

Darwin Initiative: Final Report

To be completed with reference to the “Writing a Darwin/IWT Report” Information Note:
(<https://www.darwininitiative.org.uk/resources-for-projects/reporting-forms-change-request-forms-and-terms-and-conditions/>).

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

Darwin Project Information

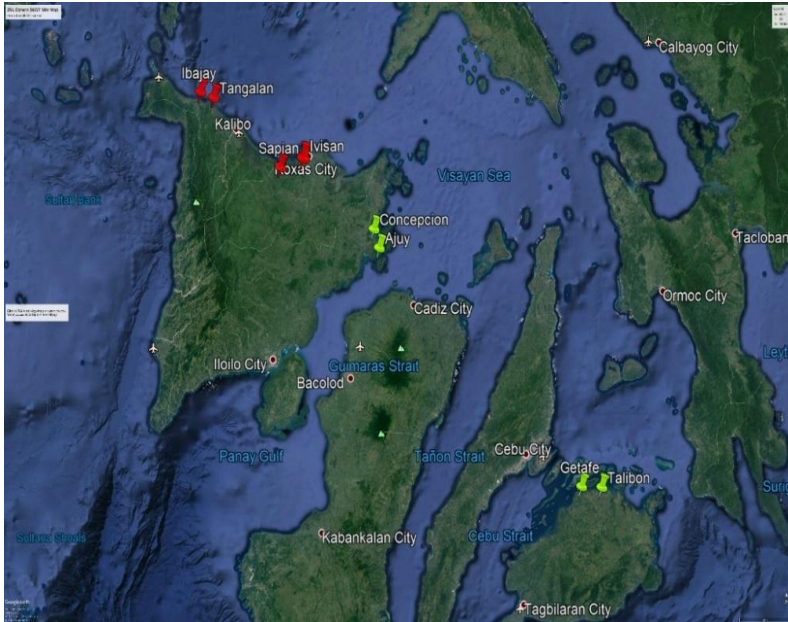
Project reference	24-027
Project title	Applying business models to sustain socio-ecological resilience in coastal Philippines
Country(ies)	Philippines
Lead organisation	Zoological Society of London
Partner institution(s)	Local Government Units of the Municipality of Ajuy & Concepcion in Iloilo Province; Local Government Units of the Municipality of Talibon and Getafe, Province of Bohol. Interface Inc.
Darwin grant value	£399,584
Start/end dates of project	1st April 2017 – 31st March 2021
Project leader’s name	Amado Blanco
Project website/blog/social media	www.zsl.org ; www.net-works.com ; coast4c.com; [REDACTED] @morefishlessplastic
Report author(s) and date	Amado Blanco (Project Leader), Wilfredo Baguio, Jr. (Financial report – Finance Officer) 30 June 2021

1 Project Summary

The Darwin Initiative supported innovative approaches to enhance socio-ecological resilience to disasters in the Philippines, including MMPAs and Net-Works™ (21-010). The project took stock of these experiences and successes to build business models that break pervasive donor dependence in community-based marine conservation, creating fully scalable solutions.

The project aimed to address key issues that are predicting effectiveness of MPAs as biodiversity conservation and fisheries management tools: size, habitat composition, sustainability and enforcement. Under existing Philippines laws, coastal municipalities and cities are mandated to set aside at least 15% of municipal waters (i.e., 15 kilometres from general coastlines seaward). However, the total area declared protected at present remains very low at 0.5% because of their small size (average 12ha of no-take zone). And, most of these MPAs are dominantly coral reefs. Mangroves, seagrass, mudflats, and other habitat types crucial to life cycles of fisheries resources are unprotected, leaving them highly vulnerable to conversion.

Financing to support effective management of MPAs in the long-term is also cross-cutting issue. A study suggests that only 12% of declared MPAs in the Philippines are effectively enforced. All the rest exist as paper parks mainly because of the lack sustainable financing and lack of community buy in. This project was aiming to catalyse a new generation of MPAs that are bigger (i.e., with at least 200-ha. NTZ), diversified in terms of habitat types, and financially sustainable. ZSL has demonstrated through the Net-Works business model there are alternative options to help secure access for sources of financing for MPA management in the long-term. Through the diversification of the Net-Works business model, we aimed to support these idealised MPAs through the income generated by the business model itself, veering away from conventional donor-dependent set up. During the first year we introduced the term iMPA to describe ‘ideal MPAs (also interpreted as innovative, inclusive, improved) that are bigger in size, better managed and enforced, and sustainably financed using the Net-Works business model. We phased out the term



MMPA (which referred to Mangroves in MPAs) as it did not adequately represent this improved approach. Starting in Year 3, project implementation was focused on two bay-scapes in Iloilo Province on Panay Island in western Visayas and Bohol in central Visayas, Philippines and targets local communities and local governments within these sites (*see green pins in updated map below*) and businesses through global supply chain development. The target communities live below the Philippines' poverty line and are extremely vulnerable to declining marine resources and increasing typhoons. Our interventions aim for these community members, especially women, to have diversified livelihoods, access to fairer and inclusive markets, and a mechanism and

opportunity to engage meaningfully in conservation activities.

2 Project Partnerships

Key project partners are the local government units (LGUs) of Ajuy and Concepcion in Iloilo and Talibon and Getafe in Bohol. ZSL has formal memoranda of agreement (MOA) with the two LGUs in Iloilo. Our MOA with LGU Concepcion has been renewed this year (**Annexes 7,8,9**).

In 2019, our application for accreditation with LGU Talibon and LGU Getafe in Bohol were approved (**Annexes 10,11**). Negotiations for MOA with Talibon and Getafe did not advance due to Covid-19 travel and meeting restrictions. ZSL has a long work history with MPAs and seahorse conservation in Talibon and Getafe through its link with Project Seahorse, enabling us to partner with fishing communities and local governments in planning and legalising iMPAs even without the formality of MOA. The approval of municipal ordinances of the three new iMPAs in Bohol is a concrete manifestation of our excellent working relationships with the two LGUs. We have closely collaborated with the nine (9) *barangay/village* LGUs in eight iMPA sites we have focused since Year 3. We have enabled and guided partner people's organizations (POs) and 75 partner VSLAs as prime movers in advocating, planning, and implementation of eight (8) legally declared iMPAs. Our partner POs are as follows:

1. Tambaliza Small Fishers Association (TASFA), Concepcion
2. Salvacion Responsable kag Uswagon nga Mangingisda (SALVARUN), Concepcion
3. Asosasyon Sang Mangingisda sa Malangabang (ASMMA), Concepcion
4. Association of Igbon Savers for Sustainable Fisheries (AsISUF), in Concepcion
5. Punta Buri MPA Small Fisherfolks Association (PBMPASFA), Ajuy
6. Silagon Fisherfolk Association (SFA), Ajuy
7. Asenso sa Baroto Association sa Guindacpan (ABAG), Talibon
8. Guindacpan Grower of Seaweed Seedling Organization (GGOSSO), Talibon
9. Kapunungan sa Nagkaiusang Mananagat ug Lumulupyo sa Handumon (KANAGMALUHAN), Getafe
10. Handumon Seaweed Culture Association, Getafe
11. Kahugpongan sa Gagmay nga Mananagat sa Jandayan Sur (KAGAMAJAS), Getafe.
12. Kapunungan sa Mananagat sa Jandayan Norte (KASAMAJAN)
13. Marianasan Seaweeds Grower and Fisherfolk Association (MASEGAFA), Getafe

We have active collaborations with key national government agency partners. The Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) requested us to provide inputs in the formulation of guidelines for delineating territorial waters of municipalities and cities with off-shore islands and in regional stakeholder consultations on the Fisheries Management Areas (FMA). The national leadership of DA-BFAR endorsed our grant application to the Blue Action Fund, which would have allowed us to replicate iMPAs in at least 15 municipalities in central Philippines (**Annex 12**). We have actively engaged with the Regional Field Offices of DA-BFAR. We tapped its western and central Visayas regional fish warden training units in three batches of Advance Fishery Law Enforcement and Enhancement

Training for community partners in Iloilo and Bohol bay-scapes. DA-BFAR Regional Field Office 7 granted us permits to export dried seaweeds samples for bio-plastic lab testing at the University of Technology-Sydney. It has allowed us to export seaweeds to Cargill in France while we are still processing our application for registration. The Philippine Crop Insurance Corporation, a government-owned and controlled corporation attached to the Department of Agriculture, continued to subsidize crop insurance coverage of our assisted seaweed farmers. We are a partner of the USAID-funded Fish Right project, which is a project of DA-BFAR.

Through the ProCOAST project, which ZSL co-implements with Department of Environment and Natural Resources (DENR), and GIZ, we worked together in developing Tambaliza iMPA in Concepcion, Iloilo as Centre of Learning for iMPA, VSLA, and nets recycling. GIZ, through ProCOAST, has funded the publication of key knowledge products drawn out from Net-Works experiences, e.g., VSLA Environment Fund, social marketing, biophysical assessments, community engagements). DENR helped us secure use tenure for the construction site of the Tambaliza iMPA guardhouse. The mangrove components of Handumon and Jandayan Sur & Norte iMPAs in Getafe, Bohol are within DENR jurisdiction. Through its local Protected Area Management Board, DENR approved the spatial plan integrating Handumon and Jandayan mangroves in iMPAs.

We opted to engage the Integrated Services for the Development of Aquaculture and Fisheries (ISDA), Inc. because internal dynamics (i.e., restructuring and staff movement) at the Southeast Asia Fisheries Development Centre (SEAFDEC) stalled the signing of our MOU. Results of our technical and training engagement with ISDA are outlined in **Annex 13**.

ZSL and Oceana Philippines signed a MOA formalising collaboration in areas of mutual interests: promotion of marine protected areas, enforcement training and promotion of a reporting system, Fisheries Management Area, and joint publication and statements on themes of common interests, e.g., mangroves (**Annex 14**).

In February 2020, ZSL's Council took the decision to spin-out Net-Works (™) into an independent entity to facilitate transition to a financially self-sustainable model that could attract new forms of finance to scale, as per the Darwin objectives. Coast 4C Limited was created in June 2020. ZSL has a Heads of Terms, two subgrant agreements (from Coast 4C to ZSL) and a Collaboration Agreement with Coast 4C that cover the relationship and transition from the current Net-Works project to Coast 4C.

Cargill issued a letter of intent (LoI) to Coast 4C, with a commitment to extend technical advice and priority purchaser of dried red seaweeds we produce. We have collaborations with the University of the Philippines-Marine Science Institute (UP MSI) on the field trials of new seaweed strains. Meloy Fund and University of the Philippines – Los Banos provided us funding and technical assistance to construct an innovative solar-powered seaweed drier in Guindacpan, Bohol (**Annex 15**). Meloy Fund and Koltiva will provide us with technical assistance to set up and implement a management information system that will enable us to efficiently trace seaweed production and trading transactions (**Annex 16**).

The Australian Embassy Direct Aid Program (DAP) provided 1M-Phillippine Peso grant to support rehabilitation of seaweed farms farmers had to unexpectedly abandon due to Covid-19 lock down (**Annex 17**). The Philippine German Embassy provided us a small grant to support procurement of marker buoys to demarcate two newly-established iMPAs in Iloilo. The IUCN Blue Nature Capital Financing Facility (IUCN BNCFF) has committed to provide financial support to upgrades of vital seaweed supply chain logistics, such as new baling machines for seaweeds and warehouse renovations. As of report writing, Coast 4C already has a signed agreement with IUCM BNCFF (**Annex 18**).

3 Project Achievements

Please see also **Annex 2**.

3.1 Outputs

Output 1 – Effective community-based management of eight iMPAs across 2 bay-scapes. We secured memoranda of agreement with the municipalities of Concepcion and Ajuy (**Annex 7,8,9**) in Iloilo and accredited with the municipalities of Talibon (**Annex 10**) and Getafe (**Annex 11**) in Bohol.

We conducted community profiling (**Annex 19**) and biophysical assessments in target communities in Ajuy-Concepcion bay-scape (**Annex 20,21,22**) and used rapid assessment results to inform site selection and, with funds from another partner, Coastal Resource Management-Ecosystem Approach to Fishery Management (CRM-EAFM) plan formulation. We facilitated and provided technical guidance in the

formulation and adoption of these plans (**Annexes 25,26**). Concepcion and Ajuy municipalities formally adopted the coastal resource management plans (**Annexes 27,28**). We conducted community mapping (**Annex 24**) and habitat mapping (**Annex 23**), in target iMPA sites in Bohol which we used to inform iMPA spatial planning.

In Yr2, a learning exchange and a forum on iMPA were organized to facilitate sharing of experiences and best practices among local MPA managers in the original Panay sites (**Annex 29**). With resources from GIZ-assisted ProCOAST project, Tambaliza iMPA is being developed as a “centre of learning” for iMPA. Knowledge products (i.e., VSLA Environmental Funds, social marketing, and biophysical assessments) derived from iMPA implementation are in the final stage of editing for publication. (**Annex 30,31,32**)

Management councils in seven established iMPAs have been formally organized with the issuance of executive orders or EOs (**Annex 33,34,35,36,37,38,39**). Across all sites, 35% of council members are women. We are working with LGU Getafe in Bohol for the issuance of the EO for newly-declared Jandayan Sur and Norte management council creation.

All eight (8) iMPAs are already legally declared (**Annex 40,41,42,43,44,45,46,47**) The eight iMPAs cover a total area of 5,766 ha., representing 17.8% of estimated bay-scape waters. Total estimated bay-scape waters (i.e., length of general coastlines of municipalities multiplied by 3 km) is 32,399 ha. Our community partners encountered strong opposition from commercial fishing interests while pushing for the declaration of Salvacion-Malangabang and Igbon iMPAs in Concepcion. Passage of municipal ordinances to legally declare three iMPAs in Bohol was delayed due to Covid-19 lock down and travel restrictions.

We designed and set up training and workshops as venues for learning exchanges among local MPA managers. All five iMPAs in Iloilo underwent management effectiveness assessments using the MPA MEAT assessment tool. Tambaliza has MPA MEAT Level 2 rating, Punta Buri has Level 2; Salvacion-Malangabang Level 1, Silagon has Level 1; and Igbon Level 0 (**Annex 48,49,50,51,52**)

We engaged a total of 75 VSLAs in two bay-scapes, 34 of which were organized within the Darwin project period. All VSLAs contribute to their environmental funds, an innovation that ZSL introduced.

A discussion paper, titled “*Marine plastic pollution and marginalized small-scale fishing communities in Southeast Asia - a practical perspective on the need for more fish and less plastic.*”), which builds on some of our experiences and data around plastic pollution and MPAs and draws on the literature, is a work in progress and under revision (**Annex 53**.)

Output 2 – Integrated Territorial Use Rights for Fisheries (TURFs) introduced within iMPAs in two bay-scapes to align fishers’ incentives with sustainability and MPA management.

The eight (8) legally established iMPAs have total buffer zones, regulated use zones and managed fishing areas or TURFs zone of 3,455 ha., or an average of 432 ha. per iMPA. The approved municipal ordinances define activities that are allowed and prohibited in the managed fishing areas. In Tambaliza iMPA (the first to be established), we piloted the process of formulating a more detailed implementing rules and regulations or IRR (**Annex 54**). If proven helpful, this process will be adopted in the other seven (7) iMPAs. Restrictions in fieldwork and community meetings had caused delays in further development and official adoption of the IRR.

The standard iMPA guardhouse building plan we have developed and promoted as part of iMPA branding includes a seaweed drying platform. (**Annex 55**). Guardhouses in 5 iMPA sites (Tambaliza, Punta Buri, Salvacion-Malangabang, Silagon and Guindacpan are completed (**Annex 56**). Guardhouses in Igbon and Handumon are in early stage of construction (**Annex 57**). Municipal governments, barangay local governments, and VSLAs put in financial counterparts for guardhouse construction amounting PhP590,000, PhP197,32, and PhP25,255, respectively. Municipal Engineering Offices finalized building plans and supervised actual construction. Through a small financial grant from Meloy Fund and technical support from University of the Philippines - Los Banos, we installed an innovative solar-powered seaweed dryer on the guardhouse of Guindacpan iMPA (**Annex 15**). Our Julius Baer Foundation grant will support the construction of a guardhouse in Jandayan Sur and Norte.

We also developed and adopted standard designs for MPA marker buoys to delineate various zones of iMPAs (**Annex 59**). Boundaries and zones of 4 of 8 iMPAs have been demarcated with marker buoys (**Annexes 60,61,62,63,64**). Marker buoy layout plans of 3 iMPAs are being prepared (**Annexes 65,66,67**).

Total membership of MPA management councils across iMPA sites is 389 and more than 50% of members are from local communities. Across all sites, women membership in the councils is 34% and 15% of trained/deputised fish wardens are women. In Yr4, 1,575 individuals contributed to VSLA Environmental Funds and 1,917 community members took part in various social marketing and community outreach activities. A total of 3,811 community members supported or were involved in iMPA implementation, representing 23% of the total population in these communities. In the Yr3, we reported that 26% of the population were involved. The slight reduction in Yr4 can be attributed to travel and meeting constraints associated with Covid-19.

We rolled out a fishers' perception survey and catch landing monitoring in the Tambaliza iMPA in Year 4. We adapted the methodology promoted by the USAID-assisted Fish Right Project (**Annex 68**). As suggested in the draft perception survey report (**Annex 69**), majority (64%) of respondents perceived an increase in fish catch, with forty-five percent (45%) of respondents replying that fish catch is "up a little bit" and 19% replying catch is up a lot. As of report writing, we are still encoding catch landing data.

Output 3 – Diversified Net-Works business model supports environmental management and biodiversity conservation, and clears up marine debris.

We engaged a total of 75 VSLAs in two bay-scapes, 34 of which were organized within the grant period. All 75 VSLAs contributed to the environment funds. In Year 4, VSLAs in three iMPAs (Tambaliza, Guindacpan and Handumon) leverage their environment funds (PHP45,255) to compel local governments to provide funds for MPA enforcement related activities. Eighteen (58%) of the 31 VSLA agents we trained have remained active. The agents are dominantly females (94%).

We trained 143 fishers in 7 communities in ecological seaweed farming. Sixty-nine (69) trained fishers received production assistance to start farming in the 1/8-ha starter up farmers. However, production scaling was affected by typhoons and disease induced by increase sea surface temperature. Farming was impacted Covid-19 lock down since farmers were also not allowed to visit their seaweed farms. Over the last 12 months, we collected 39.6 tons of dried seaweeds both from assisted (6.3 tons) and non-assisted seaweed farmers, and are in the process of exporting a container of seaweed to Cargill subject to shipping availability.

A total of 11 VSLAs are involved in buying of used fishing nets (as local buyer-consolidators) and 10 VSLAs in trading of dried seaweeds. Whilst only one VSLA per village engages in the trading of used fishing nets in order to achieve economies of scale to make the model viable locally, all VSLA members in partner communities can sell used fishing nets to trading partners in their respective communities. Net-Works has collected a total 292 metric tonnes of used nylon fishing nets in collection sites in the Philippines and 96 tons were collected by our two hubs operating in the two bay-scapes

Output 4 – Incorporation of mangroves into iMPA ordinances and development of the science base towards potential certification of blue carbon from mangroves in the Philippines on the voluntary market.

