



Darwin Initiative Main Project Annual Report

Important note: *To be completed with reference to the Reporting Guidance Notes for Project Leaders:*

it is expected that this report will be no more than 10 pages in length, excluding annexes

Submission Deadline: 30th April 2017

Darwin Project Information

Project reference	23-024
Project title	Securing marine fisheries, livelihoods and biodiversity in Myanmar through co-management
Host country/ies	Myanmar (Burma)
Contract holder institution	Wildlife Conservation Society – Myanmar Program
Partner institution(s)	Ministry of Agriculture Livestock and Irrigation (Department of Fisheries/DoF), Pyoe Pin, Rakhine Coastal Conservation Association (RCA), Rakhine Fisheries Partnership (RFP), University of Exeter.
Darwin grant value	£ 299,870
Start/end dates of project	May 1 2016, through to March, 2019.
Reporting period (e.g., Apr 2016 – Mar 2017) and number (e.g., Annual Report 1, 2, 3)	May 2016 – Mar 2017, Annual Report 1
Project Leader name	Martin Callow (until March 2017) Elizabeth Matthews and Thaung Htut (interim)
Project website/blog/Twitter	https://programs.wcs.org/myanmar/Wild-Places/Marine-Ecosystems.aspx
Report author(s) and date	Martin Callow, Kyaw Thinn Latt, Thaung Htut, Phoe Cho, Elizabeth Matthews April 28, 2017

1. Project rationale

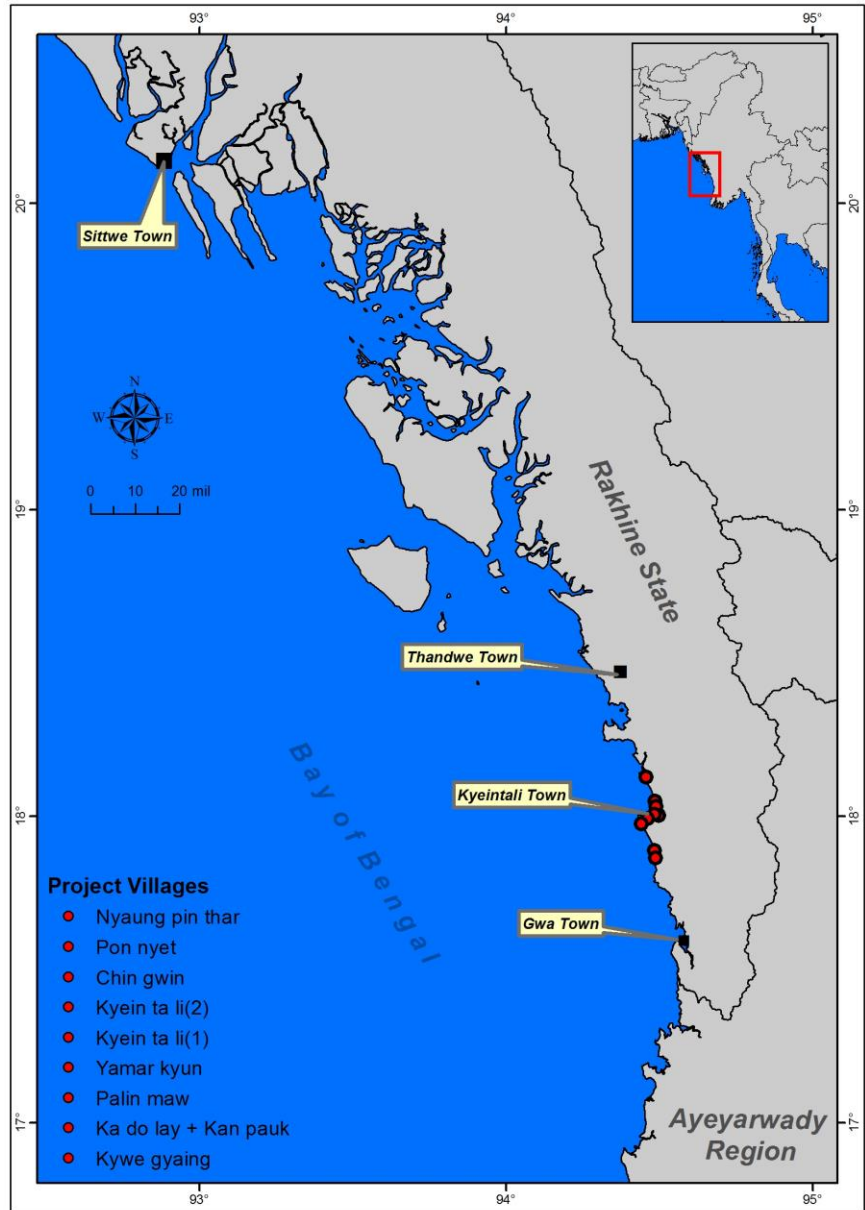
Myanmar is dependent on fisheries economically (GDP 3.5%) and as a source of protein (43% of animal proteins consumed). Despite fisheries' importance, Myanmar has limited capacity for sustainable management. A recent University of Washington global analysis of fisheries governance systems labeled Myanmar the least effective. Overexploitation, encouraged by poor regulations, weak rule of law and enforcement and unsustainable fishing techniques, has resulted in drastic declines of stocks. Norway's 2014 marine survey showed that pelagic stocks are currently 10% of their 1979 biomass, with similar estimates for inshore fisheries. Inshore fisheries are of particular concern, currently over capacity and non-compliant with closed seasons.

In coastal Rakhine State, over 80% of the people are directly or indirectly involved in small-scale fisheries for livelihoods and subsistence, but are rarely involved in decision-making or planning

processes. Limited data indicate declines in catch over the past 5 years, particularly in sardine, anchovy and mackerel, and evidence of inshore fisheries bycatch, including a range of globally threatened species like dugongs, turtles, sharks and rays, though information is guarded and poorly documented. Compounding these problems, Rakhine is ranked second in Myanmar's States and Regions in terms of poverty, with 78% of the population poor and concentrated along the coast.

These are great challenges. However, our work so far has shown how enthusiastic local communities are to do something about the state of their coastal fisheries. They have shown great interest in co-management approaches, and are working with our project team to collect data that can help inform the resource management process. In addition, the ideals of participatory co-management are a large change from previous top-down, strict governance models, especially for the new government with little experience of any other approaches.

However, our work with fisheries department representatives is showing us that there is receptivity to these ideas. With careful engagement and recognition of the needs of all local stakeholders and participants, we will be able to develop a sustainable model of fisheries co-management that works for coastal communities in Rakhine state.



2. Project partnerships

This project is led by WCS, which has been working in Myanmar since 1993 and was instrumental in the creation and expansion of several protected areas, including the country's first marine and aquatic protected areas. WCS collaborates with the Ministry of Natural Resources and Environmental Conservation (MONREC), the Ministry of Agriculture, Livestock, Irrigation (MALI), Department of Fisheries (DoF) and local civil society to assess the status of Myanmar's ecosystems and build capacity for wildlife conservation and natural resource management. WCS has engaged the Department of Fisheries for over ten years on freshwater and marine projects, and has utilised its long-standing relationships to obtain inputs to - and support for - this project from local partners.

Working through partnerships is core to the WCS 2020 Strategy, and has been essential to the design of this project. It is important to note that working with a government partner (in this case, the Department of Fisheries - DoF) is necessary for any work like this in Myanmar. From the beginning of the proposal development process, we focused on ensuring this project was owned by the partners – particularly Pyoe Pin and the Rakhine Coastal Conservation Association (RCA). Our partnership with the Rakhine Fisheries Partnership (RFP) has developed over the past year, which is a result of the outreach that the partners have been conducting to ensure the lessons being generated from this project are shared.

