



Department
for Environment
Food & Rural Affairs



Improving coastal resilience and ecosystem services through biodiversity restoration



Darwin Initiative Main Annual Report

To be completed with reference to the “Project Reporting Information Note”:
(<https://www.darwininitiative.org.uk/resources-for-projects/information-notes-learning-notes-briefing-papers-and-reviews/>).

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

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Darwin Initiative Project Information

Project reference	28-021
Project title	Improving coastal resilience and ecosystem services through biodiversity restoration
Country/ies	Philippines
Lead partner	International Institute of Rural Reconstruction (IIRR)
Project partner(s)	Zoological Society of London (ZSL), Municipal Government of Guinayangan, Quezon
Darwin grant value	£499,985.00
Start/end dates of project	September 1, 2021 – August 31, 2024
Reporting period (e.g., Apr 2021 – Mar 2022) and number (e.g., Annual Report 1, 2, 3)	Sep 2021 – Mar 2022 Annual Report 1
Project Leader name	Julian Gonsalves, Ph.D.
Project website/blog/social media	
Report author(s) and date	Darwin John C. Raymundo, Julian Gonsalves, Ph.D, Jofel D. Coching, Carlo Palima; April 29, 2022

1. Project summary

The project *Improving coastal resilience and ecosystem services through biodiversity restoration*, also known by its acronym “ICORE,” seeks to demonstrate how a small municipality can restore and improve coastal ecological resilience and reduce poverty. Mangrove and coastal ecosystems will be rehabilitated by creating more bio-diverse and multi-strata bio-shields, that support livelihoods and protect local communities from climate change risks. To reduce habitat destruction, fishing communities will be empowered to shift to climate resilient agriculture systems and practices that are gender-sensitive and agro-biodiversity rich. The local government, education sector, and the community are key actors and partners in these coastal ecosystems enriching efforts.

The project will address five threats to biodiversity and society: a) loss of agricultural species and genetic diversity, b) illegal cutting of coastal tree species; c) unregulated coastal development, d) siltation and sedimentation, and e) climate change risks. By addressing these key threats, the project will contribute to the improvement of the condition of the following ecosystems: a) mangroves, b) seagrass beds, c) coastal saline rainfed lowlands, and d) coconut-based agro-

ecosystems particularly family farms and homesteads. In the process, the project will help improve the quality of life and the resilience of the community with preferential options for women and youth.

The project rationale takes root in the fact that despite being one of the 17 megadiverse countries, poverty remains high in rural areas, particularly among fisherfolks and rural farmers. Guinayangan is a third-class municipality composed of 54 barangays (villages) with 45,155 people and a poverty incidence of 24.55% (2015 census). The project will work in 14 coastal barangays within the municipality (Figure 1).