Eight established iMPAs cover a total of 181 ha. of mangroves, representing 170% of target.

Baseline data on blue carbon stocks (vegetation and sediment) generated for 220 ha. of mangroves in different conditions. Baseline data on blue carbon sequestration rates (vegetation, sediment and gas flux) generated for 59 ha mangroves of different conditions in 4 sites. Baseline data collection on sequestration quantification. Sequestration profiles through time (under management options) in late-stages of development (Duncan *et al. submitted*); Literature review on possible discount factors complete and data gaps previously-identified for the Philippines closed after the approval and publication of updates to Verra methodology VM0007 for coastal wetland conservation and restoration.

Community identification methodology for survey implementation (on extractive use and clearing) completed and target sites identified.

Output 5 – Break donor dependence and create financially sustainable community-based management.

The spin off entity (Coast 4C) from Net-Works is now legally registered. The evolving financial model of Coast 4C assumes seaweed trading to eventually become the main source of revenues. In this model, essential support for iMPA implementation (e.g. maintenance of basic enforcement facilities, management capacity building) is treated as cost. This means these costs will be covered by the income of the social enterprise.

A “ring-fenced” team has been set up while Net-Works completes its transition into Coast 4C. If fundraising and revenue targets are realised, this team will be transitioned to Coast 4C to manage the nets and seaweeds supply chains and to support iMPA management councils maintain effective iMPA implementation. The pandemic has created added challenges to fundraising as the business of some clients have been adversely affected, and a very short lead time within ZSL for the transition to be achieved.

A Seaweed Supply Chain Manager is being hired to strengthen Coast 4C capacity to expand commercially seaweed trading. This post will coach and mentor current supply chain operational team, who mostly do not have proper commercial training. To improve our ability to scale farming, we are collaborating with the University of the Philippines – Marine Science Institute in the field trials of new seaweed strains. We will also be collecting potentially new seaweed strains from the wild for lab propagation and eventually field testing. Meloy Fund and Koltiva will provide Coast 4C technical assistance in seaweed production and trading management information system to build efficiency in monitoring and managing production and trading of dried seaweeds. We received a supplemental grant from the IUCN Blue Natural Capital Financing Facility to improve our warehouse in Bohol and our seaweed baling capabilities (**Annex 18**).

We accumulated a total inventory of 39.6 metric tonnes (MT) of dried seaweeds, with gross revenues of around £██████ per month in the two bay-scapes. Our monthly gross revenue from trading of used nets is £██████. Our buyer of used fishing nets has been impacted by Covid-19 and has stopped buying our used fishing nets, prompting us to explore alternative buyers.

3.2 Outcome

Indicator 1 - Implement eight (8) iMPAs. Eight iMPAs have been legally established in two bay-scapes with the enactment of municipal ordinances (**Annex 40,41,42,43,44,45,46,47**). The 8 iMPAs cover a total area of 5,766 ha. or average size of 720 ha., which is higher than the 400-ha target. The total area under protection represents 17.7% of estimated total bay-scape waters (**Annex 70**). The no-take “replenishment” zones total 2,188 ha, an average of 273 ha, which is higher than the 200-ha target. Seven of eight iMPA have legally mandated management councils. (**Annex 33,34,35,36,37,38,39**). Tambaliza and Punta Buri iMPAs already have 5-year management plans duly approved by the municipal governments (**Annex 71,72**). Management plans of Salvacion-Malangabang, Silagon, and Guindacpan iMPAs are in various stages of formulation (**Annex 73,74,75**)

Indicator 2 - Halt or reverse declines in key marine species and habitats. The 8 legally declared iMPAs in two bay-scapes protect a total area of 5,766 ha., including 181 ha. of mangroves, 226 ha. of seagrass, and 237 ha. of corals. Most Philippine MPAs are dominantly corals and now we are seeing habitat diversification and inclusion in the iMPA approach. Standard MPA surveys were conducted in Tambaliza (**Annex 76**) and in Punta Buri (**Annex 77**), Salvacion-Malangabang, Silagon and Igbon (**Annex 78**). These surveys generated the baselines after their legal declaration. The surveys covered mangrove and seagrass habitats using community structure survey methods and assessed coral reef status - using photo quadrats, rugosity, and fish visual census methods.

Indicator 3 - Set socioeconomic baselines. We implemented baseline socio-economic surveys in Tambaliza, Punta Buri, Salvacion-Malangabang, Silagon, Igbon, Guindacpan, Handumon, and Jandayan Sur & Norte using our standard survey tool (**Annex 79**). We conducted repeat surveys in some sites. However, due to increasing data management load (including VSLAs and supply chains) of the team, we only managed to do quick tabulations on specific data needed to inform iMPA planning.

Indicator 4 - Livelihoods diversified. The 8 legally established iMPAs have a total ecological seaweed farming zone of 199 ha. Subdivided into 1/8-ha. farm lots, this will provide up to 1,598 fishing families opportunities to engage in seaweed farming as alternative and/or supplemental livelihoods. By the end project duration, we already trained a total of 143 local fishers (representing 1 household each) and provided production assistance to 69 fisher-households to engage in seaweed farming using the ecological methods (e.g. with lesser plastics inputs) we have promoted. Farming has been impacted by typhoons, sea surface temperature warming induced disease (ice-ice), and Covid-19 lock down. At one point, farmers in Guindacpan Island (a major seaweed farming site) were not allowed to visit their seaweed farms due to

a month-long lock down. To supplement limited supply, we were getting from assisted farmers, we decided to start buying from other seaweed farmers to meet supply commitment to Cargill and, more importantly, provide small seaweed farmers more accessible market during the pandemic.

Indicator 5 - Business model from diversified Net-Works business model supporting a small local team to sustain community-based conservation activities and the supply chains. The Net-Works spin off entity is now registered as Coast 4C, with ZSL representatives sitting in its board. **(Annex 80)**. ZSL created a “ring-fenced” team to work for Coast 4C during the transition period or until September 2021 **(Annex 81)**. Most staff members of this team have been with Net-Works for years and are very familiar with the iMPA approach. The Seaweed Supply Chain Manager we are recruiting will bring in commercial expertise the current team lacks. Total current inventory of dried seaweeds is 36.9 tons. Over a period of 12 months, this means £[REDACTED] gross revenue per month from the two bay-scapes. Our gross monthly revenue from used fishing nets is £[REDACTED]. Our European buyer of used fishing nets stopped buying from us since European economy has been hit badly by the pandemic. Coast 4C also got a consultancy contract with the World Bank and IUCN BNCFF just provided a supplemental funding to upgrade vital supply chain logistics and modest staff salary support. The partnership with Meloy Fund and Koltiva is evolving. These supplement the revenue we are expecting from the supply chains.

3.3 Monitoring of assumptions

Project Summary	Risks and Assumptions	Comments on Status
<p>Outcome</p> <p>Community-based conservation effectively protects 15% of bay-scape waters in three pilot bay areas (thereby meeting national and CBD targets), fully sustained by a diversified Net-Works business model that enhances socio-ecological resilience and reduces dependence on donor funding.</p>	<ul style="list-style-type: none"> ▪ Municipal and barangay local government units supportive. All have shown support to date; ▪ Further natural disasters, particularly tropical storms, typhoons and earthquakes do not hinder significantly project sites or activities. However, we were surprised how much conservation work the communities were willing to do even in the immediate aftermath of Typhoon Haiyan. ▪ Revenues in the business model can be made to match the costs of ongoing iMPA support – which depends on both increasing supply and price of goods, and finding efficient ways to reduce costs – something that we have already shown we are very effective at with Net-Works. ▪ Presence of active People’s Organizations engaged in Coastal Resource 	<p>Municipal and barangay LGUs have been very supportive. The strong endorsement of barangay local governments of the proposed iMPAs and the enactment of municipal ordinances legally creating the iMPAs are manifestations of local government support. Financial cost-shares and technical assistance from barangay and municipal governments in planning and construction of guardhouses are concrete expressions of support.</p> <p>A severe tropical storm (Tisoy/Kammuri and Ursula/Phanfone) hit the Visayas area in December 2019, affecting most project sites in Panay. Our assisted seaweed farms were damaged.</p> <p>With the slowdown of the global economy due to the pandemic, our buyer of used nets in Europe temporarily stopped buying from us. We are already in talks with an alternative buyer in Taiwan who is willing to offer us the same price (note: our first container was shipped to Taiwan on 26th June). We have a total inventory of 39.6 tons of dried seaweeds. We are having challenges securing shipment booking as the pandemic has also affected merchant shipping. Hence, revenues are tied up to our inventory. ZSL decided to provide Net-Works with bridge financing (with Cargill purchase order and letter of intent as guarantees) so we can keep our commitment to buy nets and seaweeds from partner communities.</p> <p>Active fishers’ organizations are existing in the eight final iMPA sites. They have been fully engaged in crucial iMPA establishment (e.g., sources of local ecological knowledge for spatial planning,</p>

	<p>Management/fisheries management with high conservation awareness</p> <ul style="list-style-type: none"> ▪ Receptivity of stakeholders to a new approach to conservation through business models. 	<p>endorsement of spatial plans and draft ordinances) and implementation (e.g., management council members, fish wardens, VSLA environment funds contributions). All of them are represented in the newly-created management councils</p> <p>In all sites we introduced the business model supported iMPA approach, it is embraced readily by communities and local officials. The fact that all proposed iMPAs are now legally declared is proof of stakeholder reception.</p>
<p>Output 1 Effective community-based management of iMPA eight iMPAs across the two bay-scapes:</p>	<ul style="list-style-type: none"> ▪ Local champions can be found which has always been possible in previous communities although sometimes can be complicated by underlying political agendas. ▪ Community-level support for conservation is motivated by shared experiences with similar communities. We have found previously that cross-visits are highly effective but only when they are well planned with defined objectives, clear structure and follow up. ▪ Engagement and support from local government is secured throughout the project. Following the national elections in April 2016, government should be stable for 3 years but level of bureaucracy and time around MPA ordinances can vary depending on the village and LGU officials. ▪ Boundaries between municipalities are defined or can be resolved, especially where they may affect MPA establishment. 	<p>Assumption valid all throughout project duration. The people's organizations and VSLA constituency provide a venue for spotting local champions. Our community organisers monitor VSLAs for any concerns around them becoming politicised but this has not been an issue to date.</p> <p>Development of Tambaliza iMPA in Concepcion as e.g., iMPA centre of learning. The ProCOAST, which ZSL co-implements with DENR and GIZ, has supported the development of Tambaliza iMPA as centre of learning for iMPA, VSLA, and nets recycling. ProCOAST has resources to organize LGU learning visits to Tambaliza and can help co-finance replication, if learning visitors express interest in this model.</p> <p>Barangay and municipal governments are fully engaged in iMPA creation and implementation. For instance, LGUs Concepcion and Ajuy allocated financial cost-shares to build guardhouses in Tambaliza, Punta Buri, Salvacion-Malangabang, Silagon, and Igbon. Municipal Engineers provided technical assistance in finalising building plans and program of works and supervised actual construction.</p> <p>Partner LGUs in the two bay-scapes have no prevailing boundary related issues that may undermine collaborations. These two bay-scapes have been known in their respective provinces for inter-municipal alliance in coastal resource management.</p>
<p>Output 2 Integrated Territorial Use Rights for Fisheries (TURFs) introduced within iMPAs (creating TURF-reserves or replenishment zones) in two bay-scapes to align fishers' incentives with sustainability and</p>	<ul style="list-style-type: none"> ▪ Communities can reach agreement on location of buffer zones and managed fishing areas. Often these are a mechanism for implementing existing (unenforced) laws on fishing gears. 	<p>We have not encountered any difficulties in facilitating community agreement on buffer zones and managed fishing areas. The idea of access to the managed zones as incentives for participation and compliance to the rules is very appealing to most communities. But, opposition from external vested interests cannot be downplayed. The enactment of Salvacion-Malangabang and Igbon iMPAs was hard won victory considering the very strong and organized attempts by commercial/illegal fishers to block approval. We experienced a conflict of interest (involving local legislators) case while lobbying for the Handumon iMPA ordinance. Strong community support prevailed in the end.</p>

<p>MPA management.</p>	<ul style="list-style-type: none"> ▪ Improved diversity of function of MPA guardhouses will enhance enforcement of no-take zones and illegal fishing activities through additional surveillance and active engagement of fishers. ▪ Women engage as fish/forest wardens which may be facilitated through training specific women's enforcement teams as successfully applied in South Africa and Nepal. ▪ Participatory CPUE surveys and perception surveys are able to detect any changes within the lifespan of the project 	<p>Assumption remains generally valid. And, we are getting anecdotal feedback on the validity of the assumption Tambaliza and Punta Buri – the first two sites with completed guardhouses.</p> <p>We have trained a total of 80 fish wardens in 8 iMPA sites, of which 15% are women. In Yr3, we reported that 31% were women. Composition of fish wardens in newly-declared iMPAs both in Iloilo (Salvacion-Malangabang and Silagon) and Bohol (Guindacpan and Jandayan) are dominantly men, bringing down overall % of women fish wardens.</p> <p>We are able to conduct CPUE, using perception surveys (Annex 68) and catch landing monitoring only in Yr4, where 5 of 8 iMPAs were legally declared. Also, the method we were aiming to use was costly and it took us some time to do modifications to make it affordable. We are planning to use results of Fish Right Project wider CPUE survey (which we also supported) to enrich our baseline. However, we still need to get access to their final reports. We already have the raw data.</p>
<p>Output 3 Diversified Net-Works business model supports environmental management and biodiversity conservation, and clears up marine debris.</p>	<ul style="list-style-type: none"> ▪ Available conservation/ environmental champions suitable as village agents ▪ Viable markets for plastic waste other than nylon ▪ Net-Works systems and M&E are robust enough to convert to a private code. Sharing of the toolkit, current data collection methods and results through a series of meetings with FLOCert (leading experts and behind Fair-Trade certification) have suggested this is the case. ▪ BFAR issues seaweed farming permits according to their current guidelines. 	<p>Community buy in for VSLAs remain very strong and they will always provide a good recruitment ground for local conservation leaders. Cross-membership between VSLAs and iMPA management councils is high, which can be used as initial basis for spotting local champions. We have already trained a total of 31 village agents (94% women) in two bay-scapes, 58% of them are active. Trained agents have already formed a total of 20 new VSLAs.</p> <p>Local scrap buyers also buy other recyclable plastics. Our seaweed farming method has already created a market for used PET bottles, which replace Styrofoam buoys. We will resell these into sustainable recycling supply chains at the end of life. We have been in contact with Plastics Bank, who is interested to set up operations in central Philippines.</p> <p>Assumption is no longer valid. Net-Works decided earlier not to pursue the idea of private and FLOCert certification.</p> <p>Local government units (not BFAR) have the authority to issue farming permits. We continue to enrol assisted seaweed farmers to a BFAR-linked crop insurance program for seaweed farmers. We are assisting farmers and VSLAs so their members can meet the eligibility guidelines.</p>

	<ul style="list-style-type: none"> ▪ Sustainable seaweed farming methods are adopted by families and not undermined by existing accepted practices e.g., use of polluting plastic ties. ▪ Loss of seaweed production due to weather/disease is within contingency parameters set within the business model (based on scientific research and extensive discussions with key stakeholders). 	<p>The methods we jointly developed with Dr. Anicia Hurtado, which were implemented in deeper (at least waist-deep) farming sites were readily adopted by local seaweed farmers, after training and provision of production assistance. Most farmers have low productivity with their existing farming practices and the alternative we presented with forecasted better yield was readily adopted. Farming in Yr3 and Yr4 was impacted by long period of warm sea temperature and typhoons, leading some to doubt the suitability of the methods we introduced. We have recently decided to be more enabling (rather than prescriptive) in the development and promotion of farming methods that will potentially perform better. We are consulting with local farmers what they think are the best farming practices that have better chances under warmer conditions</p> <p>We have kept the size of farms we supported to 1,250m² size so it can be covered by the government-subsidized crop insurance, while Net-Works continued to explore more affordable insurance options.</p>
<p>Output4</p> <p>Incorporation of mangroves into iMPA ordinances and development of the science base towards potential certification of blue carbon from mangroves in the Philippines on the voluntary market.</p>	<ul style="list-style-type: none"> ▪ Stable land tenure is existing or can be established for project sites ▪ Community agreement and buy-in to implement Plan Vivo ▪ Project is validated and verified under the Plan Vivo Standard. ▪ Plan Vivo and ZSL are able to secure buyers for each tonne of CO₂e generated from the project ▪ Market price for tradeable carbon remains fairly stable and high therefore project costs are offset and communities benefit from income. 	<p><i>We have already revised this output statement in the logframe. However, we did not update the assumptions in the last technical Change Request. We will be seeking Darwin approval of proposed new assumptions (in italics) below:</i></p> <ul style="list-style-type: none"> ▪ Stable and appropriate land tenure is existing or can be established for project sites (4.1 – carried over) ▪ <i>Representative sites can be accessed with support of community members for blue carbon stock and sequestration monitoring (4.2, 4.3)</i> ▪ <i>Community agreement and willingness to engage with survey approaches to understand levels and drivers of potential extractive mangrove use (4.3, 4.4)</i> ▪ <i>Access to appropriate laboratory equipment for analysis of mangrove soil carbon sources and for complementary carbon stock data (e.g., through formation of collaborations) (4.4, 4.6)</i>
<p>Output 5</p> <p>Break donor dependence and create financially sustainable community-based management</p>	<ul style="list-style-type: none"> ▪ Efficient approaches to iMPA management can be developed to ensure costs are within the scope of resources available within business models and local government resources. ▪ Funds can be accessed to the right level to support MMPAs sustainably by Yr4. We already have a strong track record with existing business models and counterpart funding from local governments. 	<p>The iMPA approach diversifies financing base to ensure long term and sustained effective management of iMPAs. So far, we have implemented the following financing diversification schemes: 1) include annual budgetary provision in iMPA ordinances; 2) link VSLA environmental funds to iMPA management; 3) adopt a sharing system for fines and penalties collected from violators; 4) access other grants to complement Darwin funding. New grants accessed in Yr4: German Embassy small grant, Australian Embassy Direct Aid Program, Meloy Fund, and IUCN BNCFF; 5) use grant funds to leverage LGU funds. Municipal governments in Iloilo have provided financial and technical assistance as counterparts for guardhouse construction. LGUs in Bohol have provided funds, in-kind and personnel support for the MPA</p>

		guardhouse construction We are still growing the revenue streams from nets and seaweeds.
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3.4 Impact: achievement of positive impact on biodiversity and poverty alleviation

The eight legally established iMPAs cover a total area of 5,766 ha., including no-take zones of 2,188 ha., contribute to the Philippine Biodiversity Strategy and Action Plan 2014-2025 in achieving the Aichi Biodiversity Targets and the CBD targets for marine biodiversity protection. The eight iMPAs cover mangrove (181 ha.), seagrass (226 ha.) and coral reef (237 ha.), habitats, maximising coastal and biodiversity protection, which we are monitoring through biological surveys. This new generation of bigger and habitat-diverse MPAs is in the top 3% in the country in terms of size and around 45 times larger than the average MPA size (>23 times larger than the average no-take zone size), so this project offers the potential for transformational difference in community-managed MPAs in the Philippines. Importantly, these iMPAs take protection within the two bay-scapes above the nationally mandated target of 15% (Fisheries Code RA 8550). Whilst it is still early to fully evaluate the biodiversity impacts through underwater surveys due to pandemic related delays which also affected our ability to survey, 64% of respondents in iMPA Tambaliza perceived that fish-catches had increased since iMPAs were introduced.