The project has generated significant partnership gains through our efforts to build trust with the Pyoe Pin team, which is politically connected in Rakhine State (through the RFP) and at the Union level. WCS been invited to (and attended) various state level events in Sittwe (the capital of Rakhine state) and Kyaukpyu through Pyoe Pin and the RFP. In addition, WCS has also secured invites for Pyoe Pin (and the DG and Research Director of the Department of Fisheries) to attend The Economist South East Asia regional Fisheries Summit (Jakarta, October, 2016) and more recently (for Pyoe Pin and the Deputy Minister and Director of the Department of Fisheries) to attend The Economist World Ocean Summit (Bali, February, 2017). We are pleased that Pyoe Pin has secured a new phase of funding, which will enable the team to continue to work with partners to advance important reforms of the fisheries sector in Myanmar.

Our partnership with the RCA is central to the success of this project. The RCA has strong local leadership (Dr Maung Maung Kyi), based in Kyeintali, the focal community for this project. RCA also is fortunate to have the support of a team of local volunteers who are committed to environmental conservation in Kyeintali, Gwa and Thandwe. This project has invested significant efforts to build awareness and capacity for fisheries research and fisheries co-management with this core group. Through this relationship, in particular, WCS is now a trusted member of the Kyeintali fisher community. Our efforts to elevate fisheries within the RCA is paying dividends, and the districts and township DoF officers are now also much more engaged on fisheries issues owing to the attention this project is bringing to the sub-township of Kyeintali.

These partnership have opened opportunities for the project and its learning to access new audiences. In particular, we are proud to be founding members of the Myanmar Fisheries Partnership (MFP), a national consortium of NGOs, institutions of higher education, community baed organizations, the Myanmar Fisheries Federation and the DoF.

WCS is also very fortunate to be working with the University of Exeter (UoE) on this project and on broader scientific activities in Myanmar. The team-members from UoE have been instrumental in helping our project develop a robust research methodology and have provided training to the WCS team and RCA staff/volunteers. This academic partnership provides this project with an even more credible construct, which, when considering all the partners involved, ensures we have a project design that is rich in technical, social and political capital.

3. Project progress

3.1 Progress in carrying out project Activities

Overall the progress in carrying out project activities has been going to plan. Some aspects of this project may take longer than originally anticipated, however. Co-management is a new process in Myanmar, and as a result it takes some time for people to understand their roles in the process, including the project team. Just the fact that local people have a role in a resource management process is a new concept. As a result, we need to move carefully and steadily with activities to ensure that people are active and enaged in the processes we are trying to promote. We have been pleased to see how supportive and enthusiastic people have been to this project and its ideals of co-management.

Output 1. A gender-sensitive participatory planning process has led to the development and adoption of a co-management plan for coastal fisheries in Thandwe District in Rakhine State.

Activity 1.1 RFP/RCA stakeholder meetings to discuss challenges and propose and design the fisheries co-management planning process.

During July 2016, stakeholder meetings were held in Thandwe District (Thandwe, Kyeintali and Gwa) to officially launch the project with the DoF, local partners and community members. One hundred fourteen people attended these events: 39 fishers/fish-workers, 32 DoF staff (including the Rakhine State Fisheries Director), and 43 RCA members (including a Rakhine parliamentarian). Sixteen women attended these stakeholder meetings; a concerted effort will be required from all project partners to ensure female representation is expanded (a common challenge for development projects in Myanmar). Our strategy will focus on identifying barriers to women's participation, identifying and targeting women who should attend the meetings, and possibly running a series of parallel side meetings (focus groups) for women.

The aforementioned stakeholder meetings not only launched the project but also solicited feedback from community members on the challenges faced by the fisheries sector in the region. The events secured strong buy-in for the project from stakeholders, particularly the DoF (State and District officials) and RCA members. In addition, through these meetings, agreement was reached for the project to target the township of Kyeintali (the base for the RCA).

Activity 1.2 Site-based / fisher village meetings to ensure awareness and uptake of the emergent input/output controls and adaptive management processes (legal framework, monitoring, compliance, reporting).

To support the project's uptake, a sustainable fisheries management training workshop was conducted in July 2016 and another in February 2017 to transfer knowledge on sustainable fisheries management practices, generally used input and output controls, and to identify participatory project team members. This training in Kyeintali was attended by 38 persons (9 women): Government = 2, DoF = 2, Fishers = 24, RCA = 8, WCS = 2. On February 15-16, 2017 the training session in Kyeintali was attended by 27 persons (5 women): Government (GAD) = 1, Police=1, DoF = 1, Fishers = 15, RCA = 5, WCS = 3, Exeter=1. The total for both training sessions was 59 people, plus the WCS and Exeter staff.

Activity 1.3 Co-management plan developed and ratified by members of the RFP/RCA/fishing communities

All participants involved in the management planning discussions indicated in the post-training surveys that they wanted to solve the overfishing problem. They also indicated that they are willing to participate in the management processes to make this happen.

The co-management plan is being developed with the information that was discussed at these training sessions and smaller community meetings. This is a new form of management so it is important that we take time to lay the proper foundation. The main topics discussed so far were the definition and process of co-management, partnership among stakeholders and the expected benefits of co-management. Kyawe Gyaing and Ka Toe Lay villages are in the process of forming fishery committees.

Moreover, we facilitated sessions to enable the community members to improve their co-management vision and objectives. The vision is: *To improve living standard by sustainable utilization of fishery resources.* Their objectives are to:

- Address the decline of illegal fishing activities collaboratively with involvement of the local community and government;
- Protect the habitat and spawning grounds;
- Obey the current rules and regulations and take responsibility for fishery improvement;
- Improve law enforcement; and

- Foster development options for the fisher communities in each village.

Output 2. Baseline data is available and routine participatory collection of additional data is integrated into the governance mechanisms for co-management.

Activity 2.1 Training in fisheries (catch, compliance, etc.), socio-economic and value-chain data collection provided to members of the RFP/RCA/fishing communities

A variety of data has been secured from the DoF and RCA during the first 6 months of the project, mostly related to fishers, licences, gear types, target and non-target species catch and household numbers in the Thandwe district. The quality of these data is variable, however the data have provided deeper insights into the project area and, in a country where few reliable data exist, helped the project team to refine the implementation model. As such, we have devised an implementation plan that will see us interview 390 fishers (from a total of 1,387) from 10 landing sites in Kyeintali (at each landing site we will also conduct key informant interviews and participatory mapping). We will also interview the 5 traders and 25 collectors / processors now known to operate in Kyeintali.

We have worked with the University of Exeter to design appropriate survey tools, including socio-economic survey questions/forms (fishers and traders), fisheries participatory mapping protocol, fish landing site surveying (for Catch Per Unit Effort/CPUE, Bycatch Per Unit Effort/BPUE and length-weight frequency data) and acquired novel “Pelagic Data Systems” GPS tracking devices to attach to a selection of purse seine vessels (supported by vessel owners and DoF). Two training workshops have been delivered to WCS and RCA staff in the use of the survey tools, with a specific focus on training a core team of project enumerators. The first training session targeted 13 trainees (5 women): WCS = 1, DoF = 2, RCA = 6, fishers = 4. The second training event targeted 23 additional trainees (5 women).

The first training was conducted in Kyeintali sub-township from August 29 to September 3, 2016. The aim of the training was for participants to better understand the socioeconomic status of the fishing communities and key stakeholders. Using participatory mapping as a primary hands-on tool, we were able to begin to strengthen the understanding of concepts and acceptance of fisheries co-management.

The second training on landing catch survey and fishing vessels based survey was held from September 29 to October 10, 2016 in Kyeintali sub-township. The training helped the communities understand how fisheries data and statistics can be monitored and how to use GPS.

Activity 2.2 Participative measurements of ecological and socioeconomic criteria through fish landing monitoring, semi-structured/key informant interviews, household and market/value-chain surveys.

