Darwin Initiative Final Report

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

Darwin project information

Darwin Project Information

Project Reference	21-011
Project Title	Securing livelihoods and conserving marine biodiversity through rights-based fisheries management
Host Country/ies	Madagascar
Contract Holder Institution	Blue Ventures Conservation
Partner institutions	Direction Régionale de l'Environnement et des Forêts (now DREEF) Melaky; Direction Régionale des Ressources Halieutiques et de la Pêche (DRRHP) (formally DRPRH) Melaky
Darwin Grant Value	£251,855
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Reporting period (e.g., Apr 2015 – Mar 2016) and number (e.g., Annual Report 1, 2, 3)	Apr 2015 – Mar 2016, Annual Report 2
Project Leader name	Alasdair Harris
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1 Project Rationale



Figure 1: Map of Barren Isles

The Barren Isles archipelago is among the last productive small-scale traditional fisheries on the west coast of Madagascar, and home to one of the largest intact coral reef ecosystems in the Mozambique Channel. Over 4,000 traditional fishers depend on its resources for their livelihoods, and hundreds more migrate from all over Madagascar to work around these islands, driven by the collapse of their local marine ecosystems. In Madagascar's current open accessfishing regime, these traditional fishers forced to compete are against longliners, trawlers, and other industrial boats that operate around the islands to harvest the pelagic fisheries. Furthermore, the Melaky region where the Barren Islands are located is extremely isolated. and Illegal, Unreported, and Unregulated (IUU) fishing is widespread. In participatory consultations conducted in 2009. communities fishing unanimously identified these external pressures as the single most important threat to their food security and livelihoods.

Without an existing legal mechanism to protect the rights of traditional fishers, pioneering a new model of a rights-

based, community-managed Marine Protected Area (MPA) is a critically important method of empowering poor coastal communities to manage marine resources and improving fisheries sustainability. Transferring formal management rights to protect this ecosystem is fundamental to conserving biodiversity, strengthening food security, and ensuring community resilience.

The Barren Isles MPA forbids industrial fishing within its perimeters while protecting traditional fishing communities' right to work in the zone, creating a platform for fisheries management through an MPA management committee and reinforcing it with a Regional Fisheries Management Plan. Without an intervention to involve local communities in resource management and to restrict industrial and IUU fishing, the Barren Isles coral reefs risk facing the same degradation and overexploitation that has plagued the fisheries of the West coast of Madagascar.

2 Project Partnerships

Key partners

• Ministry of Aquatic Resources and Fisheries (MRHP): The ministry in charge of implementing Madagascar's fisheries code, that formally recognizes local management of fisheries by communities; gives orientations regarding formal procedures for developing the protected area management plan; formally responsible for developing the Melaky Fisheries Management Plan (FMP), supported by BV as technical and financial partner, including: mediating the negotiations between traditional fishers and the shrimp trawling industry body the "Groupement des Aquaculteurs et Pêcheurs de Crevettes à Madagascar" (GAPCM), formally validating the plan, and signing it into law as a Ministerial Order; supporting the consultation process at a regional and national level and the diffusion and communication of the plan.

• Regional Ministry of Fisheries (DRRHP): applies the MRHP policies and executes the tasks ordered by the MRHP at the regional level; represents the MRHP at the regional level and supports relevant regional workshops or administrative procedures, validated management measures to include in the dina.

• Ministry of Environment, Ecology and Forests (DREEF): the ministry initially in charge of protected area designation processes (later handed over to a new body, the Secretariat d'Etat de la Mer), so was the main coordination body for the consultation processes towards securing temporary protected area status; responsible for delivering biodiversity commitments, so presented the IUCN list of endangered species to VMNB association representatives during a workshop organized by BV, supported the formal process to incriminate a patron of SCUBA divers crew for sea cucumbers (material seizure, complaint at the Tribunal, engagement letter); validated the management measures to add in the dina

• Centre de Surveillance des Pêches (CSP): as the main fisheries surveillance authority, this unit validated the outline of the MCS programme for the BI MPA;

• Tribunal of Maintirano: ratified the Barren Islands dina, making this a legally recognised set of rules and sanctions

Centre de Fusion d'Information Maritime (CFIM): a new partnership is in development but this body will be involved in support for reporting infractions to the national authorities (CFIM is attached to the Prime Minister's office) when the MCS is in place. Compile information/data from Madagascar about infractions, which may be able to provide data on trends on illegal infractions.

The partners will continue to be involved in the management and validation of the MPA and the implementation of the Regional Fisheries Plan beyond the life of this project, in particular the MCS will be enforced with the help of the CSP. The Tribunal will validate the updated dina.

Lessons, strengths and challenges

Despite some initial differences in priorities between some of the project partners, our relationships and partnerships are going well overall, and generally continue to strengthen. Our relationship and collaboration with the Ministry of Fisheries (MRHP) remains strong and they have been supportive in the development of the Regional Fisheries Management Plan (PAP). We have made special efforts to meet with the representatives of Regional Ministry of Fisheries (DRRHP) to ensure common objectives are outlined and understood, and to ensure they are involved in activities as much as possible. Our relationship with the Ministry of Environment (DREEF) is now stronger than ever, and they have provided support on issues with the mining company wishing to illegally extract guano. Our relationship with the Centre de Surveillance des Pêches (CSP) also remains strong, but with only one agent in the field and limited support from central CSP, they are unfortunately limited in the support they can provide on the ground to tackle illegal fishing activities.

3 **Project Achievements**

3.1 Outputs (where indicators and activities are referred to, please see additional information in the logframe).

Output 1 The proposed Barren Isles MPA, with a zoning plan which protects traditional fishing grounds, is gazetted as a protected area by the government of Madagascar

Baseline: In March 2014 (start Y1) there was no legal entity (local committee/association) to manage the MPA and no-one had the ability to co-manage the MPA. No management plan existed.

Change: Temporary protection was granted for two years and is in the process of being renewed. A validated zoning plan has been created, a draft MPA management plan is nearly finalised, and the local management association - Vezo Miray Nosy Barren (VMNB) - has been elected and meets regularly (see Indicator 0.1 in logframe; Annex 1: 2014.11_Ministerial Order Temporary Protection MPA; Annex 2: 2016.11.06_PAG_DRAFT).

Problems encountered (anticipated or unanticipated): Changes in government and government structures have delayed the renewal process, which is still ongoing and required the need to re-build relationships and re-submit all documentation (see 3.2 Outcome section below for further details).

Evidence for change: The Barren Isles MPA now has a fully functioning association (Vezo Miray) (Indicator 1.2), compiled of 59 democratically elected community members. They now have legal status and are authorised to manage the Barren Isles MPA (Annex 3: 2017.03_VMNB association legalisation). A management plan for the MPA, including a zoning plan and a list of infractions to enforce, has been developed through ongoing consultations throughout the project period (Indicator 2.1). The zoning and management draft plan (Annex 2: 2016.11.06_PAG_DRAFT) are being finalised. The MPA received temporary protection in 2014 (Annex 1: 2014.11_Ministerial Order Temporary Protection MPA), and is awaiting renewal given delays due to Ministries changing areas of responsibility.

Output 2 A fisheries management plan is developed and implemented by the fishing communities in collaboration with the regional fisheries authorities (DRRHP)

Baseline: No fisheries management plan at start Y1.

Change: A Regional Fisheries Management Plan (PAP) has been developed and validated by the Ministry in 2016, through a Ministry Order Decree FMP (PAP) Melaky (Annex 4: Ministry Order FMP (PAP) Melaky).

Problems encountered (anticipated or unanticipated): Although no significant problems were encountered during the development of the PAP, aside from the expected delays with official validation, the scale of the PAP now presents considerable challenges for actual implementation. Key to these challenges is the lack of capacity within the Melaky region for implementation by the Ministère des Ressources Halieutiques et de la Pêche (Ministry of Fisheries), and the role that Blue Ventures can, or should, play. At present, it is likely the Barren Isles MPA, will be used as a means to test/pilot many of the management initiatives within the regional plan (eg. fishers registration cards,).

Evidence for change: A validated PAP now exists (Indicator 2.3), and discussions underway for implementation (Activity 2.4).

Output 3 A system of community-based monitoring, control and surveillance of illegal fishing activities in the Barren Isles MPA is developed with the local community and implemented in partnership with the CSP.

Baseline: No system existed, ad hoc reports and discussions with CSP on major issues/infractions.

Change: A first system for community-based monitoring exists via community logbooks, and a full MCS plan for the Barren Isles MPA is in development (Annex 5:2016.10.17-22_Workshop minutes_MCS programme outlining; Annex 6: 2016.10.22_Workshop report from consultant outlining programme.pdf; Annex 7: 2016.11.04_MCS Meeting minutes national validation (MCS programme validation). Possible decline in industrial fishing and sea cucumber extractive activities (Indicator 2).

Problems encountered (anticipated or unanticipated): The CSP representative in Maintirano must work practically single-handedly in his role for the whole Melaky region, and has no means of transport. Anecdotal reports suggests he is also pressured by his superior at the central government to overlook illegal sea cucumber SCUBA exploitation. Furthermore, the CSP representative does not believe that local regulations are necessary, arguing that the national law should be enough. He seems sceptical of community monitoring, control and surveillance. However, in the end, he agreed with the first design of the MCS programme for the BI MPA, and signed the workshop minutes (Annex 5: 2016.10.17-22_Workshop minutes_MCS programme outlining).

Evidence for change: A management committee and a dina committee exist that will be responsible for designing and updating the management measures, and for reinforcing the latter that are integrated in the dina law. Community members keep logbooks and communities have agreed what they want to enforce through the *Dina* (Annex 8: 2017.04-06_Validation list of infractions outcome_Malagasy) and are eager to have community surveillance in place (Indicator 0.2). A full MCS plan for the Barren Isles MPA is in development. Industrial fishing is now only permitted within an agreed corridor within the MPA, but in 2017 all industrial fishing has been temporarily banned in order to assess its impact, and make further recommendations (Annex 9: 2016.02.16-17_National validation report FMP (PAP).

Efforts have been made to minimize scuba diving of sea cucumbers. CSP were persuaded to intervene on one island, Nosy Mboro, where a team of scuba divers set up a dive camp and materials were confiscated (Annex 10: 2017.05.08_Engagement letter patron SCUBA divers). On a second occasion, CSP were asked to get divers to move out of the MPA. In both circumstances, effects were only short lived, with sea cucumber fishing activities resuming in a different location within the MPA. Potential corruption remains an underlying challenge to address this issue.

Output 4 Community-based monitoring of the key fisheries within the Barren Isles MPA is carried out, enabling reliable stock estimates and providing a basis for sustainable management and improvement of the fisheries.

Baseline: Community based fisheries monitoring piloted in 2 villages in Maintirano.

Change: Fisheries data are now regularly collected by community monitors (Activity 4.1), and using these data in a fisheries diagnostic means we now have a greater understanding of the key fisheries, which will inform community-led management measures whether permanent or temporary. Additionally, data from the profiling exercise can be used as a baseline for further assessment in the future.

Problems encountered (anticipated or unanticipated): On reflection, stock assessments were overambitious and probably not appropriate for measuring the outcome given the timeframe, and stage of the MPA when the grant started. Given the nature of the multi-gear and multi-species nature of the fisheries, data-deficient models for stock assessment considered by the consultant were deemed inappropriate or in other cases the data required did not exist/was insufficient.