Our capacity building approach has taken three forms: environmental training including enforcement and mangrove and beach forest training; supporting VSLAs that address poverty with Environment Funds to enhance community capacity to manage their own resources, and; developing a toolkit for replicating the iMPA approach. For VSLAs, the average annualised returns on assets are 33% and 83% of ZSL-Philippines supported VSLA members are women helping address poverty and gender equity. Many VSLA members avail of loans and investing VSLA savings to support livelihood activities, suggesting the multiplier effects of VSLAs.

We have helped to increase incomes through the trading of seaweed, and we have increased financial inclusion through the VSLAs. £[redacted] community income from seaweed trading, with £[redacted] additional income associated with the premium price that we have paid. By end of Yr4, total fishers trained in eco-seaweed farming reached 143 and 69 farmers received production assistance to engage in actual farming so were able to either start or scale up their seaweed activities. Seaweed farming continues to be impacted by climate change, particularly ice-ice syndrome and typhoons. Whilst we work to address these issues, we have supported farmers in registering with the Philippine Crop Insurance Corporation and with their claims for losses. We have completed surveys and collected information on wellbeing metrics in years 2017/2018 and 2018/2019 (the last survey before the pandemic), and we aim to complete the next round of surveys once the pandemic allows and write up the results in the coming months.

It is worth mentioning that these two bay-scapes are strategically positioned within two nationally recognised fisheries ecosystems: the Visayan Sea and the Danajon Bank Double Barrier Reef. The bay-scapes are proximate to midsections of these ecosystems making them ideal learning sites and geographic scaling platforms.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

G1.5 [By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters]

- We have worked with 75 VSLAs, which provide fishing families access to basic financial services. Anecdotal information we gathered suggest that access to VSLA financial services help members in coping with economic dislocations caused by COVID-19.
- We have catalysed the creation of 8 community-managed iMPAs. These iMPAs have more diverse habitat composition, improving their resilience. The eight established iMPAs have total mangrove forests of 181 ha. mostly inside no-take zones. We will build local capacities to rehabilitate these mangroves using community-based approaches developed and employed in previous Darwin grant. Mangroves enhance resilience of fishing communities, providing coastal greenbelts that protect them from strong winds, waves, and surges (documented in scientific research with grant 21-010 Duncan et al., 2016 doi: 10.1016/j.marpolbul.2016.05.049).

G8.10 [Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.]

- VSLAs help democratise access to basic financial services. This project has catalysed the formation of 34 new VSLAs. We are engaging a total of 75 VSLAs (41 pre-existing) in the two bay-scapes. We also trained other local NGOs and special projects (e.g., USAID Fish Right) to organize VSLAs

G12.2 [By 2030, achieve the sustainable management and efficient use of natural resources]

- The iMPA approach requires compliance to a set of standards, e.g., 400 ha. minimum total size, 200 ha. no-take zone, buffer zone as TURFs, managed fishing area, ecological seaweed farming zone, and coverage of at least two habitat types. Social inclusion and incentivisation of participation are key principles. Information and technical guidance in management planning assure formulation and adoption of science-based management plans. On top of these is the business model approach, which we are expecting to resource effective iMPA management in the long-term, freeing them from boom-and-bust cycle of conventionally designed and funded MPAs. Taken as a suit of strategies, these will promote sustainable and efficient use of coastal resources.
- Incentivising access to fishing grounds (e.g., buffer-TURFs zone and managed fishing areas) that benefit spill over from no-take zones promotes community appreciation on good enforcement and economic benefit from active participation (e.g., rights to fish in preferential use areas). The eight established iMPA have total buffer-TURFs zones of 1,509 ha. and manage fishing areas of 1,945 ha.

G12.5 [By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse]

- Since our first year of operation, Net-Works has already collected 291 tons of used fishing from all collection sites in the Philippines.
- We exported a total of 234 tons of used fishing nets to Slovenia for recycling
- We did a pilot implementation of Bulk buying Action to reduce WASTE Plastics in the Ocean (BAWAS Plastic), which aims to reduce by 50% the products in single-use packs/wraps being bought by community members by increasing the amount/volume of products in bulk and more readily recyclable packaging. (**Annex 82**). Pilot implementation involved three VSLAs, with replication plans suspended due to the pandemic.
- The Trash for Heath (T4H) scheme we piloted in Concepcion; Iloilo continues. T4H incentivises collection and proper management of residual wastes at the village level by prioritising *barangays* and households that participate in the scheme (**Annex 83**).
- The seaweed farming methods we are promoting minimizes plastics inputs

G13.1 [Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries]

- 75 VSLAs provide vulnerable coastal families with access to basic financial services and social funds.
- iMPAs are designed to be habitat inclusive. The eight established iMPAs are much bigger (45 times bigger than national average) and include mangrove and seagrass habitats. This represents a significant improvement from the majority of MPAs across the country, which are small (16 ha. average total size) and dominantly coral reefs.
- The iMPAs we have helped established are recognized by local government unit partners as disaster preparedness interventions. Well protected mangroves provide greenbelts to coastal settlements, shielding them from strong winds, waves, and storm surges.

G14.1 [By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution]

- See G12.5
- Science has suggested the role of seaweeds in mitigating ocean acidification
- We are also partnering with University of Technology - Sydney to explore bioplastics and bio-fertiliser applications of seaweeds

G14 [Share of marine areas that are protected]

- Eight iMPAs we have established cover a total area of 5,766 ha. as iMPAs. The iMPAs include mangroves (181 ha.), seagrass (226 ha.) and coral reefs (237 ha.)

G14 [Fraction of fish stocks overexploited and collapsed (by exclusive economic zone)]

- Spill over effect of iMPAs, effective enforcement in and around iMPAs, and managed fishing inside iMPAs are intended to at least stabilize fishing efforts, preventing further depletion and collapse.

G14.2 [By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration]

- See G12.2 and G13.1

G14.4 [By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics]

- The iMPAs we catalysed have buffer zone-TURFS, managed fishing areas, and eco-seaweed farming zones. The eight established iMPAs have total buffer zones and managed fishing areas of 3,455 ha.
- The USAID-funded Fish Right project, which ZSL is an implementing partner, promotes right-sizing in fisheries. It employs fisheries research, science-based and ecosystem level fisheries management planning, partnership, tapping of local champions, and capability building. ZSL has been involved in ground activities to support these key strategies. ZSL views effectively-managed iMPAs as a fundamental right-sizing tool, stabilising supply side through regeneration and eventually MPA spill over.
- We have already trained a total of 80 fish wardens and provided them with essential enforcement assets, such as guardhouses, patrol boats, megaphones, binoculars, GPS gadget, flashlights, etc.
- ZSL is active in the Visayan Sea fisheries ecosystem level initiative of the Bureau of Fisheries and Aquatic Resources to put the Visayan Sea under a management regime that considers it as one fishery management unit.
- We signed a MOA with Oceana in Yr3 (**Annex 14**) formalising our collaborations in the following areas: MPAs, mangroves conservation, enforcement, and illegal fishing reporting.

G14.5 [By 2020, conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information]

- ZSL has delivered eight iMPAs under this Darwin grant. The average size of eight iMPAs already established is 720 ha., which is 45 times bigger than the current average total size (16 ha.) of MPAs in the Philippines). iMPA no-take zones are 23 times bigger than the average no-take zone size (12 ha.) of MPAs across the country. Demonstrating that bigger and more habitat diverse MPAs are possible can provide new momentum for LGUs to meet legally mandated declaration of 15% of municipal waters as MPAs.

G14.a [Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries]

- Standard biological surveys were conducted in five sites in Concepcion-Ajuy and rapid assessment conducted in Talibon-Getafe bay-scapes, informing spatial planning and management planning.
- We are in negotiations with other groups for data sharing on long-term MPA datasets.
- We have the content to fully develop the iMPA toolkit (**Annex 85,86,87,88**), which includes sections on biophysical survey methods for coral reefs, seagrass, mangroves, and seahorse survey. ProCOAST is supporting the publication of key components of the tool kit, i.e., VSLA Environmental Funds (**Annex 30**), social marketing (**Annex 31**), and biophysical assessments (**Annex 32**)

G14.b [Provide access for small-scale artisanal fishers to marine resources and markets]

- We integrated TURFs zones, managed fishing areas, and eco-seaweed farming zones in all of the eight approved iMPAs.
- Net-Works nets supply chain is accessible to all small fishers and we are now growing the seaweed supply chain commercially. A big international end-user of carrageenan extracted from seaweeds is partnering with us.

- We sent samples of seaweeds to the University of Technology – Sydney for lab test on potential bio-plastics application of carrageen extracts. Initial results have been very encouraging. If advanced, this will open a new market for seaweeds our partner communities will be producing.

4.2 Project support to the Conventions or Treaties (e.g., CBD, Nagoya Protocol, ITPGRFA, CITES, Ramsar, CMS, UNFCCC)

This project contributes to national action plans and programs to support the country’s achievement of the Convention on Biological Diversity, Aichi Biodiversity Targets and Sustainable Development Goals. The project includes strategies and approaches anchored on the broader framework of Integrated Coastal Management (ICM) implemented in Key Biodiversity Areas, including (i) supporting local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced and rehabilitating degraded ecosystems; (ii) adopting measures to avoid or minimise adverse impacts on biological diversity (Articles 8 & 10). The Net-Works™ model also encourages the involvement of coastal communities in the management and benefit-sharing from the sustainable use of biological diversity (Article 8), and is an economically and socially sound measure for incentivising conservation and sustainable use of components of biological diversity (Article 11). Net-Works™ is designed to support community-based protected areas, which can contribute to the protection targets under CBD only when they achieve scale. This is demonstrated by the eight iMPAs, which are among the largest community-managed MPAs in the Philippines.

These strategies will contribute to the achievement of the Philippine Biodiversity Strategy and Action Plan 2014-2025 in contribution to achieving the Aichi Biodiversity Targets:

- Terrestrial Ecosystems, Priority Strategy 1- Protect and conserve existing natural habitats and pursue restoration of the functionality of degraded habitats (supporting Aichi Targets (AT) 1, 2,5,11,14,15,19)
- Terrestrial Ecosystems, Priority Strategy 3 – Conserve and protect natural ecosystems to improve the resilience of vulnerable communities (supporting AT 1,2,15,19)
- Aquatic Ecosystems (Freshwater/Marine), Priority Strategy 5- Implement habitat rehabilitation programs and strengthen collaboration among relevant agencies and stakeholders on land and water use, resource extraction, ecosystem restoration, law enforcement and sustainable livelihoods (supporting AT 1, 2, 5,6,10,11,15).

4.3 Project support to poverty alleviation

Seaweed farming employs labour in planting preparations. Each unit of farm employs at least a day every crop cycle 1-2 people in seeding the crop lines. For every hectare subdivided into 8 units of 1/8-ha. farm lots, this means 8-16 people are hired to mount seedlings every cycle. For a site with fully developed 10-ha. seaweed farming zone, this means 80-160 people can be employed for at least a day every cropping.

By end of Yr4, Net-Works hubs operating in two bay-scapes collected a total of 96.5 tons of used fishing nets, providing £[REDACTED] in direct community income from a product that had zero value before Net-Works started operating. VSLAs earned at least P1.00 for every kilo of nets (and dried seaweeds) they buy from members and resell to Net-Works. As trading partners, VSLAs generated a total income share of around £[REDACTED] from the 96.5 tons and part of their earning goes to VSLA environmental funds. These figures do not look substantial, but shifting mindsets that poor people cannot support conservation financially represents a significant psychosocial empowerment. By end of Yr4, our two hubs bought a total of 39.6 tons of dried seaweeds, which is equivalent to £[REDACTED] direct community income.

Previous research (Hill et al., 2011) identified that risk was a key barrier that prevented fishers from diversifying their livelihood options, e.g., starting seaweed farming. We facilitated insurance coverage of assisted seaweed farmers by the Philippine Crop Insurance Corporation, which implements a subsidised insurance program open to seaweed farmers about 4 years ago.

Millions of people in Philippine coastal communities are dependent on income from seaweed farming. However, despite increasing demand, seaweed production in the Philippines is falling as a result of inequitable and inefficient supply chains that prohibit R&D within the industry to reach seaweed producers. This means that old and tired varieties of seaweed are showing reduced growth rates, and this has recently been massively exacerbated by extended periods of higher-than-average sea surface temperatures. Even in parts of the world where seaweed farming has been introduced in recent years (e.g., the Western Indian Ocean) they are using old and imported cultivars. This means that the economic viability of seaweed farms is declining, driving people deeper into poverty and resulting in a return to fishing already overexploited fish stocks. Net-Works fills a critical gap in bridging between seaweed farmers and industry-level R&D. As

a result, we have started rolling out technological innovations in seaweed farming methods, and have created an exciting partnership between industry (Cargill) and academia (University of the Philippines-Marine Science Institute) that really addresses some of these key concerns and delivers new seaweed cultivars, generated from local wild populations. Initial projections based on modelling from pilots demonstrate that these innovations will bring people above national poverty thresholds within 1 year of implementation.

4.4 Gender equality

Women membership in VSLAs remains high at 83%. VSLAs are a key tool we are using to engage more women. VSLAs are the main social infrastructure for generating iMPA buy in, particularly the idea of creating habitat diverse and bigger MPAs. Whilst we still have a challenge in increasing female participation in iMPA management councils – that normally have membership defined by office/position (or *ex officio*) within local government units such as barangays (villages) and people’s organisations. In Yr3, we reported that average women membership in management bodies was only 21%. We have seen an encouraging improvement in Yr4, with women now representing 34% of management council members across all sites. Of the 80 locals were trained as fish wardens, 12 or 15% are women.

Addressing democratic processes to deliver increased gender equality within barangay local government units is something that will take a long time to achieve. In order to increase engagement of women in iMPA governance, we have linked VSLAs, which exhibit high female participation, to MMCs. The environment fund empowers VSLAs to have a say and a role in governance, because VSLAs decide on when and where their environment funds will be donated, and MMCs are accountable in how they spend this money.

In the last two years, we organized a total of 209 social marketing and community outreach activities in the two bay-scapes. Of the 4,738 local residents who participated, 2,614 (55%) were women. Of the 31 VSLA agents we trained and mentored, 23 (94%) are women.

4.5 Programme indicators

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

Yes. By leveraging the VSLAs as a platform for outreach and engagement in the planning and zoning stages, application of our social marketing strategy, and inclusion in all phases, we were able to involve a far larger part of the population that is normally engaged in MPA design and establishment. The Environment Fund within VSLAs gave a much larger number of people the opportunity to engage in MPA implementation and management than normally is possible (normally restricted only to MPA Management Council), and it has provided some degree of accountability of the MPA management Council to the broader population. VSLAs include the poorest people within the communities, and therefore this approach has given those groups a voice in the process that has not previously existed.

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

Tambaliza and Punta Buri are the first iMPAs to be legalised. These two sites have 5-year management plans formally approved by municipal governments (**Annex 71,72**). We facilitated and provided technical guidance in the preparation of the Coastal Resource Management-Ecosystem Approach to Fisheries Management Plans of Concepcion and Ajuy, Iloilo. Formally adopted by the two municipal governments (**Annex 25,26**), these plans integrate proposed iMPA sites we were working in the initial years.

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

Our approach to MPA management and CRM-EAFM plan formulation is highly consultative and participatory. Multi-stakeholder technical working groups were created (through executive orders issued by mayors) to initially formulate broad strokes of the plans for presentation, review, and approval by the communities. The TWGs integrate community inputs in the revision of the plans. Once community agreement is reached, barangay governments and people’s organizations endorse the draft plans to the municipal level, where they are deliberated by the multisectoral Municipal Fisheries and Aquatic Resource Management Councils before they are presented for deliberation and adoption by the municipal councils. While this process is time-consuming and iterative, it generates buy in from major stakeholder groups, including women, and increases the community understanding and appreciation on MPAs. The CRM-

EAFM Plans went through similar iterative process. In certain iMPA sites, the municipal ordinance creating the iMPA specifies the percentage of women members in the management councils.

- **How did the project positively influence household (HH) income and how many HHs saw an increase?**

Selling used fishing nets to VSLAs brings additional income to poor fishing households. VSLAs have positive impact on household income as they provide option to save hard-earned income. They are helpful mechanism for managing family income. Before their introduction, local residents had the tendency to become “one-day-millionaires”, spending income from fishing almost instantly to alcohol, gambling, and other vices. With VSLAs, they can save part of their income in their community banks, buying more time to plan how to prudently use the income later. Links to VSLA elevates the “bankability” of poor fishing families as they can avail of credit at least 2 times more than their savings, enabling them to spend for essential family requirements they cannot afford if they rely solely on daily cash income.

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

While we conducted baseline socio-economic surveys, we need to undertake repeat surveys to be able to detect systematically any improvement in household income. We only have interim data analysis.

4.6 Transfer of knowledge

We have designed, printed and disseminated popular infographics and posters on the iMPA approach. We gave presentations to local governments and national government agencies, including the Bureau of Fisheries and Aquatic Resources and the Philippine Climate Change Commission. The official websites of Net-Works (net-works.com) and Coast4C (coast4c.com) feature materials about iMPA, inclusive supply chain practices, and innovations in seaweed farming. The ProCOAST project of GIZ and ZSL is supporting the publication of VSLA Environmental Fund and biophysical assessments guidance manuals, to be made accessible to local governments interested to learn about iMPAs at the Tambaliza centre of learning. Our membership with the NGOs for Fisheries Reform provides a forum to promote the iMPA approach and VSLAs as social platforms for marine conservation. Net-Works was featured in The Economist Films video on circular economy where our Darwin assisted project was highlighted. Guindacpan Island, Talibon was covered by a National Geographic Society film on ocean optimism, particularly the success of Net-Works fishing nets supply chain.