Following training, baseline data collection commenced in October 2016 (over 30 surveys have been completed to date). An intensive period of participatory socio-economic, key informant, mapping and catch surveys has been scheduled for the remainder of year 1. One pelagic data logger has been deployed (and is transmitting data); the RCA have identified a further nine purse seine vessels who will participate in GPS tracking and these units were deployed in October and November 2016. The RCA and fishers are continuing to collect catch data, and WCS is working with them to enter and analyze the socioeconomic and catch data.

Activity 2.3 Consultative meetings with RFP/RCA members/fishing communities to present survey results and discuss the design of adaptive management actions.

Seventy people attended the Annual Forum in Kyeintali from April 24 to 26, 2017. The overall purpose of the Forum was to discuss *Benefits of Sustainable Marine Fisheries Resources Management* through:

- Building relationships and capacity for sustainable fisheries in Myanmar;
- Strengthening the project by learning from the experiences of other organizations and regional partnerships;

- Sharing new scientific information and ideas between WCS marine team and fisheries stakeholders;
- Completing the creation of Kyeintali Inshore Fisheries Co-management Committee/Association; and
- Having an open discussion with Kyeintali Inshore Fisheries Co-management Association (KIFCA) to begin drafting the co-management Action Plan.

The participants (60 male and 10 female) represented many perspectives: government = 5, forestry and environmental conservation = 8, DoF = 8, fishers = 19, RCA = 13, RFP (including INGOs/NGOs) = 8, WCS = 8, Exeter = 1. The forum was led by Dr. Nyunt Wai (DoF), WCS, MFP and Dr Mg Mg Kyi (RCA). People shared their experiences on coastal resource management and co-management of small-scale fisheries.

The forum provided a good opportunity to promote better relationships among INGOs, NGOs, DoF and communities on responsible fisheries through common vision of the need for sustainable management and co-management. The community and partner organizations are now better informed on the different roles and responsibilities involved in the co-management process and of the fact that coastal resources can be better managed and used for long-term benefits for the communities.

Output 3. A strategy to reduce unintended bycatch of marine vertebrates has been developed and implemented by local fishing communities.

Activity 3.1 Rapid assessment boat based field survey to determine the presence and conservation status of dugong and other marine invertebrates known to be caught as by- catch in coastal fisheries in Rakhine.

A workshop was held in July 2016 to share knowledge of the threats to Rakhine’s marine wildlife and to share knowledge of the tools and practices that fishers might deploy to minimise unintended bycatch. This training in Kyeintali was attended by 38 persons (9 women): Government = 2, DoF = 2, Fishers = 24, RCA = 8, WCS = 2). It is important to note here that, in the coastal communities of Rakhine, efforts to reduce bycatch are going to have to identify a powerful incentive mechanism as most if not all species caught provide important income for poor fishers.

Also, as per output 2, during this period, we have worked with the University of Exeter to design a boat-based survey methodology to determine the presence and conservation status of dugong and other marine vertebrates known to be caught as bycatch in coastal fisheries in Rakhine. An initial reconnaissance of the Kyeintali marine region was undertaken on Wednesday 5 October 2016 and, while not scheduled in the Darwin workplan, additional surveys will likely be factored in to determine seasonality in species presence and seasonal fisheries-related risks.

Activity 3.2 Community workshops held to discuss and agree spatial and gear modifications / practices to minimise impacts on dugong and marine turtles.

While the project intends to reduce bycatch, it is increasingly clear that quantifying BPUE will be challenging due to its (often) unreported nature, and as such estimates maybe misleading. To that effect, we are considering what other strategies might be deployed for reducing bycatch – such as circle hooks (to reduce turtle bycatch), acoustic deterrent devices (for cetaceans), and lights on nets (for turtles). That said, minimising dugong interaction with fisheries via these kinds of technical approaches will likely be challenging to implement (as they are non-specific to dugong) and success may only be achieved through time-area management of fisheries. As such, it may be more effective to use the results of participatory mapping of dugong and fisheries activities to design seasonal or area closures to reduce the interactions. Mutual learning over the coming months will help us further understand how best to mitigate bycatch.

Activity 3.3 Participative reports of by-catch reductions presented at consultative meetings with RFP/RCA members/fishing communities.

Bycatch reduction was included in the training on sustainable marine management that was held in

Kyeintali from August 18-19, 2016 and at the Annual Forum (April 24-26, 2017).

Communities in Kyeintali and Gwa have been involved in community forestry and community fisheries management projects over the past 2 or 3 years to a certain extent. However, data-based systematic management which can benefit and strengthen community efforts in co-management is still quite a foreign concept to them. So the training highlighted the importance of reducing bycatch, through simple, traditional means during daily fishing routines and how it can effectively be incorporated into the design of community management plans. The trainees who have successfully completed the training will lead particular village tracts on community management through by-catch reducing activities.

Output 4. Lessons learned from fisheries co-management planning and practices are shared to boost national fisheries resource governance capacity.

Activity 4.1 Communicate project results, impacts and lessons learned at state, region and union levels through the annual forum.

While no Output 4 activities were scheduled to be delivered in quarters 1 and 2, a variety of opportunities emerged that enabled the team to share knowledge of sustainable co-management with a variety of State/Region and Union leaders. Through match funding, WCS and Pyoe Pin were able to host the DoF Director General and Director of Research at the South-East Asia and Pacific Regional Fisheries Summit in Jakarta (July 2016). Similarly, our “Thriving Fisheries” project (funded by the blue moon fund) has enabled us to visit Aweyarwady, Thanintharyi and Mon States/Regions to share learning about co-management and the activities under this Darwin-funded project to DoF staff and members of the regional fisheries partnerships. Project results were reported during the Annual Forum in April 2017.

Activity 4.2 Conduct site visits to other states and regions to share lessons directly with other fisheries partnerships (e.g. in Ayeyarwady region)

The WCS / Darwin project team has been actively attending regional events across Myanmar. We have attended meetings of the RFP in Kyaukpyu to share lessons with parliamentarians and other regional fisheries partnership attendees. Phoe Cho has presented to (and is now a member of) the Mon state fisheries partnership, plus WCS has conducted (under alternative funding) site assessments across each of Myanmar main coastal states and regions, which have included workshops to share our learning and collect participatory inputs for our learning process. WCS is also a founding member of the MFP, and we have attended MFP events in NPT and Yangon (June 2016, December 2016, March 2017).

Activity 4.3 Promulgate project learning to an international audience through attendance at IMPAC4 (Chile) and social media channels.

In terms of our digital reach, various tweets, and Facebook and website posts have communicated the project and its activities to WCS Myanmar’s audience base. On Facebook we have an audience reach of 426,224 and have achieved 31,128 engagements since May 1, 2016, while on Twitter we have recorded 305,607 impressions and 5,424 engagements since May 1, 2016.

Our team submitted an abstract for consideration to the IMPAC4 conference organizers; the successful abstracts should be announced in early June.

3.2 Progress towards project Outputs

Output 1. A gender-sensitive participatory planning process has led to the development and adoption of a co-management plan for coastal fisheries in Thandwe District in Rakhine State.

1.1 By 2017, more than 50% of the RCA members (current RCA members in Kyeintali = 40, but this is expected to rise by 2017), which includes a proportionally representative number of female fish-workers, have pledged support for a participative co-management plan.

1.2 By 2018, a suite of sustainable fisheries input and output controls are designed by the

RFP/RCA.

1.3 By 2019, between 50-75% of participating fishers within the target geography are compliant with the co-management plan.

