (Annex 1 Y3, 3.7). The Conservation Service has appropriate surveillance material for policing the lake (Annex 1 Y3). After June 2016, 42 results-based patrols (16 in the lake, and 26 terrestrial patrols) and five special interventions to monitor the lake and prevent infractions of the code of fishing were organised resulting in the identification of 22 fishers fishing illegally, three of them faced action by the Conservation Service, and 16 illegal gear were seized (Annex 1 Y3). 23 illegal farms were also identified (Annex 4 Y3). An informal alert system from co-management groups exists in five committees (Annex 1. 3.6). Communities in plantation areas have participated in community-based forest monitoring, and prevention of illegal activities in forest regenerated areas (8 VSLAs involved, 80 patrols – Output 4). Community discussions: Regular meetings between the conservation service and communities: Awareness raising and discussion workshops with communities on Bamboo fishing territorial user rights and meeting (26 members from 6 management committees) (Annex 1 Y3, 3.5); Shoreline management (03 committees, 4 meetings, 3 villages, 137 participants) (Annex 3, 3.1 Y3, also referred to in Output 4); Awareness raising and prevention of invasive weeds (06 committees, 1 meeting, 20 participants) (Annex 1 Y3 3.2); community delimitation of no-take zones (2 committees, 3 no take zones) (Annex 1, 3.5) Training: Reorganization of member elections and conflict resolutions (04 committees, 06 meetings, 160 members (227 men, 33 women) (Annex 1 Y3, 3.1); Support and follow up of management committees (29 meetings, 448 people, 345 men and 103 women) (Annex 1 Y3 3.2); 04 committees mediating in the fisher identification campaign (111 fishers, 04 committees) (EBFM, Achievement 3); 05 committees have VSLAs in Dizangue. (Annex 1 Y3, 3.4).)
Activity 1.9. Collaborative write-up of a five year simple management plan and approval by Conservation Service and Community Management Committees for post-project	Legacy of the project was discussed at a local level, including agreement with local agencies involved in conservation on best practices for project management, tourism, fisheries and tourism. A preliminary document for reference, dissemination and knowledge sharing is drafted and will be disseminated (Annex18 Y3) based on multi stakeholder agreement among fishers (Annex 11 Y3))

		A proposal RAMSAR site management plan and map, that includes Douala-Edea and Lake Ossa is drafted for discussion (Annex 17 Y3) based on multi-stakeholder consultation with the conservation service and the Regional Delegation of MINFOF
Activity 1.10. Biological and fisheries impact assessments through collection, analysis and feedback of data for manatee and freshwater turtles, and for fisheries CPUE and VPUE		CPUE (Catch Per Unit Effort), according to data collected since 2015 showed a slight negative year-on-year trend between Jan-Feb 2016 = 8.97 kg/trip (95) to Jan-Feb 2017 = 7.78 kg/trip (82) CPUE varied among landing sites with a more pronounced decrease in captures in Lindema (-3.05 kg) and more consistent CPUE in Kounguelac (-0.3 kg). Despite the high number of fishers, Mevia and Lindema remain as two of the more productive landing sites in the lake. (Annex 6 Y3). A Poster presentation was produced by Constant Ndjassi and disseminated as a part of the Mentor Manatee USFW Programme) (Annex 24 Y3). Manatee data being collected and analysed by partner NGO AMMCO.
Activity 1.11. Reporting and preparation and submission of peer-reviewed paper.		Ongoing at project closure. Paper is being drafted to be revised and submitted for publication. A publication about lake Ossa that includes the Operational plan is in print.
Output 2. VSLAs established and integrated into community management committees	Indicator 1: At least 3 VSLAs established with 10-25 members each through community management committees by end of year 1.	**Indicator 1.** Three VSLAs were established in three pilot communities encompassing 68 members (Goal=3 VSLAs, 30-75 members) in year one. Two of them have continued toward the end of the project and account for 55 members (27 women and 28 men), while the members of the third one divided and integrated in new groups (Annex 5, 3.1, 4)). • The two VSLAs that have continue to present have saved in total 4,754,100 FCFA (6,338 £) and generated interest from loans of 252,200 (336 £) • Savings per person in the two VSLAs have progressed from 34,709 FCFA (46 £) in the first cycle, to 44,582 FCFA (59.5 £) in the second cycle (target=20,000 FCFA/year) • Membership grew from 43 to 55 in these two VSLAs.
	Indicator 2: Village Agents replicate the VSLA approach in year 2, taking the total number of VSLAs to at least 10 with at least 200 households engaged by year 3.	**Indicator 2.** By the end of Yr 3, VSLAs had grown from three groups to 17 groups in Lake Ossa and 424 members (289 women, 135 men) from 345 households (target 200 households) in 9 villages (Annex VSLAs, Achievement 2). • 37% of fishers are members of VSLAs - 104 out of a total number of 279. • VSLAs have expanded beyond Lake Ossa to other fisher communities around the Douala-Edea protected area through co-funding (Londji: 18 men, 15 women, and Pongo Zongo: 11 men, 11 women).
	Indicator 3: Training modules on lake ecology and management developed and	**Indicator 3.** VSLA meetings have served as platforms for awareness raising, training and development of capacities for co-management within communities, both connected to Lake Management (Output 1, Annex EBFM), Forestry and shoreline management (Output 4, Annex Forestry Yr3) and community business models (Output 3, Annex Forestry Yr2).

