Darwin Initiative/D+ Project
Half Year Report
(due 31st October 2019)

Project reference	25-024
Project title	Securing marine biodiversity and fishers' income through sustainable fisheries, Mozambique
Country(ies)/territory(ies)	Mozambique
Lead organisation	Zoological Society of London - ZSL
Partner(s)	Associação do Meio Ambiente (AMA), Coastal Oceans Research and Development in the Indian Ocean (CORDIO), Universidade Nova de Lisboa, Faculdade de Ciencias Sociais e Humanas (NOVA FCSH), Universidade Lúrio (UniLúrio), University of Aveiro, Department of Biology & CESAM (Centro de Estudos do Ambiente e do Mar), Wildlife Conservation Society (WCS)
Project leader	Jeremy Huet
Report date and number (e.g. HYR3)	31st October 2019, HYR1
Project website/blog/social media etc.	Webpage: https://www.zsl.org/conservation/regions/africa/our-sea-our-life Facebook: @ZSLMarineAndFreshwaterConservation Twitter: @OurSeaOurLife

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

Output 1: Two multi-zonation LMMAs established in Bandar and Mecufi by end of Yr1 with co-management agreements in place, each incorporating at least 200ha of no-take zones covering at least 2 critical habitats in each village (from seagrass, mangrove and coral), 50ha of buffer zones for preferential user rights, one temporary closure area, and mangrove rehabilitation area.

Over the past six months community consultations were undertaken in three sites with legalized CCPs (Bandar, Mecufi-sede and Natuco), selected in Yr1 with the approval of provincial and district authorities. These consultations consisted of discussions with community groups (youth, elders, men, women met separately) about the current situation regarding declining fish stocks and the reasons for this. In the 1990s, the quantity of fish captured was considered satisfactory. However many community members have lost their job in local industries (production of cotton and sisal fibres), which lead to a sudden increased fishing efforts. In the early 2000s, itinerant fishers from Nacala and Tanzania settled in Cabo Delgado province to exploit marine resources, often using unsustainable fishing practices and patterns (night and neap tide fishing, small mesh nets, etc.) that local fishers took over shortly after itinerant fishers' arrival. Overall, the main propositions from the consultations with community groups were related to creating marine reserves and diversifying local livelihoods, with an aim to reduce people's dependence on capture fishing. However, it was clearly identified that similar initiatives (creating marine reserves) had been unsuccessful in the past both in Bandar and Mecufi, because of poor engagement with neighbouring communities. As a result, near Mecufi-sede, we consulted five communities (Muaria, Sassalane, Metacane, Kambala, Ngoma), one near Natuco (Mazeze)

and two near Bandar (Pemba, Muevi) to ensure they were engaged from the onset of the project and there was buy-in from these, improving the likelihood of their compliance to the future LMMAs' rules and regulations. Please see photographs of community consultation meetings **(Figures 1, 2 & 3) in the supporting documents**.

Following the CCP diagnostic undertaken in Yr1, we worked on capacity-building for Mecufi-sede's and Bandar's CCPs by (i) doubling the number of CCP members to 24 and 26 respectively, (ii) recapping the role of the CCP in the community and the responsibility of its members to achieve marine co-management and (iii) establishing monthly activity plans (see Figure 4 -CCP activity plan for Bandar- July- in supporting documents) such as for the construction of their offices.

The community-based underwater survey has not started yet as we are waiting for the LMMAs' boundaries to be agreed first (which is likely to take place by December 2019) before collecting baseline data (during the first quarter of 2020). We will share these results as part of the next annual report in April 2020. Meanwhile, CCP members are still collecting CPUE (Catch Per Unit Effort) data for selected indicator species, through a smartphone application that is linked up to an online database. Data is checked by UniLurio and submitted to IIP (Fisheries Research Institute) who are responsible for fisheries data collection. Several visits to the villages have taken place to replace one smartphone and two batteries, and also to address any concerns or questions raised by the CCP members (see Figures 5, 6 and 7 in supporting documents). The existing application has been slightly amended and training to the CCP members was delivered to align with the new Open Artfish application run by MIMAIP (Ministry of Fisheries) enabling comparability between both sets of data.

Nine savings groups (VSLAs) have been formed and are operational (see further details in Output 4 below). In addition to the financial services provided by these community groups and the support for livelihood diversification, VLSAs are also platforms for dialogue, meeting on a weekly basis, enabling the project to deliver conservation outreach messages. We aim to link up livelihoods to the sustainability of the LMMAs through awareness raising activities and the introduction of the Environmental Fund. The Environmental Fund within VSLAs will be used to fund activities that address the LMMA objectives (e.g. planting mangrove seedlings). The messaging has been developed in accordance to this and the outreach activities have started in three VSLAs. As an example, we have worked with a VSLA group comprised of women specialised in pottery craft in Bandar, this has been a route to convey the importance of a charcoal oven (made up of clay) as a sustainable alternative for cooking, as it reduces the need to cut mangroves for this purpose (see Figures 8 and 9 in supporting documents).