Evidence for change: A network of 14 community data collectors have been trained and monitor the fisheries landings within the Barren Isles MPA (Activity 4.2). Expanded from two villages in Maintirano to include another coastal village where there is no trawling, and three islands to monitor different fisheries. A fisheries diagnostic using these data has shown six key

species for further management efforts and assessment (Activity 4.1 - 4.3, Annex 11: 2016.10.28_BI MPA fisheries profile).

3.2 Outcome

Outcome: The Barren Isles MPA empowers traditional fishers to secure and manage their fishing resources, leading to a decrease in overexploitation by industrial and itinerant fishing.

Overall this project achieved a significant amount of the Outcome. The BI MPA is still considered under temporary protection with an authorised local association as co-managers, (Annex 1: 2014.11_Ministerial Order Temporary Protection MPA; Annex 3: 2017.03_VMNB association legalisation) a regional fisheries management plan has been validated by the government (Annex 4: 2016.11.07_Ministerial Order FMP Melaky), industrial trawlers are not permitted within the MPA boundaries apart from a negotiated corridor - and in 2017 industrial boats have also been temporarily banned from this too (see 3.1. Outputs section above; Annex 9: 2016.02.16-17_National validation report FMP (PAP)). Therefore approximately 4000 fishers have gained more security and rights to manage 431,700 ha of the BI MPA. Since the grant ended, it is also worth noting that the Barren Isles are now also officially designated as a Ramsar site (https://rsis.ramsar.org/ris/2303).

More specific information by indicator is given below.

Indicator 0.1

Barren Isles MPA receives definitive protection status by The definitive creation process of the BI MPA is still in progress, as is the temporary protection status renewal. This is not foreseen to be long-term problem to achieving the final implementation of the MPA and the main delays are due to conflicts of leadership between the Secretariat of the State in charge of the sea and the Ministry of Environment (see Section 3.1, Output 1). Until they find a resolution on how to manage marine MPAs (in comparison to terrestrial protected area), the process will be delayed but our work preparing the communities will continue and we expect to have definitive status in 2019.

Y2, including a boundary that protects traditional fishing grounds from industrial fishing.

In Y2 and 3 the focus of activities was to validate the MPA management structure and support the creation of the official management committee *Vezo Miray Nosy Barren* (VNMB), including a monthly training program for committee members. Through working on these areas, the development of the MPA reached an important milestone for the community. Indeed, with seven people per village involved in MPA management and *Dina* (local legislation for the MPA) enforcement, buy-in to the management of marine resources by traditional fishers has been boosted. Through discussions on zoning and management plans for the BI MPA, community representatives have, and will continue to, gain more responsibilities and ownership over the MPA and marine resource management and will be well-prepared when the MPA receives definitive status.

Indicator 0.2

50% decrease in the incidence of industrial fishing and illegal scuba diving for sea cucumbers within the MPA from Y1 to Y3.

We did not fully achieve this indicator, and in hindsight we were not equipped to monitor this from Y1 to Y3. This is due to level of capacity and willingness (at this stage of the development) of the community to monitor such activities.

However, many activities have been completed to demonstrate a shift in industrial and illegal scuba diving within the BI MPA, but we can not confirm if there has a been a 50% decrease.

For example, industrial fishing vessels are no longer allowed to operate within the MPA and further negotiations with GAPCM in 2016 (Malagasy industrial fishing companies association) meant that trawlers will not operate in the "corridor" in the MPA (zone between Maintirano and

Nosy Marify) during the 2017 fishing season (Annex 9: 2016.02.16-17_National validation report FMP (PAP)). Additionally, a partnership with the CFIM (Centre de Fusion d'Information Maritime) has been developed to support reporting infractions to the national authorities (CFIM is attached to the Prime Minister's office).

However, illegal scuba diver crews are still present and active, although work was done to encourage greater involvement of CSP to tackle this issue (see further details in Outcome section of logframe and Annex 10: 2017.05.08_Engagement letter patron SCUBA divers). Active follow-up occurred on one occasion by committee representatives within the MPA with CSP, and resulted in a successful intervention mission late December 2015, when some equipment was seized. However, banning sea cucumber diving in the long-term will rely on the will of key governmental entities and means to enforce national law and act against illegal fishing.

Significant progress was made towards the community level monitoring, control and surveillance (MCS) programme and we have seen fishers becoming more empowered. The participatory development of a formal MCS program through public consultations in each MPA village, with the aim to help reduce illegal fishing activities, has identified which infractions and local laws communities want to enforce themselves or collaborate with the authorities on. These infractions will be included in the *dina*, as their reference for conducting future MCS activities.

We hope that the MCS programme will also have a greater impact on the illegal sea cucumber fishing.



Figure 2: Map showing the corridor between Maintirano and the MPA boundary, now included (horizontal yellow lines)

Indicator 0.3

Stock assessments of coral reef fisheries in all five participating villages show fisheries within the MPA are not overexploited and below maximum sustainable yield (MSY)

We have highlighted that this indicator (see logframe) was probably not appropriate given the timeframe of this grant and the stage of MPA implementation at the time of writing. We had also hoped an appropriate stock assessment method would be found but as the work progressed we focussed on other activities that we could implement with the community and current capacity.

Fisheries monitoring was established in two mainland villages (Ambalahonko, Ampasimandroro) in 2012, and this monitoring was extended to include three island communities (Nosy Lava, Nosy Marify and Nosy Maroantaly) and a further mainland village (Ampandikoara) in 2015, with some ad hoc monitoring carried out in Sara, Kimazymazy (Activity 4.2). These data collected were entered and checked to create a baseline database of fisheries landings from the region that include more than 15 combinations of gear usage and more than 90 targeted fish species. The

database was then used in conjunction with socio-economic and qualitative data to complete a fisheries profiling exercise which aims to understand the differences between the different

communities of fishers, and their catches (Annex 11: 2016.10.28_BI MPA fisheries profile).

Through consultation in 2016, communities identified 6 key species that they were interested in understanding and potentially managing. In addition to the broader fisheries profiling exercise further analyses were conducted on these highlighted species including looking at (where data allowed) trends in catches over time, and length frequency distributions identifying where catches were dominated by juvenile fish.

Results of this monitoring have been presented and compared with fishers' observations and impressions. The decline of all resources is generally acknowledged among fishing communities, but periods of good catch are still occurring for many species and further investigation is likely needed to identify the best management strategies to be implemented locally that will reap positive impacts for both fisheries and communities.

Fishers identify the high number of fishers and fishing gear as the main cause of the decline, and are aiming to mitigate this threat by regulating the immigration of migrant fishers as a measure (already integrated in the Fisheries Management Plan).

A participatory mapping and ecosystem health assessment was also completed around the islands. Sharing this information with communities facilitated discussions around ecosystembased approaches to management and the majority of communities have subsequently decided to implement permanent or temporary reserves (8 in total - Annex 12: Maps of reserves (Folder). These reserves are currently being zoned and mapped and will also be monitored according to a defined protocol to observe changes in both ecosystem health and fish populations.

3.3 Impact: achievement of positive impact on biodiversity and poverty alleviation

Impact statement from logframe: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources

The project has been strongly aligned with the Programme of Work on Marine and Coastal Biodiversity by promoting full participation of communities in the establishment and maintenance of the Barren Isles MPA in line with decision VII/28 on protected areas.

By working participatively with small-scale fishers to manage biodiversity with the goal of reducing poverty and protecting their preferential access rights, the project fulfills articles 7 and 8 of the basic principles of the elaborated programme of work on marine and coastal biodiversity.

The project has contributed to the conservation of biological diversity and the sustainable use of its components, two main objectives of the CBD, in particular Articles 6, 8, 10 and 11.

Examples of key contributions to each Article include:

- Development and validation of Regional Fisheries Management Plan for Melaky region (Article 6) (Indicator 2.1-2.3, Annex 4: 2016.11.07_Ministerial Order FMP (PAP) Melaky)
- Draft Barren Isles MPA management plan, local legislation drafted (Dina) and infractions listed that protect key habitats, species, and reduce destructive fishing practices (Article 6) (Indicator 0.1, Annex 2: 2016.11.06_PAG_DRAFT)
- Empowered 4,000 traditional fishers to manage the formal rights over their fishing grounds through local management association and local monitoring and surveillance programme (Article 8 & 10) (Activities 1.1 1.3 and 3.1 3.4, Annex 3: 2017.03_VMNB association legalisation).
- Protection through MPA establishment and official temporary protection for key high biodiversity area in Madagascar, included protected zones and protection of

endangered species (Article 8) (Annex 1: 2014.11_Ministerial Order Temporary Protection MPA; Annex 2: 2016.11.06_PAG_DRAFT)

- Removal of industrial trawling from MPA (Article 10) (Indicator 0.2, Annex 9: 2016.02.16-17_National validation report FMP (PAP)
- Focus on improvement of key fisheries resources, and periodic closures regimes to act as long-term incentives for wider natural resource management (Article 11) (Indicator 1.1.; Activities 1.1 and 4.3; Annex 12: Maps of reserves (Folder)).
- Responding to unmet health needs in the region to ensure that communities have access to information and services, and are therefore more able to support natural resource management in the long-term (Article 11) (see section 4.4.).

By reinforcing the effective management of marine resources through a community-managed MPA (Indicators 1.2 - 1.3, Annex 3: 2017.03_VMNB association legalisation) and taking practicable actions to rebuild fish populations and protect key habitats (Indicator 1, Annexe 13: 2016.11.07_Ministerial Order FMP Melaky; Annex 1: 2014.11_Ministerial Order Temporary Protection MPA), the project will help protect critical ecosystems and ensure local, poor communities are able to benefit sustainably from biodiversity; helping Madagascar achieve CBD Aichi Biodiversity Targets 6, 10, 11 and 14.

This project has also contributed to CITES and CMS through strengthening protection of endangered and migratory species, in particular the five species of marine turtle that can are found in Madagascar's waters (two species currently regularly recorded in the Barren Isles) through monitoring and protection of nesting females (Activity 4.2; Annex 14: Turtles, tracks and nests observed in Barren Isles). The ban on industrial trawling within the MPA will also benefit CITES and CMS species in the short and longer term.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

This project directly addressed SDG 14 - to conserve and sustainably use the oceans, seas and marine resources for sustainable development. The creation of the MPA and the communities' direct involvement and management of the MPA, and its resources, are an important milestone towards the overarching aims of the conservation of, and sustainable resource use in, the Barren Isles Archipelago. In particular, we are have undertaken activities to addressed the following: to end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices.

During the project significant achievements and milestones have been reached which contribute to this SDG, including: the development of the fisheries management plan, successful renegotiation of the use of a corridor outside the MPA (which has now been delineated as a sustainable use area, supporting the community to create an MCS programme to monitor and report illegal fishing activity), and by continuing to build relationships with the regional fisheries ministries and enforcement agencies to support the communities in their efforts to protect the MPA.

Specific targets that this project have worked towards include:

- to effectively regulate harvesting and end overfishing
 - Indicators 2.2 2.3; Annex 4: 2016.11.07_Ministerial Order FMP (PAP) Melaky; Annex 9: 2016.02.16-17_National validation report FMP (PAP)
- IUU fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible
 - Output 3; Annex 8: 2017.04-06_Validation list of infractions outcome_Malagasy; Annex 9: 2016.02.16-17_National validation report FMP (PAP); Annex 10: 2017.05.08_Engagement letter patron SCUBA divers)
- and to increase scientific knowledge, and develop research capacity in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries.