	integrated into VSLA training programme by year 1.	• VSLAs engaged in fisheries co-management (described in Indicator 1) and participated in farmer field schools related to the tree planting pilot exercise and agroforestry business models (Activity…). • VSLAs contributed to organize village discussion meetings on lake management and riparian shoreline management for the participatory development of a reserve map (as discussed in output 4).
	Indicator 4: Households engaged in VSLAs saving an average of at least 20,000cfa (£25) per year by year 3 from a baseline of an average of 0 cfa in savings.	**Indicator 4.** Average yearly savings of VSLA members showing a positive trend and increasing on average from 26,319 FCFA per person (during the first cycle) to 41,736 FCFA in their second cycle (target= 20,000 FCFA). In total, participants in VSLA groups have saved 20,154,200 FCFA (26,872 £) and generated interest from community self-help loans of 1,751,925 (2 335 £) (Annex VSLA, Achievement 2) • 15 VLSAs have established an 'environmental fund' linked to payments of casual labour for tree plantings organized by VSLAs, clean-up activities, and nets (Annex VSLAs, Achievement 3). Cash workers involved in tree plantings appointed by VSLAs contribute to the environmental fund with a percentage of their salary to the eight participant VSLAs to which they belong, and seven VSLAs are involved in net transactions, receiving a percentage of the price. • In total, VSLAs have received 143,600 FCFA in environmental funds coming from forestry activities and 56,150 FCFA from net transactions (Annex VSLAs, Achievement 3).
Activity 2.1. Workshop and training-of-trainers on VSLAs.		Complete. Two workshops were carried out. The first 3-day workshop focused on training 7 ecoguards to help them understand the benefits of working with the VSLA model. The second 3-day workshop focused on training 4 selected ecoguards and 4 Village Agents. (Annex 3 Y1)
Activity 2.2. Establishment of socio-economic baselines through community consultations with 11 communities, and collection, analysis and feedback of data from household surveys and participatory rural appraisal.		Complete. A household census was carried out in all 11 Lake Ossa villages (Annex 12 Y1). Wellbeing baseline indicators were obtained through 8 focus groups held in 4 representative communities (Mevia, Beach, Kilometre 3 and Kouguelac) with both men and women in April 2015. Baseline data was collected through the administration of 98 households in 6 communities (Mevia, Ekite, Beach, Pongo Pitti and Beach) (Annex 8 Y2).
Activity 2.3: Establishment and fostering of first VSLAs in three pilot communities.		Complete. Three VSLAs were established in three pilot communities encompassing 68 members (Goal=3 VSLAs, 30-75 members) in year one (Annex 3 Y3). Two of them have continued toward the end of the project and account for 55 members (27 women and 28 men), while the members of the third one divided and integrated in new groups. The two VSLAs that have continue to present have saved in total 4,754,100 FCFA (6,338 £) and generated interest from loans of 252,200 (336 £) (Annex 5 Y3).
Activity 2.4: Development of training modules on lake ecology and management developed and integrated into VSLA delivery		Complete. 51 VSLA members participated in lake ecology training activities which were part of preliminary workshops carried out to disseminate and discuss the Net-Works business model in June 2015 (Annex 5 Y2). The three VSLAs engaged in forestry activities participated in lakeshore