Municipality of Guinayangan

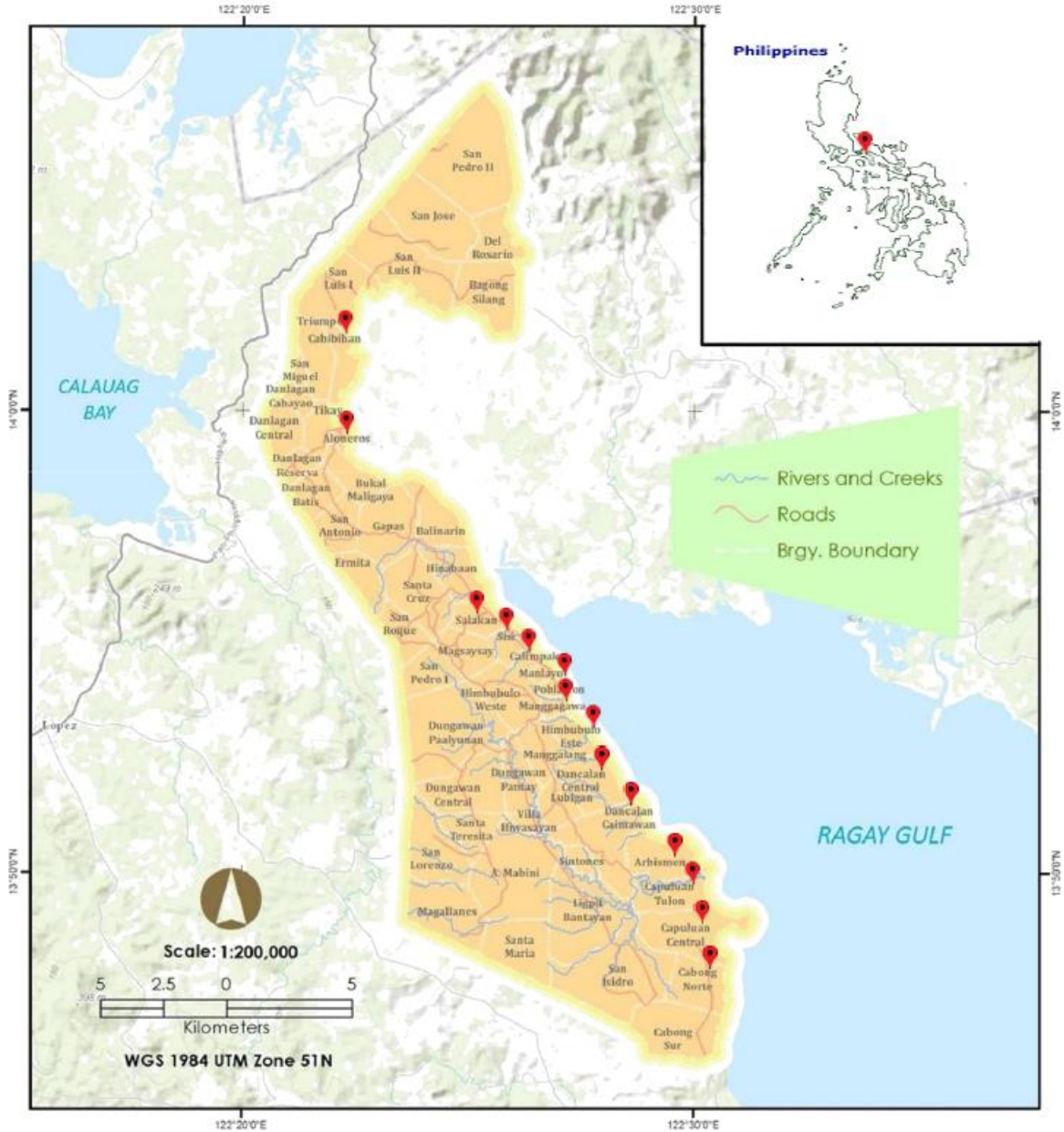


Figure 1. Map of Guinayangan, Quezon indicating 14 coastal barangays

2. Project stakeholders/ partners

Formal Partners Zoological Society of London (ZSL) and the Municipal Local Government Unit of Guinayangan, Quezon (MLGU)

A Memorandum of Agreement (MOA) between IIRR and the ZSL has been signed and notarized formalizing the tie-up between the two parties in implementing the project (Annex X). ZSL is responsible for providing technical assistance to the project on mangrove management and rehabilitation.

IIRR has an accreditation with the MLGU, recognizing the organization's long history of implementing development projects within the municipality. Representatives from the various municipal departments form the core of the Project Management Team (PMT) and play a crucial role in the implementation of project activities. The Municipal Mayor's Office, Office of the Municipal Agriculturist (OMA), Municipal Environment and Natural Resources Office (MENRO), Municipal Planning and Development Office (MPDO), Municipal Budget Office (MBO), and Disaster Risk Reduction and Management Office (DRRMO) are represented in the project.

Barangay Local Government Units (BLGU), Municipal Fisheries and Aquatic Resource Management Council (MFARMC) and People's Organizations (POs)

Barangay officials engaged as pivotal partners in mobilizing both manpower and physical resources in the community. Barangay captains were tapped in the distribution of planting materials in several barangays. The MFARMC as a recommendatory body for municipal coastal resource management is seen as one of the focal organizations for the project, with its members being involved in capacity building activities. MFARMC members doing double-duty as fisher and farmer PO leaders were engaged by the project. The POs also serve as the pool from where beneficiaries are sourced, with most of the target demographic for poverty alleviation in their groups.

National Government Agencies (NGAs) and Academe

The project has tied up with the Department of Agriculture (DA) in getting technical assistance. The DA Undersecretary and Chief of Staff, Dr. Leo Sebastian was present during the formal project launch and visited one of the mangrove conservation sites. Representatives from the Provincial Environment and Natural Resources Office (PENRO) and Bureau of Fisheries and Aquatic Resources (BFAR, under the DA) form part of the PMT and have committed to provide resources and trainings to the project. The project has also cooperated with Cavite State University (CAVSU), with a site visit to their National Coffee Research, Development and Extension Center (NCRDEC) by Guinayangan MLGU staff. An intern from the CAVSU is also currently engaged with the project in developing information materials. Strategic links were made with the National Plant Genetic Resources and the Institute of Plant Breeding at the University of Philippines, Los Baños (IPLB). Plants genetic resources from the Gene Bank (cassava, banana, peanuts and mung bean) were secured. The Visayas State University in Leyte also provided valuable flesh-colored sweet potato germplasm for adaptation testing and eventual multiplication to support the project efforts to create more bio-diverse coastal farming systems. More formal arrangements and partnership will be sought (where and if needed) following these initial overtures to partners with premier resource institutions.

3. Project progress

3.1 Progress in carrying out project Activities

The first year of the project concentrated primarily on organizational strengthening for partners, preliminary mangrove resource assessments, generation of baseline socio-economic and livelihood data, and the introduction of planting materials to farmer beneficiaries for pilot studies. Most of the activities have been conducted in time save for a few, and those that have been completed have reached the intended audiences. Activities that have not yet been conducted are expected to be finished within the 1st half of Y2.

3.2 Progress towards project Outputs

Output 1. Total of 330 hectares of coastal areas with sparse mangrove cover rehabilitated, protected, and sustainably managed through community-led initiatives.

A Training of Trainers on Mangrove and Beach Forest Rehabilitation and Conservation (MBFRC-ToT) was conducted by ZSL for 2 IIRR staff, 2 MLGU staff, and 6 PO members in Iloilo last February 21-27, 2022. The MBFRC-ToT was held in ZSL's Centers of Learning (CoLs) including (a) Katunggan It Ibajay Ecopark, Ibajay, Aklan, (b) Pedada Integrated Mangrove Ecopark, Ajuy, Iloilo, and (c) Leganes Integrated Mangrove Ecopark, Leganes, Iloilo.

The MBFRC-ToT enhanced the knowledge and awareness on science-based protocols and mangrove rehabilitation techniques, and also enriched the experience of the participants through various lectures and workshops, and hands-on practicum activities (Annex 5). This developed a group of trainers to conduct on-site mangrove training courses for the local communities of the target 14 coastal barangays. The ToT graduates, along with key MLGU officials, will form the core of the municipal mangrove management team.

The MBFRC-ToT participants drafted a mangrove rehabilitation plan during the training, identifying appropriate mangrove species for nursery establishment, outplanting areas, and nursery areas within their respective barangays.