Output 4; Annex 11: 2016.10.28_BI MPA fisheries profile: Annex 15: Screenshots of shark form; Annex 16: Screenshot of database; Annex 14: Turtles, tracks and nests observed in Barren Isles)

In addition to Goal 14, since Madagascar's small-scale fisheries make a vital contribution to livelihoods, this work has also supported both Goal 1 – End poverty in all its forms everywhere – and Goal 2 – End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

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

The project's outcomes have contributed to all three main objectives of the CBD, in particular Articles 6, 8, 10 and 11. Section 3.3 has highlighted details.

By establishing the largest MPA in Madagascar (and the largest community-managed MPA in the Indian Ocean), protecting critical marine ecosystems, including some of the largest and healthiest coral reefs and associated habitats in the Mozambique Channel region, the project has made the largest contribution of any protected area in Madagascar towards CBD Aichi target 11; to protect at least 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, by 2020. This goal was reiterated by the President of Madagascar in his Sydney Promise in November 2014, when he announced his intention to triple Madagascar's marine protected area coverage by 2020.

The project also contributed to the Bonn Convention objectives of the CMS through its turtle nest-monitoring component, in which community-based monitors track and protect marine turtle nests on the Barren Isles. These nests are highly susceptible to poaching by local fishers, and the project has had a demonstrable success in protecting these nests, particularly last year as the new rotation system has reduced poaching instances.

The project supported CITES by reducing illegal fishing of sea cucumbers, which are listed on the 2014 CITES appendix of species susceptible to overexploitation. The communities of the Barren Isles MPA included restrictions on scuba diving for sea cucumbers in their communitybased dina law. The practice is widely recognized as unsustainable and it is illegal in national laws. The MCS programme is still in development and will be a means of providing proof of illegal scuba diving for sea cucumbers. This has already resulted in an intervention mission in December 2015, by BV and the CSP and DREEF made the sea cucumber diving operation sign a letter of agreement stating that the patron agrees not to bring SCUBA materials in the BI MPA (Annex 10: 2017.05.08_Engagement letter patron SCUBA divers). Eventually we hope that the practice will cease and illegal exports of these creatures to China will be reduced. CITES is supported through the community-led monitoring of marine turtle nesting, which has seen poaching reduced on islands where monitors are based (Annex 17: Humber et al. 2016).

4.3 **Project support to poverty alleviation**

Contribution to improved human development and wellbeing:

To date only a baseline social survey has been tested, and will need to be repeated to fully assess the impact of the Barren Isles MPA.

However, by establishing management measures within the MPA, community management and enforcement committees such as the Vezo Miray and the MCS team, communities have been able to participate in the decision-making process regarding the conservation of biodiversity and sustainable management of fish stocks, in these areas, allowing traditional fishers to continue to practice their customary trade. Now that the fishers have elected an MPA management committee and the VMNB has been established, local communities have a platform where fishers can work directly with government authorities and communities have been empowered to take ownership over their own resources. Therefore the first step has been taken to secure local livelihoods, and put in place management measure that will increase food security and human wellbeing.

Who and how many received benefits as a result of this work:

As this work is still ongoing we do not currently have the final information. The pilot social survey that was conducted in October 2014 surveyed 197 households and 854 people from 12 villages to gather a first baseline to assess impact and benefits in the longer term (see Section 4.5 for further information).

However, the Barren Isles MPA protects 431,700ha of fishing grounds from industrial and illegal fishing activities, mining activities on islands and through the management association has given community fishers the rights to manage their traditional fishing grounds.

The Barren Isles archipelago is one of the last productive small-scale traditional fisheries on the west coast of Madagascar, and home to one of the largest intact coral reef ecosystems in the Mozambique Channel. Over 4,000 traditional fishers depend on its resources for their livelihoods, and hundreds more migrate from the Southern regions of Menabe and Atsimo-Andrefana to work around these islands, driven by the collapse of their local marine ecosystems.

Without an existing legal mechanism to protect the rights of traditional fishers, pioneering a new model of a rights-based, community-managed MPA has been critically important method to empower poor coastal communities to manage marine resources and improve fisheries sustainability. Transferring formal management rights to protect this ecosystem is fundamental to conserving biodiversity, strengthening food security, and ensuring community resilience against poverty.

Furthermore, in consultation with communities a regional fisheries management plan has been established that reinforces the BI MPA (Annex 4: 2016.11.07_Ministerial Order FMP Melaky). This fisheries management plan has been legalised and aims to improve fishers livelihoods and in the long-term alleviate poverty by: conserving marine and coastal environments to improve resource resilience; developing sustainable marine resource exploitation to enhance living conditions of coastal and fishing communities, and ensure a fairer wealth redistribution by improving the region's share of the national economy's profits from the region's fisheries.

4.4 Gender equality

Women fishers have traditionally taken a supporting role to male fishers and in Maintirano, they are principally responsible for sorting their husbands' catches. However, women also make up the vast majority of fish collectors on the beach and in town. Their knowledge of fish markets is important for management decisions, and women are an important asset for fisheries enforcement, as they witness most fishing activities while their husbands are out. By including them in local management and dina committees, which are comprised of 59 representatives (of which 6 are women), women are actively involved in fisheries management enforcement and monitoring.

There are no direct gender equality activities in this project, but equity is being addressed directly by the team through other BV projects in the Barren Isles. Blue Ventures is collaborating with PSI & JSI/MAHEFA in order to integrate community-based family planning, integrated case management of common childhood illnesses, and other health services with local fisheries management initiatives. JSI/MAHEFA has trained community health agents, PSI provides the health products, and Blue Ventures supports the community health agents and local environmental initiatives, while facilitating integrated community outreach addressing PHE (Population, Health and Environment) topics. This project has given women access to reproductive health care and allows them to choose if, and when, they have children. In doing so, seven community health workers have provided 190 packets of pills and 4,9343 Depo-Provera injections from March 2016 to March 2017. This has contributed to 1,246 couple-years

protection. In addition, Blue Ventures has partnered with the Ministry of Health to conduct two vaccine campaigns on the Barren Isles, ensuring that children and pregnant women are vaccinated. This not only contributes to gender equality by giving women the choice and control over their reproductive health, but as women are healthier and start to choose to have smaller families they can choose to become more engaged in natural resource management, including ecological monitoring activities, and the majority of the data collectors in this project are currently women.

4.5 **Programme indicators**

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

Yes, through development of two structures: the Dina committee which is integrated into the Barren Isles MPA committee (VMNB) formed of 59 representatives, responsible for conducting public judgement and reinforcing the dina (local law); and the second structure - the management framework of the Regional Fisheries Management plan, which will include representatives from the BI MPA.

• Were any management plans for biodiversity developed?

Two management plan for biodiversity have been developed:

Barren Isles MPA management plan (Annex 2: 2016.11.06_PAG_DRAFT). This builds in plans for biodiversity through zoning of the MPA, including permanent protected areas, and infractions related to destructive fishing gears.

Melaky Regional Fisheries Management plan (Annex 18: 2016.03_FMP (PAP) Report Melaky). This builds in plans for biodiversity through management of industrial fishing within the region and supporting long-term fisheries sustainability measures.

• Were these formally accepted?

Melaky Regional Fisheries Management plan was validated by Government in 2016 (Annex 18: 2016.03_FMP (PAP) Report Melaky.) as Ministerial Decree 23283 (Annex 4:

2016.11.07_Ministerial Order FMP (PAP) Melaky)

Barren Isles MPA management plan has been drafted (Annex 2: 2016.11.06_PAG_DRAFT) and is being finalised. The MPA received temporary protection in 2014 (Annex 1: 2014.11_Ministerial Order Temporary Protection MPA), and is awaiting renewal given delays due to Ministries changing areas of responsibility.

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

The development of both plans was highly participatory. Approximately 76 (19 for the Regional Fisheries Management Plan PAP; 60 for the MPA management plan) community consultations were held to design both, with estimated 1,500 community members consulted. Six women are in the VMNB.

• Were there any positive gains in household (HH) income as a result of this project?

We are unable to report on any change at this point due to the early stage development of the MPA but we do have an estimated baseline income of \$1.77 per person per day at present. We will use this baseline to measure income change in the next few years.

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

At this point, only a first baseline has been collected.

4.6 Transfer of knowledge

Knowledge has been transferred through:

- Nationally through the MIHARI network of Locally Managed Marine Areas members of the Barrens MPA have attended 3 meetings for community members to exchange lessons learned (September 2015 Morondava, October 2015 Mananara, July 2016 Belo Sur Mer) and another community workshop (regional forum) will be held by MIHARI in Maintirano in October/November 2017 and around 40-50 community members from Maintirano/Barren Isles are expected to participate. This will give the community members chance to learn from more than one community at the same time and share their experiences.
- Engaging with partners on the issue of resource extraction, particularly WWF who are present in the region, to advocate as a strong civil society voice, representing the interests of the community groups.
- Print media a number of reports and publications have been produced from work within the Barren Isles MPA and shared with partners and Blue Ventures' network. See Annex 5 Publications, of this report for a comprehensive list.
- Open communication channels with organisations based in Tana constantly updating on progress WCS PAP conversations adapted their PAP plan which was implemented on a smaller scale (same consultant) now two-way exchange. Formal event and press releases around the PAP negotiations and the launch event when it was validated.
- Locally Managed Marine Area (LMMA) toolkit with our lessons learnt and how to set-up an LMMA available to partners.

Did the project result in any formal qualifications?

The project has not resulted in any formal qualifications. However, the current Site Leader (Cecile Fattebert, Swiss nationality) has been promoted into this role from her previous role on the project as Policy Officer. She also attended training on Managing and Leading Conservation Projects, run by Durrell at the end of 2016, allowing her to develop her skills in this role and share these with the wider team.

Jean Berthu (JB), Fisheries project assistant went to La Reunion for training on identifying Sharks and Rays in January 2016 run by Smartfish.

Rindra, the Fisheries Projects Coordinator, went to a Smartfish workshop in Kenya in Feb 2017 which presented the results from 6 years of Smartfish research from many countries.

4.7 Capacity building

Additionally, new (local) project staff have been hired on the project or developed into new roles: Jeanne Admin and Logistics Assistant (2016), Rindra Rasoloniriana went from consultant to full time Fisheries Projects Coordinator (2016), Abdou Bin Julien Felix was hired as Socio Organiser (2015), Toalidy was hired as Safidy (health) Support Technician (in March 2016). Jean-Berthieu Nomenjanahary changed roles from Socio Organiser to Fisheries Project Assistant.

Ny Aina Andrianarivelo, who works at a national level, with a strong support role to the Barren Islands project, was promoted from Policy Officer to Policy & Partnerships manager. Key to this progression was a series of targeted training opportunities:

- Training on negotiation skills for protected areas in Kenya, offered by the IUCN network (BIOPAMA)
- The Kinship Fellows programme in June 2015 a month-long intensive training course in applying market based approaches to conservation, held in Washington State, USA.
- Earthskills network training, a year-long mentoring programme organised by Earthwatch which started with an in-person intensive professional training for two weeks in South

Africa, followed by regular mentoring sessions with the business leader.

- Attending numerous conferences representing Blue Ventures overseas including in Tanzania, Abu Dhabi, Germany

As a consequence he has played the lead role in liaison and negotiation with government ministries, and in particular has taken a leadership role in guiding the BI field team on their strategies to fulfil national requirements and advocate for the project and the LMMA. He is now part of a number of panels and bodies representing BV with national stakeholders, including government.

Please comment on which project achievements are most likely to endure? Has there been any impact on policy in the host country(ies) at regional/national/transboundary level?