4.7 Capacity building

The Project Lead (Amado Blanco) was invited to speak about ocean governance at the 2019 World Ocean Summit in Abud Dhabi, UEA, where he talked about the necessity of economic and social inclusion of poor coastal peoples to enable them to participate in ocean governance. He was invited speaker by the Philippine Textile Research Institute to share about the Net-Works business model during the 5th InnoSight International Conference / Workshop on “Nature to Value towards a Circular Textile Industry. They consider Net-Works as a good case study. Then, he was invited by the Industrial Technology Institute to speak about Net-Works at the APEC Circular Economy Platform: Accelerate the transition to a Circular Economy in October 29- 31, 2018 in Taiwan. While the invitation was refused due to prior commitments, we have maintained contact with Taiwanese organizers. The DA-BFAR invited him to provide inputs into the process of formulating the guidelines for delineating the municipal waters in the Philippines. We were invited by the USAID-funded Fish Right project to share our experience with VSLAs as conservation and community development tool. Our Darwin-assisted project has provided us the experience and proof points to share experience and insights on the business model (with the used nets and seaweed supply chains as income centres) approach to conservation.

Amado was recognized as one of the 2017 Outstanding Southern Leyteño for his marine conservation advocacy. He was invited by the National Geographic Society to attend a science-telling bootcamp in Hong-Kong, making him a National Geographic explorer. Recently, he was invited guest on a podcast and webinar initiated by organizations associated with the University of the Philippines, where he talked about the development of the business model approach.

5 Sustainability and Legacy

The eight iMPAs we have catalysed are set up to be co-managed by communities (i.e., barangay local governments, VSLAs, people's organisations, other stakeholder groups) and municipal governments (i.e., mayor's offices, Municipal Agriculture Offices, Coastal Resource Management Offices, Municipal Fisheries and Aquatic Resource Management Councils). Approved ordinances have budgetary provisions assuring management councils of minimum funding requirements to maintain effective management. More importantly, buy in from community stakeholders has remained robust. The use of VSLA Environmental Funds to leverage funds from local governments has been proven to be effective. We are very confident the iMPAs can be sustained beyond the grant period. Coast 4C, the entity that has span off from Net-Works, is now a legal entity and has forged vital collaborations, which have started to bring in needed resources (e.g., new seaweed strains, technical assistance) and market commitments. ZSL has created a "ring-fenced" team of 15 Filipinos and two international staff to work for Coast4C in the homestretch of the transition period or until September 2021, unless extended. If Coast4C-ZSL fund-raising targets will be realised, this team will be transitioned eventually into Coast4C or seconded by ZSL to Coast4C, depending how grants implementation structures are set up.

6 Lessons learned

What worked well:

- Our involvement in the legal declaration of iMPAs offers three key important insights: Firstly, the strongest stakeholder groups we can mobilise to champion protected area creation are in the communities. Municipal fishery in central Philippines is replete with powerful commercial fishing interests and well connected with local political families. Well-organised community stakeholders can effectively repulse this opposing interest. Secondly, municipal officials who had publicly pronounced pro-conservation and artisanal fishers' stance can be optimised to galvanise support from local government institutions. Thirdly, simplification of complex science information into resource maps, and explaining complex marine science concepts, such as life-cycles, fecundity, spill over, etc, using animated videos or simple schematics facilitates easy understanding of fundamental scientific basis of what we are promoting
- Sitting down with local officials to explore cost-sharing arrangements is often more productive than asking them to fund unilaterally essential support infrastructures. Cost-shares from local communities are equally compelling in motivating local governments to commit funds and personnel.
- We made good progress in tracking women participation in project activities. Starting in Yr3, we started generating disaggregated data on participation in activities we organised and implemented. Our tracking suggests that women participation is dominant (55%) in the 209 social marketing and community outreach activities we implemented in the last two years.
- Our partnership with the University of Technology-Sydney on bioplastic applications of carrageenan extracted from strains of seaweeds our assisted farmers produce has been initially positive. They are developing technologies that may enable communities to extract carrageenan, thus, creating significant value addition to their product.
- One of the biggest global end-users of carrageenan (Cargill) is committing market access and technical support to spur much-needed growth in our seaweed supply chain.
- We have a fully developed model for iMPA management planning. With Tambaliza MPA Management Plan as model, management planning process in other sites has become more efficient.
- Modelling approach can hasten implementation. While you need to invest time in developing models, implementation can be swift once you have fully developed model. The standard models we adopted for MPA guardhouse with seaweed dryer and iMPA marker buoys have made guardhouse planning and construction and demarcation efficient because "templates" are available.

What didn't work well:

- Covid-19 quarantine measures affected team productivity and our livelihoods diversification interventions. At the height of lock downs, seaweed farmers in Bohol (where we have a concentration of assisted farming) were prohibited (Coast Guard patrols did not allow them to go out to the sea) from visiting seaweed farms, eventually resulting to crop damage and loss of seedstocks.
- The May 2019 elections slowed down team momentum. ZSL Philippines normally freezes field activities within campaign period to avoid political branding of our conservation and development interventions. Some sites were declared hotspots by the authorities and travel was regulated.
- Local elections resulted to political leadership transitions, which meant we had to reboot practically everything, e.g., establish ties with new elected officials, refile draft ordinance, etc. Personnel (e.g.,

CRM Officer) reshuffling and worse retrenchment (e.g., asking courtesy resignation of all deputised fish wardens) can happen.

- Elections can expose iMPAs more vulnerable to illegal fishing (commercial fishing inside municipal waters) activities. Candidates recognise electoral influence of commercial fishing interest aspiring local officials tend to avoid illegal fishing issues during elections.
- Politics intervening in community-based enforcement initiatives. Political patrons of apprehended illegal fishers who encroached into the iMPAs were released after settlement (mostly not above board). This caused morale of local enforcement team to dwindle. While our American Bar Association Role of Law Initiative grant provided resources to build para-legal capacity within the management councils and set up support systems necessary to ensure successful case litigation, Covid-19 restrictions in fieldwork and community outreach have limited our ability to enhance local capacity in this area.
- Women participation in iMPA management councils already formally created is low, relative to what is prescribed in the Magna Carta of Women (at least 40%) and our commitment (50) % to Darwin under this grant. MPA Management Committees normally have membership defined by office/position within local government units such as barangays (villages) and People's Organisations.
- Seaweed production performance remains lower than target. Farming was affected by extended periods of warm sea surface temperatures, which induced a bleaching known as *ice-ice*, and a strong typhoon on the week of Christmas in 2019. Shortage in seedlings was a consequence, limiting our ability to scale despite increasing demand, seaweed production in the Philippines is falling as a result of inequitable and inefficient supply chains that prohibits R&D within the industry to reach seaweed producers. This means that old and tired varieties of seaweed are showing reduced growth rates, and this has recently been massively exacerbated by extended periods of higher-than-average sea surface temperatures. Net-Works fills a critical gap in bridging between seaweed farmers and industry-level R&D. As a result, we have started rolling out technological innovations in seaweed farming methods, and have created a partnership between industry and academia that really addresses some of these key concerns and delivers new seaweed cultivars, generated from local wild populations. Initial projections based on modelling from pilots demonstrate that these innovations will bring people above national poverty thresholds within 1 year of implementation.
- Phyconomy is very challenging! We introduced new seaweed cultivation methods following expert guidance and input. There was a lot of expectation raised around these methods due to the nature of the guidance and input, and when these did not perform as expected it led to demoralisation of both the team and the farmers. However, it is clear that the diversification of farming methods is a positive, and gives farmers options/choices for methods that may work better at different times and in different places. We are now adopting a more enabling (not prescriptive) approach that allows seaweed farmers to respond to seasonal changes and implement a range of methods, including their traditional practices, whilst monitoring performance and sharing knowledge between farmers.
- Delays in crop insurance claims processing/release. The crop insurance company does not have adequate staff with background in seaweed farming to conduct site damage assessment, which is the second step in insurance claims process. None of the most recent insurance claims we assisted has been approved yet. This creates a problem for seaweed farmers. We have supported seaweed farmers through this time by bridging this finance gap.
- Delays on the enactment of iMPA ordinances, had domino effect on other grants in cost-sharing arrangement with this Darwin project. For instance, we can only move the Blue Natural Capital Financing Facility and Julius Baer Foundation approved budgets for guardhouses, patrol boats, and marker buoys after approval of municipal ordinances. Our training plan got delayed as a subsequence.

What would you do differently?

- Consider site diversification (e.g., inclusion of other sites) right at the start.
- Reduced ambition and allowed greater degree of resources for R&D – especially within livelihood components. We have built very strong partnerships in industry and academia to help address the issues. We could not have predicted the scale of the productivity problems in 2019 that affected both the Philippines and Indonesia and led to significant supply chain problems for the industry. However, it may be prudent to reserve a greater budget for R&D to attempt to mitigate any problems as and when they arise. Having said that, we feel we have done a very good job at addressing those issues and pulling together resources and capacity to do so.

What recommendations would you make to others doing similar projects?

- Review timing of funding transitions, i.e., reduction of grant funds with anticipated income flow from income centres, incorporating results of continuing business plan review and adjustment, especially when income projections need to be modified.

- Aim for a more realistic site targeting, allowing for adequate time for full development of focal sites to jumpstart economic growth engines and serve as bright spots to hasten scaling later. We did not establish hundreds of VSLAs right away. We invested attention to a couple of VSLAs and brought them to full maturity to produce a proof of concept. Projects with weather-dependent economic activities (e.g., seaweed farming) needs enough time for incubation and adjustments, especially when certain target sites do not have history of doing the livelihood projects we are promoting.

6.1 Monitoring and evaluation

In Yr3, we identified needed changes in two statements of outputs and their respective indicators. Through change request procedures, we proposed the modifications to Darwin for review and approval. Starting in Yr3, we have used the modified logframe that Darwin approved as basis for progress reporting.

In 2017, in-country Darwin project team with guidance from UK-based colleagues reviewed the indicators and monitoring system to ensure methodologies are standardised. This helped build consistency and capacity among the team and streamlined the number of indicators. Surshti Patel and Hazel Panes have been tracking agreed indicators to agreed timelines e.g., VSLA indicators are submitted monthly, MPA biological monitoring annually. We have established templates for qualitative data and informal storytelling that have allowed us to generate good content for a series of blogs that give more descriptive outcomes of the project, e.g. <http://net-works.com/2017/04/26/net-works-community-banks-saq-young-savers-story/>. We maintain a database for used fishing nets collection, which allows us to update a “dashboard” we use in communicating progress to partners. We are maintaining a similar database for the seaweed supply chain. However, we have experienced an overload in VSLA monitoring (nb: the project team maintains the central VSLA database of ZSL Philippines, which includes VSLAs organized by other project units). We are not ideally efficient in analysing and reporting the outcome of the socio-economic surveys. The idea of outsourcing data analysis and reporting would have been a more sensible option. However, our M&E Officer did site-specific tabulations in response to field team request for data to inform management planning processes on-site.

Until 2019, ZSL organized in-house annual project reviews, which the team participated. However, no external evaluation was undertaken within the project period.

6.2 Actions taken in response to annual report reviews

We received feedback after reviews of our first and second annual reports. We took advantage of the last two years to address the comments and suggestions raised by the reviewers. While women participation in management councils is lower than what we aimed, we are seeing an increase in women membership in the councils. Starting in Yr3, we started collecting gender disaggregated data on community participation. All comments and suggestions related to logframe have been addressed, including the approval of the revised logframe through formal change request procedure. Lastly, we accessed additional funding from other donors, such as Julius Baer Foundation, 2 grants from National Geographic Society, IUCN BNCCF, American Bar Association-USAID, USAID-University of Rhode Island Fish Right Project, embassy small grants, and Coast4C initially from an impact investment group and a private investor.

7 Darwin identity

The Darwin logo and UK Aid logo has been clearly displayed on all presentations that we have given. Additionally, Darwin Initiative support is referenced in a recently submitted paper that draws on information generated from a range of projects, including this one. The Darwin Initiative identity and logo features in ZSL’s website project pages and Net-Works website (see list below). The project also has a social media presence and has been publicised through both personal twitter accounts; @ZSLMarine (9,764 followers); @FishNotPlastic (2,397 followers) and re-posted via @OfficialZSL (32.9k followers) which tags the Darwin Initiative in relevant posts, as well as the Facebook pages of ZSL Marine and Freshwater and Net-Works and ZSL Mangrove and Beach Forest Rehabilitation and Conservation. The Darwin logo/identity is displayed on the following websites:

- Net-Works website <http://net-works.com/about-net-works/partners/>
- ZSL website Net-Works project page <https://www.zsl.org/conservation/regions/asia/net-works>
- ZSL website Philippines Mangroves page <https://www.zsl.org/conservation/regions/asia/rehabilitating-mangroves-in-the-philippines>

8 Impact of COVID-19 on project delivery

Quarantine declarations have limited our ability to undertake crucial fieldwork activities, including community consultations on proposed iMPA legislations and management plans, leading to delays in implementation of subsequent phases. Restrictions on meetings have caused some VSLAs to eventually dissolve. Livelihoods in assisted communities were severely impacted, especially at the onset due to unexpected disruptions of fishery supply chains. Seaweed farmer were not permitted to visit their farms resulting to crop damage. Our central technical support team could not travel to our hubs due to strict border controls between provinces, leaving the load of moving important targets largely to our field teams, with technical inputs delivered only through online channels.

Revenue generation from our supply chains has been affected significantly. The European buyer of used fishing nets stopped buying due low product sales and low utilization of pre-pandemic inventories. Merchant shipping has been affected making it very challenging to secure booking confirmations with shipping lines. Thus, projected revenues are tied up to our seaweeds and nets inventories.

We undertake regular review and updating of operational plans, which had already undergone multiple adjustments as pace of fieldwork depended on highly volatile travelling advisories. We maintain contacts with communities and municipal officials via mobile and on-line communication.

We provide our team with regular updates on Covid-19 cases trends, health and safety protocols, and quarantine advisories. We provide our field staff and community partners with PPEs. More importantly, we require staff to always observe health and safety protocols, especially the use of PPEs and practice social distancing. We require staff to comply with national and local regulations on gatherings. As much as possible, we tried to avoid non-essential meetings with community partners for mutual protection.

Livelihoods diversification helps in fostering community resilience. The social and financial safety nets that VSLAs provide help buffer economic shocks of the pandemic. Well managed MPAs can help secure food security in fishing communities.

While new working modalities cannot completely replace working arrangements prior to the pandemic, a good number of emerging working modalities are worth embracing. Virtual meetings, if set up well, are less costly and can be just as effective as face-to-face meetings, bringing down operating cost to a certain degree. More importantly, virtual options reduce significantly the risk of getting infected with the virus, which is constantly mutating.

9 Finance and administration

9.1 Project expenditure

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
TOTAL				

Staff employed	Cost
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(Name and position)	(£)	
Ana Pinto		
Gamaliel R. Oczon		
Christian L. Montilijao		
Nicholas Michael V. Measures		
Ricky C. Galvan		
Hazel M. Panes		
Ana Mae Mendoza, Kisstryl Gonzales, Sheila Tacmo		
TOTAL		
Capital items – description		
N/A		
TOTAL		
Other items – description		
Annual dive monitoring surveys for M&E		
TOTAL		

9.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total	
Julius Baer Foundation		
Private Investment to Coast 4C		
IUCN BNCFF-1		
Philippines German Embassy Small Grant		
Philippines Australian Embassy Direct Aid Programme		
USAID -Fish Right Project		
American Bar Association Rule of Law Initiative		
National Geographic Society - 1		
National Geographic Society - 2		
TOTAL		
Source of funding for additional work after project lifetime		
IUCN BNCFF-2		
TOTAL		

9.3 Value for Money

Legal establishment of eight large (by Philippine standards) and habitat-inclusive iMPAs, the spin off Coast 4C, the body of knowledge and insights we have drawn out from our works on seaweed farming, and the social (empowered communities and productive collaborations with municipal governments) and financial capital (VSLA savings) we have catalysed within the project life are really very strong attributions to the Darwin grant.

10 OPTIONAL: Outstanding achievements of your project during the (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

Our most outstanding achievement is the legal declaration of 8 iMPAs that are multiple-use and much bigger than the average size of existing MPAs in the Philippines, which only have average total size of 16 ha. and average no-take zone of 12 ha. The iMPAs we have catalysed through this Darwin grant have average total size of 720 ha. (or 45 times bigger than national ave.) and average no-take zone size of 273 ha. (or 23 times bigger than the national average). Because these iMPAs are larger, they incorporate critical mangrove (181 ha.), seagrass (226 ha.), and corals (237 ha.). Most MPAs in the Philippines are dominantly corals and because they are also small, they are unable to ensure protection of important species within critical phases of their life cycles.

Secondly, we have incorporated regenerative seaweed farming as an intervention to regulate fishing pressured while allowing MPAs to rejuvenate adjacent fishing grounds, as social and bio-fences that shield buffer and no-take zones from poaching, as incentive for community compliance to rules and regulations, and as future income centres to support effective MPA management in the long-term. While we are still trying very hard to grow seaweed farming commercially, we are confident our partnership with key market players and academia will lead to more stable supply.

Surviving and adapting to covid, including supporting our vulnerable communities directly affected.