Baseline 40 members

Change recorded by 2017: A new Fisheries Association was formed for Kyeintali, comprised of an additional 20 fishers and fish-workers. In March 2017, the co-management event attracted 2 persons from each community. This Inshore Fisheries Co-management Association has a common goal (DoF and fishers): To improve food security, human well being and ecosystem services by systematically and sustainably using marine resources. We have worked with them to identify the important issues that need to be in a co-management plan. Over the coming months, we will continue to work with them and other stakeholders to more fully develop the co-management plan which will include identification of co-management areas; important fish habitats, control of trawls, dynamite fishing, poisoning, fishing during breeding season, electric fishing, fishing with small size net, mining, and sand extraction; steps to reduce conflict; actions against IUU; and building capacity and safety measures in the fishery sector. Will be regular management meetings of the Fisheries Association to log management compliance. All of this is an ongoing process.

Output 2. Baseline data is available and routine participatory collection of additional data is integrated into the governance mechanisms for co-management.

2.1 By 2017, baseline fisheries, socio-economic and value-chain monitoring data is available for >30% of the participating small-scale fleet and associated fish-workers/households.

2.2 By the end of Year 1, fisheries and socioeconomic data has been circulated via the first RFP/RCA stakeholder workshop.

2.3 Co-management planning process receives annual inputs from collaborative monitoring data.

Baseline None

This is an on-going adaptive process. We are still analyzing the socioeconomic data, but have shared other baseline data during the training sessions and Annual Forum. There will be regular management meetings of the Fisheries Association to log management compliance, for community-based fisher groups to participate step by step; for government agencies to collaborate in the identification of co-management areas; collect data on important fish habitat areas; to make rules and regulations in line with existing one for sustainable fisheries; to reduce conflict and IUU; to build capacity for fishery sector and safety measures.

Output 3 A strategy to reduce unintended bycatch of marine vertebrates has been developed and implemented by local fishing communities.

3.1 By 2017, baseline marine vertebrate bycatch data increases from 0 to more than 20% of participating fishers.

3.2 By 2017, areas to protect from fishing have been identified and agreed to by 30% of participating small-scale fishers in our focal area.

3.3 By 2018, bycatch reduction devices or practices are adopted by more than 30% of participating small-scale fishers in Kyeintali (more than 125 people).

For all the baseline is NONE. At the March 2017 workshop there was discussion about place-based protection, resulting in agreement that Kyeintali's coastal and adjacent nearshore areas should be protected through co-management.

Output 4 Lessons learned from fisheries co-management planning and practices are shared to boost national fisheries resource governance capacity.

4.1 By 2018, RFP/RCA members document key lessons learned to date.

4.2 By 2018, the annual forum hosts community and government officials from at least two other districts, states or regions.

4.3 By 2019, 2 alternative districts, states or regions pledge to support the implementation of fisheries co-management.

For all the baseline is NONE. This is an ongoing process to share project learning and leverage it within construct of regional fisheries partnerships.

3.3 Progress towards the project Outcome

Outcome: An inshore fishery co-management plan is implemented in Rakhine State, Myanmar, ensuring sustainable livelihoods and improved income for local fishing communities, reducing bycatch and providing a scalable resource governance model.

0.1 By 2019, 25% of fishers from our focus area (assuming Kyentali is chosen = 420 participating people) document a 5-10% increase in CPUE compared to 2016 baselines.

0.2 By 2019, more than 25% (420 people) of the small-scale fishing fleet of Kyentali Township, including a proportionally representative number of women, are actively engaged with resource governance decision-making processes. (2016 Baseline = 0).

0.3 By 2019, annual socio-economic surveys demonstrate a 5% increase in participating fisher (N=420) and associated fish-worker (N=unknown, TBD) incomes against 2016 baselines.

0.4 By 2019, bycatch of marine vertebrates (dugong and marine turtles) decreased by between 10% and 30% compared to 2016 baselines.

The inshore fishery co-management planning process has been initiated and there is a strong likelihood that the project will achieve its outcome by the end of the funding. Three of the four outcome indicators are based upon the successful completion of the management planning process and the actual implementation of the actions outlined in the plan. While we are hopeful that the plan will be finalized and implementation started in the coming year, it is possible that the increases in CPUE (O.1) and income (O.3) may not be as strong by project end as we had originally envisaged, primarily due to the fact that these are indicators measuring processes that take time to change. We will monitor this closely over the coming year to see if adjustments need to be made. As co-management is a new and very different governing process in Rakhine, and in Myanmar in general, we are finding we need to spend more time with the communities, government and our own staff to build acceptance and understanding of the approach and its methods.

3.4 Monitoring of assumptions

Assumption 0.1. That communities and the newly emerging government (under the leadership of the National League for Democracy) are willing and able to actively participate in co-management.

Comments: The new government is still trying to find its feet, and there has been some confusion associated with identifying what the national priorities are. However, we have been fortunate to host senior government delegations at international events. Through this, we have seen a keen interest in the fisheries sector. Our work with communities continues to motivate us as there is a great appetite to engage in a process of improving their depleted coastal resources.

Assumption 0.2. That fisheries are capable of recovering within project timeframe to secure improvements in CPUE and social-economic returns.

Comments: The most significant fisheries of Rakhine (economically) are those targeted by the purse seine fleet (anchovy, sardine), which are fast growing species. However, there is still much to learn about the seasonal and spatial distribution of this stock and of the stocks' status. Our ongoing work to record catch composition, length-weight estimates, CPUE etc. will lay the basis for the long-term future management and sustainability of this fishery.

Assumption 0.3. That no natural disasters impact the coastal communities and no socio-political unrest emerges.

Comments: There have been no natural disasters in Rakhine since the start of this project. However, significant social tensions are evident in the northern part of the state. Our project area, in southern Rakhine, is mostly unimpacted by these tensions. While our site-based work is not directly impacted, access to other fisheries and sites in northern Rakhine is not now possible. As a result, opportunities for sharing lessons (e.g. with Danida-funded projects) is limited. If tensions begin to spill over into the state capital Sittwe (as they did a few years ago), our project will need to consider other ways to engage with the Rakhine decision-makers.

Assumption 0.4. That market prices do not fluctuate so much that value capture is degraded.

Comments: Anecdotal evidence suggests that prices have remained stable or risen for anchovy and sardines in recent years – mostly, as we understand, owing to a reduction in supply. Exogenous factors have not had any direct impact on prices.

Assumption 1.1. That communities and fishers feel empowered by this governance framework and want to participate (and do not feel disenfranchised by historical government policies).

Comments: This project allows us to support the development of the Kyeintali Inshore Fisheries Co-management Association (KIFCA), and its formation is a demonstration of the community interest in this project.

Assumption 1.2. That government remains stable over the lifecycle of the project and does not enact conflicting policies.

Comments: As per assumption 0.1. So far, the government is stable and there are no signs of it changing. Of course Myanmar is a very dynamic country and policies are continually being adjusted. Channels exist that enable us to communicate with partners in order to try to mitigate relevant conflicting policies, such as through the national marine and coastal management committee and the Myanmar Fisheries Partnership (MFP).

Assumption 1.3. DoF maintains support for co-management.

Comments: DoF has consistently and publically voiced support for the benefits of co-management. DoF's leadership with the MFP also demonstrates a willingness and desire to work in partnership with other organisations to enable co-management. This is also evidenced by the fact that DoF is working with Danida on a large multi-year development project to implement co-management in Rakhine and Tanintharyi. Our project is engaged with technical leads of this project to ensure learning is shared.

Assumption 2.1. That communities and government are willing to participate in collaborative monitoring.

Comments: Our work with the RCA and local fishers is testament to the fact that the willingness to participate in collaborative monitoring exists. Our larger challenge is not willingness, but ensuring a consistency in the quality of data gathered through participative monitoring. This was not unexpected, but it does place significant demands on the team to monitor and evaluate data as it is collected by community participants.