A baseline mangrove community structure (MCS) survey assessing species diversity, density and distribution was completed last March 21-25, 2022. The survey was led by ZSL with the participation of IIRR, MLGU staff, and community members.

Overall, the mangrove forests of Guinayangan are highly diverse with a total of 23 true mangrove species found in 11 barangays. The mangroves ranged from intermediate (age) forests to young secondary growth in non-operational fishponds, and were in fringing, riverine, and basin formations. Of the 23 mangrove species, 18 species were represented within the survey plots. Survey results are presented in detail in Annex 6.

Mangrove outplanting sites indicated in the draft rehabilitation plans were re-assessed by the ToT graduates applying their learnings from the training. The selected outplanting sites were then verified and mapped out with the assistance of ZSL and maps of rehabilitation areas have been generated indicating a subtotal 4.5 ha (Annex 7). The mangrove rehabilitation plans were then revised for the selected barangays based on the validated 4.5 ha mangrove outplanting sites.

A remote inventory and mapping of brackish water fishponds (BWFP) was conducted to determine potential and additional areas for mangrove rehabilitation across the entire municipality (Annex 8). A total of 74 ha was identified as potential for mangrove rehabilitation but only 14 ha was located within the target barangays. On the other hand, 170 has. of non-operational fishponds with full mangrove cover can be potentially reverted (administrative process) to mangroves. However, these areas still need to be re-assessed and validated on the ground.

The law enforcement components of the project have not been initiated pending the identification of conservation areas and the local partners to be trained, and drafting of an enforcement framework.

Output 2. 700 hectares of coastal agro-ecosystems in 14 villages in Guinayangan are utilized for regenerative agriculture including promotion of agro-biodiversity.

Community meetings and house-to-house visits have been conducted to explain the project objectives and garner more support for the activities. A total of 460 beneficiaries in 14 barangays have received various planting materials. Some of them are currently engaged in Participatory Action Research (PAR) and pilot testing strategies for regenerative agriculture. A report on the fruit trees distribution is included as Annex 9.

An estimated 70 has. of coastal agricultural areas have been currently allocated to diversified crops such as mung bean, peanuts, and various fruit trees. The area was estimated from expected planting distance of the total number of planting materials distributed. This area is expected to increase as more planting materials are distributed and greater social preparation and additional information campaigns are conducted.

In order to engage the local communities in restoring their ecosystems a modest effort was made in the first year to get communities engaged in adaptation trials for peanut, mung bean and banana. This approach was to engage individual households in simple trials (observation trials on suitability and adaptability, not agronomic studies). Preliminary feedback is that peanut, mung bean and bananas were all found to be suitable and relevant to the area. The approach was to introduce multiple varieties of small quantities of seeds of peanut and mung bean. Seeds were secured from the Institute of Plant Breeding and Dept of Agriculture in the Northern Philippines. Diversity kits ensuring intra-species diversity allowed community members to engage in PAR. Focus group discussions (FGDs) were used as a mechanism to collate views on relevance and adaptability of these nutrition-sensitive approaches.

The project is also currently working with existing community groups: farmer, fisher and women's groups. A conscious effort has been made to actively recruit women to partake in livestock raising, using the previous experience of women native pig farmers in the area as a focal discussion point.

The orientation and workshop on fund management system were not yet conducted prior to further social preparation of the POs. These are expected to be done within the 1st half of Y2.

The activities that have been completed form a solid base for the project to work on in the following years, and with further social preparation, the number of beneficiaries and total area rehabilitated would significantly increase.

Output 3. Around 1,000 poorest households in 14 coastal villages with improved livelihood security and resilience resulting from regenerative agriculture and sustainable use of resources found in the designated multiple-use mangrove forests.

Baseline surveys to determine stakeholders and produce a livelihood and socio-economic profile have been completed. Baseline data per barangay are presented in a report (Annex 10).

An initial 460 individuals were provided with a wide range of planting materials, with several currently engaged in PAR. PAR is being conducted in areas nearest the coastline, with the hopes of finding suitable crops that have community acceptance as well as suitability to the more demanding agriculture environs close to the sea. As a field of study coastal agriculture has not been studied. Meanwhile through a diversified portfolio of climate resilient and biodiverse options, lives and livelihoods will be advanced. These are other more in-depth surveys will follow in Y2 and Y3.

To provide guidance and advisory support to MLGU units engaged in livelihood development and agro-biodiversity enhancement (fish, trees, crops and small livestock), 3 source books were developed after critical assessment was made of past and current literature (mostly derived from IIRR work in the Philippines) and the potential usefulness and relevance to coastal areas in the Philippines. These materials were subsequently reviewed at a writeshop organised by IIRR at its campus in Silang, Cavite. A peer review process helped further narrow down the materials during the writeshop itself. The report of the writeshop is included as Annex 11. Design and refinement by a graphic designer and artist followed the writeshop.

Another study on the use of coconut by-products was commissioned and completed during the first year of the project. This was to explore the potential of the by-products that farmer tenants and fishers can easily access given the prevalence of coconut farming systems, as part of the search for inclusive and pro-poor livelihood interventions. Some of these options will be tested in the second year of the project in select barangays and specifically targeted to the families of fishers and farmers. The full report was prepared by a former IIRR staff member and value chain expert (Annex 12).

Aside from coconut-based enterprises, fruit preservation and native pig productions will also be explored for the women of fisher families. To support future work, a desk study by a former ICRAF scientist was undertaken and completed in Y1 (Annex 13). An initial basis for early testing and development by IIRR's Enterprise Development Specialist will begin in Y2.

Output 4. Knowledge and good practices derived from project are shared widely to the public as well as to various agencies of the government within Guinayangan and in the province to mobilize policy, funding and public support.