All project achievements will endure as we continuing to work in the Barren Isles to support the long-term establishing of a well functioning community-managed MPA, as well as the wider Melaky Fisheries Management Plan. Blue Ventures is committed to supporting the community to implement the Barren Isles MPA management plan, build the capacity of the local management association, and finalise all official administration required by the government.

The Melaky Fisheries Management Plan was the first of its kind in Madagascar, as it covers an entire administrative region, where the previous example was for a smaller area. We worked closely with the fisheries ministry to propose a process and format that can be adapted to other regions in the future. While the FMP has only recently been signed into law we have seen signs that this will have an impact on the Melaky region and will hopefully become a model nationally. For example, the negotiation process involving all stakeholders led to the first agreement between shrimp trawling lobby and local traditional fishers to zone trawling areas, including trawling lobby agreeing to cede a productive zone (Annex 19.1: Shrimp trawling blog)

What will happen to project staff and resources now the project funding has ceased?

We have secured further funding for this project in order for us to deliver the next phase of activities in the Barren Isles. Post project funding has been successful from Darwin Initiative, as well as funding from the Critical Ecosystem Partnership Fund. There is also an opportunity with the World Bank funded project SWIOFISH to provide sufficient resources to the key partners and stakeholders to implement the Regional Fisheries Management Plan, which is beyond the scope of Blue Ventures' current level of funding or capacity.

5 Lessons learned

What key lessons have been learnt as a result of this project? (including administrative, management, technical, M&E).

Positive lessons learned:

- The power of coordinated civil society advocacy: through building a coalition, including local stakeholders (fishers) and regional actors, national NGOs and influential national civil society organisations, we were able to develop a coordinated strategy to address the threat of phosphorite extraction on the Barren Isles. While this issue is still not categorically resolved, we saw the power of raising community grievances at a national level with the relevant government bodies, as well as building a group that can rapidly respond to threats and make informed and powerful strategies.
- The LMMA model is a viable one, even in low capacity and low resource settings: despite low education levels of fishers, and the challenges in finding viable economic incentives in this region, community leaders remain engaged in the LMMA, and fishers see the value in managing their resources over long time scales.

- Role of government: while we struggled with lengthy protected area processes, and the low capacity of the regional government bodies in Melaky, we saw a huge step-up in progress once we embarked on the Fisheries Management Plan with the central fisheries minister, with BV as a technical and financial partner in the process. Ministry staff began to see BV as an ally in delivering a key result according to their fisheries policy and new legal code, and played a strong role bringing together divergent actors into a negotiation process, and enabling us to have a wider impact on policy.
- Training is key to building a cohesive management body: faced with a very disperse group of communities over a very large area, and very low levels of formal education in the area, we saw that regular meetings, formal (in the regional capital) and in the field, were key to reinforcing a management group, and that including regular training on core skills as part of this process is essential.
- Value of peer-to-peer dialogue in resolving conflicts: in remote fishing communities rumours can spread fast, creating conflicts and slowing progress on projects - we were able to resolve a conflict that threatened to undermine a core element of the LMMA, by bringing a community leader from another LMMA to listen to members of the community and speak about his experiences.
- Getting the balance right for adaptive management decisions based on data: in a remote and data-poor region, you will never have complete scientific information on which to make management decisions. Setting up a community-based monitoring programme enabled us to complete basic diagnostics to inform community decision making on siting of closures within the protected areas, which can be reviewed and improved according to monitoring results.
- The role of local project managers: our project includes many disciplines and works across different sectors in responding to community needs. We found that our vision, strategy and team management became clearer when we moved to a site-based management model, with our site manager overseeing the multidisciplinary team, supported by technical expertise within our country programme.
- Using Vezo Miray representatives to help run dissemination sessions with communities was very successful and a good way to give them greater ownership and authority for the MPA governance and management, and has given them a better understanding of their role in the long-term.
- Health model can be adapted to different circumstances value as an engagement tool to accelerate community engagement and buy-in. Launching the health programme activities. This will not only start to address gender equity issues and provide an integrated PHE approach to resource management but it also provided a tangible benefit to communities from our work and helped us to deliver more messages regarding the MPA and its benefits.

The following activities did not work so well but have provided valuable lessons for the future of the project:

- The issue of turtle hunting is still a major concern in the area, and our programme of monitoring has at times caused tension and resentment among certain communities. While the nest monitors' presence on the islands appears to prevent poaching while they are there in person, we can not be certain that hunting and trade has declined overall. Given historic tensions with environmental projects focusing on turtles, we made a conscious decision not to lead with turtle awareness raising in community outreach at the outset of this project, and instead focused on building trust in order to set up the LMMA management systems. However, we feel that now this is moving forward, sensitive awareness raising lead by the nest monitors could be coupled with the monitoring activities to begin to address the threat more directly.
- The illegal collection of sea cucumbers by teams using SCUBA gear has continued to be a major challenge and has threatened to undermine our work on many occasions. The groups organising this activity have many links in the region, and we have struggled to mobilise the State fisheries surveillance unit effectively against this threat. At the same time, community surveillance alone is not strong enough faced with these

organised groups. Our approach evolved over the years and we have decided to form a mixed body made up of the community patrol group and the state authorities as this has been shown in other regions to be the best way of mobilising the relevant entities and achieving more transparency thereby minimising chances of corruption.

It is extremely challenging to conduct effective consultation over a massive area with a changing dynamic of fishing and migrant populations. In later years of the project, we discovered very low awareness amongst fishers about decisions on zoning that had been made through thorough consultation with communities in the early days of the project, and since written into protected area plans.

If you had to do it again, what would you do differently?

- Implement a systematic training programme for community leaders and potential leaders from the outset, focusing on essential skills such as numeracy and literacy, before moving onto more complex association management processes and natural resource management concepts. This would help build confidence and trust, and lay the groundwork for real participation in the formal processes for running an LMMA, enabling quicker progress towards autonomy.
- Create the management committee of the association at the beginning of the project, and later add the dina committee. It would have facilitated information and awareness raising, public consultations and decision-making processes from the beginning, concerning both the MPA development and fisheries management measures. After the association VMNB was created, we realized that numerous fishers still didn't know about the MPA and what it meant for them. We started then to organize focus group discussions with every family clan, in each village, so as to make sure everybody in the communities can access to information, ask questions, share ideas, doubts and suggestions.
- Develop creative ways to document decision making and regularly revisit these within communities. Participatory video could be a useful medium to increase trust in the consultation processes, both to have a record of decisions that is more accessible to fishers with little formal education, and to record how the decisions were made, so that future leaders might have more trust in the process.

What recommendations would you make to others doing similar projects?

- Do not underestimate the length of time for administrative paperwork to be processed by the government (e.g. renewal of protected area temporary status).

- For project success and sustainability beyond the life of the project, a community-led process from the outset is key to achieving community buy-in and ownership.

It is essential that projects facilitators (eg. community support agents, socio-organisors) work with their heart, are honest and true, participate naturally in the communities' events (funerals and other traditional family gatherings). It is best if they are from the same area, and speak the same dialect. They should inspire trust in communities, be very patient and able to explain in an accessible manner and repeat information as much as needed

5.1 Monitoring and evaluation

Major changes to project design and approved changes to logframe

There were no major changes to project design. However, a small change to indicators to measure Output 3 in the logframe was requested, and a slight adjustment to activities under Output 4 in 2015. These adjustments were agreed with LTS.

Was the M&E system practical and helpful to provide useful feedback to partners and stakeholders?

The M&E system for this project was quite practical and straightforward both during development of the project and in some cases useful for tracking progress against targets. However, it is clear that in some cases the objectives and indicators selected at the start of the project (e.g. stock assessments) were actually inappropriate and were beyond the scope of this project. It has certainly been a useful lesson for the organisation in how we develop logframes and project plans, and we are currently using this as we develop our future projects and move forwards with this one.

The fisheries data have been used extensively throughout this project to provide feedback to communities and other stakeholders in order to gather further feedback on what the data seems to be showing, and for development of the management plans, local legislation, and infractions.

During the project period, has there been an internal or external evaluation of the work or are there any plans for this?

There has not been any external evaluation of the work to date and we feel that this is unlikely to be necessary for the next few years, as ecological responses can take up to 10 years to demonstrate any significant effects. Until the results of conservation and fisheries management interventions have had time to embed, we will be consistently reviewing the work that we are are doing internally and plan to complete further impact assessments with communities in the next few years focusing on mixed methods approaches to qualify some of the social and economic changes that might have come about due to the project implementation.

The majority of the work conducted within this project timeframe has ensured the development of strong baseline datasets against which future assessments may be compared

A socio-economic census survey was undertaken in October 2014, designed to provide the baseline information about fishers' perceptions of marine resources, fishing techniques, knowledge of fisheries management, the general economic situation, and inter and intra-village social cohesion. A representative sample of fishers was surveyed in four coastal villages and on four islands. Some initial analyses of the socio-economic data have been made and have been used to develop and adapt the projects and community engagement projects. Further analyses are being completed and will form part of the fisheries analysis profile providing the social and economic context of the fisheries being assessed.

In addition to socio-economic monitoring, community monitors collected data on fish landings, turtle nesting and ecological and habitat data throughout the project. These data were analysed and disseminated back to communities in quarterly outreach sessions (Activity 4.4). These data, in addition to qualitative data collected from communities have been used to inform discussions and ultimately community decisions around resource management, resulting in the participatory zoning plan which is being developed with communities. We are already seeing that communities are engaging in the development of both temporary and permanent closures as key management strategies.

5.2 Actions taken in response to annual report reviews

Feedback from HY reports and end Y1 report were all responded to as requested.

The end of year 2 report review raised some larger issues in relation to whether some of the output and outcome-level indicators were achievable within the timeframe, such as feasibility of a the stock assessment and reducing IUU by 50%. These were discussed with Eilidh at LTS and it was agreed that the project should focus on areas that were more achievable in the time remaining within the project (eg. the PAP, PAG and MCS system), and at this point decided wasn't feasible (or necessary for the current priorities with the community) to do stock assessments.

The renewal in temporary protection was raised as a particular concern, and some the current situation, and what this meant in practice on the ground was also discussed with LTS. Delays due to Ministry changeover have meant the renewal of the temporary protected areas status

has not yet happened, but this has not had an impact to the team or implementation at sitelevel; activities carried on, communities maintained enthusiasm and work continues with the national and regional Ministries in practice. We are still waiting for the administrative processes to renew the temporary protection officially and now expect it in 2019.

There were also some concerns raised about industrial fishers being able to fish in the corridor between the coast and the MPA - this has now been resolved and industrial fishers are no longer able to fish in this corridor.

Reviews were not discussed with partners as it was not relevant for the partnership.

6 Darwin identity

This project has always referenced the Darwin Initiative when publicising major project accomplishments. The Darwin Initiative was mentioned in a press release on the MPA creation in Y1. The logo has been displayed on factsheets detailing the profile of the Barren Isles habitats and communities, the final fisheries management plan and on the Vezo Miray calendar in Y2.

The Darwin Initiative is listed on our <u>partner's page</u> and acknowledged in all <u>blogs</u> (Annexes 19.1-19.4).

On social media, Blue Ventures regularly tweets updates on the status of the Barren Isles project and includes the Darwin twitter handle, showcasing the project's day-to-day work and the island's incredible biodiversity. The Blue Ventures' twitter account has over 4,270 followers, and is a primary communication tool with the public.