		conservation discussion events and 8 of their members attended a 'training-of-trainers' workshop about conservation agriculture and reforestation (Annex 3 Y2). VSLAs have served as awareness creation platforms for Lake Ecology (see activity 1.5.) and lakeshore management and ecology: Practical techniques of tree planting (3 VSLAs, 88 people, 64 women), Weeding and fertilization activities (5 VSLAs, 163 people, 129 women), Zoning of lakeshores (7 VSLAs, 216 people, 169 women), Sustainable and zero deforestation land management (7 VSLAs, 216 people, 169 women), Participatory mapping (2 meetings, 73 people, 57 femmes), Eco-burning techniques (1 séance, 21 people), development of alternative income generating activities (11 people), reporting and finance (4 VSLAs, 39 women), International Rural Women's day (19 women) (Annex 4 Y3, 3.1, 3.2, 3.3, 4). Furthermore, various training exercises have been organized on tree planting activities (6 meetings in partnership with APADER on 3 VSLAs from 2 villages, 24 men and 74 women) (also referred in Annex 4); weeding and fertilization for agroforestry (10 meetings in 5 VSLAs, 34 men, 129 women); zoning of agroforestry and respect of forest regeneration areas and buffer zone around the plantation SAFACAM (19 meetings, 7 VSLAs, 47 men and 169 women); training in identification of farmers and eco-fallow techniques (11 meetings, 7 VSLAs, 57 hommes and 180 women) (Annex 4 Y3 3.1, 3,2, 3.3, Annex APADER).
Activity 2.5: Replication of VSLAs through Village Agent model and monitoring, ensuring that at least 11 communities have at least one VSLA group functioning		Complete. 16 new VSLAs created in the project area, 11 of them supported by village agents, and 2 VSLAs in other coastal communities. By the end of Yr 3, VSLAs had grown from three groups to 17 groups in Lake Ossa and 424 members (289 women, 135 men) from 345 households (target 200 households) in 9 villages. 7 VSLAs are in their first cycle, 7 in the second cycle and 3 are in the 3rd cycle (Annex 5 Y3 , 3.2).
Activity 2.6. Activity 2.6: Socioeconomic impact assessment through collection, analysis and feedback of data from household surveys and participatory rural appraisal (linked also to output 3).		Complete. Socio-economic data were collected between March and May 2017, encoded and analysed (Annex XX Y3)
Output 3. Three business models assessed, taking lessons from initial pilots, and training provided for potential new sustainable enterprises to diversify the livelihoods of local communities in a) community-based native tree nurseries, b) Net-Works and c) wildlife tourism (migratory birds, manatees and freshwater turtles – building on the existing local government priorities for ecotourism development).	Indicator 1: Training modules developed and delivered through the VSLAs for community tree nurseries and Net-Works by year 1	Complete. ZSL organized and delivered training courses with VSLA members and communities on Net-Works (Annex 5 Yr 2, Annex 23 Y2) and tree nurseries (Annex 5, 6 Y1, Annex 4 2, Chapter 2, 2.1.), (Annex 9 Y2). Net-Works transactions were introduced in VLSAs of Mevia, Beach and Pongo Pitti in Year 2 (May 2015) and later extended to seven VSLAs from seven villages (Annex 9 Y2). Agroforestry and tree planting trainings continued being delivered through eight VSLAs up to the end of the project (Annex 4, Yr3), see activity 2.4.
	Indicator 2: Business model for Net-Works and community tree nurseries developed and refined	Business models were revised and adjusted to become sustainable. • Net-Works business model evolved during the project period from an initial phase connected to lake clean up exercises (Annex 23 Y2, XX) and an individual clean-up

	based on practical experience by year 2.	voluntary programme ('savings for nets', Annex 23), to the definition of a business-oriented mechanism. • The Net-Works business plan was adjusted to be financially sustainable and scalable to the coastal area through increased incentives to net-managers that resulted in the collection of 2,923kg, of them 1,123 kg of nets came from Lake Ossa and 1,800kg came from four collection sites beyond Lake Ossa through co-funding (Annex 9 Y3, 3.1.) • After the initial training phase, three of the six nurseries initially supported by the project continued to be operational and self-sufficient producing 1,860 fruit trees and 8,000 plants of African black pepper (Annex 4 Y3). • Agroforestry and livelihood business models have been assessed at the end of the project (two meetings, 11 people participated from three Fishery Management Committees and five VSLAs) (Annex 4 Y3 3.5) and will continue to be supported through additional funding from the GEF Small Grants Programme through VSLAs in Lindema, Mevia and Plantation areas (..
	Indicator 3: 50% of fishing households engaged in either tree planting or Net-Works by year 2 from a baseline of 0%	75 fishers have been registered in Lake Ossa for the sale of net waste (27% of total, target = 50%) (Annex Net-Works Year 3 – Achievement 2), seven households have been involved in tree nurseries and 41 households (42 people, 12 men and 30 women) have been involved in agroforestry, forest surveillance and forest regeneration activities (Annex 4 Y3, 3.2).
	Indicator 4: Feasibility study and associated business model (if appropriate) for wildlife-based tourism completed by year 3, including plan for appropriate training of local community members to work in this sector.	A participatory tourism management plan was drafted and approved in a participatory manner with local stakeholders, and endorsed by the Conservation service and the Ministry of tourism (Annex Tourism). • The plan was presented in the Council of Dizangue and includes a business plan and regulates tourism activities, community involvement and presents guidelines for the collaboration with tourism operators (Annex 15). Tourist visits raised from 41 in 2015 to 94 in 2016, given the increased national awareness of Lake Ossa. Tourists in high season (November-April) increased from nine in 2015 to 57 in 2017 (Annex 10 Y3).
Activity 3.1: Participatory assessment of enterprise opportunities and capabilities in 11 communities (done in conjunction with activity 1.2) and site selection for implementation of tree nurseries and Net-Works.		Complete. A feasibility study was carried out in all 11 villages to better understand the possibilities of establishing sustainable community tree nurseries. 6 sites have been selected for community-based tree nurseries and 4 sites for VSLAs and Net-Works (Annex 4 Y1).
Activity 3.2: Development of outline business model for Net-Works and tree nurseries.		Complete. A tree nursery business model has been developed and an outline business model was developed with communities as a part of a training exercise. (Annex 4 Y1, Annex 5 Y1). A business model for Net-Works was developed in May 2015. Later on, the business model was adapted to coastal communities (Annex 9 Yr3) and the development of a continuous clean-up campaign in Dizangue.