During the barangay project orientation meetings, community surveys were conducted to gather baseline socio-economic data, along with KAP surveys and FGDs for 4 sectors of the community (fisherfolk, farmers, women, youth). Stakeholders were also mapped, identifying beneficiaries within the barangays. Results of these baseline surveys are collated in a report (Annex 10), with the KAP analysis to follow within the 1st month of Y2.

Initial coordination with school district administrators has been done to secure their support for information campaigns for elementary and high school students. Discussions with socio-civic organizations have also been initiated to secure support for mangrove planting activities to be sponsored by their groups.

The project's activities are regularly featured in the OMA Facebook page, augmented with photos supplied by the project staff.

Community leaders have also been identified and will be engaged for education activities. Although stakeholder analysis has been completed, the development of behaviour change models and strategies have not yet been done, and will be done in the 1st half of Y2.

3.3 Progress towards the project Outcome

The indicators for the Outcome are an adequate gauge for project progress. Overall, the project is optimistic that the Outcome can be achieved by the end of funding. Progress against the indicators are listed below.

0.1. Within 3 years, the current 300 has (Y0 baseline) of degraded mangrove forests in Guinayangan are rehabilitated, protected and sustainable managed; with an added 10% expansion in forest cover, increasing total area to 330 hectares; resource management is done fully by fishers' organizations with 30% women membership.

The project has conducted mangrove resource surveys and identified an initial 4.5 has. for mangrove reforestation. With additional abandoned fishpond areas also being considered for reversion, the project is capable of meeting the additional 30 has. increase in forest cover by the end of the project. The indicators used are adequate for the planned Outcome, with the institutionalization of mangrove management and the attendant legislation being the most critical. Engagement of women in fisherfolk or community organizations remains to be improved, with the goal of their participation in mangrove planting activities and management initiatives. As of the moment, only 1 of the 6 community members forming the core of the management team is a woman.

0.2. Within 3 years, species diversity in coco-based family farms and homesteads located in 700 hectares of coastal agro-ecosystems has improved by 10%; increasing agri-based livelihood options for farming households by 20% (50% of which, managed by women) due to more available crops & animals as household assets.

Between 70 to 90 hectares of previously mono coconut cropped land have benefitted from enrichment planting with a wide range (over a dozen species) of perennials, short term perennials and annuals by the end of Y1. Results from these adaptation and crop suitability informal participatory with biodiverse cropping will inform future intensification and scaling

efforts. With livelihood and agro-ecosystems profiles collated and the subsequent development of materials for regenerative agriculture and coconut by-product livelihoods, it is expected that more options are available for households by Y2 and Y3, and that the project should be able to meet the expected Outcome by project end.

0.3. By Y3Q3, 50% increased level of appreciation by coastal communities of biodiversity conservation as nature-based solutions to managing climate-change risks & vulnerabilities.

KAP baseline surveys have been conducted to assess the levels of community engagement on the topics of mangrove protection and agro-biodiversity. To address climate change risks, the project is partnering with the OMA and DRRMO in promoting coastal bio-shields through the planting of mangroves and fruit trees, and implementing climate-smart agriculture practices learned from IIRR's previous projects in the municipality.

Overall, the project should be on track to achieve the desired Outcome from all the indicators by the end of the project barring any major disturbances.

3.4 Monitoring of assumptions

Assumptions for Outcomes and Outputs made at the time of the project inception still hold true to this date.

Outcome Assumption 1: Host country remains politically stable and supportive to mangrove and agro-biodiversity conservation; policy environment and related legal frameworks remain unchanged during the project.

Comments: No change in assumption. No major changes to existing policies on conservation and agriculture at the national level that would drastically affect the project have been implemented during Y1. Further deregulation in delivery of basic services by the local government units through an increase in Internal Revenue Allotment (IRA) by means of the Mandanas Ruling in 2022 would allow the local government to allocate more funds to conservation and agriculture initiatives such as those implemented by the project.

Outcome Assumption 2: Provincial and municipal policy environment continues to support environmental conservation despite growing demand for land use conversion for infrastructural development and agricultural plantations.

Comments: No change in assumption. As proof of municipal commitment to the preservation of land for conservation purposes, the project continues to provide technical assistance through its involvement in the Municipal Environment Management Council (MEMC) for payment for ecosystem services (PES) for watershed management that would affect coastal areas. Savings from PES would be used by the municipality to buy private lands around the watershed for further protection.

Outcome Assumption 4: Land-owners, farming households, and local government have collaborated to improve production systems and practices in 700 hectares coastal agro-ecosystems utilizing regenerative agriculture.

Comments: No change in assumption, although some tenant farmer beneficiaries expressed reluctance in accepting fruit trees due to possible conflicts with landowners. Most have been receptive though and have agreed to participate in the project. Greater buy-in from farmers through information campaigns and a shift to crops (such as short-term perennials, small canopy fruit trees and roots and tuber crops) that landowners would be agreeable to are seen.

Outcome Assumption 3: Communities and local governments in coastal areas covering the 300 hectares of mangrove forests have agreed to support interventions to protect and conserve mangroves in their respective localities.

Comments: No change in assumption as evidenced by support from the MLGU, BLGUs and POs in the various activities of the project. Active participation in meetings and trainings by community members as well as barangay officials has been noted as well (Annex 14).

Outcome Assumption 5: Local government policy & decision makers are actively pursuing best options for increasing community resilience of coastal communities using participatory approaches.

Comments: No change in assumption given the consultative processes and participatory approaches used by the project and partner LGUs.