ANNEXES

Annex 1. Project's most recently approved logframe

Annex 2. Report of Progress and Achievements Against Final Project Logframe

Annex 3. Annex 3 Standard Measures

Annex 4. Aichi Targets

Annex 5. Publications

Annex 6. Darwin Contacts

Annex 1 Project’s original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact: Community-based marine protection in the Philippines enhances resilience to natural disasters while helping meet national targets (15%), fully sustained through business models, reducing donor dependency and building sustainability. (Max 30 words)</p>			
<p>Outcome: (Max 30 words) Community-based conservation effectively protects 15% of bay-scape waters in two pilot bay areas (thereby meeting national and CBD targets), fully sustained by a diversified Net-Works business model that enhances socio-ecological resilience and reduces dependence on donor funding.</p>	<p>0.1 Implement eight (8) iMPAs, each of minimum 400 ha, totaling 15% of bay-scape waters (out to 3km) by Yr 4 (minimum of 5,800ha protected, including at least 1,800 ha of no-take zone). 0.2 Halt or reverse declines in key marine species and habitats (mangroves, seagrasses, coral reefs and indicator invertebrate/fish species) within three bay-scapes by Yr 4, having established baselines at new sites by Year 2. 0.3 Set baselines in Yr1 through survey of stratified selection of households and achieve an average 20% improvement in locally-defined household wellbeing indicators (including subjective,</p>	<p>0.1 Municipal ordinances. GIS of bay-scapes with iMPAs plotted. 0.2 Perceptions surveys, Underwater Visual Census (UVC) surveys, photoquadr at surveys, freely-available satellite remote sensing (using established ZSL methodologies: Duncan et al., 2016)</p>	<ul style="list-style-type: none"> ▪ Municipal and barangay local government units supportive. All have shown support to date; ▪ Further natural disasters, particularly tropical storms, typhoons and earthquakes do not hinder significantly project sites or activities. However, we were surprised how much conservation work the communities were willing to do even in the immediate aftermath of Typhoon Haiyan. ▪ Revenues in the business model can be made to match the costs of ongoing iMPA support – which depends on both increasing supply and price of goods, and finding efficient ways to reduce costs –

	<p>material style of life, income and food security) by Yr4 (n=25,000 households total, min of 500 sampled in stratified selection)</p> <p>0.4 Livelihoods diversified from an average of 2.0 occupations per household in Yr 1 to 2.5 in Yr 4 (n=25,000)</p> <p>0.5 Business model from the diversified Net-Works business model supporting a small local team of Community Organisers and Biologists by Yr 4 to sustain community-based conservation activities and the supply chains, as reflected in Darwin budget.</p>	<p>on habitat changes, especially for mangroves.</p> <p>0.3 Household surveys using our tried and tested socioeconomic M&E protocol with mobile data entry of a stratified sample of 500 households at beginning, middle and end of project.</p> <p>0.4 Analyzed MPA Management Effectiveness Assessment Tool (MEAT) Reports completed at beginning, middle and end of project.</p> <p>0.5 Business plans, iMPA management plans and budgets, income from products in Net-Works supply chain, environment funds within VSLAs, counterpart funding committed from local government.</p>	<p>something that we have already shown we are very effective at with Net-Works.</p> <ul style="list-style-type: none"> ▪ Presence of active People's Organizations engaged in Coastal Resource Management/fisheries management with high conservation awareness ▪ Receptivity of stakeholders to a new approach to conservation through business models.
<p>Outputs:</p> <p>1. Effective community-based management of iMPA eight iMPAs across the two bay-scapes:</p>	<p>1.1 Free Prior Informed Consent (FPIC) obtained from all relevant municipal local governments by Yr 1, as a measure of</p>	<p>1.1 MOUs. 1.2 Village profile reports and data. 1.3 Exchange visit activity reports</p>	<p>2 Local champions can be found which has always been possible in previous communities although sometimes can be</p>

<ul style="list-style-type: none"> ▪ Pedada and Ajuy Bay, Iloilo Province linked to Concepcion Bay and Concepcion Islands, Iloilo (2 LGUs - Pedada and Ajuy) ▪ Getafe and Talibon Bay, Bohol Province. ▪ 	<p>community support and engagement.</p> <p>1.2 Village (barangay) profiles completed using Rapid Rural Appraisal approaches by Yr 1 that establish resource management needs and capacity at each site.</p> <p>1.3 Exchange visits completed to existing iMPAs within each bay-scape by Yr 1 to enthuse and educate community champions and provide practical demonstration of conservation interventions.</p> <p>1.4 Appropriate governance structures for eight iiMPAs (defined by municipal ordinances) with equitable membership (at least 50% women, and representing major social groups within each community) established or strengthened and meeting at least monthly by Yr 3.</p> <p>1.5 Participatory site selection for eight iiMPAs and municipal ordinances obtained for these by Yr 2, with total area equating to 15% of bay-scape waters.</p> <p>1.6 One iiMPA social network composed of local People’s Organization POs/MPA Management Councils (MMCs), and VSLAs established and meeting bi-annually in each bay-scape for experience sharing and cooperation by Yr 2. At least 50% women participating in decision making in the social network.</p> <p>1.7 All iiMPAs pass the criteria for Philippines MPA Effectiveness Assessment Tool (MEAT) level 1 (“MPA is established – with participatory process, adoption of management plan, and appropriate legislations and governance) by Yr 2 and MEAT level 2 (“MPA management is effectively strengthened”) achieved in all iiMPAs by Yr 4, from level 0 or 1 and on track for level 3 (which can only</p>	<p>and participant lists.</p> <p>1.4 New iiMPA ordinances, iiMPA management plans, MPA Management Council Profile, criteria from Coral Triangle MPA Network implementation manual achieved</p> <p>1.5 Coastal resource and habitat assessment reports and GIS maps</p> <p>1.6 Infrastructure e.g. marker buoys, guardhouses</p> <p>1.7 iiMPA social network registered with list of members, meeting minutes and action plan</p> <p>1.8 MEAT assessments submitted to national MPA Science Network</p> <p>1.9 VSLA savings books, savings loans taken, environment fund savings and annual share outs</p> <p>1.10 Social marketing plan, interview responses, evaluation data</p> <p>1.11 Peer reviewed paper</p>	<p>complicated by underlying political agendas.</p> <p>3 Community-level support for conservation is motivated by shared experiences with similar communities. We have found previously that cross-visits are highly effective but only when they are well planned with defined objectives, clear structure and follow up.</p> <p>4 Engagement and support from local government is secured throughout the project. Following the national elections in April 2016, government should be stable for 3 years but level of bureaucracy and time around MPA ordinances can vary depending on the village and LGU officials.</p> <p>5 Boundaries between municipalities are defined or can be resolved, especially where they may affect MPA establishment.</p>
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	<p>be achieved after 5 years of operation).</p> <p>1.8 15 VSLAs (see output 3) contributing their environment funds to appropriate management committees and management committees leverage funds from municipal LGUs to sustain management activities by Yr 2.</p> <p>1.9 Social marketing campaign delivered across each bay-scape by Yr 2 with baseline set in Yr 1 and willingness to pay for community-based marine conservation increased 50% by Yr 4 (or to minimum of PhP100 p.a. where baseline is PhP0) – indicating increased support for conservation due to pro-poor design and successful social marketing.</p> <p>1.10 Peer reviewed paper submitted for publication on ecological impacts of project's iMPAs by Yr 4.</p>		
<p>2. Integrated Territorial Use Rights for Fisheries (TURFs) introduced within iiMPAs (creating TURF-reserves or replenishment zones) in two bay-scapes to align fishers' incentives with sustainability and MPA management.</p>	<p>2.1 Buffer zones and managed fishing areas around iMPAs identified and established as part of iMPA ordinances and planning by Yr 2, of at least the same size (200ha) as the no-take zone at eight iMPAs sites.</p> <p>2.2 Rules on who can use these buffer zones and how, under what conditions, any benefit sharing arrangements, and how this is enforced included in appropriate management plans by Yr 2 and being implemented by Yr 3.</p> <p>2.3 Appropriate iiMPA guardhouses designed to include opportunities to improve fisheries operations (e.g. seaweed drying platforms) by Yr 2 and implemented by Yr 3.</p> <p>2.4 Participation in iiMPA management (number of people participating in patrols, attendance at monthly management committee meetings, proportion of</p>	<p>2.1 TURF areas defined on GIS maps with approved municipal ordinances</p> <p>2.2 TURF rules documentation and iMPA management plans with list/directory of registered TURF users</p> <p>2.3 Kg of seaweed dried per month on guardhouses</p> <p>2.4 Patrol records, apprehensions and fines records</p> <p>2.5 Perceptions surveys following Yasue et al 2010 and participatory</p>	<ul style="list-style-type: none"> ▪ Communities can reach agreement on location of buffer zones and managed fishing areas. Often these are a mechanism for implementing existing (unenforced) laws on fishing gears. ▪ Improved diversity of function of MPA guardhouses will enhance enforcement of no-take zones and illegal fishing activities through additional surveillance and active engagement of fishers. ▪ Women engage as fish/forest wardens which may be facilitated through training specific women's enforcement teams as successfully applied in South Africa and Nepal. ▪ Participatory CPUE surveys and perception surveys are able to detect any changes within the lifespan of the project

	<p>apprehensions resulting in prosecutions) established at a minimum of 50% by Yr 2 and maintained >90% of capacity by Yr 4, including increasing # women fish/forest wardens in communities.</p> <p>2.5 Perceptions surveys and participatory CPUE surveys in Yr 4 indicate that fishers perceive increased CPUE in the buffer zones and sustainable use areas between the baseline set in the year that the ordinance is approved and year 4.</p>	<p>CPUE surveys.</p>	
<p>3. Diversified Net-Works business model supports environmental management and biodiversity conservation, and clears up marine debris.</p>	<p>3.1 15 VSLAs with environment pouch contributing funds to support iMPA management by Yr 1.</p> <p>3.2 15 Village agents (one per barangay) trained and replicating VSLAs from the parent VSLA by Yr 2. At least 50% women trained as village agents.</p> <p>3.3 All VSLAs collecting discarded fishing nets and selling them into the supply chain by Yr 2.</p> <p>3.4 .</p> <p>3.5 24 families trained and actively farming 6ha of seaweed per community for 7 communities by Yr2 following social and environmental criteria and meeting standards.</p> <p>3.6 A minimum of 30 families farming a minimum of 6ha of seaweed per iMPA (total of 8) by Yr4, generating 600 tonnes of dry seaweed p.a. that meets standards for Net-Works Social and Environmental criteria and supports iMPAs.</p> <p>3.7 At least 50% of VSLAs producing and selling seaweed and nylon nets into the supply chain by Yr 3, with 100% selling both products by Yr 4.</p>	<p>3.1 VSLA Profiles in ZSL VSLA M&E database</p> <ul style="list-style-type: none"> • No. of VSLAs • No. of village agents • No. of environment pouches • total amount loaned • No. of loans/loan use • Total amount of environment funds • Agreement on environment pouch expenditure <p>3.2 Directory of village agents with contact details.</p> <p>3.3 Net quantities and sales records</p> <p>3.4 Technical specification document included in Net-Works Toolkit</p> <p>3.5 Business plans, VSLA records in M&E database, kg and price records through sales and return on investment</p>	<ul style="list-style-type: none"> ▪ Available conservation/ environmental champions suitable as village agents ▪ Viable markets for plastic waste other than nylon ▪ Net-Works systems and M&E are robust enough to convert to a private code. Sharing of the toolkit, current data collection methods and results through a series of meetings with FLOCert (leading experts and behind Fair Trade certification) have suggested this is the case. ▪ BFAR issue seaweed farming permits according to their current guidelines. ▪ Sustainable seaweed farming methods are adopted by families and not undermined by existing accepted practices e.g., use of polluting plastic ties. ▪ Loss of seaweed production due to weather/disease is within contingency parameters set within the business model (based on scientific research and extensive discussions with key stakeholders).

	<p>3.8 Total of 100 tonnes of ocean-bound plastics (including nets and other materials) diverted into the supply chain from the two bay-scapes by Yr 4.</p> <p>3.9 Proportion of beach quadrats with plastics present reduced from 60% to 40% by Yr 4 at all sites.</p>	<p>reports, transport/export permits in supply chain.</p> <p>3.6 kg of plastic waste collected from project sites, kg of plastic recycled into viable product.</p> <p>3.7 kg of seaweed produced per family per month.</p> <p>3.8 Biophysical survey data from of beaches using our tried and tested photoquadrat method for detecting the abundance of marine plastics</p>	
<p>4. Incorporation of mangroves into iMPA ordinances and development of the science base towards potential certification of blue carbon from mangroves in the Philippines on the voluntary market.</p>	<p>4.1 At least 106.5ha of mangrove forest areas included in iMPA ordinances (output 1) by the end of year 4.</p> <p>4.2 Baseline data on blue carbon stocks and sequestration in varying and representative mangrove forests (e.g., geomorphic settings/community structure/rehabilitation and degradation levels) generated by year 3 – biomass and soil components</p> <p>4.3 Baseline scenarios of mangrove extractive use and clearing, including predictive spatio-temporal approaches, and forecasting of potential emissions reduction generated by year 4.</p> <p>4.4 Quantification of sequestration achievable (and creditable) under different management options, and quantification of necessary methods (e.g. discount factors) to enable inclusion of soil carbon in Carbon</p>	<p>4.1 Project registration certificate, Payment for Ecosystem Services agreement in place and copy of issuances.</p> <p>4.2 Project design document</p> <p>4.3Agreements/ signed documents</p> <p>4.4. Technical specification document</p> <p>4.5. Technical specification document</p> <p>4.6. Meeting minutes/Constitution s and By Laws /Local Community Organiser contracted</p> <p>4.7 Survey results and amended Project Design Document</p>	<ul style="list-style-type: none"> ▪ Stable land tenure is existing or can be established for project sites ▪ Community agreement and buy-in to implement Plan Vivo ▪ Project is validated and verified under the Plan Vivo Standard. ▪ Plan Vivo and ZSL are able to secure buyers for each tonne of CO2e generated from the project ▪ Market price for tradeable carbon remains fairly stable and high therefore project costs are offset and communities benefit from income.

	<p>accounting and NDCs by year 4.</p> <p>4.5 Literature review on appropriate tenurial instruments for Plan Vivo project creation completed by year 4.</p> <p>4.6 Quantitative spatial tools for identifying optimal MPA sites for potential Plan Vivo implementation developed by year 4. iMPA</p>		
<p>5. Break donor dependence and create financially sustainable community-based management</p>	<p>5.1 Establish a business model for managing the revenues and costs associated with the supply chain for goods and services from communities (output 3) by Yr 1.</p> <p>5.2 Recruit a small and local team at each bay-scape to maintain the supply chain and provide technical support to communities in iiMPAs by Yr 2.</p> <p>5.3 Build the capacity of the local support team to manage the supply chain and support iiMPAs through Training of Trainers in Net-Works, mangroves and iiMPAs by Yr 3.</p> <p>5.4 Revenues from the supply chain generate around PhP80,000 (₱██████ monthly per bay-scape through new products to support the salaries and field activities of a small and local technical support team to maintain the supply chain and provide technical support to iiMPAs by Yr 4.</p>	<p>5.1 Business models</p> <p>5.2 Contracts</p> <p>5.3 Training workshop reports, attendance sheets, evaluations and follow up assessments</p> <p>5.4 Local government annual budget allocation, Barangay/PO resolutions for budgetary request, Municipal Annual Investment Plans</p>	<ul style="list-style-type: none"> ▪ Efficient approaches to iMPA management can be developed to ensure costs are within the scope of resources available within business models and local government resources. ▪ Funds can be accessed to the right level to support iMPAs sustainably by Yr 4. We already have a strong track record with existing business models and counterpart funding from local government.

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

1. Effective community-based management of 8 iiMPAs across the two bay-scapes (Ajuy-Concepcion bay-scape in Iloilo and Talibon - Getafe bay-scape in Bohol,)
 - 1.1 Project presentation and consultation meetings towards generation of Free Prior Informed Consent from municipal and barangay (village) governments and people's organizations
 - 1.2 Community (barangay) and People's Organization (PO) profiling using existing RRA tools
 - 1.3 Participatory site selection for eight new iiMPAs through:
 - 1.3.1 Coastal resource and habitat assessments
 - 1.3.2 GIS mapping
 - 1.4 Community and local government orientations on ZSL iMPA approach iiMPAs within each bay-scape
 - 1.5 Establishment or strengthening of governance structures of iiMPAs with equitable membership
 - 1.5.1 iiMPA Management Council (MMC) formation and profiling
 - 1.5.2 iMPA management planning
 - 1.5.3 iiMPA demarcation and zoning
 - 1.5.4 iMPA ordinance drafting, lobbying and approval by municipal governments
 - 1.6 iiMPA infrastructure establishment
 - 1.6.1 iiMPA marker buoys
 - 1.6.2 iMPA guard house construction

- 1.7 iMPA social network established composed of local POs/MMCs and VSLAs
 - 1.7.1 Annual meetings for experience sharing and cooperation
- 1.8 Annual conduct of MPA Management Effectiveness Assessment Tool (MPA MEAT)
- 1.9 Formation/strengthening of VSLAs
- 1.10 Roll-out Social Marketing campaign across each bay-scape
 - 1.10.1 Undertake willingness to pay survey for community-based marine conservation
- 1.11 Preparation and submission of publication on ecological impact of iiMPAs

2. Integrated Territorial Use Rights to Fisheries (TURFs) introduced within iiMPAs (creating TURF-reserves or replenishment zones) in two bay-scapes to align fishers' incentives with sustainability and MPA management

- 2.1 Identification and demarcation of buffer zones for TURF areas
- 2.2 TURF governance and management planning
- 2.3 Registration of fishers participating in TURF
- 2.4 Construction of seaweed drying platforms in iiMPA guard houses
- 2.5 Perception surveys for changes in fish catches in TURF and control areas

3. Diversified Net-Works™ business model supports environmental management biodiversity conservation, and clears up marine debris

- 3.1. Setting up environmental funds of formed/strengthened VSLAs, including profiling and databasing
- 3.2. VSLA village agents training and replication
- 3.3. Discarded fishing nets collection/recycling through NetWorks™ supply chain undertaken by VSLAs
- 3.4. Training on seaweeds farming and implementation among 30 target families in eight communities
- 3.5. Production and selling of seaweed, nets by VSLAs into the supply chain
- 3.6. Biophysical survey data collection of marine plastics using photoquadrat method

4. iMPA. Incorporation of mangroves into iMPA ordinances and development of the science base towards potential certification of blue carbon from mangroves in the Philippines on the voluntary market

- 4.1 Incorporate mangroves into activities 1.5.3 and 1.5.4.
- 4.2 Generate baseline data on blue carbon stocks and sequestration in varying and representative mangrove forests (e.g., geomorphic settings/community structure) – biomass and soil components
- 4.3 Generate baseline scenarios of mangrove extractive use and clearing, including predictive spatio-temporal approaches, and forecasting of potential emissions reduction.
- 4.4 Explore appropriate sequestration requirements for the Philippines (representative areas, as above) for inclusion and accounting of soil carbon emissions reduction, in order to explore and improve the financial viability of voluntary blue carbon projects in iMPA sites.
- 4.5 Literature review of appropriate tenurial instruments for Plan Vivo project creation.
- 4.6 Develop quantitative spatial tools for identifying optimal MPA sites for potential Plan Vivo implementation.