Assumption 2.2. That the value chain is traceable / transparent

Comments: This is a challenging area of work. We are learning that value chains are very dynamic, both for species and for seasons. A complex series of differentiated value chains appear to exist, and it will take us more time to fully understand the routes of products (and value capture) through these chains.

Assumption 2.3. That training workshops are sufficient to generate a consistent quality of participative data / inputs.

Comments: The training workshops to date have enabled us to develop the RCA capacity. However, our early analysis of data is demonstrating a need to boost this training component (particularly for biological data sets/surveys). This is also a requirement for our growing WCS

team, and we are grateful to be working with the University of Exeter to help us develop these skills within the project team.

Assumption 3.1. That fisher interviews provide accurate information.

Comments: Our early data analyses are providing us with a rich understanding of the community and the associated fisheries. The key informant interviews, coupled with household and trader surveys (over 400) provide a detailed insight into the Kyeintali sub-township. Our local team is adept at conducting these types of socioeconomic surveys. Full analysis of the results is proving to be taking more time than originally anticipated.

Assumption 3.2. That fishers will be unguarded with respect to providing insights into spatial-temporal bycatch.

Comments: We have been amazed at how receptive and open the fishing community is to our project. Our understanding is that the deep trust that the RCA has within Kyeintali rolls over to WCS too. We also believe that WCS's long standing presence in the country plays some role in this openness. In addition, we have recruited a strong local team with excellent community engagement skills.

Assumption 3.3. That appropriate bycatch reduction devices and practices will be adopted and that support can be generated for marine vertebrate protection.

Comments: This is challenging. In Kyeintali, like all of Mynamar, there are many illegal and destructive practices. Possibly the best hope of implementing bycatch reduction is via spatial management and through the exploration of novel techniques, such as circle hooks to reduce turtle bycatch; acoustic deterrent devices for cetaceans; and lights on nets to deter turtles.

Assumption 3.4. That fishers act honestly when reporting compliance.

Comments: We are not yet at the stage where management actions have been designed and adopted by the community, so we do not yet understand the level of compliance reporting. Fishers seem very honest about reporting their current practice of illegal activity. There is certainly an appetite for change and so we anticipate the action planning to provide useful insights into the level of support for sustainably managing Kyeintali inshore resources.

Assumption 4.1. That Union Government support for co-management continues to persist.

Comments: As per 1.3. The DoF is continuing to mention the importance of co-management at the Union level.

Assumption 4.2. That Union Government policies continue to permit the devolution of management responsibility to states and regions.

Comments: This process is ongoing. In Rakhine there is a draft inshore fisheries bill, other coastal states and regions are in the process of developing theirs, albeit in a less developed state. We have provided some inputs to the Rakhine bill, however the timing of the process is not always clear and often reactive.

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

Our project is designed to improve human well-being and foster sustainable development through successful fisheries co-management, where people are directly involved in managing the natural resources upon which they depend. The goal is to have a positive impact on marine biodiversity by decreasing the negative impacts of fisheries on coastal species, while sustaining a long-term, positive impact on human well-being through improved fishery benefits. These benefits include reliable income and nutrition, as well as the benefits associated with biodiversity conservation. As this is the first year of the project, it is too early to measure significant direct impacts on either biodiversity or human well-being. In addition, the results of a recent socioeconomic survey have not yet been fully analyzed. However, anecdotal evidence, such as the enthusiasm and interest of local partners and communities to foster the changes needed for co-management of local fisheries,

indicate to us that we will see a positive impact on biodiversity and poverty alleviation as a result of this project.

4. Contribution to the Global Goals for Sustainable Development (SDGs)

This project contributes towards SDG 14 *Conserve and sustainably use the oceans, seas and marine resources for sustainable development*. It specifically focuses on improving sustainability of coastal fisheries and improving fisheries management systems in Myanmar. The work is on-going, but this year we have begun to build the foundation for effective participatory co-management of coastal fisheries in Rakhine State, Myanmar.

5. Project support to the Conventions, Treaties or Agreements

This program of work supports the goals of protecting marine biodiversity in Myanmar as described in the Myanmar NBSAP, as well as Aichi targets, especially SDG 14. In addition, our team is coordinating with the WCS Myanmar Wildlife Trade Team that has a grant from DEFRA on wildlife trade/CITES implementation.

6. Project support to poverty alleviation

The on-going socioeconomic data collection, when analysed, will help inform the project's poverty alleviation strategy. We have asked fishers during early workshops about preferred livelihood options beyond fisheries, the most common response we have heard so far is for poultry raising. We are exploring other opportunities as well. For instance, we have been talking with ZSL about the potential for their Net-Works program to operate in Rakhine as a means to secure diversified income options. Net-Works is a program, started in the Philippines, which enables communities to sell discarded fishing nets to a manufacturer of carpet tiles as a source of recycled nylon. The local community receives an additional source of income and long-term incentives to protect their coasts and waters. RCA is also assessing ecotourism potential in the area, which could have indirect benefits to local resource users, including fishers.

Ultimately, the fisheries co-management planning process will lead to an action plan with steps to help limit the impacts of unsustainable and destructive fishing in an effort to recover depleted stocks, and hence economic returns. As this project progresses, we will continue to identify and develop potential actions specific to how fisheries activities are conducted, such as supply chain modifications and value adding, to support poverty reduction efforts.

7. Project support to gender equality issues

Women along the Rakhine coast are dominant in fish processing and often manage finances. However securing their participation in meetings related to fisheries management is an on-going challenge because local cultural norms and expectations do not support their participation, directly and indirectly. WCS field staff, who are all men, have been interviewing women selling fish and other fish products in markets in order to understand their roles in the fishery and to speak with them about fisheries management options. It is important to our project that we continue working to ensure women are active participants and to emphasize the importance of their roles, both in the local fishery and in its management. Women have been involved in training sessions, as noted about in Section 3.1, although in lower numbers than men, so we will re-assess how to get more involvement of women, perhaps through separate and focused meetings. This is an on-going process of building gender equality into fisheries management processes, which will be continued throughout the project.

8. Monitoring and evaluation

We are monitoring project activities both through regular work planning and the annual analysis associated with donor reporting. Many of the indicators in this project are starting from a baseline of "none." In addition, there is much learning associated with this work, including among our project team. So tracking progress through regular work planning has been a very effective means of monitoring this project.

9. Lessons learnt

After initial delays in the administrative start of this grant which affected the staff recruitment process, we have been able to make up the lost time. More importantly, we have learned not to underestimate the time and effort required to ensure enough capacity exists in communities related to the techniques and application of monitoring and fisheries management approaches. The appropriate use of these techniques is crucial to the project's long term success, and training must match the needs of local communities and other participants. We have been fortunate to work with the RCA, and they have actively and enthusiastically been using the new methods and knowledge. There is still a way to go to ensure this knowledge is transferred to fishers and local community members through the management committee. Working with the DoF presents a set of challenges: limited capacity; a very production-oriented approach to fisheries where sustainability is in the narrative but knowledge of practices is limited; and a historical and entrenched command-and-control philosophy to resource management. We have carefully tried to ensure that the views of DoF are represented at meetings and workshops, while also trying to emphasize the importance of a new model of co-management where responsibility is shared with fishing communities. WCS's local team has very strong ties with DoF. Our consistent messaging and persistent attention to these issues is starting to pay off, as the DoF appears to be growing more receptive to the approach.

Early engagement with community and community leaders during project development and developing a strong partnership with Pyoe Pin have been crucial to the success of this project so far. The Pyoe Pin team has been a great enabler of communication and engagement with Rakhine decision-makers and politicians. As a result, WCS has been invited to various state events to discuss fisheries.