The Darwin goals have been discussed with project partners DREEF and DRRHP, specifically at a workshop in Y1. Additionally, this foreign investment was flagged in the advocacy efforts with the Malagasy government around the threat of phosphorite extraction in the Barren Isles (Annex 20: Barren Isles Briefing doc). At the request of the fisheries minister information in project financing was provided to present to the Madagascar government's council of ministers. Blue Ventures' funding from Darwin has also been discussed with the UK Ambassador at regular one to one meetings updating him on our progress.

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)			-1%	n/a
Consultancy costs			3%	n/a
Overhead Costs			-9%	n/a
Travel and subsistence			0%	n/a
Operating Costs			5%	n/a
Capital items (see below)			-22%	Budget included Smartphones but only one purchased for the project. Overall budget line equates to 1.6% of annual grant.
Others (see below)			0%	
TOTAL	82,727.00	82,674.48		

Staff employed	Cost
(Name and position)	(£)

TOTAL	36,422.34
Local Staff engaged as needed (Boat drivers, guardian etc)	
Jean Berthieu Nomenjanahary, Community Organiser	
Rindra Rasolonirina, Fisheries Coordinator	
Xi Chen, Finance Director	
Fran Humber, Conservation Director	
Charlotte Gough, Monitoring and Evaluation Coordinator	
Kevin Chambon, Conservation Coordinator	
Abdou Bin Julien Felix, Barren Isles Community Liaison	
Cecile Fattebert, Barren Isles Project Coordinator	

Capital items – description	Capital items – cost (£)
Fire Extinguisher	
First aid kit	
Laptop computers	
Motorized sailing boat costs (Pirogue)	
Smartphones for ICT MCS (plus solar chargers)	
TOTAL	1,027.86

	Other items – description	Other items – cost (£)
n/a		
TOTAL		0

7.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
GEF Dugong and Seagrass Project (Grant period 2015-2018) Supporting some of the same activities, but also additional activities to this project	
MacArthur Foundation (Grant period 2014-2015)	
TOTAL	£129,400
Source of funding for additional work after project lifetime	Total (£)
Critical Ecosystem Partnership Fund (Grant period 2016-2019)	
Darwin Post Project Funding (Grant period 2017-2019)	
TOTAL	£252,159

7.3 Value for Money

Overall cost

At over 4,300 km² the Barren Isles is the largest community-managed MPA legally recognised

by national government in the Indian Ocean. With an overall project cost of £251,855 over three years, the cost per km² per year equates to £19.45. This compares very favourably to other MPAs worldwide. Evidence from a global study (Balmford et al, 2004) suggests that median cost per km² for MPAs is around \$2,698 per year. Adjusting for inflation and converting to sterling gives a median global MPA cost of £2,464 per year, 127 times higher than our figures.

MPAs like the Barren Isles also provide vital seafood and protein for local communities and so have a socio-economic dimension as well as a biological one. In the Barren Isles, around 4,000 fishers depend on the resources of the MPA for food and income. This equates to a cost per beneficiary per year of £21. Unfortunately, and to the best of our knowledge, no study has ever looked at cost per beneficiary for an MPA. All too often, MPAs are seen as being about the fish and not the people who depend upon them for food and income, so cost per km² remains the favoured cost metric.

It's for this reason that many MPAs fail, existing as paper parks without any real protection. The two global research projects that have looked at this found that only 16% of MPA managers feel that they have sufficient funding for conservation, that 79% of MPAs do not meet even half of the thresholds for adequate management and that 91% do not have adequate staffing.

By focussing on the needs of nearby communities and devolving decision making and management to the local level, LMMAs like the Barren Isles overcome many of these shortcomings, creating sustainable marine management, and doing so with greater cost effectiveness (as demonstrated above) than traditional "top-down" initiatives. However, impacts need to be regularly assessed to ensure a continued flow of benefits over the long term.

Community-led initiatives/methods

Fisheries management undertaken by the project have been and will continue to be largely implemented by the target communities themselves using a traditional system of governance. Community members themselves have undertaken many of the project's activities. Such participatory coastal management represents a proven low cost strategy for implementing decentralised fisheries management at scale.

Equipment purchases value

Blue Ventures has a procurement policy in place for equipment purchases, whether funded through restricted or unrestricted funds. Purchase orders are required and these are monitored by the Finance and Logistics team. Where required quotations should be obtained to ensure value for money, this can be assessed on a number of factors and not necessarily the cheapest quote but also quality and availability.

The purchase of the boat was made in line with our procurement policy, extract below, to ensure value for money.

"Three competitive quotes must be obtained for all purchases between £10,000 and £20,000. If in any one year, the total expenditure with an existing supplier falls within this range, competitive quotes will be required from at least two other suppliers. If for any reason alternative quotations have not been requested or cannot be obtained, the reason for non-compliance should be clearly documented and approved by the Finance Director."

This process was undertaken for this boat purchase on the Darwin grant and has been reviewed by the Finance Director, The expenditure was also selected as part of the grant audit who found no issues with the evidence provided to support the transaction.

In kind

The project strongly involves both local and national government authorities, including significant support provided in-kind. Additional in-kind contributions were provided by Blue

Ventures and our project partners over the project period. In-kind contributions include staff time, office use, meeting spaces and boat/car use. For example, Ministries providing meeting spaces for the fisheries management plan workshops in the capital.

BV has also been to leverage the investment made by this project to carry out other activities, such community health. Despite a small pot of funding to start community health work, the team in place were able to start feasibility assessments and pilot work. Since then, as a result of this work, we have been able to attract further funders to support the community health work in these sites.

Annex 1 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
Impact: Effective contribution in support in Endangered Species (CITES), and biodiversity but constrained in resource	ort of the implementation of the objective the Convention on the Conservation of I es.	es of the Convention on Biological Diver Migratory Species (CMS), as well as rel	sity (CBD), the Convention on Trade ated targets set by countries rich in
Outcome: The Barren Isles MPA empowers traditional fishers to secure and manage their fishing resources, leading to a decrease in overexploitation by industrial and	(1) Barren Isles MPA receives definitive protection status by Y2, including a boundary that protects traditional fishing grounds from industrial fishing.		
itinerant fishing.	(2) 50% decrease in the incidence of industrial fishing and illegal scuba diving for sea cucumbers within the MPA from Y1 to Y3		
	(3) Stock assessments of coral reef fisheries in all five participating villages show fisheries within the MPA are not overexploited and below maximum sustainable yield (MSY)		
Outputs: 1. The proposed Barren Isles MPA, with a zoning plan which protects traditional fishing grounds, is gazetted as a protected area by the government of Madagascar	1.1 Stakeholder agreement on zoning plan for Barren Isles MPA by end Y1	 1.1 Government decree and map showing the gazetted MPA boundary; 1.2 Meeting minutes from 	Sufficient political will exists for the creation of the Barren Isles MPA and development of a fisheries management plan
	stakeholders groups in management committee with >90% attendance by nominated representatives	consultations and validation workshops	Through using the formal process to gazette the MPA, local fishers are able to negotiate a MPA boundary
	1.3 80% of villages elected representatives to fishing association and management committee by Y3.		against industrial fishing

Project summary	Measurable Indicators	Means of verification	Important Assumptions
2. A fisheries management plan is developed and implemented by the fishing communities in collaboration with the regional fisheries authorities (DRRHP)	 2.1 Stakeholder consultations show approval for fisheries management plan by end Y1 2.2. Key fisheries and habitats covering at >80% of protected area envelope are included in management plan draft 2.3 Fisheries management plan is approved in collaboration with DRRHP by Y2 and ratified by Y3 	2.1 Fisheries management plan document2.2 Meeting minutes from consultations and validation workshops.	With the support of CSP (the Malagasy government agency for the enforcement of fishing laws) the community is able to enforce an industrial fishing ban within the MPA and decrease illegal scuba diving for sea cucumbers
3 . A system of community-based monitoring, control and surveillance of illegal fishing activities in the Barren Isles MPA is developed with the local community and in partnership with the CSP	 3.1. Number of community members trained in Dina enforcement for infractions. 3.2. Increase from 0 to 50% of Dina infractions followed up by community association. 3.3. 3/4 participating communities filing monthly reports on industrial and illegal fishing activity within the MPA limits by Y3. 3.4. CSP effectively provides support/responds to reports of illegal fishing by community by Y3. 	3.1. Reports of the community surveillance committee3.2. CSP data showing the movements of industrial vessels based on satellite monitoring	Local fishing stakeholders are able to agree on an effective fisheries management plan Sufficient political will exists for the creation of the Barren Isles MPA and development of a fisheries management plan
4 . Community-based monitoring of the key fisheries within the Barren Isles MPA is carried out, enabling reliable stock estimates and providing a basis for sustainable management and improvement of the fisheries	 4.1. Stock assessments of coral reef fisheries in all five participating villages show fisheries within the MPA are not overexploited and below maximum sustainable yield (MSY) 4.2. 5 MPA communities involved in weekly participatory fisheries monitoring and contributing data to 	4.1. Analyses of catch data of key fisheries using Spawning Potential Ratios (SPR) based stock assessments	Catch data collected is sufficient to assess the sustainability of key fisheries using Parfish and other tools for data-deficient fisheries stock assessments

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	quarterly resource status dashboard		
	4.3. Workshop on monitoring and stock assessment results held with stakeholders by Y3		
	4.4. Fisheries management plan is updated annually to include findings and recommendations of stock assessments		
Activities (each activity is numbered a	according to the output that it will contrib	oute towards, for example 1.1, 1.2 and	1.3 are contributing to Output 1)
Activity 1.1 Consultation of local and m Activity 1.2 Community exchange visit Activity 1.3 Workshop with all MPA sta Activity 1.4 Follow-up community cons Activity 1.5 Creation of MPA managem Activity 1.6 Training and work planning Activity 1.7 Assessment of legal mech recommendations Activity 2.1. Consult with Ministry of Fi Activity 2.2. Conduct stakeholder cons Activity 2.3. Hold validation workshops Activity 2.4. Develop implementation p	nigrant fishing communities for manager (build fishing community support for ma akeholders to determine management pl sultations and final management plan va nent committee g sessions with newly formed MPA mana anisms to secure fishing rights for comm sheries at national and regional levels to sultations solan with DRRHP and Barren Isles MPA	ment plan development anagement) lan, zoning and management associatio lidation workshop agement committee nunities and enable rights-based manage o develop fisheries management plan te management committee	gement, lessons learned and policy erms of reference
Activity 3.1. Liaise with regional authorities, CSP and other stakeholders to develop plan for improved community-based MCS			
Activity 3.2. Conduct regular trainings in Dira enforcement and infraction management with continuity Activity 3.3. Support community in following up on any infractions (Dina & writing up illegal fishing activity)			
Activity 3.4. Develop process for transferring reports by community members on illegal fishing from industrial and sea cucumber vessels to CSP			
Activity 4.1. Participatory fisheries monitoring established in 5 villages			
Activity 4.3. Zoning plan for MPA established with community and plan developed and implemented for monitoring impact on fisheries and habitats			
Activity 4.4. Stock assessments on priority fisheries carried out			
Activity 4.5. Disseminate monitoring re	esults to communities and stakeholders	(presentations, resource status dashboa	ard, etc.)
Activity 4.6. Incorporate results of fishe	eries monitoring into MPA and fisheries	management planning	
	2	24	