5. Break donor dependence and create financially sustainable community-based management

- 5.1 Recruitment of small local teams at each bayscape to maintain the supply chain and provide technical support to communities in iiMPAs
- 5.2 Capacity building of local support teams to manage the supply chain and support iiMPAs
 - 5.2.1 Training of Trainers on NetWorks™ business model
 - 5.2.2 Training of Trainers on mangroves in MPAs

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

Project summary	Measurable Indicators	Progress and Achievements
<p>Impact:</p> <p>Community-based marine protection in the Philippines enhances resilience to natural disasters while helping meet national targets (15%), fully sustained through business models, reducing donor dependency and building sustainability.</p>		<ul style="list-style-type: none"> • 7 of 8 targeted iMPAs in two bay-scapes legally declared as March 2021 and 8 of 8 by 7 June 2021, with 5 new iMPAs declared in Yr4 (nb: <i>In this terminal report we are indicating 8 of 8 accomplishment. We would have delivered the 8th iMPA before March 2021 if not for current fieldwork and meeting restrictions. No related costs charged to the Darwin grant after March 31st).</i> (Annex 40,41,42,43,44,45,46,47) • 8 iMPAs legalized through this project have average size of 720. ha. - a significant leap from current average size (12 ha.) of MPAs in the Philippines (Annex 23) • Average size of no-take zones is 273 ha., or 37% bigger than the 200-ha. no-take zone size we had targeted • All sites cover at least three critical habitats, including 186 ha. of mangrove green belts • All sites have ecological seaweed farming zones with average size of 25 ha. or 150% bigger than the 10-ha. target. Four of 8 iMPA sites are linked to the supply chain of used nylon fishing nets (Annex 23) • The new entity that has span off from Net-Works is now registered as Coast 4C (Annex 80). It will assume trading of ecologically produced seaweeds and used fishing nets from Net-Works in September 2021 or upon completion of the spin off process.
<p>Outcome</p> <p>Community-based conservation effectively protects 15% of bay-scape waters in two pilot bay areas (thereby meeting national and CBD targets), fully sustained</p>	<p>0.1 Implement eight (8) iMPAs, each of minimum 400 ha, totalling 15% of bay-scape waters (out to 3km) by Yr 4 (minimum of 5,800ha</p>	<ul style="list-style-type: none"> • 8 iMPAs legally established with average size of 720 ha. The 8 iMPAs have a total area of 5,766 ha., representing 17.7% of the total estimated size of the two bay-scapes (Annex 23)

<p>by a diversified Net-Works business model that enhances socio-ecological resilience and reduces dependence on donor funding.</p>	<p>protected including at least 1,800 ha of no-take zone).</p> <p>0.2 Halt or reverse declines in key marine species and habitats (mangroves, seagrasses, coral reefs and indicator invertebrate/fish species) within three bay-scapes by Yr 4, having established baselines at new sites by Year 2.</p> <p>0.3 Set baselines in Yr1 through survey of stratified selection of households and achieve an average 20% improvement in locally-defined household wellbeing indicators (including subjective, material style of life, income and food security) by Yr4 (n=25,000 households total, min of 500 sampled in stratified selection)</p> <p>0.4 Livelihoods diversified from an average of 2.0 occupations per household in Yr 1 to 2.5 in Yr 4 (n=25,000)</p> <p>0.5 Business model from the diversified Net-Works</p>	<ul style="list-style-type: none"> ● 8 iMPAs have total no-take zones of 2,188 ha, representing 122% of target (1,800 ha.) ● Standard iMPA surveys conducted in 5 iMPA sites in Iloilo (Annex 76a, 76b, 77,78,). ● Baseline socio-economic surveys conducted in Punta Buri, Ajuy and Salvacion-Malangabang, and Tambaliza in Concepcion, as reported last year. In Yr3, we conducted socio-economic surveys in Handumon, Getafe (baseline) and in Guindacpan, Talibon (repeat). Baseline In Yr4, we surveyed Silagon and Jandayan Sur and Norte Interim data analysis has just been done (Annex 94). ● Ecological seaweed farming introduced in 8 communities and involving 10 VSLAs; 143 local fishers trained in ecological seaweed farming (Annex 95); 69 trained fishers received production support to engage in actual farming using enhance culture methods. Scaling, however, has been constrained by a number of factors, mainly typhoons, diseases induced by warmer sea surface temperature, and availability of seedstocks at the onset of “good seasons” ● 8 communities linked to the used fishing nets supply chain; 8 VSLAs (total membership of 757) involved as site-based trading arms
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	<p>business model supporting a small local team of Community Organisers and Biologists by Yr 4 to sustain community-based conservation activities and the supply chains, as reflected in Darwin budget.</p>	<ul style="list-style-type: none"> ZSL created a “ring-fenced” team of 15 local staff and 2 international staff as transitory team for Coast 4C until September 2021 (Annex 81). A Seaweed Supply Chain Manager is being recruited (Annex 89). This team is set up to assume conservation activities after the September 2021 full transition. It is anticipated that income from nets and seaweeds trading will be inadequate in the initial years to support the entire team beyond September 2021. ZSL and Coast 4C are doing joint fund raising to ensure a core team can be maintained to advance the commercial growth of seaweed trading and deliver essential iMPA strengthening support.
<p>Output 1.</p> <p>Effective community-based management of eight iMPAs across the two bay-scapes:</p> <ul style="list-style-type: none"> Pedada and Ajuy Bay, Iloilo Province linked to Concepcion Bay and Concepcion Islands, Iloilo (2 LGUs - Pedada and Ajuy) Getafe and Talibon Bay, Bohol Province. 	<p>1.1 Free Prior Informed Consent (FPIC) obtained from all relevant municipal local governments by Yr 1, as a measure of community support and engagement.</p> <p>1.2 Village (barangay) profiles completed using Rapid Rural Appraisal approaches by Yr 1 that establish resource management needs and capacity at each site.</p> <p>1.3 Exchange visits completed to existing iMPAs within each bay-scape by Yr 1 to enthuse and educate community champions and provide practical demonstration of conservation interventions.</p>	<ul style="list-style-type: none"> ZSL has memoranda of understanding (MOU) with the municipalities of Concepcion and Ajuy in Iloilo. We renewed the MOU with Municipality Concepcion, Iloilo and in the process of renewing the MOU with the Municipality of Ajuy, Iloilo. ZSL is accredited with the municipal governments of Talibon and Getafe in Bohol. (Annex 7,8,9) Village profiles of Panay sites completed and reported in Yr 1 Profiles were also used in formulation of village Action Plans (Annex 19). Conducted community profiling in three Bohol sites: Guindacpan Island and Jandayan Island (Annex 24) Learning visit and roundtable discussion on IMPA were organized (Annex 29). The GIZ ProCOAST project that ZSL is implementing is developing Tambaliza as Centre of Learning for iMPA, village savings and loan association (VSLA) and Net-Works (nets recycling). However, because of Covid-19, no learning visit to the learning centre has been organized. ProCOAST is helping us publish important manuals, such as the VSLA environment fund, social marketing and biophysical assessments (Annex 30,31,32). With learning visits constrained by Covid-19 travel restrictions, these knowledge products can help promote the iMPA approach.

1.4 Appropriate governance structures for eight iMPAs (defined by municipal ordinances) with equitable membership (at least 50% women, and representing major social groups within each community) established or strengthened and meeting at least monthly by Yr3.

1.5 Participatory site selection for eight iMPAs and municipal ordinances obtained for these by Yr 2, with total area equating to 15% of bay-scape waters.

The ProCOAST project is also coordinating/facilitating the construction of Tambaliza Biodiversity Learning and Ecotourism Centre. The Iloilo Provincial Government committed Php1M, with ProCOAST sharing the construction cost

- MPA management councils of 7 iMPAs legalized as of March 2021 formalized created through municipal executive orders (**Annex 33,34,35,36,37,38,39**)
- The councils in the 7 sites have total membership of 272, of which 65% are makes and 35% are females.

Women Membership in MPA Management Councils

iMPA Site	Women	%	Men	%	Total
Tambaliza	16	27%	43	73%	59
Punta Buri	19	33%	38	67%	57
Salvacion-Malangabang	3	12%	23	88%	26
Guindacpan	9	39%	14	61%	23
Handumon	8	42%	11	58%	19
Silagon	18	40%	27	60%	45
Igbon	22	51%	21	49%	43
TOTAL	95	35%	177	65%	272

- Igbon MMC has the highest (51%) women members and Salvacion-Malangabang (12%) has the lowest women members
- However, frequency of meetings has been affected by localized and national Covid-19 restrictions on mass meetings
- As of the writing of this report, all 8 targeted iMPAs have been legally declared, covering a total area of 5,766 ha or 17.8% of estimated bay-scape waters (**Annex 40,41,42,43,44,45,46,47**). Total estimated bay-scape waters (i.e., length of general coastlines of municipalities multiplied by 3 km) is 32,399 ha (**Annex 70**)
- A learning visit to Tambaliza iMPA and roundtable discussion on iMPA were organized to facilitate learning interactions among

	<p>1.6 One iMPA social network composed of local People's Organization POs/MPA Management Councils (MMCs), and VSLAs established and meeting bi-annually in each bay-scape for experience sharing and cooperation by Yr2. At least 50% women participating in decision making in the social network.</p> <p>1.7 All iMPAs pass the criteria for Philippines MPA Effectiveness Assessment Tool (MEAT) level 1 ("MPA is established – with participatory process, adoption of management plan, and appropriate legislations and governance) by Yr 2 and MEAT level 2 ("MPA management is effectively strengthened") achieved in all iMPAs by Yr 4, from level 0 or 1 and on track for level 3 (which can only be achieved after 5 years of operation).</p> <p>1.8 15 VSLAs (see output 3) contributing their environment funds to appropriate management committees and management committees leverage funds from municipal LGUs to sustain</p>	<p>local MPA managers. We also organized joint training among management council members from different iMPAs both in Iloilo and Boho sites. The Advanced Fishery Law Enforcement and Enhancement Training we organized were joint training events that provided venues for exchange of insights and good practices in enforcement (Annex 90,91)</p> <ul style="list-style-type: none"> ● All 5 iMPAs in Iloilo were subjected to management effectiveness using the Philippines MPA Effectiveness Assessment Tool (MEAT). Annex 48,49,50,51,52. Since most of them are less one year old during the rating period, 3 iMPAs have Level 0-1, but with encouraging comments. Tambaliza and Punta Buri have Level 2 ratings and with very positive remarks (Annex 92) ● Total new VSLAs organized under project is 34 (7 in Yr1, 7 in Yr2; 6 in Yr3, and 14 in Yr4). Since Yr1, we have engaged a total of 75 (41 were pre-existing) VSLAs in the two bay-scapes. Due to Covid-19 travel restrictions we were only able to collect Environment Fund data from 46 VSLAs. Total environment fund balance currently available from the 46 VSLAs is P48,283. Most VSLAs spend their environmental funds in agreed environmental campaigns, particularly as beach clean-ups. In Tambaliza, Guindacpan and Handumon iMPAs, VSLAs pooled in their
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	<p>management activities by Yr 2.</p> <p>1.9 Social marketing campaign delivered across each bay-scape by Yr 2 with baseline set in Yr 1 and willingness to pay for community-based marine conservation increased 50% by Yr 4 (or to minimum of PhP100 p.a. where baseline is PhP0) – indicating increased support for conservation due to pro-poor design and successful social marketing.</p> <p>1.10 Peer reviewed paper submitted for publication on ecological impacts of project’s iMPAs by Yr 4.</p>	<p>environment funds (P482,55) for iMPA patrol boat and co-finance guardhouse construction.</p> <ul style="list-style-type: none"> ● In Yr3, we organized 120 social marketing activities that involved 2,831 community members, 55% of whom were women. In Yr4, a total of 89 social marketing activities were facilitated under Covid-19 travel and mass gathering regulations, which involved of 1,907 community members. In the last two years, a total of 209 social marketing activities were implemented, which involved 4,738 residents (55% women). ● Of the 75 total VSLAs we are engaging, only 46 VLSAs have updated data in our database. These 46 VLSAs have total membership of 1,020 (83% women) and all of them contribute at least P2.00 every weekly meeting for 52 weeks, or a total of P104 per member annually) ● The paper we submitted, titled “<i>Marine plastic pollution and marginalized small-scale fishing communities in Southeast Asia - a practical perspective on the need for more fish and less plastic</i>” is still under revision. This paper builds on some of our experiences and data around plastic pollution and MPAs and draws on the literature. ● International team members were involved in the following peer reviewed blue-carbon related papers: <ul style="list-style-type: none"> - Lee CKF, Nicholson E, Duncan C, Murray NJ. 2021a. Estimating changes and trends in ecosystem extent with dense time-series satellite remote sensing. <i>Conservation Biology</i>, 35, 325-335. - Lee CKF, Duncan C, Nicholson E, Fatoyinbo TE, Lagomasino D, Thomas N, Worthington TA, Murray NJ. 2021b. Mapping the extent of mangrove ecosystem degradation by integrating an
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		<p>ecological conceptual model with satellite data. Remote Sensing, 13, 2047.</p> <p>- Duncan C, Primavera JH, Hill NAO, Koldewey HJ. submitted. Potential for return on investment in rehabilitation-oriented blue carbon projects: Accounting methodologies and project strategies. <i>Frontiers in Forests & Global Change</i>.</p>
<p>Activity 1.1</p> <p>Project presentation and consultation meetings towards generation of Free Prior Informed Consent from municipal and barangay (village) governments and people's organizations</p>		<ul style="list-style-type: none"> As reported previously, we signed memoranda of understanding with the local government units of Concepcion and Ajuy, Iloilo. Our MOU with Concepcion was renewed recently. We are also accredited in the Municipalities of Talibon and Getafe, Bohol. Comprehensive briefings for the local officials were required prior to our accreditation. All approved iMPA ordinances went through community consultations/public hearings before their approval. All approved ordinances were also endorsed by the communities through people's organizational and barangay local government endorsements.
<p>Activity 1.2</p> <p>Community (barangay) and People's Organization (PO) profiling using existing RRA tools</p>		<ul style="list-style-type: none"> Rapid biophysical and socio-economic surveys conducted in 17 potential iMPA sites, of which 14 were eventually selected (Annex 19,20,21,22) Community resource mapping conducted in iMPA sites in Bohol - which were not in the original target sites (Annex 24)
<p>Activity 1.3</p> <p>Participatory site selection for eight new iMPAs through:</p> <p>1.3.1 Coastal resource and habitat assessments</p> <p>1.3.2 GIS mapping</p>		<ul style="list-style-type: none"> Our approach to iMPA site identification and selection employed participatory processes. We organized participatory community resource mapping to understand general status and current uses of marine resources. Our biologists conduct rapid habitat assessments (Annex 20,21,22) using bucket view method. Results of our assessments are used to inform community spatial

	<p>planning meetings, which are exercises that reconcile socio-economic and biodiversity conservation uses of coastal resources. Community agreements are translated into GIS maps, which went through multiple iterations after each stakeholder consultation.</p>
<p>Activity 1.4</p> <p>Community and local government orientations on ZSL iMPA approach iMPAs within each bay-scape</p>	<ul style="list-style-type: none"> ● Communities and local governments in the original set of target bay-scapes were given orientation on the iMPA approach. The Blue Action Fund gave first stage approval of a ZSL application for funding. BAF provided us a small project development grant to present the iMPA approach to community stakeholders and local governments in northern Iloilo and in Bohol. ● In lobbying for approval of iMPA ordinances, we also had to orient/reorient municipal legislative councils on the iMPA approach
<p>Activity 1.5</p> <p>Establishment or strengthening of governance structures of iMPAs with equitable membership</p> <p>1.5.1 iMPA Management Council (MMC) formation and profiling</p> <p>1.5.2 iMPA management planning</p> <p>1.5.3 iMPA demarcation and zoning</p> <p>1.5.4 iMPA ordinance drafting, lobbying and approval by municipal governments</p>	<ul style="list-style-type: none"> ● Executive Orders issued by the municipal mayors to formally organize the MMCs in the following iMPA sites: Tambaliza, Punta Buri, Salvacion-Malangabang, Silagon, and Igbon in Iloilo and Guindacpan and Handumon in Bohol. Executive Order for the 8th site is still being work out (Annex 33,34,35,36,37,38,39) ● Management plans Tambaliza and Punta Buri iMPAs already approved by local governments (Annex 71,72) ● Management plans of Salvacion-Malangabang, Silagon, and Guindacpan iMPAs are in the drafting stage (Annex 73,74,75) ● Marker buoys already installed in Tambaliza, Punta Buri, Salvacion-Malangabang, and Silagon iMPAs. Marker buoys for Igbon, Guindacpan, and Handumon are still being fabricated. (Annex 59,60,61,62,63,64,65,66,67) ● All iMPA ordinances already approved (Annexes 40,41,42,42,44,45,46,47)

<p>Activity 1.6</p> <p>iMPA infrastructure establishment</p> <p>1.6.1 iMPA marker buoys</p> <p>1.6.2 iMPA guard house construction</p>	<ul style="list-style-type: none"> • Refer to item # 1.5.3 • iMPAs with completed guardhouses: Tambaliza, Punta Buri, Salvacion-Malangabang, Silagon in Iloilo and Guindacpan in Bohol (Annex 55,56) • Guardhouses in early construction stage: Igbon in Iloilo and Handumon in Bohol (Annex 57). We secured from Julius Baer Foundation the budget to build the guardhouse in Jandayan (8th iMPA) 									
<p>Activity 1.7</p> <p>iMPA social network established composed of local POs/MMCs and VSLAs</p> <p>1.7.1 Annual meetings for experience sharing and cooperation</p>	<ul style="list-style-type: none"> • Training activities we carried out (e.g., Advanced Fishery Law Enforcement Enhancement Training or AFLEET (Annexes 90,91) Seaweed Farming Skills Training (Annex 13), Leadership Training were joint events that provide opportunities for peer-to-peer learning interactions. A learning visit to Tambaliza and a roundtable discussion on the iMPA approach were conducted. 									
<p>Activity 1.8</p> <p>Annual conduct of MPA Management Effectiveness Assessment Tool (MPA MEAT)</p>	<ul style="list-style-type: none"> • All 5 iMPAs in Iloilo subjected to management effectiveness assess using the MPA MEAT tool for the first time since their declaration. Results serve as baseline and basis for management strengthening interventions planning <p>MPA MEAT Ratings Summary</p> <table border="1" data-bbox="1151 1283 1865 1442"> <thead> <tr> <th>SITES</th> <th>MEAT RATING</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>1. Tambaliza</td> <td>Level 2</td> <td>Very Good</td> </tr> <tr> <td>2. Punta Buri</td> <td>Level 2</td> <td>Excellent</td> </tr> </tbody> </table>	SITES	MEAT RATING	REMARKS	1. Tambaliza	Level 2	Very Good	2. Punta Buri	Level 2	Excellent
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3. Salvacion-Malangabang	Level 1	Good								
4. Silagon	Level 1	[no remarks]								
5. Igbon	Level 0	Fair								
<p>Activity 1.9</p> <p>Formation/strengthening of VSLAs</p>	<ul style="list-style-type: none"> • Total VSLAs engaged in the two bay-scapes – 75 • Total new VSLAs organized under project is 34 (7 in Yr1, 7 in Yr2, 6 in Yr3, and 14 in Yr4) • 41 VSLAs were pre-existing • VSLAs in Igbon coalesced and become base organizations of a new people’s organization • We trained and mentored a total of 31 village agents (94% women) in the two bay-scapes. Trained VSLA agents organized a total of 20 new VSLAs 									
<p>Activity 1.10</p> <p>Roll-out Social Marketing campaign across each bay-scape</p> <p>1.10.1 Undertake willingness to pay survey for community-based marine conservation</p>	<ul style="list-style-type: none"> • Willingness to pay questions integrated in our standard socio-economic survey tool (Annex 79) • SE surveys conducted in the following iMPAs sites: Tambaliza, Punta Buri, Salvacion-Malangabang, and Silagon in Iloilo and Guindacpan, Handumon, Jandayan Sur-Jandayan Norte in Bohol 									
<p>Activity 1.11</p> <p>Preparation and submission of publication on ecological impact of iMPAs</p>	<ul style="list-style-type: none"> • The paper, titled “Marine plastic pollution and marginalised small-scale fishing communities in Southeast Asia - a practical 									