Output 1 Assumption 1: Project incentives for women community members on seedlings collection, propagation, outplanting and maintenance of mangroves reforestation sites in place; Community groups applying learnings in mangroves conservation science.

Comments: No change in assumption. The project is currently looking for tie-ups with other external organizations to incentivize mangrove conservation activities.

Output 1 Assumption 2: Legislated policies & programs are in place: establishing LGU support to inclusive & participatory coastal governance; MFARMC implementing its mandates other than patrolling & law enforcement (e.g., planning & recommending fishery-related ordinances)

Comments: No change in assumption as seen from the support of several MFARMC members to project activities, albeit the MFARMC needs further organizational strengthening and trainings.

Output 1 Assumption 3: Local government has allocated resources (human & financial) for engaging its constituents in participatory process of and inclusive coastal governance.

Comments: No change in assumption. The OMA has allocated staff to closely work with IIRR staff in the implementation of agro-biodiversity activities, and the MENRO has been active in the conduct of mangrove-related activities.

Output 2 Assumption 1: On-site evidence-base of multiple benefits of location & context specific regenerative agriculture practices are established; Local governments and key national agencies (DA, DENR, BFAR) are intensifying implementation of related programs (e.g. organic agriculture, agroforestry, climate-resilient agri-fishery value chains) to build on farmers' interests in farm diversification to pursue government's vision of transforming Quezon province into a progressive agriculture hub.

Comments: No change in assumption. The project team has already in Y1 liaised with university-based research stations in Los Baños, Laguna and Tacolban, Leyte to support the project's needs for technical inputs and plant and animal genetic resources, to create more bio diverse, multi- strata understory cropping under the prevalent mono cropped coconut-based farming systems. These partnerships included the National Plant Genetic Resources Bank, the Legume Division and Roots Crops division of the Institute of Plant Breeding at University of the Philippines Los Baños and the Philippine Root Crop Research and Training Center (PhilRootcrops). A visit to the National Swine and Poultry Research Center (under the Bureau of Animal industry of the DA) was undertaken in order to identify sources of promising native pig breeds for dispersal to coastal women entrepreneurs. In Y2 the project will also make an earnest effort to directly engage the DENR more prominently in local efforts to restore degraded mangroves and beach forests (with a corresponding increase in their counterpart resources).

Output 2 Assumption 2: Coastal households fully understand the value and roles of agro-biodiversity conservation in sustaining agricultural production; project and government partners are rolling out support programs (e.g., Philippine Native Animals Development Program).

Comments: No change in assumption. Community meetings to be conducted to further bolster understanding of agro-biodiversity conservation.

Output 2 Assumption 3: Local government's agriculture office has incorporated regenerative agriculture scaling in its investment plans.

Comments: No change in assumption as the OMA is currently actively participating in regenerative agriculture activities of the project.

Output 3 Assumption 1: Project and government support prioritized towards emerging practices with significant conservation & gender contributions (e.g., native livestock/poultry production, backyard gardening, root and tuber crops production, and community-savings & credit associations); community and women's groups have adopted an entrepreneurship mindset in pursuing sustainability of ecosystems conservation initiatives.

Comments: No change in assumption. Livestock distribution may be affected by the past swine flu and avian flu incidence in the area, but should not alter project outputs given the dispersed nature of native breed-based backyard pig systems (which are less prone to disease outbreaks).

Output 3 Assumption 2: Local government has adopted nature-based solutions as an important guiding principle in planning and developing the local economy and its sectors.

Comments: No change in assumption, as evidenced by the success of their PES in watershed management.

Output 4 Assumption 1: Administrators and decision-makers have included conservation education for students and youth as a key activity for schools and youth organizations.

Comments: No change in assumption. Initial discussions with school district administrators have been conducted, with the intention of engaging students through the distribution of information materials by Y2.

Output 4 Assumption 2: Local champions have emerged and well-capacitated as resource persons in inclusive and participatory coastal governance.

Comments: No change in assumption. Several local champions have been identified and are being groomed to form the core of mangrove management bodies and coastal agro-biodiversity initiatives. Carefully thought out social and geographic targeting methods is likely to enhance inclusiveness goals of the project, reduce the risks of elite capture, and, to help foster wider social and environmental local impacts, an emphasis on building organizational and leadership capacities of local organisations (fisherfolk organisations) will follow in Years 2 and 3.

Output 4 Assumption 3: Project partners from local governments and community groups are incentivized to share their experiences and performing as champions in coastal governance.

Comments: No change in assumption. The project is currently looking for tie-ups with other external (e.g., local or national private sector) organizations to incentivize conservation activities. Women-led and managed community enterprise development (value addition of biodiverse agro-forestry and small livestock production) is ultimately likely to emerge as the most significant incentive for local communities to regenerate, restore and conserve their coastal ecosystems and associated local food systems).

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

Impact: Climate resilience and local community well-being in Guinayangan, Philippines improved through community-based mangrove rehabilitation and agrobiodiversity conservation in coastal agriculture supported by effective legal mechanism and law enforcement action.

Following an upsurge in the frequency of typhoons, there is heightened awareness on the role of mangrove forests in protecting coastal communities and the project seeks build on this. There are also existing laws, both national and local, on the use and protection of mangrove forests. As a first step in improving local legislation, baseline surveys determining areas for conservation and what species to protect have been completed. Current planning for mangrove rehabilitation also involves diversifying species for planting, as opposed to the prevalent practice in the country of almost exclusively using *Rhizophora* spp. for reforestation. Emphasis on protection and documentation will be given to species that are threatened, like the IUCN Red List Endangered *Camptostemon philippinensis* which was found in 5 barangays in Guinayangan.