Activity 3.3: Development and implementation of training modules for tree nurseries and Net-Works through VSLAs (in conjunction with activity 5.1)	Complete. 18 community members from all 11 villages were trained in the basic principles of tree nursery establishment in Yr 1(Annex 5 Y2). VSLAs participated in an agroforestry training of trainer's event that presented alternatives to slash and burn agricultural techniques in Yr 2 and the establishment of a model farm for agroforestry (Annex Forestry Yr2). During Yr 3, training exercises have continued on VSLAs for agroforestry (Annex 4 Yr3 already referred in 2.4.)
Activity 3.4: Pilot phase for tree nurseries implemented in up to three communities as determined from activity 3.1, including exchange visits, materials purchase, community engagement, trainings, marketing, and monitoring	Complete. The pilot phase of tree-nurseries was finalized, with 6 nurseries established in 5 villages producing 5,384 trees for reforestation and 1,207 fruit trees (Annex 4 Y2)
Activity 3.5: Participatory establishment of community-management mechanism, payment mechanisms and benefit sharing for Net-Works.	Complete in conjunction with 3.3.
Activity 3.6: Initiate net collection through lake clean-up and start buying discarded nets.	Net-Collection was initiated through clean-up campaigns in July 2016 (Year 2), sustained through an ongoing clean-up mechanism (Savings for nets). Currently, 1,123 nets have been collected through VSLAs in Lake Ossa (Annex 9 Y3).
Activity 3.7: Evaluation and assessment of community tree nursery businesses through development of business model and continued support as necessary	Complete. To maximize synergies with the reforestation project and following community consultation, we included other income diversification opportunities accessible to low income famers working in the Lake Ossa basin, such as pineapple, ndole leaves and sugar cane. These crops are planted in anti-erosion bands in agroforestry systems around the reforested lakeshores (Annex Forestry Year 3, 3.2). Business models assessment with communities (2 trainings, 11 people, 2 meetings) on collaboration with APADER (rapport APADER) (Annex 4 3.5). 3 tree nurseries continue to produce plants commercially after the project without support (Annex 4. 3.2).
Activity 3.8: Develop export plan for collected nets and obtain relevant export documents and permits.	Complete. A preliminary export plan was developed with initial indications from SAFACAM and study of export cost through consultation with export agents in the Douala port with bailing operations ongoing (66 bales) (Annex 9 Y3, 3.2, 3.3.).
Activity 3.9: Re-assess the business model for Net-Works based on monitoring of net collection and adapt as necessary.	Complete. Reassessment of Net-Works for a new phase through funds obtained from Robin Bidwell Family) to establish a sustainable supply chain based on the achievement of economies of scale through coastal clean-ups in Douala Edea.
Activity 3.10: Expansion of Net-Works into all 11 communities and ongoing collection of nets.	Complete. Net collection is regular at the end of the project in Beach, Mevia-Songueland-Ekite, Lindema and Pongo Pitty through 2 net managers and VSLA, with occasional collection in the plantation villages.