Project summary	Measurable Indicators	Progress and Achievements
Impact: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.		The project has contributed to the conservation of biological diversity and the sustainable use of its components, two main objectives of the CBD, in particular Articles 6, 8, 10 and 11 (Please see Section 3 for further information).
		By reinforcing the effective management of marine resources through a community-managed MPA and taking practicable actions to rebuild fish populations and protect key habitats, the project will help protect critical ecosystems and ensure local, poor communities are able to benefit sustainably from biodiversity; helping Madagascar achieve CBD Aichi Biodiversity Targets 6, 10, 11 and 14.
		The project supported CITES by reducing illegal fishing of sea cucumbers, which are listed on the 2014 CITES appendix of species susceptible to overexploitation. The communities of the Barren Isles MPA included restrictions on scuba diving for sea cucumbers in their community-based dina law.
Outcome The Barren Isles MPA empowers traditional fishers to secure and	1. Barren Isles MPA receives definitive protection status by Y2, including a boundary that protects	0.1. Temporary protection for BI MPA was granted in 2014 (Annex 1: 2014.11_Ministerial Order Temporary Protection MPA) and is currently in the process of renewal for a further 2 years.
 traditional fishers to secure and manage their fishing resources, leading to a decrease in overexploitation by industrial and itinerant fishing. 2. 50% decrease in the incidence of industrial fishing and illegal scuba diving for sea cucumbers within the MPA from Y1 to Y3 3. Stock assessments of coral reef fisheries in all five participating villages show fisheries within the 	The Melaky Regional Fisheries Management Plan was validated by government in 2016 (Annex 4: 2016.11.07_Ministerial Order FMP Melaky), which provides further protection to the RLMPA	
	0.2. We are not able to report on any percentage change because the official Monitoring, Control and Surveillance system has not been finalised during this grant period.	
	3. Stock assessments of coral reef fisheries in all five participating villages show fisheries within the	However, during the project period we have made progress towards reducing industrial fishing and illegal scuba diving:
	MPA are not overexploited and below maximum sustainable yield (MSY)	 Industrial trawlers have stopped fishing within the MPA corridor in 2017. The corridor was a permitted zone for trawlers to travel through the MPA.

Annex 2 Report of progress and achievements against final project logframe for the life of the project

 Partnership in development with Centre de Fusion d'Information Maritime (CFIM) to support reporting infractions between communities and authorities. Communities have identified infractions and local laws they want to enforce within the MPA (see Activity 1.1), including those included in the Regional Fisheries Management Plan and will incorporated into the BI MPA Dina. Gathered information on sea cucumber exploitation and piloted strategies to minimize activities (e.g. intervention missions with CSP). One of the missions involved seizure of materials and a complaint at the Tribunal. The verdict was that the sea cucumber SCUBA divers team had to sign a letter of agreement stating that the patron agrees not to bring SCUBA materials in the BI MPA (Annex 10: 2017.05.08_Engagement letter patron SCUBA divers). Spoke with CSP about illegal activities and asked them to call the bosses of the illegal sea cucumber dive team and ask them to leave. They did and they left in April/May 2017. Significant training and capacity building with MPA Association (see Activity 1.1 and 1.6). 0.3. Stock assessments were not completed during this period (see Output 4). However, fisheries monitoring has occurred in 6 sites, including 3 villages and 3 islands, between 2011 - 2016, to provide baseline data from which to monitor the impact of the MPA and its reserves going forward. These data were used to complete a fisheries diagnostic which showed that data collection should be improved before being able to use the data for stock assessment.
On reflection, this indicator was probably not appropriate for measuring the outcome given the timeframe, and stage of the MPA when the grant started. We had also assumed a simple stock assessment method would be available and appropriate. Given the multi-gear and multi-species nature of the fisheries, data-deficient models for stock assessment considered by the consultant were deemed inappropriate or in other cases the data required did not exist/was insufficient. In recognition of this deficiency, steps were taken to focus the profiling of 6 key species (highlighting those species

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		communities are most interested in managing) and further analyses on length frequencies were conducted showing the pressure on immature individuals in some cases (Annex 11: 2016.10.28_BI MPA fisheries profile). These results will be used to facilitate further conversations with communities around management of these species. This may focus on temporary and permanent closures as well as enforcement of existing gear restrictions .
		Furthermore, an assessment and cartography of coral reef areas around the isles has been done, revealing healthy ecosystems (Annex 21: 2016.08_MappingDataGlobal_HabMonitoring). In addition to fisheries landings data, information on habitat health is also being used to facilitate conversations that focus on ecosystem based approaches to management such as permanent closures.
Output 1. The proposed Barren	1.1 Stakeholder agreement on	1.1 The zoning plan has been validated by communities and authorities.
Isles MPA, with a zoning plan which protects traditional fishing grounds, is gazetted as a protected area by the government of Madagascar	zoning plan for Barren Isles MPA by end Y1 1.2 Representation of all key stakeholders groups in management committee with >90% attendance by nominated representatives 1.3 80% of villages elected representatives to fishing association and management committee by Y3.	The zoning plan has been validated through different public consultations (see activity 1.1), throughout the process. The Barren Isles MPA has a no- take zone, which will be the all the reef around an entire island (Nosy Mboro), and 08 permanent and temporary reserves in mangrove rivers, coral reefs and stony areas along the coastline (Annex 12: Maps of reserves (Folder)). Fishers are able to fish in the main area (remaining zone in the MPA outside of reserves and no-take zone), but there are rules are in place to ensure sustainable use (sustainable use zone) where management measures (e.g. it is forbidden to use poison fishing, there is a limit on size of nets used, habitat destruction and beach seining are forbidden) which have been identified and agreed by the communities themselves. A special zone with particular provisions has been defined in negotiation with the GAPCM (industrial fishing association in Madagascar) (see Outcome). The zoning and the management plan) (Annex 2: 2016.11.06_PAG_DRAFT).
		1.2. &1.3:
		100% of MPA villages have elected management committee representatives.
		The management committee of the Barren Isles MPA is called the Vezo Miray Nosy Barren (VNMB). It is composed of 02 elected representatives from 12 villages within the MPA. Within the VNMB representatives, a central

	management committee (composed of president, Vice-president, Secretary, treasurer, external auditor, 2 advisors) has been elected which is responsible for legislation issues e.g. proposing regulations. There is also a Dina committee (26 people), integrated into the VMNB, which is responsible for conducting public judgement and reinforcing the dina (local law). Therefore in each village there are ~ 02 Management committee and 02 Dina committee representatives - a total of 59 people (53 men, 6 women) (Annex 3: 2017.03_VMNB association legalisation).
	Elections were conducted in all the villages from April to June 2015 (Annex 22: Sample of elections attendance and Annex 23: Sample of election minutes)
	The association received its legal status in March 2017 (Annex 3: 2017.03_VMNB association legalisation).
	Attendance is high at VMNB trainings and workshops - most of the time over 90% of committee members attend (50-55 people).
	(Annex 24: 2015.09.29-30_VMNB training attendance sheet; Annex 25: 2015.10.27-29_VMNB training attendance sheet; Annex 26: 2015.11.25-27_VMNB training attendance sheet; Annex 27: 2016.01.26_VMNB training attendance sheet)
	The VMNB will form part of the steering committee for the Melaky Regional Fisheries plan (PAP). They will participate in the management of the PAP and this will be implemented at MPA level first as further north there are no other management bodies in place yet to support implementation (e.g. supporting NGOs or fisher associations). They will be also be advisors on other plans/restrictions/associations that will maybe come into force in the north of the region.
Activity 1.1. Consultation of local and migrant fishing communities for management plan development	This has been an ongoing activity and core component of how outputs and outcomes are achieved. The management plan was developed in several steps:
	1) a workshop with the VMNB representatives for identifying key species per habitat per village, and which of those are declining (October 2015) (Annex 28: 2015.10.27-29_VMNB workshop report; Annex 29: 2015.10.27-

	29_WorkshopOutcome_List of habitats & species)
	 2) a workshop with the VMNB representatives for establishing the year calendar of fishing activities (November 2015) (Annex 30: 2015.11.27_WorkshopOutcome_Annual Vezo Calendar_Gasy; Annex 31: 2015.11.27_WorkshopOutcome_Key species per habitat)
	3) a workshop with the VMNB representatives to identify what potential management measures they would want to implement in their village area (March 2016) (Annex 32: 2016.03.30-31-04.01_VMNB workshop report; Annex 33: 2016.03.30-31-04.01_WorkshopOutcome_Management measures; Annex 34: 2016.03.30-04.01_VMNB workshop attendance sheet)
	4) Focus Group Discussions with each clan in each village and public consultations and validations to have the final list of management measures in each village (April to August 2016) (Annex 35: 2017.02-2016.04-08_Narrative report_Consultations management measures; Annex 36: 2017.02-2016.04-08_Synthesis management measures)
	5) a workshop with the VMNB representatives and the local authorities to validate the management measures of each village (August 2016) (Annex 37: 2016.08.17-18_VMNB workshop report; Annex 38: 2016.08.18_Minutes validation workshop; Annex 39: 2016.08.16-17_Validation workshop attendance sheet; Annex 40: 2016.08.18_VMNB training attendance sheet).
	6) Participatory delimitation and mapping of the temporary and permanent reserves (08) that communities want to implement (ongoing) (May-June 2017) (Annex 41: 2017.05_Mapping reserve Namakia; 2017.05_Mapping reserve Nosy Faly).
Activity 1.2. Community exchange visit (build fishing community support for management)	Over the 3 year period there have been 3 exchange visits with over with 3-4 community members participating in each exchange visit:
	MIHARI (Madagascar LMMA network) regional forum in Morondava in 2015 (Annex 42: 2015.09_MIHARI Forum Morondava); MIHARI national forum in Mananara in October 2015 (Annex 43: 2015.10_MIHARI Forum Mananara report); MIHARI regional forum in Belo sur Mer & visit to a village in July 2016 (Annex 44: 2016.07_Exchange visit report).
Activity 1.3. Workshop with all MPA stakeholders to determine management	The management and zoning plan of the MPA is currently being finalized. A

plan, zoning and management association	solid draft is already produced (Annex 2: 2016.11.06_PAG_DRAFT).
	4 workshops (see activity 1.1) have been held over project period, to discuss the management plan, zoning and the association. All three are now in place (see Activity 1.4).
Activity 1.4. Follow-up community consultations and final management plan validation workshop	The community consultations took place in from April to August 2016 (see activity 1.1), followed by the validation workshop with the authorities in August 2016 see activity 1.1(Annex 38: 2016.08.18_Minutes validation workshop). Further community consultations in February and April 2017 validated the management measures for an island, including reserves proposed by one of the communities that needed other community members to validate them as well (common fishing zones).
Activity 1.5. Creation of MPA management committee	The management association, VNMB, was created in three phases. First, in April 2015, we organized a workshop with family clans' representatives from every village, and drafted the structure, status and internal ruling of the association (Annex 45: 2015.04.09-10_Mng Co. creation workshop attendance sheet; Annex 46: 2015.04.09-10_DRAFT Mng Co. Status; Annex 47:2015.04.09-10_DRAFT Mng Co. Internal Ruling). From April to June 2015, we conducted public consultations and validations of the structure and documents of the VMNB association, and facilitated the elections of their Management Committee Representatives (2 per village, except in 2 isles populated by migrant fishers) (Annex 22: Sample of elections attendance and Annex 23: Sample of election minutes). Finally, we held a workshop with the elected representatives to finalize the association folder and facilitated the elections of the Central Management Committee (Annex 48: 2015.04_Management Committee creation minutes; Annex 22: Sample of elections attendance and Annex 23: Sample of election minutes). The Dina committee forms part of the VNMB association (see output 1.1 for further explanation of roles). The VMNB association received its legal status in March 2017 (Annex 3: 2017.03_VMNB association legalisation), and is recognized by the
	government as authorised to participate in the management of the MPA.
Activity 1.6. Training and work planning sessions with newly formed MPA management committee	Over the project period we have carried out 13 training and workshops sessions of 1- 3 days with the committee, focusing on resources management, community surveillance, control and monitoring and the