For environment-themed dates such as World Environment Day and World Ocean Days in June (5^{th} and 8^{th} respectively), we provided mangrove seedlings to the existing mangrove nursery association in Mecufi-sede and organised a community planting event with local authorities. This was an opportunity to discuss strategies to address mangrove cutting (see Figures 10-12 in supporting documents). We are aiming to have (i) mapped the areas where the mangrove is cleared or damaged and (ii) developed an action plan to restore these areas by the next annual report (April 2020).

Under DPMAIP's (Provincial Direction of Fisheries) initiative, we attended a CCG meeting (co-management committee for CCPs) for the Metuge district (which Bandar belongs to) in August to discuss existing issues related to marine co-management (Figure 13 in supporting documents). The importance of disseminating any initiatives and associated rules related to fisheries management to neighbouring communities was stressed in the meeting, in order to reduce unintended encroachment to marine reserves.

We participated in the regional conference WIOMSA (West Indian Ocean Marine Sciences Association) in Mauritius in July, where OSOL delivered two posters and two oral presentations (see Figures 14-16 in supporting documents). One poster explored the negative results of violent events that have been occuring in the north of Cabo Delgado province since October 2017 on marine co-management. These events have prevented us from organising exchange

visits of CCP members between current sites and the ones hosting LMMAs established in the period 2013/18 (Phase 1 of Our Sea Our Life, Darwin Project Ref. 20-023). A second poster focused on the role of VSLAs in marine co-management and their positive outcome on wellbeing and Material Style of Life indicators. One of the oral presentations described the phenomenon of itinerant fishing in Cabo Delgado province, as well as the threats and opportunities related to it. Additionally, the initial results of community-based oyster farming trialled in the period 2013/18 were presented and explained (these are used as a reference for the community work undertaken in Output 2 below). We were also able to attend a special session to connect a network of conservationists in the West Indian Ocean and share data regarding the capture of octopus following the opening of temporary-closed areas (within LMMAs), with an aim to refine and maximise the socio-economic benefits of these openings to the coastal communities while ensuring octopus populations are not at risk.

Output 2: Integrated Territorial User Rights in Fisheries zones integrated into LMMAs to incorporate sustainable fishing and women-led bivalve aquaculture initiatives in Bandar and Mecufi to incentivise enforcement of LMMA and replace illegal mosquito net fishing for vulnerable female groups.

Territorial User Rights in Fisheries (TURFs) are fishing areas (within LMMAs) with associated rules, targeting vulnerable community members affected by conservation measures with an aim to alleviate the socioeconomic impact of these measures on them. As per Output 1, decisions are currently pending at community levels, regarding the most vulnerable community members (relating to future LMMAs) and which fishing areas should be assigned as TURFs. However, we have progressed with the support to women-led bivalve aquaculture, with an aim to replicate this to TURFs once the decision-making process is complete with the communities. Assessments of habitat conditions and the occurrence of bivalve species were conducted in the project sites. These assessments show that the oyster *Pinctada Margaritifera*, studied previously in 2013/18, is absent from the three sites. However, the oyster *Crassostrea cuculata* occurs in Bandar (there is no oyster species in Mecufi), is consumed by the local population and its cultivation is easier relative to that of species of the genus *Pinctada.* Additionally, the mussel *Modiolus philippinarum* is abundant in Mecufi, and this species is used for food consumption by local communities. A market study for both present species was conducted and showed that the demand is relatively high while the offer is currently low, and that both species are cultivated simultaneously. It also showed that there is interest in the sale of bivalves in Pemba, but that one of the main constraints is the transport cost (a barrier to any self-initiative). VSLAs have the potential to address this barrier, and help producers access Pemba's bigger market.

In Mecufi, together with the community, a group of 15 motivated voluntary women were selected who were (i) using mosquito nets for fishing and (ii) knowledgeable in bivalve collection. After assessing their capacity needs, we delivered training in harvesting techniques that minimise damage to the bivalves. After measuring water parameters, ocean currents and accessibility, two sites were selected in Mecufi (please see Figure 22 in supporting documents) and one in Bandar (managed by the local CCP) to implement bivalve production and allow future expansion of farming structures. Two bivalve racks were set up in Mecufi (one in each location) and one in Bandar using wood logs and sisal ropes. Measurements of size and weight of bivalves were taken. Four bags (200 mussels and 80 oysters each) were positioned in Mecufi and two bags in Bandar, as well as spat collectors.

Colleagues from the University of Aveiro provided training for AMA team members on (i) bivalve biometric parameters and growth during shellfish production and (ii) the strength and durability of local materials used for the structures. Additionally, samples of dried oysters and mussels were obtained to perform a comparative analysis between fresh and preserved bivalves. These will assess (i) aspects of food quality and safety in bivalves preserved by traditional methods and (ii) the energy budget and energy reserves (lipids, proteins and carbohydrates) of cultivated species (please see Figures 17-21 in supporting documents). A subsequent mission is planned for February 2020, which aims to assess progress and to expand the structures accordingly.