Activity 3.11: Wildlife tourism feasibility study through external consultation and dissemination of results to multi-stakeholder platform (as established in output 4).		Complete. Sustainable Tourism Plan produced with the agreement of the MINTOUL and MINFOF (Annex 10 Y3, Annex 15 Y3). Tourism operations increasing though new tours to see manatees (Annex Tourism, XXX). Awareness creation activities were also developed (October 2016); National rural women day of the Sanaga Maritime Department and the Launching of the tourism season with 33 people participating.
Output 4: A multi-stakeholder committee formed to define and agree boundaries of the reserve, with *10ha of the Reserve's degraded shore reforested and 5ha under agroforestry*	Indicator 1: Multi-stakeholder management committee including agroindustry, Community Management Committees and MINFOF is formed and meeting at least twice per year starting at the end of year 1.	**Indicator 1.** Multi-stakeholder management meetings, under the presidency of the sub divisional officer and the Conservation service met once during year 1, three times during Year 2, and four times during year 2 (target = twice/year). Stakeholders met three times in Year 2, under the direction of the Divisional Officer: for the validation of the fishery bylaw (Annex 2 Y2), for the planning of the Tourism Management Plan (Annex 11 Y2), and for the organization of the bamboo fishing trap removal campaign (Annex 18, Y2). During year 3, they met to agree on bamboo areas (26 participants, 0 women) (Annex 1, 3.5), participatory drafting of a tourism plan (44 participants, 10 women) (Annex 10), revision and amendment of a local fishery bylaw (35 people, 3 women) (Annex 2 Y3), awareness raising on riparian buffer zones (31 participants, 4 women) (Annex 3, 3.2.) of the reserve and validation of the final map of the reserve (46 people, 4 women) (Annex 3, 3.4). In March 2017, a results sharing and operational planning workshop gathered together all management agencies involved with MINFOF in the management of the reserve and representatives of VSLAs who agreed on specific management guidelines for post project (21 participants, two women), Annex 11 Y3) on the basis of the best practices demonstrated by the Our Lake Our Life project (see Output 1).
	Indicator 2: A reserve map of Lake Ossa with boundaries clearly demarcated and zoning system included is agreed by the multi-stakeholder management committee by year 2 and legally ratified by MINFOF by year 3.	**Indicator 2.** A participatory proposal of a map for the reserve, describing boundaries and land uses around the lake was developed with the involvement of local communities (four meetings involving 137 attendants, 45 in SAFACAM communities and 92 in the Mevia and Lindema Communities, 73 women) (Annex 3, 3.1.; Annex14. Ground-trothing was carried out with local fisher communities (four days in Mevia and Lindema) (Annex 3 Y3, 3.3) and the SAFACAM area (Annex 4 Y3, 3.4.) and validated by the Conservation Service, Divisional officer, Council representatives and traditional authorities (two meetings with 31 people, four women and 46 people, four women) (Annex 3 Y3, 3.4.).
	Indicator 3: Participatory mapping completed and 15 ha of priority lake shore area within the reserve identified and agreed for	**Indicator 3.** 7.5 hectares for reforestation (within a shoreline forest strip of 50 to 100 m) and 14 hectares for agroforestry were established at the end of year 2 (Annex 4 Y2 Chapter 3). • Following the drafting of a MoU with SAFACAM (Annex MOU Safacam), an assessment and zoning of riparian forests based on forest conservation status and level of encroachment were proposed, establishing six zones of riparian forest protection and five

	restoration with any land clearing required completed by year 2.	areas for agroforestry and sustainable management in the 224 ha of the lake basin under the management of agroindustry (Annex 4 Y3, 3.4.). • These areas are integrated in the reserve map (referred to in Indicator 2).
	Indicator 4: At least 3 community tree nursery is established and providing at least 500 native trees a year by year 3 to support restoration of lake shore	**Indicator 4.** Tree nurseries produced 5,384 trees for reforestation (goal of 500) (Annex Forestry Year 2). After pilot phase (three tree nurseries) continued independently of project support (referred to in Output 3) (Annex 4 Y3, 3.2).
	Indicator 5: 15 ha of identified priority lake shore is replanted by year 3 with trees monitored for survival and demonstrating signs of growth.	**Indicator 5.** At the end of the project, 3,149 trees of the 4,108 that were planted are demonstrating good health (Annex Forestry Year 3, 3.1.). The illegally burnt surface in designated areas decreased from 5.19 ha - 24% of the total surface - to 2,500 m^2 (0.01%). • The project organized agroforestry training through VSLAs (already referred to in Output 2) and tree planting exercises with the agreement of SAFACAM and the Conservation Service (Annex 4 Yr2, Chapter 2, 2.2., Annex 4 Y3 3.3). • To prevent further slash and burn around replanted areas, the project supported farmers to adopt agroforestry and anti-erosive bands in 13 demonstration farms around replanted areas, that were enriched with sugarcane, *ndole* leaves (a local legume) and pineapple (Annex Forestry Y3 3.2). • 132 farmers (91 women) from three villages were registered by SAFACAM and the Conservation Service for temporary access farms in agroforestry regeneration areas, (Annex 4 Y3 3.4.) agreeing to avoid uncontrolled slash and burn and follow improved fallow practices leaving a lakeshore buffer of natural vegetation of 50-100 m. • A community-based forest monitoring and surveillance campaign organized through VSLAs between December 2016 and March 2017 was established in collaboration with the conservation Service. We detected 23 illegal farms in protected forests through 26 terrestrial patrols and 80 community patrols organized by VSLAs in three villages (Annex 4 Y3, 3.3).
	Indicator 6: Neighbouring industry participates through contributions made in kind and through direct purchase of tree seedlings from community tree nursery for restoration activities.	**Indicator 6.** SAFACAM agreed with ZSL on a MoU to advance in the improvement of environmental management (Annex 16 Y3) and committed resources to support riparian forest management and reforestation beyond project implementation (Outcome 8). • Resources will be used to sustain forestry activities beyond March 2017, generating income to VSLAs. • SAFACAM has engaged in the production of afforestation trees (1,000) sourced from VSLAs to sustain afforestation in 2017 and community-based bushfire prevention campaign. • A HCV management plan will be developed based on learning from the project.