		perspective on the need for more fish and less plastic” submitted to the Science of the Total Environment is still a work in progress.															
<p>Output 2.</p> <p>Integrated Territorial Use Rights for Fisheries (TURFs) introduced within iMPAs (creating TURF-reserves or replenishment zones) in two bay-scapes to align fishers’ incentives with sustainability and MPA management.</p>	<p>2.1 Buffer zones and managed fishing areas around iMPAs identified and established as part of iMPA ordinances and planning by Yr 2, of at least the same size (200ha) as the no-take zone at eight iMPAs sites.</p>	<table border="1"> <thead> <tr> <th>Managed Fishing Areas</th> <th>Area (ha.)</th> <th>Ave. (ha.)</th> </tr> </thead> <tbody> <tr> <td>Buffer Zone</td> <td>842</td> <td>105</td> </tr> <tr> <td>Regulated Use Zone</td> <td>1,945</td> <td>243</td> </tr> <tr> <td>TURFs Zones</td> <td>667</td> <td>83</td> </tr> <tr> <td>Total</td> <td>3,455</td> <td>432</td> </tr> </tbody> </table>	Managed Fishing Areas	Area (ha.)	Ave. (ha.)	Buffer Zone	842	105	Regulated Use Zone	1,945	243	TURFs Zones	667	83	Total	3,455	432
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<p>2.1 Rules on who can use these buffer zones and how, under what conditions, any benefit sharing arrangements, and how this is enforced included in appropriate management plans by Yr2 and being implemented by Yr3.</p>	<ul style="list-style-type: none"> • See also Annex 23. These zones are more than double the 200-ha no-take zones. The 8 established MPAs have total buffer zones and managed fishing areas of 3,455 ha, or an average of 432 ha. per iMPA • All approved municipal ordinances define both prohibited and activities allowed in various zones: buffer, regulated-use and TURFs zones. To further define incentivized access to the manage fishing areas, we piloted the process of formulating the implementing rules and regulations (IRR) in Tambaliza iMPA – the first iMPA we established. The draft IRR is attached as Annex 54. We will assess IRR implementation later and adapt this process to the other 7 iMPAs. • Guardhouses in 5 iMPAs (Tambaliza, Punta Buri, Salvacion-Malangabang, Silagon and Guindacpan) are completed, and 2 (Igbon, and Handumon) are under construction. We already have secured the funding from the Julius Baer Foundation to build the guardhouse in the 8th iMPA. All guardhouses have seaweed drying platforms. Meloy Fund and the University of the Philippines - Los Banos provided us financial and technical support to install a modern solar-powered seaweed dryer in Guindacpan iMPA in Bohol (Annex 15). 																
<p>2.3 Appropriate iMPA guardhouses designed to include opportunities to improve fisheries operations (e.g., seaweed drying platforms) by Yr 2 and implemented by Yr 3.</p>																	
<p>2.4 Participation in iMPA management (number of people participating in patrols, attendance at</p>																	
		<p>Women Membership in MPA Management Councils</p> <table border="1"> <thead> <tr> <th>iMPA Site</th> <th>Women</th> <th>%</th> <th>Men</th> <th>%</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Tambaliza</td> <td>16</td> <td>27%</td> <td>43</td> <td>73%</td> <td>59</td> </tr> </tbody> </table>	iMPA Site	Women	%	Men	%	Total	Tambaliza	16	27%	43	73%	59			
iMPA Site	Women	%	Men	%	Total												
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monthly management committee meetings, proportion of apprehensions resulting in prosecutions) established at a minimum of 50% by Yr 2 and maintained >90% of capacity by Yr 4, including increasing # women fish/forest wardens in communities.

2.5 Perceptions surveys and participatory CPUE surveys in Yr 4 indicate that fishers perceive increased CPUE in the buffer zones and sustainable use areas between the baseline set in the year that the ordinance is approved and year 4.

Punta Buri	19	33%	38	67%	57
Salvacion-Malangabang	3	12%	23	88%	26
Guindacpan	9	39%	14	61%	23
Handumon	8	42%	11	58%	19
Silagon	18	40%	27	60%	45
Igbon	22	51%	21	49%	43
Jandayan Sur & Norte	11	30%	26	70%	37
TOTAL	106	34%	203	66%	309

- Total (including village non-residents) MPA management council membership and trained fish wardens in 8 legally established iMPAs is 389. Average women membership of MMCs is 34%
- A total of 80 local fishers were trained and deputized as fish wardens. Only 15% of trained fish wardens are women. Approximately 1,575 (75 groups x 21 members each) VSLA member households support iMPA implementation through their weekly environment fund contributions. If we add the 1,917 community members involved in various community outreach/social marketing activities, total individuals involved in iMPA management in Yr4 is 3,881. This represents 23% of the total population (2015 Census Data) in the 8 iMPA sites. In Yr3, we reported 26% of the population were involved in MPA implementation. The decrease in Yr4 can be attributed to Covid-19 travel and community meeting restrictions.
- We piloted the conduct of fish catch monitoring in Tambaliza iMPA – the first that was established through this project. Methods employed include fisher perception surveys, secondary data gathering and catch landing monitoring involving local volunteers (**Annex 68**). An early draft of the perception survey report has been prepared (**Annex 69**). We only collected the second seasonal catch landing data recently, but we are still encoding the raw data.

Activity 2.1

<p>Identification and demarcation of buffer zones for TURF areas</p>	<ul style="list-style-type: none"> • All declared iMPAs have buffer zones and regulated use zones and TURFs zones. The 8 established iMPAs have a total buffer zones of 842 ha, and regulated-use and TURFs zones of 2,612 ha. Punta Buri and Silagon iMPAs have designated TURFs zones exclusively for local fishers, on top of the buffer zones. • Marker buoys already installed in Tambaliza, Punta Buri, Salvacion-Malangabang, and Silagon to demarcate the zones. Marker buoys for Guindacpan and Handumon iMPA are still in the procurement stages (Annex 59,60,61,62,63,64) • After ground-truthing/deep gauging and consultations with local fishers, we provided technical support in preparing marker buoy installation layout plans of Guindacpan, Silagon, Igbon, Salvacion-Malangabang iMPAs (Annexes 65,66,67) • We accessed resources for iMPA marker buoys from the National Geographic Society, Julius Baer Foundation, American Bar Association, and German Embassy Small Grants, with cost-shares from local governments
<p>Activity 2.2 TURF governance and management planning</p>	<ul style="list-style-type: none"> • We broadly define TURFs rules in the municipal ordinances. Additionally, we piloted in Tambaliza iMPA a management council exercise to define detailed implementing rules and regulations for the TURFs. We still need to complete this process, implement, and assess its effective and potential replication in other sites. Management plans of Tambaliza and Punta Buri already approved (Annex 71,72). With the exception of Igbon, Handumon, and Jandayan iMPAs, management planning Salvacion-Malangabang, Silagon iMPAs are still in drafting stages (Annex 73,74,75)
<p>Activity 2.3 Registration of fishers participating in TURF</p>	<ul style="list-style-type: none"> • No associated activity conducted
<p>Activity 2.4 Construction of seaweed drying platforms in iMPA guard houses</p>	

	<ul style="list-style-type: none"> • All completed guardhouses have seaweed drying platforms (Annex 56) • Meloy Fund and University of the Philippines provided us resources to set up an innovative solar-powered seaweed dryer in Guindacpan (Annex 15) 	
<p>Activity 2.5 Perception surveys for changes in fish catches in TURF and control areas</p>	<ul style="list-style-type: none"> • We did pilot implementation of the fish catch monitoring in Tambaliza iMPA, which involves perceptions surveys and catch landing surveys (Annex 69) 	
<p>Output 3. Diversified Net-Works business model supports environmental management and biodiversity conservation, and clears up marine debris.</p>	<p>3.1 15 VSLAs with environment pouch contributing funds to support iMPA management by Yr 1.</p> <p>3.2 15 Village agents (one per barangay) trained and replicating VSLAs from the parent VSLA by Yr 2. At least 50% women trained as village agents.</p> <p>3.3 All VSLAs collecting discarded fishing nets and selling them into the supply chain by Yr 2.</p> <p>3.4 [deleted]</p> <p>3.5 24 families trained and actively farming 6 ha of seaweed per community for 7 communities by Yr2 following social and</p>	<ul style="list-style-type: none"> • Total 34 new VSLAs (14 new in Yr4) were organised within the project period and all of them contribute to environmental funds. All 41 pre-existing VSLAs contribute their weekly environmental funds. In Yr 4, VSLAs contributed £678 as cost-share/leverage funds for MPA guardhouses and a patrol boat • Total of 31 village agents (94% women) were trained in two bay-scapes. Eighteen or 58% are active while 42% are inactive • Active VSLA agents have organized a total of 20 new VSLAs since the beginning of their engagement • Buying of discarded fishing nets is implemented in 8 villages in the two bay-scapes. A total of 8 VSLAs (or 1 in each village) are set up to be the trading arms. All 757 members of existing VSLAs in these 8 villages can sell discarded fishing nets to their respective VSLA trading partner.

	<p>environmental criteria and meeting standards.</p> <p>3.6 A minimum of 30 families farming a minimum of 6ha of seaweed per iMPA (total of 8) by Yr4, generating 600 tonnes of dry seaweed p.a. that meets standards for Net-Works Social and Environmental criteria and supports iMPAs.</p> <p>3.7 At least 50% of VSLAs producing and selling seaweed and nylon nets into the supply chain by Yr 3, with 100% selling both products by Yr 4.</p> <p>3.8 Total of 100 tonnes of ocean-bound plastics (including nets and other materials) diverted into the supply chain from the two bay-scapes by Yr 4.</p> <p>3.9 Proportion of beach quadrats with plastics present reduced from 60% to 40% by Yr 4 at all sites.</p>	<ul style="list-style-type: none"> ● A total of 143 fishers (each representing 1 family) in 7 communities were trained in ecological seaweed farming seaweed farming. ● Of the total farmers trained, 69 received production inputs to engage in farming. Each farmer has 1/8-ha. starter farm, covering a total of 8.6 ha. or average of 1.2 ha. per site. Assisted farmers produced a total of 6.3 tons of dried seaweeds so far. Production has been impacted by typhoons, warming of sea surface temperature that induce ice-ice syndrome, and Covid-19 lock down. ● 8 VSLAs are trading partners in used fishing nets buying in two bay-scapes. Not all VSLAs can engage in buying since you need to trade in volume to make it economically viable as an enterprise. But, all members of existing partner VSLAs (75) can sell used nets to their respective nets buying VSLA. Seven communities are now engaged in seaweed farming. At the moment, we buy directly from assisted farmers. 10 VSLAs are initially involved in buying dried seaweeds. ● As of March 2021, Net-Works has collected a total 292 tons of used nylon fishing nets. Ninety-six (96) tons were collected by our two hubs operating in the two bay-scapes ● Trash mapping surveys were done in 6 communities in the two bay-scapes (Annex 93)
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Activity 3.1 Setting up environmental funds of formed/strengthened VSLAs, including profiling and databasing	<ul style="list-style-type: none"> All new VSLAs organized under this grant (34) and the 41 pre-existing VSLAs have adopted the environment fund innovation introduced by ZSL. Our M&E Officer has kept a VSLA database. However, due challenges in conducting fieldwork due to Covid-19 travel regulation, we do not have updated data for all VSLAs we are engaging 	
Activity 3.2 VSLA village agents training and replication	<ul style="list-style-type: none"> We trained and mentored a total of 31 village agents (94% women) in the two bay-scapes. Trained VSLA agents have organized a total of 20 new VSLAs 	
Activity 3.3 Discarded fishing nets collection/recycling through Net-Works™ supply chain undertaken by VSLAs	<ul style="list-style-type: none"> See # 3.7 and #3.8 	
Activity 3.4 Training on seaweeds farming and implementation among 30 target families in eight communities	<ul style="list-style-type: none"> We trained a total of 143 fishers in 7 communities in ecological seaweed farming seaweed farming. We organized two trainers training in Iloilo and Bohol with Dr. Anicia Hurtado, formerly with the Southeast Asia Fisheries Development Centre as resource person. Three team members also conduct hands-on training for farmers who did not attend the Hurtado training. Of the total farmers we trained, 69 received production inputs to engage in farming. Each farmer has 1/8-ha. starter farm, covering a total of 8.6 ha. or average of 1.2 ha. per site 	
Activity 3.5 Production and selling of seaweed and nets by VSLAs into the supply chain	<ul style="list-style-type: none"> Assisted farmers produced a total of 6.3 tons of dried seaweeds so far. Production has been impacted by typhoons, warming of 	

	<p>sea surface temperature that induce ice-ice syndrome, and Covid-19 lock down</p> <ul style="list-style-type: none"> ● In Yr4, we collected 39.6 tons of dried seaweeds both from assisted and non-assisted seaweed farmers. We have already packed 24 tons for shipment to Cargill in France. ● 8 VSLAs are actively buying used nylon fishing nets from their own members and from members of other VSLAs in the communities. However, our buyer in Slovenia has stopped buying nets from us since they still have plenty of inventory. We are in contact with a new buyer in Taiwan. 						
<p>Activity 3.6 Biophysical survey data collection of marine plastics using photo-quadrat method</p>	<ul style="list-style-type: none"> ● In the last quarter of 2019, our team conducted marine plastics surveys using photo quadrat methods in six villages. See Annex 93 for highlights of initial data analysis. 						
<p>Output 4. Incorporation of mangroves into iMPA ordinances and development of the science base towards potential certification of blue carbon from mangroves in the Philippines on the voluntary market.</p>	<table border="1"> <tr> <td data-bbox="589 722 1041 914"> <p>4.1 At least 106.5ha of mangrove forest areas included in iMPA ordinances (output 1) by the end of year 4.</p> </td> <td data-bbox="1041 722 1977 914"> <ul style="list-style-type: none"> ● Total mangrove habitats covered by the 8 legally declared iMPAs is 181 ha., or 170% of target. </td> </tr> <tr> <td data-bbox="589 914 1041 1345"> <p>4.2 Baseline data on blue carbon stocks and sequestration in varying and representative mangrove forests (e.g., geomorphic settings/community structure/rehabilitation and degradation levels) generated by year 3 – biomass and soil components</p> </td> <td data-bbox="1041 914 1977 1345"> <ul style="list-style-type: none"> ● Baseline data on blue carbon stocks (vegetation and sediment) generated for 140.74 ha (7 sites) of intact, 2 sites of degraded, 4.50 ha (1 site) of converted, and 74.55 ha (3 sites) of rehabilitated mangroves (all across representative geomorphic settings). Baseline data on blue carbon sequestration rates (vegetation, sediment and gas flux) generated for 45.71 ha (2 sites) of intact, 2 sites of degraded, 4.50 ha (1 site) of converted, and 9.04 ha (1 site) of rehabilitated mangroves). </td> </tr> <tr> <td data-bbox="589 1345 1041 1453"> <p>4.3 Baseline scenarios of mangrove extractive use and clearing, including predictive</p> </td> <td data-bbox="1041 1345 1977 1453"> <ul style="list-style-type: none"> ● Community identification methodology for survey implementation (on extractive use and clearing) completed and target sites identified; Remote (c.f. COVID-19 travel restrictions) community </td> </tr> </table>	<p>4.1 At least 106.5ha of mangrove forest areas included in iMPA ordinances (output 1) by the end of year 4.</p>	<ul style="list-style-type: none"> ● Total mangrove habitats covered by the 8 legally declared iMPAs is 181 ha., or 170% of target. 	<p>4.2 Baseline data on blue carbon stocks and sequestration in varying and representative mangrove forests (e.g., geomorphic settings/community structure/rehabilitation and degradation levels) generated by year 3 – biomass and soil components</p>	<ul style="list-style-type: none"> ● Baseline data on blue carbon stocks (vegetation and sediment) generated for 140.74 ha (7 sites) of intact, 2 sites of degraded, 4.50 ha (1 site) of converted, and 74.55 ha (3 sites) of rehabilitated mangroves (all across representative geomorphic settings). Baseline data on blue carbon sequestration rates (vegetation, sediment and gas flux) generated for 45.71 ha (2 sites) of intact, 2 sites of degraded, 4.50 ha (1 site) of converted, and 9.04 ha (1 site) of rehabilitated mangroves). 	<p>4.3 Baseline scenarios of mangrove extractive use and clearing, including predictive</p>	<ul style="list-style-type: none"> ● Community identification methodology for survey implementation (on extractive use and clearing) completed and target sites identified; Remote (c.f. COVID-19 travel restrictions) community
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	<p>spatio-temporal approaches, and forecasting of potential emissions reduction generated by year 4.</p> <p>4.4 Quantification of sequestration achievable (and creditable) under different management options, and quantification of necessary methods (e.g. discount factors) to enable inclusion of soil carbon in Carbon accounting and NDCs by Year 4.</p> <p>4.5 Literature review on appropriate tenurial instruments for Plan Vivo project creation completed by Year 4.</p> <p>4.6 Quantitative spatial tools for identifying optimal MPA sites for potential Plan Vivo implementation developed by Year 4.</p>	<p>household questionnaires and Focus Group Discussion (FGD) guidelines developed and logistical testing complete; Remote FGDs trialled with three community groups (barangay officials, shoreline gleaners and fisherfolk) in 2 communities (Igbon and Silagon), with roll-out to identified communities in late-2021 (COVID-19 -driven delays to associated research project grant [AXA Research Fund]); Satellite remote sensing (SRS) methodology for quantification of extractive use (c.f. degradation) and clearing complete (Lee <i>et al.</i> 2021a; 2021b; Worthington <i>et al. in prep</i>); SRS analyses now to be conducted in 2021, post-delayed community FGD and household survey questionnaire roll-out.</p> <ul style="list-style-type: none"> • Baseline data collection completed; Sequestration profiles through time (under management options) in late-stages of development (Duncan <i>et al. submitted</i>); Literature review on possible discount factors complete and data gaps previously-identified for the Philippines closed after the approval and publication of updates to Verra methodology VM0007 for coastal wetland conservation and restoration. • As per Yr3 update report, due to COVID-19 -driven delays to associated research project grants (AXA Research Fund): Literature review methodological approach complete; Review now to be conducted in late 2021. • As per Yr3 update report, due to COVID-19 -driven delays to associated research project grants (AXA Research Fund): Quantitative spatial tools development pending inputs dependent on 4.2-4.5; Further required spatial data sources and methodologies identified (e.g. methodological development in mid-stages toward completion).
<p>Activity 4.1 Incorporate mangroves into activities 1.5.3 and 1.5.4.</p>	<ul style="list-style-type: none"> • Activity completed by Yr3 	