In hindsight, there are some things we would do differently. We anticipated some reluctance of community members to have data loggers used on vessels, and so we decided not to deploy fisheries-monitoring apps and the fishers registration system. However, our use of the pelagic data systems tracker has been well received, and, if we had more funds, we could deploy this system more widely. It appears that we could have implemented other technologies as well to improve the efficiency of fisheries data collection. The current paper-based system is time intensive for the RCA and WCS team, and there have been delays associated with data entry and management. So now we plan to explore how to improve the efficiency with data collection applications through use of technology. Since there is a challenge related to the lack of available data, we could have spent more time earlier to map habitats of local area to get a better idea of marine wildlife presence and seasonality. We also should have allocated more time to capacity building. For instance, if a partner does not have so much capacity for scientific data management, it will need more time to build that capacity. If they lack sufficient human resources, the project results could be affected along its limited timeframe.

For others doing similar projects, we would recommend an early assessment of participatory methods to ascertain if particular methods are preferred or best avoided. In addition, it is important to challenge your own and your team's perceptions and assumptions. Invest in building skills in the core team from the very start, if not before. Skills in project management are just as important as scientific methods, since participatory projects require a significant amount of planning and forecasting, as well as organising and reporting. Understanding and investing in your team's

development of these skills will have a long-standing impact. For multi-level partnerships it is important to identify a local leader or steward, to have clear messages and good communicators within the team, to have strong connections with politicians for broader impact, and to build advocates within the fishers community to help proliferate project learning.

In order to build these lessons into the project and into future plans, we will hold more frequent project team meetings, focus attention on research planning, all with the intention of further developing further the co-mgmt and co-mgmt committee plan. Now that the co-management planning process is well underway, there is the option for continued and regular dialogue with fishers. This communication is essential, and may become the key mechanism for open and transparent communication between project team and the local communities. Until now many project plans have been developed among WCS-DoF-Pyoe Pin, somewhat in isolation. So the formation of the co-management committee presents the best possible project communication and learning platform.

10. Actions taken in response to previous reviews (if applicable) - N/A

11. Other comments on progress not covered elsewhere - none

12. Sustainability and legacy

The project has definitely increased the visibility of WCS and partners in Rakhine state, especially among the communities we are working with. It has been very popular, and we have been encouraged to see the real interest and enthusiasm for co-management, as described elsewhere in this report.

The planned exit strategy is still valid. As of now, we do not plan to make changes.

13. Darwin identity

The Darwin Initiative logo has been included on all banners that are used at workshops and training sessions, in products produced related to this Darwin Award (such as the Marine Biodiversity Atlas), and on the Biodiversity Atlas web portal (marine.myanmarbiodiversity.org). In addition, the project has been actively communicating locally through Twitter and Facebook posts, which are linked to the Darwin Initiative's social media channels.

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2016 – 31 March 2017)

Project spend (indicative) since last annual report	2016/17 Grant (£)	2016/17 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			10%	
Consultancy costs			0%	
Overhead Costs			4%	
Travel and subsistence			-5%	
Operating Costs			-20%	Workshop costs were less than anticipated,

				so funds were allocated under Staff costs for Elizabeth Matthews to work with the Myanmar staff during Martin Callow's departure.
Capital items (see below)	-	-		
Monitoring & Evaluation (M&E)			0%	
Others (see below)			-38%	Workshop materials were less than anticipated.
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2016-2017

Project summary	Measurable Indicators	Progress and Achievements April 2016 - March 2017	Actions required/planned for next period
<p>Impact</p> <p>Myanmar's inshore fisheries are sustainably co-managed to recover depleted stocks, boost value capture, and minimise unintended catch of threatened species, while supporting food security, diverse and resilient livelihoods.</p>		<p>It is too early to measure positive impact on biodiversity. However the groundwork has been laid for collaborative and participatory co-management of local fisheries in Rakhine state.</p>	
<p>Outcome</p> <p>An inshore fishery co-management plan is implemented in Rakhine State, Myanmar, ensuring sustainable livelihoods and improved income for local fishing communities, reducing bycatch and providing a scalable resource governance model.</p>	<p>0.1 By 2019, 25% of fishers from our focus area (assuming Kyentali is chosen = 420 participating people) document a 5-10% increase in CPUE compared to 2016 baselines.</p> <p>0.2 By 2019, more than 25% (420 people) of the small-scale fishing fleet of Kyentali Township, including a proportionally representative number of women, are actively engaged with resource governance decision-making processes. (2016 Baseline = 0).</p> <p>0.3 By 2019, annual socio-economic surveys demonstrate a 5% increase in participating fisher (N=420) and associated fish-worker (N=unknown, TBD) incomes against 2016 baselines.</p> <p>0.4 By 2019, bycatch of marine vertebrates (dugong and marine turtles) decreased by between 10% and 30% compared to 2016 baselines.</p>	<p>The inshore fishery co-management planning process has been initiated in Kyentali and there is a strong likelihood that the project will achieve its outcome by the end of the funding.</p>	<ul style="list-style-type: none"> - analyze socioeconomic data - finalize draft co-management plan - review and adapt co-management plan with project partners - develop action plan for implementation of co-management plan - continue to build local capacity - continue fishery data collection and analysis
<p>Output 1. A gender-sensitive participatory planning process has led to the development and adoption of a co-management plan for coastal fisheries in Thandwe District in Rakhine State.</p>	<p>1.1 By 2017, more than 50% of the RCA members (current RCA members in Kyentali = 40, but this is expected to rise by 2017), which includes a proportionally representative number of female fish-workers, have pledged</p>	<p>Overall, the planning process has been participatory and there has been a very positive reaction to the project from fishing communities as well as government partners. Securing women's participation in meetings related to fisheries management is an on-going challenge because local cultural norms and expectations do not support their participation, directly and indirectly. However we are specifically targeting women fish sellers in the project as one means of</p>	

	<p>support for a participative co-management plan.</p> <p>1.2 By 2018, a suite of sustainable fisheries input and output controls are designed by the RFP/RCA.</p> <p>1.3 By 2019, between 50-75% of participating fishers within the target geography are compliant with the co-management plan.</p>	fostering their involvement.
Activity 1.1. Meetings to discuss challenges and propose and design the fisheries co-management planning process. [Led by PP, supported by WCS].		meetings held in August 2016 and February 2017
Activity 1.2. Site-based / fisher village meetings to ensure awareness and uptake of the emergent input/output controls and adaptive management processes (legal framework, monitoring, compliance, reporting). [Led by PP, supported by WCS].		meetings held in August 2016 and February 2017
Activity 1.3 Co-management plan developed and ratified by members of the RFP/RCA/fishing communities. [Led by PP, supported by WCS].		initial meeting held in April 2017 to begin co-management planning process
<p>Output 2. Baseline data is available and routine participatory collection of additional data is integrated into the governance mechanisms for co-management.</p>	<p>2.1 By 2017, baseline fisheries, socio-economic and value-chain monitoring data is available for >30% of the participating small-scale fleet and associated fish-workers/households.</p> <p>2.2 By the end of Year 1, fisheries and socioeconomic data has been circulated via the first RFP/RCA stakeholder workshop.</p> <p>2.3 Co-management planning process receives annual inputs from collaborative monitoring data.</p>	<p>There have been delays in analyzing the socioeconomic data, so the data that we hoped would be ready by the end of Year 1 is not yet available for distribution. These delays are related to the additional time needed to be building local capacity in data management and analysis. Through our work with the University of Exeter, we have compelling visuals showing the spatial overlap of fishing activity and biodiversity which is essential data that is being incorporated into the management planning process. The data collection, analysis and incorporation is a key component that we will focus on in the coming year.</p>
Activity 2.1. Training in fisheries (catch, compliance, etc.), socio-economic and value-chain data collection provided to members of the RFP/RCA/fishing communities. [Led by WCS, supported by PP].		August and September 2016
Activity 2.2. Participative measurements of ecological and socioeconomic criteria through fish landing monitoring, semi-structured/key informant interviews, household and market/value-chain surveys. [Led by WCS, supported by PP].		October 2016
Activity 2.3. Consultative meetings with RFP/RCA members/fishing communities		April 2017