There is considerably less understanding about the value of conserving species diversity in agricultural crops and livestock. To support the need for educating local officials and line agency staff, a source book was compiled. This is expected to serve as a reference manual for local government official and as a prototype for design of materials for public education and school-level environmental education. Meanwhile coastal agro-biodiversity is already being enhanced and crop genetic resources being introduced/protected at community levels to further educate local communities of the value of agro-biodiversity. The introduction of different varieties secured from other communities and from various national gene banks and plant breeding centers have recently also been initiated. Some of these crops (legumes, bananas, roots and tuber crops) are already being harvested. In June/July 2023 there will be a major educational and plant distribution campaign focusing on these multi-species short cycle crops.

Poverty alleviation is being addressed by the development of livelihood enterprises that are most suited for the coastal areas and relevant to the lives and livelihoods of the poor especially fishers and women. This includes the use of coconut by-products, a use of RTB (roots, tubers and bananas) and fruit processing. These crops are an integral part of climate-smart agriculture which supports conservation through sustainable used, while ensuring better nutrition choices and resiliency to the negative economic, biophysical and agro-ecological impacts of climate change (Annex 11).

Forage species (*Trichanthera*, napier grass, cover crops) have been planted in several barangays in preparation for livestock distribution in Y2 as an additional livelihood component.

4. Project support to the Conventions, Treaties or Agreements

The project supports the Aichi Targets through the following activities:

- Promotion of agro-biodiverse and sustainable agricultural practices through regenerative agriculture by distributing different varieties of crops to farmer-fishers with the goal of reducing pressure on coastal resources (AT7, AT10, AT13, AT14)
- Increased awareness for biodiversity conservation through community meetings, trainings and information drives (AT1)
- Identification of mangrove areas for conservation and rehabilitation to preserve species diversity (AT11, AT13, AT15)
- Ensure ecosystem services are preserved through community engagement, specially of women and youth (AT14, AT1)

In response to the Philippine Biodiversity Strategic Action Plan (2015-2028), the project has contributed:

- An initial 4.5 has. to the target 30 has. for rehabilitation, on top of the planned protection of the existing 300 has. of mangroves (Conservation Target #3)

- 50% of genetic diversity of cultivated plants and farmed, starting with the different varieties of RTBs being introduced ((Conservation Target #4)
- Protection of existing mangrove and agro-biodiversity areas to preserve ecosystem services (Ecosystem Services Target #7)

The project contributes to the Nagoya Protocol's goal of preserving genetic diversity through its promotion of inter/intra species diversity of fruits, root crops and tubers, as well as the identification of mangrove species to be prioritized for rehabilitation efforts.

5. Project support to poverty reduction

The choice of crops being distributed by the project, mostly understory crops which enrich biodiversity, fruits, legumes and RTBs help meet food and feed needs. In a farming system dominated by coconut farming systems (with a landowning class), the project relied on a more biodiverse coastal agriculture approach that is emerging as being pro-poor, women-empowering, and, socially inclusive. To ensure that even tenants can utilize land spaces, the project has created a special trajectory for identifying, sourcing and distributing germplasm of short cycle crops, such annual crops and short-term perennials (permitted by land owners). The project has taken on a special campaign for under-utilized crops that differentially benefit the poor. By combining long-duration, medium-duration and short-cycle (3 to 6-month duration) crop options, the project is ensuring its work is inclusive and cognizant of the poor's needs and priorities. There is already a lot to be seen on the ground by way of direct impacts on food and nutrition needs of the poor. The planned mangrove restoration and conservation work has a longer time frame for results to emerge. However, the project approach will be to protect and conserve the existing mangrove stand, estuarine resources and water bodies. The safeguarding of these resources is expected to support the needs of the very poor including women. Cognizant that coastal zones are complex social-ecological systems, the value of gleaning for women and the poor will be studied in Y2 (via a case study). Meanwhile in Y2 8 proof-of-concept sites will be nurtured where biodiverse mangrove and agro-ecosystems landscapes can be seen and a case made for pro-poor coastal development approaches. women-managed enterprises will be established, demonstrated and documented starting early in 2022, serving as centers for discovery, learning, evidence, and advocacy on how to link coastal resources development, biodiversity enhancement with pro-poor development.

6. Consideration of gender equality issues

The project is already actively engaging women in the coastal communities to participate in its activities. As evidenced in Annex 10, turnout for women during activities is notable. But it is also well-known that nowadays that approach to achieving gender balance is not adequate. Thus, the project focus on targeting women directly. This includes prioritizing geographic targeting (i.e., 3 kilometres from the seafront in the vulnerable areas), spaces around the homes and environs, to address gender inequities by investing in asset development. A choice of fruit trees, RTB and small livestock is providing mostly women an opportunity to enhance their natural asset base, within the otherwise male-dominated, coconut-based farming systems that characterize coastal areas in much of the Philippines. A focus on both diversification and intensification of ecosystems is already demonstrating its special and unique relevance to women, the poor and fishers. Results are already noted and evident on the ground. In Y2 its natural to expect as horizontal scaling of these options and germplasm amongst that segment of the very poor and women. IIRR has set up with support from the Australian embassy a crop museum facility within the coastal areas to regularly providing locally adapted and nutritionally dense planting materials to the 14 coastal villages. This will continue until the end of the project. Still, there is a lot of room for growth in terms of improving women's engagement (and deepening our own understanding) in coastal resource management and the need for ensuring the poor, women and tenants have increased access to livelihood options.