Unfortunately, due to ongoing violent events occurring in northern Cabo Delgado, we have been unable to organise an exchange visit to the site where we originally trialled oyster farming using *Pinctada margaritifera* in 2013/18.

Output 3. Equitable governance and management of marine resources and sustainable bivalve aquaculture ensured through advanced representation and participation of women in CCPs and LMMA management.

The rapid rural assessment conducted in Yr1 highlighted the differences in gender roles (please see photo of focus group interview - Figure 23 in supporting documents). Overall, men and women are engaged in the same livelihoods (fishing, agriculture) but in addition women are also in charge of household (fetching water and cooking) and childcare duties. Some women have leadership positions as neighbourhood representatives or in village committees. Elders, widows, women with many children and single women are the most vulnerable to food insecurity. A significant percentage of women make up the recruitment for VSLAs (see Output 4). The results are a base for a comprehensive gender equity assessment to be undertaken at a later stage in Yr2, to gain a better understanding of gender inequality and to inform long-term strategies for changing behaviours. Our approach will draw from the approach used in "Gender Action Learning System", a community-led empowerment methodology that uses principles of inclusion to improve income, food and nutrition security of vulnerable people in a gender-equitable way. It identifies and dismantles obstacles in their environment, challenging service providers and private actors. An interdisciplinary regional workshop will be organised by Yr3 to discuss the outcome of our approach.

Output 4. Sustainable financing mechanisms (business models, functional VSLAs, Biodiversity Offsets sustainably contributing to LMMAs management costs) established for Bandar and Mecufi LMMAs fostering multi-use zonation, sustainable bivalve aquaculture and gender equity

Five additional VSLA groups have started to save since April 2019 (totalling nine functional VSLAs). Two new VSLA groups have been formed and are in the process of starting weekly savings (please see Figure 24 in supporting documents). Currently, 90% of VSLA group members are women (223 women) and a total of has been saved (from existing economic activities only). Also, it is worth noting that four VSLAs have already started to take out loans, with a total of - a significant value considering it is during the first year, showing group members trust each other in abilities to repay loans. Half of these loans were invested in small-scale businesses. Livelihoods will be linked up to the sustainability of the LMMAs using awareness raising activities and through the introduction of the Environmental Fund (see Output 1). The Environmental Fund within VSLAs will fund activities that address the LMMA objectives (e.g. planting mangrove seedlings).

Legalizing LMMAs, besides the formal recognition of the LMMA statute by the government which then conditions an efficient enforcement, will increase the LMMAs' likelihood of access to longer-term funding. There is a noticeable lack of coordination between MIMAIP/DPMAIP (Ministry of Fisheries) and MITADER/ANAC/DPTADER (Ministry of Environment), between both national and provincial levels, and the two government institutions for LMMA legalization. A meeting was held with all relevant stakeholders in order to address this issue in July 2019 (please see Figure 25 in supporting documents). As a result of the discussions, it was agreed that the upcoming Fisheries Regulations references would be included in the recent Conservation Regulations (n. 89/2017) that regulate the legalization of community conservation areas (CCAs), which would be applicable for the coastal environment. This will be a major step towards the sustainability of LMMAs in Mozambique.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these

could have on the project and whether the changes will affect the budget and timetable of project activities.

According to the World Meteorological Organisation, the Cyclone Kenneth is the equivalent of a Category 4 storm and made landfall from 25th April in northern Mozambique, near the border with Tanzania. This severely impacted an area which has seen no tropical cyclones in the satellite era and which has no experience of the destructive winds and storm surge of such an intense storm. The project sites have been seriously affected (houses, village infrastructures) as well as their road access, which limited our capacity to advance project activities in May. We resumed our work under normal conditions from June onwards. This should have minimal impact on project activities, assuming there are no further similar events occurring in the region.

The project was unsuccessful in obtaining matched funding from two major donors (Fondation Ensemble and Blue Action Fund). Fondation Ensemble initially agreed to fund the project, however did not proceed to the signing of a funding agreement due to the unrest in northern Cabo Delgado during the 2018 Christmas period. This impacts the project in the following ways: (i) sustaining the local AMA staff salaries in Yr3 and (ii) achieving Output 4, especially in regard to operating biodiversity offsetting. A change request will be submitted to the Darwin Initiative, with suggestions for reallocation of partners' salaries and for readjustment of objectives in Output 4 as well as WCS' role. The extent of the changes are dependent on the outcome of a proposal recently submitted to BIOPAMA, which should announce results by the end of November 2019.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS:	Yes/**No** *(in Yr1 annual report only)*
Formal change request submitted:	Yes/**No** *(to be submitted in December 2019)*
Received confirmation of change acceptance	Yes/No *(n/a)*

3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes ☐ **No** ☒ Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

No

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document. Additionally, if you were funded under R25 and asked to provide further information by your first half year report, please attach your response as a separate document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but should also be raised with LTS International through a Change Request. Please DO NOT send these in the same email.

Please send your **completed report by email** to Darwin-Projects@ltsi.co.uk. The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 25-035 Darwin Half Year Report**