		membership registry and fishing gear census. In the last 6 months we have had 2 sessions on community monitoring, control and surveillance (MCS) (5- day workshop in October 2016 to define the general lines of the programme with the consultant) and defining criteria of each infraction of each village as a basis for the MCS activities (Annex 8: 2017.04-06_Validation list of infractions outcome_Malagasy).
Activity 1.7. Assessment of legal mechanisms to secure fishing rights for communities and enable rights-based management, lessons learned and policy recommendations		A Malagasy environmental law specialist carried out a review of legal mechanisms applicable to securing local fishing rights within an LMMA context, and carried out a thorough consultation with LMMA stakeholders across the country to make a proposal for a new legal text recognising the different governance mechanisms. The legal text was not adopted due to a reorganisation of roles and responsibilities at the ministerial level, but has been adapted for use in future texts we hope to be released in coming years. A report of this process is available in Annex 64.
Output 2 . A fisheries management plan is developed and implemented by the fishing communities in collaboration with the regional fisheries authorities (DRRHP)	 2.1. Stakeholder consultations show approval for fisheries management plan by end Y1 2.2. Key fisheries and habitats covering at >80% of protected area envelope are included in management plan draft 2.3. Fisheries management plan is approved in collaboration with DRRHP by Y2 and ratified by Y3 	2.1 Participatory consultations, led by a consultant, Mr. Charles ANDRIANAIVOJAONA, were conducted in 19 villages in two stages (first questionnaires (Annex 49: 2015_FMP (PAP) survey sample) in September/October 2015 and then validation through consultations in November 2015) along the coast of Melaky Region, where a total of 941 community members participated. The Regional Fisheries Management Plan was validated during a 2-day workshop December 2015 in Maintirano with representatives from all the stakeholders of the Region (Annex 50: 2015.12_Minutes Regional validation FMP Melaky; Annex 51: 2015.12_Attendance sheet Regional validation FMP (PAP) Melaky).
		2.2 The Regional Fisheries Management Plan (PAP) shows that 100% of the Barren Isles MPA are included in the management plan and covers all fisheries, and recommends that fisheries regulation and access is devised with strong participation from local communities in its management and enforcement (Annex 52: Map BI MPA - Melaky). The PAP covers the territorial waters (12 nautical miles offshore) along 440 km of coastline, which is the entire marine area of the Melaky region. The Barren Isles MPA is foreseen to become a pilot for the Fisheries Management Plan implementation, reinforcing its protection.
		2.3 The Regional Fisheries Management Plan (Annex 18: 2016.03_FMP

	(PAP) Report Melaky) was ratified by the Minister of the Halieutic Resources and Fishery GILBERT François in November 2016 as Ministerial Decree 23283, (Annex 4: 2016.11.07_Ministerial Order FMP (PAP) Melaky).
Activity 2.1. Consult with Ministry of Fisheries at national and regional levels to develop fisheries management plan terms of reference	This was completed by end of Y1. The terms of reference for this role was the final output (Annex 53:ToR_FMP (PAP) consultancy).
Activity 2.2. Conduct stakeholder consultations	Consultations with communities, regional and national government and GAPCM were carried out between November 2015 and February 2016 in order to design the Regional Fisheries Management Plan (Annex 9: 2016.02.16-17_National validation report FMP (PAP)). Many of these consultations were carried out by the consultant Mr. Charles ANDRIANAIVOJAONA.
Activity 2.3. Hold validation workshops	The validation workshops at the communal, regional and national levels were held between November and December 2016. Minutes of these workshops are in FMP attendance sheets validations Commune Maintirano, Soahany, Tambohorano (Annex 54: sample attendance sheet (2015.12.15_Attendance sheet validation FMP (PAP) Commune Maintirano); Annex 9: 2016.02.16- 17_National validation report FMP (PAP)). It was validated in February 2016.
Activity 2.4. Develop implementation plan with DRRHP and Barren Isles MPA management committee	Since August 2016, there have been meetings at the national level with SWIOFISH2 (SF2), a World Bank (WB) project, whose mission is to implement fisheries management plans in Madagascar. The Region Melaky is the only region of the country considered by SF2 as an ultra-priority area for implementing the project. Meetings on the SF2 project are ongoing, internally (BV team), with partners, with the SF2 coordinator, with the WB, in order to get a clear vision of how the project will be implemented (still unclear), and how strategically BV can anticipate risks and also ensure this large source of funding can be used as an opportunity for sustainable development of fisheries in Melaky (Note: It is not possible for BV to wholly lead implementation as this must be the government, nor can we receive significant funding from the WB but we expect to support implementation in some way). BV has suggested that the Regional Fisheries Management Plan (PAP) is
	implemented within the MPA as a pilot initially, because of the institutional weakness further in the north of the region, and to extend work geographically at a later date. A technical Consultant of the WB/SF2 project,

		met in February 2017 agreed with this, but has no "power" but to recommend to the MRHP to do so.
		In July, BV will support the MRHP to conduct the regional officialisation of the PAP and the creation of the Steering Committee that will coordinate its implementation.
Output 3. A system of community- based monitoring, control and surveillance of illegal fishing activities in the Barren Isles MPA is developed with the local community and in partnership with the CSP3.1. Num trained in infraction 3.2. Increasion association 3.3. 3/4 p filing modiand illega MPA limited 3.4. CSF support/m fishing by	3.1. Number of community members trained in Dina enforcement for infractions.3.2. Increase from 0 to 50% of Dina infractions followed up by community.	3.1 Informal training sessions (approx once a month) on the importance to report illegal activities and incidences with industrial trawlers that destroyed fishers' net have been held with at least 26 dina committee members (2 per village x 13 villages).
	 association. 3.3. 3/4 participating communities filing monthly reports on industrial and illegal fishing activity within the 	day workshop in October 2016 to define the general lines of the programme with the consultant) (see output 2). All 59 VNMB were invited, 55 attended 1 from DREF 1 from DRRHP (Annex 55: 2016.10.17-22_MCS workshop attendance sheet).
	MPA limits by Y3. 3.4. CSP effectively provides support/responds to reports of illegal fishing by community by Y3.	3.2 0 infractions have not been enforced to date as rules for enforcement are still being decided, national laws may also be added to the Dina, clarifying what consists of an infraction. Community members are currently reporting some incidences in their books as the MCS rules are finalised but most of these are currently incidences with industrial boats.
		However, several observations of infractions have been discussed with the CSP - e.g. several industrial fishing boat infractions and anecdotal evidence that local fisher nets were destroyed have been discussed with CSP. In May 2017 sent a letter to the CSP to ask for data on industrial fishing boats trawling in the MPA in the corridor - reports from Vezo that the trawlers are working within MPA. Director of the CSP has recently changed so process slower than previously to discuss these issues.
		3.3 At the beginning communities were reporting nothing - now community members are orally reporting infractions (mostly industrial trawlers) at meetings. They are not currently filing monthly reports as the MCS rules are still being decided but a few are recording infractions in their notebooks.
		3.4 Although the official system is not yet established, we have had 2 visits by CSP, and they have responded to calls about illegal sea cucumber activity

	and have supported sea cucumber missions.
	Despite not reaching our indicators, over the project period, we have:
	 Built the foundations of a community-based monitoring, control and surveillance (MCS) programme for the BI MPA. Defined management measures and identified the infractions communities want to integrate in their marine Dina. Formalized the Association VMNB so that it is authorised to participate in the MPA management, including creating the lists of fishers who are allowed to access the MPA. Created a new partnership with the CFIM to prepare for future infractions reporting at the national level (especially concerning scuba diving for sea cucumbers and industrial fishing incidences). Two of our staff have participated in an exchange visit and workshop in the North West of Madagascar to see and discuss different models of MCS. Followed-up on fishers' claims and observations about boats trawling in the MPA: letter to the CSP to ask for trawler location data (Annex 56: 2017.06.02_Info request to CSP about trawlers).
Activity 3.1. Liaise with regional authorities, CSP and other stakeholders to develop plan for improved community-based MCS	A consultant, Charles ANDRIANAIVOJAONA, was hired to develop the MCS for Barren Isles MPA, which involved consultation meeting with the main communities in Maintairano (Ampasimandroro and Ambalahonko) in October 2016 (Annex 6: 2016.10.22_Workshop report from consultant outlining MCS programme), and a series of workshops with VMNB representatives to define the general lines of the MCS programme.
	After the workshop the main points were validated by the CSP Melaky in October 2016 (Annex 5 2016.10.17-22_Workshop minutes_MCS programme outlining; Annex 6: 2016.10.22_Workshop report from consultant; Annex 55: 2016.10.17-22_MCS workshop attendance sheet). During these workshops, we started to identify the list of infractions, from the management measures but also from the national law, that fishers want to integrate in their dina and reinforce through the MCS programme.
	We held another training with the VMNB to identify the lists of infractions for each village, to have their preliminary ideas and make sure they understood the topic and are able to explain and facilitate the consultations in their

	village (Annex 57:02.23_VMNB workshop attendance sheet). We conducted public validations and consultations in all the villages from May to June 2017 to complete these lists of infractions, according to the template given by the Consultant. This template consists in a series of questions meant to define criteria for each infraction (what, where, when, who, etc) (Annex 58: 2016-2017_Infractions informal reports (3 villages); Annex 8: 2017.04-06_Validation list of infractions outcome_Malagasy).
	A validation meeting of the MCS programme was held in Antananarivo with the central CSP (Annex 7: 2016.11.04_MCS Meeting minutes national validation). Charles will continue work in July 2017 to finish this process, and along with a central CSP representative they will train the local authorities, BV staff and the community surveillance agents on the modes of interventions if there's an infraction and validate the guide book of the final MCS plan (including the interventions to take and the official forms to complete).
Activity 3.2. Conduct regular trainings in Dina enforcement and infraction	See 3.1 for details of initial trainings and workshop.
management with community	There will be another training on dina law and national law after the MCS plan has been finalised (expected 3-14 July). Once the MCS activities begin regular trainings will take place on a schedule according to community needs.
Activity 3.3. Support community in following up on any infractions (Dina & writing up illegal fishing activity)	Dina committee representatives (26) were provided with notebooks with a simple template where they report details of industrial incidencies (place, date and time, action seen, author of the action) (Annex 58: 2016-2017_Infractions informal reports (3 villages)). If there have been infractions these are discussed when the team visits the community (once a month), and once the MCS has been finalised these will be followed up more systematically.
Activity 3.4. Develop process for transferring reports by community members on illegal fishing from industrial and sea cucumber vessels to CSP	This process is still fairly informal while the MCS plan is finalised to assign which infractions the Dina Committee within the VNMB will follow-up on by themselves, and which will be addressed in collaboration with the CSP.
	However, we have had phone calls and joint activities with the CSP requesting their support with illegal sea cucumber activities during this project period.