A focus in Y2 on mangrove environmental education and communications is expect to result in a new understanding of how even small mangrove areas can support some of the needs of the poor. There is limited understanding for example of the role of gleaning for the poor including

and especially for women and youth. The shallow habits allow women to wade in to collect, gather and trap edible marine organisms such invertebrates. When the seas are rough, fishers turn to these habitats. To encourage the conservation of estuaries, small mangrove patches, brackish water ponds and other habitats exposed during low tides, the project will support barangay councils to start with local ordinances to preserve these ecosystems for both environmental and social reasons. The idea of small barangay sanctuaries however small has already been floated with the Mayor of Guinayangan.

Only 1 of the 6 community members forming the core of the mangrove management team is a woman. The project seeks to encourage more women to play a bigger role in mangrove rehabilitation, not only with the planting activities but also be part of community management teams.

7. Monitoring and evaluation

IIRR internally conducts weekly meetings to plan daily activities and assess progress. Quarterly project reviews are also conducted to check progress against the logframe.

All partners play a vital role in M&E and are engaged on a regular basis. Project plans and updates are shared through monthly virtual meetings, as well as bi-monthly IIRR and ZSL management and financial team meetings, which are also virtual.

An initial M&E framework has been drafted during the project's planning workshop (Annex 15) last December 2021. A more refined M&E plan will be operationalized from this draft during the planned Y1 review/Y2 planning workshop.

The most common indicators for success of activities include: number of participants, documents formulated, planting materials distributed and improved male-female participant ratios. The indicators are still a valid way of checking Activity and Outputs as a means of contributing to the project Outcome.

8. Lessons learnt

The first year involved the need for the IIRR and ZSL team to constantly prioritize what was both important and a priority given the competing needs for time. Program implementation in a project of this nature implies the need for constituency building, liaising at different levels with local government units (provincial, municipal and barangay) imply the need for consultation. Just as important is the need for social engagement at community levels building that case for the project objectives. This also required that IIRR, ZSL and Local Government also work together recognizing each institution's priorities and procedures and work modalities. One cannot "hit the road running" right after project approval. If one is to succeed in building ownership, accountability while ensuring sustainability as well. Partnerships do make a positive difference on local communities by leveraging strengths and expertise of partners

Official MOUs and other similar agreements must be informed by realities on the ground: the best time for doing these are determined by those realities. In this case IIRR has worked in the target municipality for over five years thus greatly facilitating the entry and launch of this new effort. IIRR had also previously undertaken a few pilot activities in relation to some of the project objectives via small grants from CCAFs/CGIAR. IIRR and the LGU plan to build on those lessons and social capital

A scoping mission of national resource institutions at the start would have been useful but invariably such missions raise expectations unless the time devoted by external experts is compensated for. However, it is likely that mid-way through the project or into the last year, such a mission can be considered for purposes of drawing lessons for programming by other small municipalities.

An appreciation for conserving agriculture genetic resources and the restoration of agro-biodiversity does not always accrue naturally to local communities to staff and local government extension workers. The multiple objectives of conserving agro-biodiversity, of biodiverse agro-ecosystems, of nutrition-sensitive agriculture and local food systems are not always quickly or easily understood. One way to nurture that understanding is to invest in unleashing tangible

and observable changes at household levels. Bundling environmental, economic and livelihood co-benefits can help make the case for such approaches

The challenges of climate change and related natural disasters are increasingly delivering, strong negative impacts on the poor in coastal areas. As such, local communities have “opened up” to the idea/value of restoring, regenerating and conserving coastal ecosystems (mangroves, beach forest and agro-biodiversity). Interventions should include advocacy and education, but go beyond to deliver climate action on the frontlines. If properly packaged, results can be delivered fairly quickly, and with notable impacts. This project has special opportunities to deliver results in the short to medium term and use these for advocacy for small municipalities (the unique feature of this project).

Structural and functional factors continue to influence how the government agencies such as the DA and DENR work together. The area of integrated coastal resource management offers a platform for effectively bringing in the DENR, the BFAR under the DA, and the Municipal Authorities. Executive Order No. 533 on Integrated Coastal Management offers that opportunity. However, the approach will initially deploy each of these respective agencies where there is clarity on responsibilities and roles (e.g., DENR will be encouraged to invest in the replanting/restoration of mangroves and coastal habitats and BFAR encouraged to support the development of commercial fishing systems).

Gender, tenurial and tenancy issues and local legislation remain important themes in any coastal project that attempts to address poverty, inclusiveness and economic empowerment. An understanding of social dynamics and social differentiation and issues of rights to resources and food. Any project that professes to address resilience, adaptation and inclusiveness has to constantly keep this in mind because of influences and unintended consequences.

9. Actions taken in response to previous reviews (if applicable)

Suggestions to change several indicators in the logframe and needed clarifications for others as noted in Flexireference DIR 2752/1059 were addressed and accepted by the Darwin Initiative, and are now part of the project indicators moving forward.

10. Other comments on progress not covered elsewhere

The project is poised to accelerate its efforts to achieve the objectives it set for itself. COVID-19 is under control, and most of the population in the municipality have been vaccinated. The relationship with the local government is at an all-time high. This year we will have a face-to-face event to understand what more needs to be done to ensure that the project delivers at different levels. The engagement of the MLGU is planning and monitoring has been high and expected to be deepened in Y2.

11. Sustainability and legacy

The project has been widely received in Guinayangan, being part of a long series of other agro-biodiversity, nutrition, and food security projects that were successfully implemented by IIRR within the municipality. Part of the strategy of the project is emphasizing the short-term nature of its existence, and that sustainability should come from mechanisms instituted at the local government and community levels.

These mechanisms include but are not limited to: individually and community-managed agribusiness enterprises with developed markets, empowered community organizations with women playing a greater role in direction-setting, and fund allocation and legislation at both the barangay and municipal levels for protection of not only of mangrove resources but hopefully expanding to other coastal resources as well.