Activity 4.1: Workshop on Lake ecology and management with senior representatives of neighbouring agro-industries, MINFOF and Community Management Committees.		Complete. Workshops on lake ecology were organized throughout the management plan process and integrated in community meetings throughout the discussions of the management plan and the forestry and agroforestry (Annex 11 Y1), (See activity 1.8, 2.4.)
Activity 4.2: Establishment of multi-stakeholder platform, involving Community Management Committees, MINFOF Conservation Service and local agro-industry.		Complete. Regular meetings organized to agree on fishery issues and shoreline management and tourism (Annex 2 Y2, Annex 11 Y2, Annex 18 Y2, Annex 2 Y3, Annex 3 Y3, Annex 1 Y3)
Activity 4.3: Mapping of Reserve boundaries and agreement on boundaries by multi-stakeholder platform, formulated through establishment of MOU between multi-stakeholder platform members and decree from MINFOF.		Complete. Reserve map produced (Annex 3 Y3, 3.6, Annex14 Y3) within the RAMSAR site (Annex 17 Y3).
Activity 4.4: Participatory identification of 15ha of degraded priority lake shore habitat for restoration through multi-stakeholder committee, and development of management plan for these areas (including plans for clearing illegal land-uses from these areas		Complete. Participatory mapping of agricultural zones and degraded areas was carried out early in year 2 and priority zones for reforestation and ecotourism were identified (Annex Forestry Yr2) An assessment of forest cover and land uses around the reserve was also developed by partner NGO CWCS (CWCS Report Yr2). Later in the year, a detailed assessment was developed by ZSL project officer and integrated in the reserve management action plan with SAFACAM (Annex 4 Y3). Restrictions in access were discussed with communities (Annex 3, 3.1 Y3)and in Multi-Stakeholder committee including Agroindustry who included the land use restrictions in their HCV management guidelines (Annex 3, 3.2, Annex 4 3.4.)
Activity 4.5: Participatory implementation of management plans for restoration of lakeshore habitat and planting of trees produced by community nurseries by male and female community members with support from industry (*10ha of reforestation and 5ha of agroforestry*), supported by finance from industry.		Complete. During Year 2 the project developed in each of the site a programme for the involvement of farmers in forest protection and reforestation (Annex 4 Y2) through: (1) the development of two model farms to demonstrate conservation agriculture techniques adapted to slope soils alternative to itinerant slash and burn, (2) a training of trainers event in Bangante to learn and disseminate agricultural techniques alternative to slash and burn and compatible with forest regeneration, (3) demarcation and direct reforestation of the first 100 meters next to the lake (5 Ha), and (4) the promotion of conservation agriculture techniques and partial afforestation in 15 Ha of farms next to reforested areas (15 Ha) After year 3, a pilot programme for the management of riparian areas was implemented, including a pilot afforestation and forest management exercise that included piketting and planting of trees, tree monitoring in the ground and establishment of contour lines for the establishment of anti-erosive bands (Annex 4 Y3)
Activity 4.6: Participatory follow-up of replanted tree progress and monitoring on the ground, including replanting where necessary		Complete. A monitoring mechanism was developed including replanting of trees (712 trees), and regular tree monitoring and weeding on the ground through VSLAs, development of anti-erosive fields through farmer field schools (13 farms integrating agroforestry in priority areas) and development of bushfire prevention mechanism established through community patrols (80 patrols, 59 eco-fallows to prevent bushfires) (Annex 4 Y3 3.3). Following this, management guidelines for the different sectors of the lake were established.