<p>Activity 4.2</p> <p>Generate baseline data on blue carbon stocks and sequestration in varying and representative mangrove forests (e.g., geomorphic settings/community structure) – biomass and soil components</p>	<ul style="list-style-type: none"> • Activity completed by Yr3
<p>Activity 4.3</p> <p>Generate baseline scenarios of mangrove extractive use and clearing, including predictive spatio-temporal approaches, and forecasting of potential emissions reduction.</p>	<ul style="list-style-type: none"> • In Yr4 we completed the methodological design to identify all target communities for (remote) FGDs and household survey questionnaire roll-out regarding extractive use and clearing. • We also conducted trial remote FGDs for three community groups (barangay officials, shoreline gleaners and fisherfolk) at two trial community sites (Silagon, Ajuy and Igbon, Concepcion, Iloilo) and are in the mid-stages of updating final FGD and household survey questionnaire design from initial feedback. • COVID-19 -driven delays to associated research project grants (AXA Research Fund) have delayed roll-out of final community survey data collection for understanding and mapping extractive use to late 2021. • In Yr4 we also completed development of the SRS methodologies to be used in quantification and mapping of extractive use (c.f. degradation) and clearing, parts of which have been published in peer-reviewed scientific journals (Lee <i>et al.</i> 2021a; 2021b; Worthington <i>et al. in prep</i>). As a result of the COVID-19 -driven delays to community surveying fieldwork, final SRS analyses to develop baseline scenarios of mangrove extractive use and clearing will now be conducted in late 2021.
<p>Activity 4.4</p> <p>Explore appropriate sequestration requirements for the Philippines (representative areas, as above) for inclusion and accounting of soil carbon emissions reduction, in order to explore and improve the financial viability of voluntary blue carbon projects in iMPA sites.</p>	<ul style="list-style-type: none"> • In Yr4, we completed analysis and spatial methodology development to forecast sequestration profiles in Philippines mangroves through time (under blue carbon rehabilitation management options). This was made possible by use of discount factors for soil carbon sequestration from the recently approved and published updates to Verra methodology VM0007 for coastal wetland conservation and restoration (see https://verra.org/first-

	<p>blue-carbon-conservation-methodology-expected-to-scale-up-finance-for-coastal-restoration-conservation-activities/). The methodologies and preliminary results from financial viability assessments of potential voluntary blue carbon projects (site-specific) have been submitted for publication in a peer-reviewed scientific journal (Duncan <i>et al. submitted</i>).</p>		
<p>Activity 4.5 Literature review of appropriate tenurial instruments for Plan Vivo project creation.</p>	<ul style="list-style-type: none"> • COVID-19 -driven delays to associated AXA Research Fund grant has delayed progress on activity 4.5 to post-Yr4. 		
<p>Activity 4.6 Develop quantitative spatial tools for identifying optimal MPA sites for potential Plan Vivo implementation.</p>	<ul style="list-style-type: none"> • COVID-19 -driven delays to associated AXA Research Fund grant has delayed progress on activity 4.6 to post-Yr4. 		
<p>Output 5. Break donor dependence and create financially sustainable community-based management</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; vertical-align: top; padding: 5px;"> <p>5.1 Establish a business model for managing the revenues and costs associated with the supply chain for goods and services from communities (output 3) by Yr 1.</p> <p>5.2 Recruit a small and local team at each bay-scape to maintain the supply chain and provide technical support to communities in iMPAs by Yr 2.</p> <p>5.3 Build the capacity of the local support team to manage the supply chain and support iMPAs through Training of Trainers in Net-Works, mangroves and iMPAs by Yr 3.</p> </td> <td style="padding: 5px;"> <ul style="list-style-type: none"> • Coast 4C financial model is still evolving with seaweed trading eventually becoming the main source of revenues. In this model, essential support for iMPA implementation (e.g., maintenance of basic enforcement facilities, management capacity building) is treated as cost, which means this will be covered by the income of the social enterprise. The support will be delivered as incentive in exchange for effective MPA implementation. • A ring-fenced team has been set up while Net-Works transitions into Coast 4C (Annex 81). If fund raising and revenue targets are realised, this team will eventually be employed by Coast 4C to manage the nets and seaweeds supply chains and provide technical assistance to partner communities. • We are recruiting a Seaweed Supply Chain Manager (Annex 89) to strengthen our capacity to expand commercially seaweed trading. This post will also provide coaching and mentoring support to our current supply chain operational team. Most of the team members have been with Net-Works for a number of years and were already part of the team in the early implementation </td> </tr> </table>	<p>5.1 Establish a business model for managing the revenues and costs associated with the supply chain for goods and services from communities (output 3) by Yr 1.</p> <p>5.2 Recruit a small and local team at each bay-scape to maintain the supply chain and provide technical support to communities in iMPAs by Yr 2.</p> <p>5.3 Build the capacity of the local support team to manage the supply chain and support iMPAs through Training of Trainers in Net-Works, mangroves and iMPAs by Yr 3.</p>	<ul style="list-style-type: none"> • Coast 4C financial model is still evolving with seaweed trading eventually becoming the main source of revenues. In this model, essential support for iMPA implementation (e.g., maintenance of basic enforcement facilities, management capacity building) is treated as cost, which means this will be covered by the income of the social enterprise. The support will be delivered as incentive in exchange for effective MPA implementation. • A ring-fenced team has been set up while Net-Works transitions into Coast 4C (Annex 81). If fund raising and revenue targets are realised, this team will eventually be employed by Coast 4C to manage the nets and seaweeds supply chains and provide technical assistance to partner communities. • We are recruiting a Seaweed Supply Chain Manager (Annex 89) to strengthen our capacity to expand commercially seaweed trading. This post will also provide coaching and mentoring support to our current supply chain operational team. Most of the team members have been with Net-Works for a number of years and were already part of the team in the early implementation
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	<p>5.4 Revenues from the supply chain generate around [REDACTED] monthly per bay-scape through new products to support the salaries and field activities of a small and local technical support team to maintain the supply chain and provide technical support to iMPAs by Yr 4.</p>	<p>stage of iMPAs. We have existing collaborations with University of the Philippines – Marine Science Institute and Cargill on the field trials of new seaweed strains. Meloy Fund and Koltiva will be providing us technical assistance in seaweed production and trading management information system that will allow us to ensure traceability of our supply. The IUCN Blue Nature Capital Financing Facility provided us with a supplemental grant to improve our warehouse in Bohol and improve our seaweed baling capabilities.</p> <ul style="list-style-type: none"> Over the last 12 months, we accumulated a total inventory of 39.6 tons of dried seaweeds. Estimate revenue from dried seaweeds is £[REDACTED] per month over 12 months in the two bay-scapes. Our monthly gross revenue from trading of used nylon fishing nets is £[REDACTED]. Market for used fishing has been impacted by the pandemic, resulting to decrease in market value.
<p>Activity 5.1 Recruitment of small local teams at each bay-scape to maintain the supply chain and provide technical support to communities in iMPAs</p>	<ul style="list-style-type: none"> ZSL created a ring-fenced team to focus handle supply chains and deliver strengthening services to newly-declared iMPAs. We are also hiring a Seaweed Supply Chain Manager. 	
<p>Activity 5.2 Capacity building of local support teams to manage the supply chain and support iMPAs 5.2.1 Training of Trainers on Net-Works™ business model</p>	<ul style="list-style-type: none"> We are hiring a Seaweed Supply Chain Manager We received a grant from IUCN BNCFF to upgrade basic logistical facilities for both seaweed and nets supply chains We have all the content needed to produce the iMPA manuals (Annex 85,86,87) which we can use both externally and internally 	

5.2.2 Training of Trainers on mangroves in MPAs

- We are also receiving supply chain management advice from our business partners
- We are now organizing our first shipment of dried seaweeds to Cargill in France.
- We had supported most of the training events organized by the mangrove and beach forest training team of ZSL. At least two (a field biologist and community organizer) team members are in the in-house pool of trainers.

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
2	Number of Masters qualifications obtained	3	2x UK 1x India	2 x female 1x male	Artificial reefs and faunal diversity in mangroves Testing drone mapping of iMPAs	English English	
6a	Mangrove and Beach Forest Training of Trainers	239	Filipino				
6a	National Mangrove Conference	239	Filipino				
6a	Webinar series on mangroves and coastal greenbelt	4,160	Filipino		Episode 1: Mangroves: Biology and its Uses Episode 2: Coastal greenbelt/mangrove rehab Episode 3: AUU and Blue Carbon Episode 4: Mangrove Eco parks	Filipino & English	

					Episode 5: Green-gray engineering		
					Episode 6: Beach Forest Species		
6a	Seaweed farmers training	143	Filipino	81F;62		Filipino. English	Including one- on-one training
6a	iMPA Roundtable Discussion and Learning Visit	52	Filipino	43 M; 9F		Filipino	
6a	Concensus Building & Conflict management Training	155	Filipino	77F;78 M		Filipino	6 sessions
6a	Gender Mainstreaming Workshop	16	Filipino	6F; 10M		Filipino	2 sessions
6a	Advance Fishery Law Enforcement Enhancement Training	76	Filipino	3F; 73M		Filipino	3 sessions
6a	SMART (Marine) Training for Patrollers	20	Filipino	6F; 14M		Filipino	
6a	Law Enforcement and Patrol Teams Learning Exchange	26	Filipino	7F; 19M		Filipino	
Research Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	2 approved municipal Coastal Resource Management -Ecosystem Approach to					Used Participatory process

		Fishery Management Plans (CRM-EAFM Plans 2 Approved MPA management plans 4 draft MPA management plans					
10	Approved iMPA municipal ordinances.	8				English	See approved ordinance in annexes
10	Community manual flipchart for Mangrove and Beach Forest rehabilitation	1				English	
10	Translated Community Based Mangrove Rehabilitation Manual into 2 local languages	1				2 Filipino dialects	
Dissemination Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
14B	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	Total=22	Filipino	Male			29 March 2020. Amado Blanco. University of the Philippines College of Fisheries and

			Filipino				<p>Ocean Science Webinar. Making ocean clean up a restorative business</p> <p>13 August 2019. Amado Blanco. Blue Action Fund Stakeholders Consultative Meeting. Why we need bigger and well-managed MPAs</p> <p>24th May 2019. Nick Hill. University of Technology Sydney C3 lecture. "Net-Works: making seaweed farming positive for the ocean and people".</p> <p>28 Apr -3 May 2019. Amado Blanco and</p>
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			Filipino			<p>Nick Hill. International Seaweed Symposium, Jeju, Korea. "Net-Works: making seaweed farming positive for the ocean and people".</p>
			Filipino			<p>20-21 March 2019. Amado Blanco. iMPA Roundtable Discussion. Sustainable for MPA management: The role of ecological seaweed farming</p>
			British			<p>5 – 7 March 2019. Amado Blanco. World Ocean Summit. Focus Group 3: Governance Democratising</p>

							the Ocean Conversation
			British				13 th December 2018. Heather Koldewey. Christmas Conservation Lecture and inaugural Professor lecture. 'Ocean optimism in a sea of plastic'. University of Exeter, Penryn campus
			British				16 th October 2018. Heather Koldewey: Plenary speech 'Ocean optimism in a sea of plastic' at the European Union of Aquarium Curators annual conference, The Deep, Hull.

			British				<p>10th September 2019. Heather Koldewey: Opening plenary 'A Changing Planet: A quest for solutions to save the ocean'. NERC DTP conference, Imperial College, London.</p> <p>16th July 2018. Heather Koldewey: Opening presentation 'Ocean optimism in a sea of plastic'. Surfers Against Sewage Ocean Plastic Solutions Day (with HRH Prince of Wales and the Duchess of Cornwall attending in</p>
			British				
			Filipino				

			British			part), St Agnes, Cornwall.
			British			11 th – 15 th June 2018. Heather Koldewey participant in two panel discussions 'Planet or Plastic' and 'Igniting Change' at National Geographic Explorers Festival, Washington DC, USA.
			British			June 2018. Godof Villapando. Net-Works for the International Marine Conservation Congress, Malaysia.
			Filipino and British			2 nd June 2018. Heather Koldewey:

			British			<p>Addressing issues of marine debris and poverty alleviation in coastal communities. World Environment Day workshop on marine litter, New Delhi, India.</p> <p>27th April 2018. Nick Hill presenting Net-Works which was selected as a finalist for the St Andrews Prize for the Environment.</p> <p>19th February 2018. Heather Koldewey and Godof Villapando. Visiting Professors Public Lecture and Roundtable: International</p>
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			British			Wildlife Trade. Event organised by British Embassy in the Philippines. Ateneo de Manila University, Manila, Philippines.
			British			14 th February 2018. Heather Koldewey. Plenary speech at International Year of the Reef launch at Princes International Sustainability event with VIPs, business leaders and HRHs Prince Charles and Prince Harry.
						22 nd January 2018. Conservation for Communities. Workshop

			British			<p>‘Sharing best practice in marine conservation and research’ organised by CIIMAR (Interdisciplinary Centre of Marine and Environmental Research - University of <i>Porto</i>) and ZSL, Portugal.</p> <p>13th December 2017. Heather Koldewey. Opening Plenary speaker. Perspectives on reef conservation. European Coral Reef Symposium, University of Oxford, UK.</p> <p>5th December 2017. Heather Koldewey. MSc Conservation</p>
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							<p>and Ecology students lecture and workshop, University of Exeter, Cornwall campus.</p> <p>16th October 2017 – Nick Hill presented Net-Works in a lecture to Exeter University 2nd year students studying Marine Vertebrate Conservation.</p> <p>26th July 2017. Heather Koldewey. Keynote speaker. Marine Ecology and Conservation Network conference, University of Exeter Penryn campus.</p>
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							27 th April 2017. Guest speaker – Pew Bertarelli Global Ocean Legacy the Science and Culture of Marine Conservation on Rapa Nui, Easter Island, Chile.
Dissemination Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
21	Number of permanent educational/training/research facilities, structures, or organisations to be established and then continued after Darwin funding has ceased	8 MPA guardhouses with seaweed dryers 8 MPA patrol boats					
22	Number of permanent field plots and sites to be established during the project and continued after Darwin funding has ceased	8 iMPA sites					1) Tambaliza, Concepcion, 2) Salvacion-Malangabang, Concepcion, 3) Punta Buri, Ajuy, 4) Silagon, Ajuy 5) Igbon, Concepcion;

							6)Guindacpan, Talibon; 7) Handumon, Getafe, 8) Jandayan Sur and Norte, Getafe
Financial Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
23	Value of resources raised from other sources (i.e., in addition to Darwin funding) for project work	£ [REDACTED]					Grants from the following: Julius Baer Foundation, IUCN BNCFF. NatGeo; 2 embassy grants, 2 USAID projects

Annex 4 Aichi Targets

Please note which of the Aichi targets your project has contributed to.

Please record only the **main targets** to which your project has contributed. It is recognised that most Darwin projects make a smaller contribution to many other targets in their work. You will not be evaluated more favourably if you tick multiple boxes.


	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	✓
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.	✓
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.	✓
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.	✓
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.	✓
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.	✓
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


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

Type *	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g., web link, contact address etc)
MSc Thesis	Faunal diversity in different mangrove habitats in the Philippines. Shruti Suresh, University of Exeter. MSc Conservation & Biodiversity.	India	UK	Female	University of Exeter	https://www.linkedin.com/in/shrutisuresh95/?originalSubdomain=in
MSc Thesis	How effectively artificial reefs mimic natural coral reef communities in the Philippines. Fergus Cunningham	UK	UK	Male	University of Exeter	██████████
	Satellite remote sensing to monitor mangrove forest resilience and. Duncan, C.; Owen, H.J.F.; Thompson, J.R.; Koldewey, H.J.; Primavera, J.H; Pettorelli, N. resistance to sea level rise.	UK	UK	Female	Methods in Ecology and Evolution, 9 (8) pp. 1837-8152.	10.1111/2041-210X.12923 .

Manual	Community-based Mangrove Rehabilitation Manual translated and published in two local languages: Hiligaynon and Akeanon. Primavera, J.H., Savaris, J.D, Bajoyo, B., Coching, J.D., Curnick, D.J., Golbeque, R., Guzman, A.T., Henderin, J.Q., Joven, R.V., Loma, R.A. and Koldewey, H.J.	Philippines	Philippines	Female	ZSL Philippines	www.zsl.org/mangroves
Proceedings	Proceedings of the 3rd National Mangrove Conference. Loma, R.A., Coching, J.D., Calanda, V., Montilijao, C.	Philippines	Philippines	Female	ZSL Philippines	www.zsl.org/mangroves
	*Hill, N.A.O, Patel, S., Blanco, A.P., Turner, M., Andriamalala, F.G., Apurado, R., Panes, H., Garcia, F., Koldewey, H.J. Marine plastic	UK	UK	Male	In revision	

	pollution and poverty – a practical perspective on the need for more fish and less plastic.					
	Nicholas A. O. Hill, J. Marcus Rowcliffe, Heather J. Koldewey, Amado P. Blanco, Anicia Hurtado, Michael Roleda, Peter Ralph, E.J. Milner-Gulland. Towards sustainable aquaculture of Eucheumatoid seaweeds.	UK	UK	Male	In prep	████████████████████
	*Patel, S., Napper, I.E., Arias, M., Blanco, A., Davies, B.F.R., Koldewey, H., Montilijao, C., Nellas, A., Panes, H., Hill, N. (in prep.). An inclusive and equitable	UK	UK	Female	In prep	████████████████████

	<p>approach to removing abandoned, lost, and discarded fishing gear to tackle marine plastic pollution in marginalised small-scale fishing communities in the Philippines, South East Asia.</p>					
	<p>*Lee CKF, Nicholson E, Duncan C, Murray NJ. 2021a. Estimating changes and trends in ecosystem extent with dense time-series satellite remote sensing. Conservation Biology, 35, 325-335.</p>			Male	Conservation Biology	██████████
	<p>*Lee CKF, Duncan C, Nicholson E, Fatoyinbo TE, Lagomasino D, Thomas N, Worthington TA, Murray NJ. 2021b.</p>			Male	Remote Sensing,	██████████

	Mapping the extent of mangrove ecosystem degradation by integrating an ecological conceptual model with satellite data. Remote Sensing, 13, 2047.					
	*Duncan C, Primavera JH, Hill NAO, Koldewey HJ. submitted. Potential for return on investment in rehabilitation-oriented blue carbon projects: Accounting methodologies and project strategies. Frontiers in Forests & Global Change.	UK	UK	Female	Frontiers in Forests & Global Change.	

Annex 6 Darwin Contacts

Ref No	24-027
Project Title	Applying business models to sustain socio-ecological resilience in coastal Philippines
Project Leader Details	
Name	Amado Blanco
Role within Darwin Project	Project Lead
Address	
Phone	
Fax/Skype	
Email	
Partner 1	
Name	Hon. Mayor Raul Baniyas, MD
Organisation	Municipality of Concepcion, Iloilo
Role within Darwin Project	Project Partner
Address	
Phone	
Email	
Partner 2 etc.	
Name	Hon. Mayor Janet Garcia
Organisation	Municipality of Talibon, Bohol
Role within Darwin Project	Project Partner
Address	
Phone	
Email	

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	No
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	No
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 10)?	Yes. We will communicate with Darwin on this.
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	No
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	