to present survey results and discuss the design of adaptive management actions. [Led by WCS, supported by PP].		
Output 3. A strategy to reduce unintended bycatch of marine vertebrates has been developed and implemented by local fishing communities.	<p>3.1 By 2017, baseline marine vertebrate bycatch data increases from 0 to more than 20% of participating fishers.</p> <p>3.2 By 2017, areas to protect from fishing have been identified and agreed to by 30% of participating small-scale fishers in our focal area.</p> <p>3.3 By 2018, bycatch reduction devices or practices are adopted by more than 30% of participating small-scale fishers in Kyentali (more than 125 people).</p>	<p>Training has begun, both on bycatch monitoring as well as its incorporation into the management planning process.</p> <p>We are reassessing how to manage bycatch. There is already strong indication that direct reports of bycatch are not accurate due to the sensitivity of the information. So it may be more effective to use the results of participatory mapping of dugong and fisheries activities to design seasonal or area closures to reduce the interactions, rather than through specific gear modifications. Mutual learning over the coming months will help us further understand how best to mitigate bycatch.</p>
Activity 3.1 Rapid assessment boat based field survey to determine the presence and conservation status of dugong and other marine invertebrates known to be caught as by-catch in coastal fisheries in Rakhine. [Led by WCS].		boat-based training in July 2016 on bycatch; initial survey October 2016
Activity 3.2 Community workshops held to discuss and agree spatial and gear modifications / practices to minimise impacts on dugong and marine turtles. [Led by WCS, supported by PP].		see comment above
Activity 3.3 Participative reports of by-catch reductions presented at consultative meetings with RFP/RCA members/fishing communities. [Led by WCS, supported by PP].		bycatch discussed at the training session in August 2016 and the Annual Forum in April 2017
Output 4. Lessons learned from fisheries co-management planning and practices are shared to boost national fisheries resource governance capacity.	<p>4.1 By 2018, RFP/RCA members document key lessons learned to date.</p> <p>4.2 By 2018, the annual forum hosts community and government officials from at least two other districts, states or regions.</p> <p>4.3 By 2019, 2 alternative districts, states or regions pledge to support the implementation of fisheries co-management.</p>	Reporting on lessons learned is ongoing.
Activity 4.1 Communicate project results, impacts and lessons learned at state, region and union levels through the annual forum. [Led by PP, supported by		Presentations on the spatial activities of different local fisheries, biodiversity areas and other data were presented at the Annual Forum in April 2017

WCS].	
Activity 4.2 Conduct site visits to other states and regions to share lessons directly with other fisheries partnerships (e.g. in Ayeyarwady region). [Led by PP, supported by WCS].	We participated in Myanmar Fisheries Partnership events in the national capital and Yangon to share lessons learned in June 2016, December 2016, and March 2017
Activity 4.3 Promulgate project learning to an international audience through attendance at IMPAC4 (Chile) and social media channels. [Shared by WCS and PP].	Regular twitter and facebook posts are being used as a mechanism for reporting about this project locally. An abstract about the project for the IMPAC4 meeting was submitted in mid April.

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact: (Max 30 words) Myanmar's inshore fisheries are sustainably co-managed to recover depleted stocks, boost value capture, and minimise unintended catch of threatened species, while supporting food security, diverse and resilient livelihoods.</p>			
<p>Outcome: (Max 30 words) An inshore fishery co-management plan is implemented in Rakhine State, Myanmar, ensuring sustainable livelihoods and improved income for local fishing communities, reducing bycatch and providing a scalable resource governance model.</p>	<p>0.1 By 2019, 25% of fishers from our focus area (assuming Kyentali is chosen = 420 participating people) document a 5-10% increase in CPUE compared to 2016 baselines. 0.2 By 2019, more than 25% (420 people) of the small-scale fishing fleet of Kyentali Township, including a proportionally representative number of women, are actively engaged with resource governance decision-making processes. (2016 Baseline = 0). 0.3 By 2019, annual socio-economic surveys demonstrate a 5% increase in participating fisher (N=420) and associated fish-worker (N=unknown, TBD) incomes against 2016 baselines. 0.4 By 2019, bycatch of marine vertebrates (dugong and marine turtles) decreased by between 10% and 30% compared to 2016 baselines.</p>	<p>0.1 Fisher catch/log forms completed and submitted to WCS/RFP for CPUE analysis. Data will be disaggregated by gender. 0.2 RFP/RCA meeting attendance records (including gender records) and documented support for decisions. 0.3 Annual socio-economic surveys and reports demonstrate trends towards improvements in value capture and fishers and fish-workers livelihoods. Data will be disaggregated by gender. 0.4 Fish landings survey data and fisher interviews.</p>	<p>0.1. That communities and the newly emerging government (under the leadership of the National League for Democracy) are willing and able to actively participate in co-management. 0.2 That fisheries are capable of recovering within project timeframe to secure improvements in CPUE and social-economic returns. 0.3. That no natural disasters impact the coastal communities and no socio-political unrest emerges. 0.4. That market prices do not fluctuate so much that value capture is degraded.</p>
<p>Outputs: 1. A gender-sensitive participatory planning process has led to the development and adoption of a co-</p>	<p>1.1 By 2017, more than 50% of the RCA members (current RCA members in Kyentali = 40, but this is expected to rise by 2017), which includes a proportionally</p>	<p>1.1 RFP meeting notes demonstrate consensus, gender balance and commitments to co-management. 1.2 Co-management plan and</p>	<p>1.1 That communities and fishers feel empowered by this governance framework and want to participate (and do not feel disenfranchised by</p>

<p>management plan for coastal fisheries in Thandwe District in Rakhine State.</p>	<p>representative number of female fish-workers, have pledged support for a participative co-management plan.</p> <p>1.2 By 2018, a suite of sustainable fisheries input and output controls are designed by the RFP/RCA.</p> <p>1.3 By 2019, between 50-75% of participating fishers within the target geography are compliant with the co-management plan.</p>	<p>input/output controls and documented endorsement from RFP/RCA.</p> <p>1.3 Record of RFP/RCA meeting attendance and reported management infractions. Data will be disaggregated by gender.</p>	<p>historical government policies).</p> <p>1.2 That government remains stable over the lifecycle of the project and does not enact conflicting policies.</p> <p>1.3 DOF maintains support for co-management.</p>
<p>2. Baseline data is available and routine participatory collection of additional data is integrated into the governance mechanisms for co-management.</p>	<p>2.1 By 2017, baseline fisheries, socio-economic and value-chain monitoring data is available for >30% of the participating small-scale fleet and associated fish-workers/households.</p> <p>2.2 By the end of Year 1, fisheries and socioeconomic data has been circulated via the first RFP/RCA stakeholder workshop.</p> <p>2.3 Co-management planning process receives annual inputs from collaborative monitoring data.</p>	<p>2.1 Baseline fisheries, socio-economic and value-chain data records available. Data will be disaggregated by gender.</p> <p>2.2 Stakeholder workshop proceedings.</p> <p>2.3 Co-management planning process adaptive management updates.</p>	<p>2.1 That communities and government are willing to participate in collaborative monitoring.</p> <p>2.2 That the value chain is traceable / transparent</p> <p>2.3 That training workshops are sufficient to generate a consistent quality of participative data / inputs.</p>
<p>3. A strategy to reduce unintended bycatch of marine vertebrates has been developed and implemented by local fishing communities.</p>	<p>3.1 By 2017, baseline marine vertebrate bycatch data increases from 0 to more than 20% of participating fishers.</p> <p>3.2 By 2017, areas to protect from fishing have been identified and agreed to by 30% of participating small-scale fishers in our focal area.</p> <p>3.3 By 2018, bycatch reduction devices or practices are adopted by more than 30% of participating small-scale fishers in Kyentali (more than 125 people).</p>	<p>3.1 Landings survey data and fisher interviews reports.</p> <p>3.2 Participative temporal-spatial mapping (and GPS spot tracker) records demonstrate potential areas for protection.</p> <p>3.3 Bycatch reduction practices active and documented / filmed. Data will be disaggregated by gender.</p>	<p>3.1 That fisher interviews provide accurate information.</p> <p>3.2 That fishers will be unguarded with respect to providing insights into spatial-temporal bycatch.</p> <p>3.3 That appropriate bycatch reduction devices and practices will be adopted and that support can be generated for marine vertebrate protection.</p> <p>3.4 That fishers act honestly when reporting compliance.</p>