Output 5. Community-based lake clean-ups of abandoned fishing gears is undertaken regularly with local communities generating income from the sale of old fishing nets collected during the lake clean-up for recycling into carpet tiles as part of ZSL and Interface's proven Net-Works project.	Indicator 1: Outreach programmes on the impact of discarded fishing gears on Lake Ossa is developed and implemented through VSLAs and Community Management Committees by year 1.	**Indicator 1.**Outreach programmes on the impact of discarded fishing were initiated in Yr1 (Annex 5, Annex 23 Y2) and have continued through project timeframe. The need for regular clean-ups has been integrated in the fishery bylaw (Annex 13, Amended code of fishing article 6). Outreach programmes were extended to bamboo fishing (Annex 18, Year 2) and invasive species (Annex 1 Y3, 3.2) during Year 2 and Year 3.
	Indicator 2: Participatory mapping and inventory of abandoned fishing gears in Lake Ossa completed by year 1.	**Indicator 2.** Baseline data was collected in Q1 Yr2, with 391 mesh waste pieces identified in 33 transects (Annex 17Y 2)
	Indicator 3: Community Management Committees and VSLAs engaged in lake clean-up activities by year 1.	**Indicator 3.** Clean-up mechanisms based on VSLAs have been organized and extended to invasive species (*Salvinia sp*) with 19 fishers from three communities participating. More than 1,000 kg of the weed were removed from the lake (Annex 1 Y3, 3.2.). Net clean-ups have continued through individual net collection (Annex 9 Y3).
	Indicator 4: Net-Works business model operational by year 2, with fishers selling end-of-life nets into the supply chain (preventing further discards) and nets collected through the lake clean-up sold into the supply chain and benefits distributed equitably through VSLAs as per the established and tested Net-Works model.	**Indicator 4.** Ongoing net collection has continued through VSLAs, generating revenue of 280,750 FCFA and VSLAs retaining benefit of 56,150 FCFA (Annex 9 Y3).
	Indicator 5: Mechanisms for bailing and exporting the	**Indicator 5.** Bailing mechanisms using local labour (4 people) demonstrated and export scheduled for later in the year (Annex 9 Y3, 3.2).

	nets for recycling are piloted with one test shipment completed by year 2.	
	Indicator 6: Other abandoned fishing gears are being recycled or sustainably disposed of by year 2.	**Indicator 6**. 20,413 bamboos were removed and 96 ha of bamboo fishing areas established in Dizangué (Annex 18 Y2) following consultation with fishers from six committees.
	Indicator 7: At least 50% of inventoried abandoned fishing gears are removed from Lake Ossa by year 3.	**Indicator 7.** A 37% decrease in discarded fishing nets has been reported from baseline (250 mesh pieces, target = 50 % decrease) (Annex 7 3.1).
Activity 5.1: Outreach and education training modules focused on Net-Works, lake ecology, and fishing practices is developed for delivery by VSLA Village Agents		Complete. Referred to in 3.3
Activity 5.2: Training modules delivered as part of VSLA model within initially implemented VSLA groups and with Community Management Committees		Complete. Referred to in Output 1, Output 2, and Output 3.
Activity 5.3: Participatory mapping and baseline inventory of abandoned fishing gears in Lake Ossa carried out and results delivered to VSLA groups and Community Management Committees		Complete. A biophysical survey on net waste and bamboo traps was developed in May 2015 (Annex 17, Y2)
Activity 5.4: Initiate and sustain lake clean ups for Net-works with VSLA groups and Community Management Committees to remove nets and other abandoned gear, including bamboo with benefits distributed back to participating groups		Complete. 1,123 Kg of nets have been removed from Lake Ossa through net collection and clean ups (Annex 9 Yr3, 3.1). 20,413 bamboo traps have been removed from the lake, regaining an estimated lake area of 5 Ha in 2 communities (Lindema and Beach) in partnership with VSLAs (Annex 18, Year 2)
Activity 5.5: Establishment of recycling facilities, including designing and construction of baler machines for nets, establishment of warehousing for dealing with waste		Complete. A bailing machine and recycling facilities were established in Dizangue and are currently operational (Annex 9 Y3, 3.2).
Activity 5.6: Test-shipment of nets for implementation of export processes.		Not complete.Pilot net export to be completed in upcoming months through co-funding

Activity 5.7: Developing clean mechanisms for recycling or sustainable disposal of non-net waste (i.e. non-burning)	Complete. A local mechanism for the control of bio-invasions and invasive species is developed with communities. Removal of invasive plants is ongoing with local fishers (annex 1 Y3 3.2.).
Activity 5.8: Impact assessment of lake clean-ups through repeat inventory of abandoned fishing gears.	Complete. A 37% decrease in discarded fishing nets has been reported from baseline. (Annex 6 Y3, 3.1.)