The exit strategy remains the same, with the project intending to leave a more empowered community for resource management, and local government units with the technical capability to conduct coastal agro-biodiversification and conservation.

12. Darwin identity

The Darwin Initiative and UK Government's contribution to project funding is highlighted during community presentations. The community is aware of the role of the Darwin Initiative in providing funding as a completely new project being implemented by the IIRR. The project area is clearly designated as distinctly supported by the Darwin initiative and is recognized as such by the local government, ZSL and other IIRR partners.

All presentations and information materials distributed feature the Darwin Initiative logo prominently alongside the project partners' logos. These include 2 source books that when finalized will be distributed across the country through IIRR networks including the DA, and hopefully the regional offices of the Department of Education (DepEd).

Two articles on the project were featured in the Darwin newsletter as part of the project's goal of publicizing it to the greater Darwin Initiative network of partners, scientists and funders. IIRR is associated with the CCAFs program of the CGIAR and in future with the One CGIAR. Those areas are currently distinct/different from sites where the Darwin Initiative supported project is operating.

The IIRR partner in this project is ZSL Philippines. ZSL has implemented Darwin Initiative-funded projects in the Philippines prior to this engagement with IIRR. As result of this, the Darwin Initiative is already known in the Philippines, especially amongst science-based organisations and the academe. IIRR and ZSL will ensure that this current project will reach an even wider network in the Philippines and outside the country via its publications, media engagement efforts, and communication materials.

13. Impact of COVID-19 on project delivery

The COVID-19 pandemic has not adversely impacted the project, save for a few adjustments that have to be made to accommodate the restrictions brought about by lockdowns.

COVID-19 travel restrictions at ZSL's training site limited the number of participants that were able to join MBFRC-ToT, lowering the target number of trainees from 4 to 2 for the LGU and from 14 to 6 from the community. Thus, the core group of trainers would have to take up the slack in conducting the on-site mangrove training courses for all 14 coastal barangays. Also, the on-site mangrove training courses will take longer to complete due to the decreased number of trainers.

While at the community level there is clearly no substitute for face to face and participatory activities, the IIRR, ZSL and the LGU has at institutional level relied heavily on virtual platforms for its meetings, reviews and consultation with finance and administration units. There is no doubt that these forms platforms for virtual planning, review and monitoring will continue to be used because of their cost effectiveness and lower carbon foot print.

All project activities put into place the necessary health protocols in relation to COVID-19, including: proper social distancing, the use of PPEs and hand sanitizers, and vaccination requirements for participants. The Philippines has successfully implemented its vaccination program across the country, explaining for a relatively COVID-free (current) situation. Internal travel protocols are being lifted and we are cautiously optimistic about being able to implement this project at a faster pace in its second year.

By improving the availability of more diverse and healthier food crops will be available to the community this year (protein-rich legumes, carbohydrates), the project could improve overall health of community members and hopefully reduce the negative effects of future pandemics. Local food systems and household nutrition are being strengthened via bio-diverse cropping systems, a heavy reliance on root, tuber crops and bananas, and legumes and a focus on food and fruit preservation.

14. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

No violations to safeguarding policies have occurred for this reporting period.

15. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2021 – 31 March 2022)

Project spend (indicative) since last Annual Report	2021/22 Grant (£)	2021/22 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	██████	██████	██████	
Consultancy costs	██████	██████	██████	
Overhead Costs	██████	██████	██████	
Travel and subsistence	██████	██████	██████	Travel restrictions limited number of participants to the mangrove management Training of Trainers
Operating Costs	██████	██████	██████	Fewer community meetings were conducted
Capital items (see below)	██████	██████	██████	
Monitoring & Evaluation (M&E)				
Others (see below)	██████	██████	██████	
TOTAL	██████	██████		

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

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

Project 28-021 on Improving coastal resilience and ecosystem services through biodiversity conservation undertaken in the small municipality of Guinayangan, Quezon in the Philippines is now only just completed its first year. What is somewhat unique is the effort to conserve mangrove, beach forest and agro-biodiversity resources. While the more time-consuming preparation and planning for mangrove restoration is on-going, efforts are being made to deliver relatively quicker outcomes in the form of better nutrition and improved income through agro-biodiversity restoration is already underway. The dwellers in coastal areas are mostly the poor, typically fishers and invariably tenants. There are few opportunities for the poor and especially women from fisher households. Coastal agriculture can create more spaces for the

economic empowerment of women. However, coastal agriculture is a relatively less understood field of agricultural development. Coastal ecosystems can be harsh, vulnerable and subject to the vagaries of nature. Sandy and saline soils can be challenging making it hard to grow many crops. Yet relying on an approach that builds on what people already know can work, the project is supporting crops that are locally adapted (including those from similar ecological and climate zones).

By relying on local knowledge and locally adapted crops and cultivars, farmers are able to grow crops in these challenging environments. Eight kinds of fruit trees known to perform well in other coastal areas were introduced to all the project villages. Colored flesh tubers (taro, sweet potato and cassava) are being introduced with early success. Diversity kits of seeds of diverse crops and varieties are encouraging farmers to experiment and undertake adaptation trials. Three native varieties of bananas (señorita, latundan and lakatan) are thriving helping farmers meet their calorie needs.

To support the planting needs of the dozen coastal villages being targeted, a crop museum (a diversity and propagation center) has been established. To convey the importance of biodiverse agricultural systems in coastal areas, diversity fairs are being considered for the public to appreciate the multiple values of agro-biodiversity (for conservation, for food culture and to support enterprises led by women).