<p>4. Lessons learned from fisheries co-management planning and practices are shared to boost national fisheries resource governance capacity.</p>	<p>4.1 By 2018, RFP/RCA members document key lessons learned to date.</p> <p>4.2 By 2018, the annual forum hosts community and government officials from at least two other districts, states or regions.</p> <p>4.3 By 2019, 2 alternative districts, states or regions pledge to support the implementation of fisheries co-management.</p>	<p>4.1 Lessons learned documented.</p> <p>4.2 Meeting membership lists demonstrate interest for co-management of small-scale fisheries in other areas.</p> <p>4.3 Minutes of meetings held in other districts, states or regions.</p>	<p>4.1 That Union Government support for co-management continues to persist.</p> <p>4.2 That Union Government policies continue to permit the devolution of management responsibility to states and regions.</p>
--	---	---	--

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)

1.1 RFP/RCA stakeholder meetings to discuss challenges and propose and design the fisheries co-management planning process. [Led by PP, supported by WCS].

1.2 Site-based / fisher village meetings to ensure awareness and uptake of the emergent input/output controls and adaptive management processes (legal framework, monitoring, compliance, reporting). [Led by PP, supported by WCS].

1.3 Co-management plan developed and ratified by members of the RFP/RCA/fishing communities. [Led by PP, supported by WCS].

2.1 Training in fisheries (catch, compliance, etc.), socio-economic and value-chain data collection provided to members of the RFP/RCA/fishing communities. [Led by WCS, supported by PP].

2.2 Participative measurements of ecological and socioeconomic criteria through fish landing monitoring, semi-structured/key informant interviews, household and market/value-chain surveys. [Led by WCS, supported by PP].

2.3 Consultative meetings with RFP/RCA members/fishing communities to present survey results and discuss the design of adaptive management actions. [Led by WCS, supported by PP].

3.1 Rapid assessment boat based field survey to determine the presence and conservation status of dugong and other marine invertebrates known to be caught as by-catch in coastal fisheries in Rakhine. [Led by WCS].

3.2 Community workshops held to discuss and agree spatial and gear modifications / practices to minimise impacts on dugong and marine turtles. [Led by

WCS, supported

by PP].

3.3 Participative reports of by-catch reductions presented at consultative meetings with RFP/RCA members/fishing communities. [Led by WCS, supported by PP].

4.1 Communicate project results, impacts and lessons learned at state, region and union levels through the annual forum. [Led by PP, supported by WCS].

4.2 Conduct site visits to other states and regions to share lessons directly with other fisheries partnerships (e.g. in Ayeyarwady region). [Led by PP, supported by WCS].

4.3 Promulgate project learning to an international audience through attendance at IMPAC4 (Chile) and social media channels. [Shared by WCS and PP].

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
6A	# people trained (< 1 yr sessions)	M and F	Myanmar	59			59	150
6B	# weeks of training			3			3	4
7	# types of training materials (manual, presentations, posters)			2			2	3
9	# management plans			1			0	1
10	# field guides (to monitoring methods)			1			1	1
11A	papers published			0			0	1
11B	papers submitted			1 (abstract)			1	2
12A	databases established			1			1	1
14A	conferences organized to present findings			1			1	3
14B	conferences, meetings attended to present findings			1			1	3
23	other sources of funding			2 grants pending			pending	TBD

Table 2 **Publications**

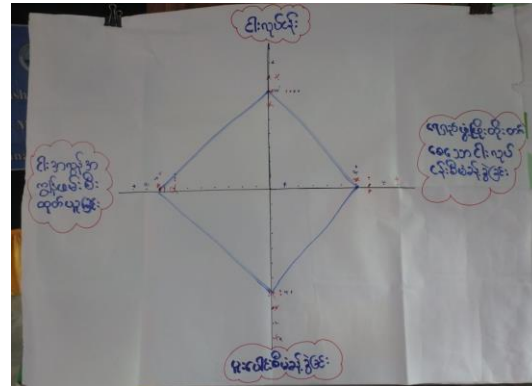
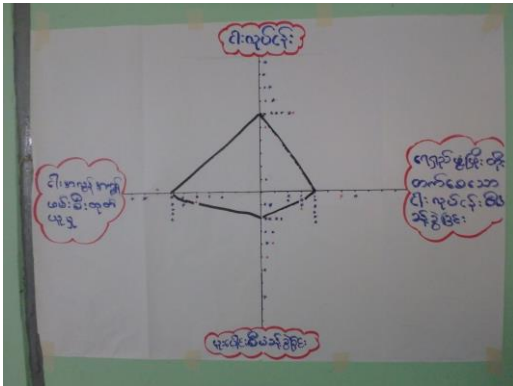
Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Myanmar Marine Biodiversity Atlas	online database	multiple partners	NA	NA	NA	marine.myanmarbiodiversity.org
Field Manual for Socio-Economic, Fisheries & Marine Vertebrate Surveys in Myanmar	manual (104 pp)	WCS and University of Exeter	male	UK	WCS and University of Exeter	on request

Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

The 104-pp *Field Manual for Socio-Economic, Fisheries and Marine Vertebrate Surveys in Myanmar* by WCS and University of Exeter is available upon request.

The Myanmar Marine Biodiversity Atlas is now accessible online at marine.myanmarbiodiversity.org

We conducted pre- and post-training surveys to assess people's uptake of the information presented at the training sessions. In the figures below, pre-training is on the left and post-training on the right. The diagrams show that as the participants went through the training, they identified co-management (bottom portion of the diagrams) more as a mechanism for sustainable fisheries management.



In the diagram below, the fisheries vision and objective that were articulated during the co-management training is shown in Myanmar language.

◀ ရေသယံဇာတများ အားရှေ့ညှိ စနစ်တကျ ထုတ်ယူ
 သုံးစွဲခြင်း အားဖြင့် လူ့စနစ်မှ အဆင့် အတန်း ဖြင့်
 တက်လာစေခြင်း

=> အဖွဲ့အစည်း => ကျေးဇူးအလှိုင်

=> တရားမဝင်စားဖွယ် ဖမ်းဆီးမှုများကို ကျွန်ုပ်တို့အဖွဲ့အစည်း
 စည်းကမ်း သတ်မှတ်ကာ နှိမ်နင်းဆန့်ကျင်ဆောင်ရွက်ခြင်း

=> ငါးရောင်းရောင်း ဝယ်ယူမှုများကို ကျွန်ုပ်တို့အဖွဲ့အစည်း
 စည်းကမ်း သတ်မှတ်ခြင်း

=> ဥပဒေအရ သတ်မှတ်ထားသည့် နည်းစနစ်ဖြင့်
 ငါးဖမ်းယူမှုများကို ဆောင်ရွက်ခြင်း

=> တရားဥပဒေစိုးမိုးမှုရှိရန်

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.	
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.	
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
Do you have hard copies of material you want 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.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	