Annex 2 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis						
1b	Number of PhD qualifications obtained						
2	Number of Masters qualifications obtained	3	Cameroonian	Male	Freshwater ecology	French	Annex 21, Y3
3	Number of other qualifications obtained	4	Cameroonian	2 men, 2 women	Freshwater ecology	French	Annex 21, Y3
4a	Number of undergraduate students receiving training	200	Cameroonian	Undisclosed	Freshwater ecology and aquatic conservation	French/English	Annex 19, Y3, Annex 20 Y3
4b	Number of training weeks provided to undergraduate students						
4c	Number of postgraduate students receiving training (not 1-3 above)	6	Cameroonian	Male	Freshwater ecology	Frech	Regular presence of interns from University of Douala during the project.
4d	Number of training weeks for postgraduate students						
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)						

6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	**2885**	Cameroonian	1480 men, 1405 women	Freshwater ecology, Community based management, Riparian area management, VSLA organization, agroforestry, tree plantings		Annex 9 Y1, Annex 11 Y1, Annex 3 Y2, Annex 4 Y2, Annex 23 Y2, Annex 1 Y3, Annex 4 Y3.
6b	Number of training weeks not leading to formal qualification	4			VSLA trainer of trainers, Agroforestry/Tree nursery training, Training GIS/IMET Yaoundé, Training swimming, training outboard driving, Training GIS CWCS, Training SMART-CyberTracker.		Annex 10 Y1, Annex 5 Y1, Annex 9 Y2, Formation IMET / GIS Yaounde 2016, Annex 15 Y3, Annex 1 Y3
7	Number of types of training materials produced for use by host country(s) (describe training materials)	1			Freshwater training modules, Tree nursery training modules, Agroforestry handbook, VSLA training modules.		Training modules/Handbook

Research Measures	**Total**	**Nationality**	**Gender**	**Title**	**Language**	**Comments/ Weblink if available**

9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	4	Cameroonian	-	Local Tourism Management Plan. Reserve Management Guidelines. HCV Management orientations RAMSAR site feasibility study and operation planning	French	Participatory process? Yes.
10	Number of formal documents produced to assist work related to species identification, classification and recording.						
11a	Number of papers published or accepted for publication in peer reviewed journals						
11b	Number of papers published or accepted for publication elsewhere						Location?
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country						
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country						
13a	Number of species reference collections established and handed over to host country(s)	2			Birds of Lake Ossa Fish of Lake Ossa		

13b	Number of species reference collections enhanced and handed over to host country(s)						

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	1	Cameroonian	Men/Women	Aquatic Conservation Day – University of Douala	French	Annex 20 Y3
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	5	Cameroonian, British, German	Men/Women	Freshwater Conservaton	French/English	Lecture at the Masters of Integrated Coastal and Marine Environment (Douala); Ocean Day Exeter University, Dec 2017 (UK) Mentor Manatee Presentation and Poster 2017 (Cameroon) Biodiversity Conservation and Wellbeing July 2016

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
							Darwin Initiative Presentation (UK)

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)		Latrine (£700), boat and 40hp outboard motor (£10,000), Garmin GPS units (£940), Dell laptop (£518), 4x4 Toyota Hilux (£8000), Field equipment: 1045 £. Material for use of MINFOF Agents: (08) Lifejackets; (04) Mattress camping; (06) camping tents (03) camping gas/mattress (06)torches (01) Telephone Nokia; (04) sleeping bags; (08) Waterproof raincoat Materials for use of ZSL and Partners: (02) hand torches, (01) frontal torch, (02) raincoats, (01) compass, (01) digital weight; (01) pair of binoculars; (01) bird identification guide; (01) English grammar book. Painting and protection of patrol boat: 194.28 £Installation of container: 171.46 £Storage Container for the Conservation Service: 1,578.56 £Water testing equipment (meter, electrode): 2,163.84 £Auxiliary patrol boat construction and transport: 562.21 £15 CV outboard engine: 2,367.85 £ (Bank charges: 2.90 £)Boat posts: 256.12 £

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work		-	-	-	-	Programme de Petites Initiatives du Fonds Français pour l'Environnement Mondial – secured by Edge fellow 32 043 £; SAFACAM – secured by ZSL for VSLAs 3 871 £; Small Grants Programme – Secured by Evergreen 19 733 £; Bidwell Family donation 10 561 £; InterfaceTM 30 000 £

Annex 3 Aichi Targets

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	X
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	X
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	X
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	X
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	X
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	X
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	X
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	

9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	X
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	X
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	X
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	X
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	X
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national	X

	legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	X
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 4 Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details. Mark (*) all publications and other material that you have included with this report

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)

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