		We had a good contact in the CSP in Antananarivo before he was removed from office on November 2016 and we had spoken to him about a number of issues, such as community member's nets being destroyed by industrial trawlers. Whilst he supported us, he recognised that fishing gear from local fishers may also not be in line with regulations (eg. no appropriate markers and floats that can be detected by the trawlers' radar). Therefore, it was agreed to develop a code of conduct between the traditional fishers represented by the Association Vezo Miray Nosy Barren and the industrial fishers in February 2016 (Annex 9: 2016.02.16-17_National validation report FMP (PAP) or see Activity 2.3) to avoid conflict, at the same time that the negotiations on the use of the corridor took place. How to implement this code of conduct is not yet clear. Further negotiations with the GAPCM will take place, in order to clarify the code of conduct and make it usable (for example, what kind of evidence is needed from each party). Creating this agreement will be revisited once the MCS programme is in place.
Output 4. Community-based monitoring of the key fisheries within the Barren Isles MPA is carried out, enabling reliable stock estimates and providing a basis for sustainable management and improvement of	4.1. Stock assessments of coral reef fisheries in all five participating villages show fisheries within the MPA are not overexploited and below maximum sustainable yield (MSY)	4.1 Stock assessments were not completed given the data deficient and multi-gear/species nature of the fishery. A first stage fisheries diagnostic was completed with focused analysis of landings for 6 key species identified by communities for future management (Annex 11: 2016.10.28_BI MPA fisheries profile). Stock assessments were an inappropriate indicator for such fisheries given the capacity and timeframe of the project.
the fisheries	 4.2. 5 MPA communities involved in weekly participatory fisheries monitoring and contributing data to quarterly resource status dashboard 4.3. Workshop on monitoring and stock assessment results held with 	4.2 Six MPA communities at 3 coastal villages (all year) and 3 islands (May to December when fishers are present) are involved in fish landing data collection. A significant amount of effort has been put in to ensure the data are entered as quickly as possible to avoid a large gaps between the period of data analyzed and time for presenting these data to the communities. Evidence is provided under activity 4.1.
	stakeholders by Y3 4.4. Fisheries management plan is updated annually to include findings and recommendations of stock	4.3 Six disseminations of fisheries monitoring results have been conducted in the concerned villages. We improved the methodology by which to explain the data and involve communities members and VMNB committees representatives. Evidence is provided under activity 4.5.
	assessments	4.4 The regional fisheries management plan has not been updated to date, nor stock assessments completed. This indicator was perhaps not appropriate given the timeframe of this grant, and the capacity needed to

		carry out stock assessments on data deficient multi-species small-scale fisheries.
Activity 4.1. Participatory fisheries monitoring established in 5 villages		14 community members have been trained to collect fisheries data across 6 villages. Data are recorded and analyzed on a monthly basis (Annex 16: Screenshot of part of the fisheries monitoring database).
		Shrimp fisheries monitoring was added in 2017, following the agreement and related conditions with the GAPCM concerning the special zone. The aim of this data collection is to provide data to demonstrate the potential benefits of a long term ban on trawling in the MPA corridor. It is unlikely the time given will be sufficient to demonstrate tangible benefits but there should be sufficient data to advocate for an extension of the trial ban.
		A pilot shark fisheries monitoring program ran from May to November in 2014-2015, allowing monitors to develop their skills using smartphones (ODK app.). In total, 6 fishermen based on 3 islands were monitoring the shark fishery (Annex 15: Screenshots from shark form and photo of data collector).
Activity 4.2. Community-based turtle needucation and awareness-raising activ species.	est monitoring at priority sites, and ities on importance of keystone	08 community members have been trained and recorded turtle nest monitoring between November-May annually since 2011 (Annex 14: Turtles, tracks and nests observed in Barren Isles). Awareness-raising sessions have been held 06 times, on turtles and other keystone species such as dugongs (Annex 59: 2017.02_Presentation for quiz about turtles; Annex 14: Turtles, tracks and nests observed in Barren Isles).
		To note: awareness raising is an ongoing activity in our work, and is key to how we facilitate decision-making processes in communities for resource management.
Activity 4.3. Zoning plan for MPA established with community and plan developed and implemented for monitoring impact on fisheries and habitats		The final zoning and management plan for the MPA is currently being developed but a draft exists (see activity 1.3). This has been completed through approximately 13 consultations with community members plus meetings and workshops mentioned in Activity 1.1, plus validated with the regional offices of fisheries and environment. Plan to conduct fisheries and habitat monitoring with community members (possibly using the current fisheries monitors) and BV staff for the 8 reserves (Annex 12: Maps of

	reserves (Folder)) in August/September to check against baseline data to see if the reserves are having an impact.
Activity 4.4. Stock assessments on priority fisheries carried out	A fisheries diagnostic/profile for the Barren Isles MPA was completed in 2016 (see Activity 4.1). The recommendations from this study will allow us to develop the next steps to improve fisheries in the MPA including the temporary and permanent reserves.
Activity 4.5. Disseminate monitoring results to communities and stakeholders (presentations, resource status dashboard, etc.)	Results of fisheries monitoring have been presented to communities 6 times during this project. A sample presentation is provided (Annex 60: 2017.02.22_FFM data Presentation_Ambalahonko and Annex 61: photo of an event in Ambalahonko; Annex 62: 2017.02.21_FFM data dissemination in Ampasimandroro). We estimate at least 40 people to have attended these meetings.
	In addition, results of coral reef and seagrass assessment and participatory mapping were presented to the concerned communities and to the VMNB committees representatives during a workshop in August 2016 (Annex 63:2016.08_Presentation habitats mapping results).
Activity 4.6. Incorporate results of fisheries monitoring into MPA and fisheries management planning	Fisheries monitoring data has not yet been incorporated into management planning. A new (Malagasy) Fisheries Scientist was recruited in September 2016. This person will work full time on fisheries monitoring data analysis and programme improvements, to properly advise communities on management decisions and assess management measures being implemented.

Annex 3 Standard Measures

Code	Description	Total	Nationalit	Gender	Title or Focus		Comments
Traini	ng Measures		У	Gender	The of Tocus	Language	Comments
1a	Number of people to submit PhD thesis	0					
1b	Number of PhD qualifications obtained	0					
2	Number of Masters qualifications obtained	0					
3	Number of other qualifications obtained	0					
4a	Number of undergraduate students receiving training	0					
4b	Number of training weeks provided to undergraduate students						
4c	 Number of postgraduate students receiving training (not 1-3 above) 						
4d	Number of training weeks for postgraduate students	0					
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)	0					
6a	Number of people receiving other forms of short-term	1	Swiss	Female	Conservation	English	
	education/training (e.g., not categories 1-5 above)		Malagasy	Male	Leadership		
					Kinship Fellows Programme/E arthskills networktrainin g/ IUCN negotiation skills/		
6b	Number of training weeks not leading to formal qualification	15	Malagasy	Both		Malagasy	

7	Number of types of training materials produced for use by host country(s) (describe training materials)	2			Fisheries Monitoring toolkit ODK User guide (mobile monitoring)	English	ODK toolkit Online: https://bluevent ures.org/conser vation/toolkits/
Resea	rch 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)	1			Regional Fisheries Management Plan	French	Annexe 18 (supporting documents)
10	Number of formal documents produced to assist work related to species identification, classification and recording.	3			Issues identified with current monitoring and data capture processes	French	Internal document at present
					Fish ID list	Malagasy	Internal document at present
					Fisheries monitoring toolkit	English	Internal document at present
11a	Number of papers published or accepted for publication in peer reviewed journals	1	UK	Female	cing Madagascar's marine turtle populations in a regional context using	English	https://www.c ambridge.org /core/journals /oryx/article/p lacing- madagascars

				community- based monitoring	-marine- turtle- populations- in-a-regional- context- using- communityba sed- monitoring/E 917362B8F2 A534D627C5 EAC0D96F9 B1
11b	Number of papers published or accepted for publication elsewhere	0			
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	1		MIHARI LMMA Database	https://mihari- network.org/d atabase/
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	0			
13a	Number of species reference collections established and handed over to host country(s)	0			
13b	Number of species reference collections enhanced and handed over to host country(s)	0			

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	1	Malagasy, French, Swiss	Male and female	National officialisati on of the FMP	French	

					(PAP)		
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	2	Swiss	Female	CEPF workshop s	French	

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)	0	Physical assets have not been handed over at this point as the project will continue.
21	Number of permanent educational, training, research facilities or organisation established	0	
22	Number of permanent field plots established	0	

Financ	ial 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						

Annex 4 Aichi Targets

		Tick if applicable to your
	Aichi Target	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.	
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.	
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.	
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.	
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.	
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.	
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.	X
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.	

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.	
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 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.	X
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.	
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 5 Publications

Type *	Detail	Nationality of	Nationality of	Gender of lead	Publishers	Available from
(e.g. journals, manual, CDs)	(title, author, year)	lead author	institution of lead author	author	(name, city)	(e.g. web link, contact address etc)
Journal paper (Annex 17)	Humber, F., Godley, B.J., Nicolas, T., Raynaud, O., Pichon, F. and Broderick, A.C. (2016) Placing Madagascar's marine turtle populations in a regional context using community-based monitoring, Oryx, 2016	British	British, Blue Ventures/Univer sity of Exeter	Female	Oryx	https://www.cambridge.org/c ore/journals/oryx/article/placi ng-madagascars-marine- turtle-populations-in-a- regional-context-using- communitybased- monitoring/E917362B8F2A5 34D627C5EAC0D96F9B1
Blog	Presenting fisheries data in the Barren Isles: a community engagement visit	Malagsy	British, Blue Ventures	Male	blog.blueventures.o rg	https://blog.blueventures.org/ presenting-fisheries-data- barren-isles-community- engagement-visit/
Blog	Freediving fishers on a mission to map Barren Isles seagrass beds	French	British, Blue Ventures	Male	blog.blueventures.o rg	https://blog.blueventures.org/ freediving-fishers-on-a- mission-to-map-barren-isles- seagrass-beds/
Blog	Working across sectors for real change: community health workers advance marine management in their villages	English	British, Blue Ventures	Female	blog.blueventures.o rg	https://blog.blueventures.org/ working-across-sectors-real- change-community-health- workers-advance-marine- management/
Blog	New partnership brings vital health services to	USA	British, Blue Ventures	Female	blog.blueventures.o rg	https://blog.blueventures.org/ new-partnership-vital-health-

	isolated fishing settlements in the Barren Isles archipelago					services-isolated-fishing- settlements-barren-isles/
Blog	Mandeha magnarato: a weekend fishing in Nosy Marify, Barren Isles	Swiss	British, Blue Ventures	Female	blog.blueventures.o rg	https://blog.blueventures.org/ mandeha-magnarato- weekend-fishing-nosy- marify-barren-isles/
Blog	Shrimp trawling closure bring new hope to traditional fishers in Madagascar	UK	British	Female	blog.blueventures.o rg	https://blueventures.org/shri mp-trawling-closure-brings- new-hope-traditional-fishers- madagascar/
Factsheet	The Barren Isles archipelago: Establishing the Indian Ocean's largest locally managed marine protected area	USA	British, Blue Ventures	Male	blueventures.org	https://blueventures.org/publi cation/barren-isles-factsheet/
Briefing document*	Les Îles Barren: Trésor unique national à préserver	French	British, Blue Ventures	Male	NA	Annex 20

Annex 6 Darwin Contacts

Ref No	21-011
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Name	
Organisation	
Role within Darwin Project	
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Fax/Skype	
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We have a number of Annexes to share and these are saved on a publicly accessible folder on Google Drive <u>here</u>: (<u>https://drive.google.com/drive/folders/0B6gpGRPB4s3QUVJKa0Zfa0dCY1U?usp=sharing</u>).