



Darwin Initiative Main Annual Report

Darwin Project Information

Project reference	27-010
Project title	Community-led stewardship and conservation of the Ometepe Island Biosphere Reserve
Country/ies	Nicaragua
Lead organisation	Fauna & Flora International (FFI)
Partner institution(s)	Biometepe (Cooperativa de Agroturismo Rural y Conservación Sostenible de la Biodiversidad de Ometepe R.L.) Network of Agro-ecological Producers of Ometepe (RAPO)
Darwin grant value	£ 299,496
Start/end dates of project	1 July 2020 – 30 June 2023
Reporting period	Annual Report 1: 1 July 2020 – 31 March 2021
Project Leader name	Co-Project Leads: Angelica Valdivia - FFI Country Director, Nicaragua, and Alison Gunn, FFI Senior Programme Manager, Central America
Project website/blog/social media	https://www.fauna-flora.org/projects/improving-sustainable-use-natural-resources-ometepe
Report author(s) and date	Alison Gunn, Angelica Valdivia, Heydi Salazar (FFI) Keyla Mena (Biometepe) April 2021

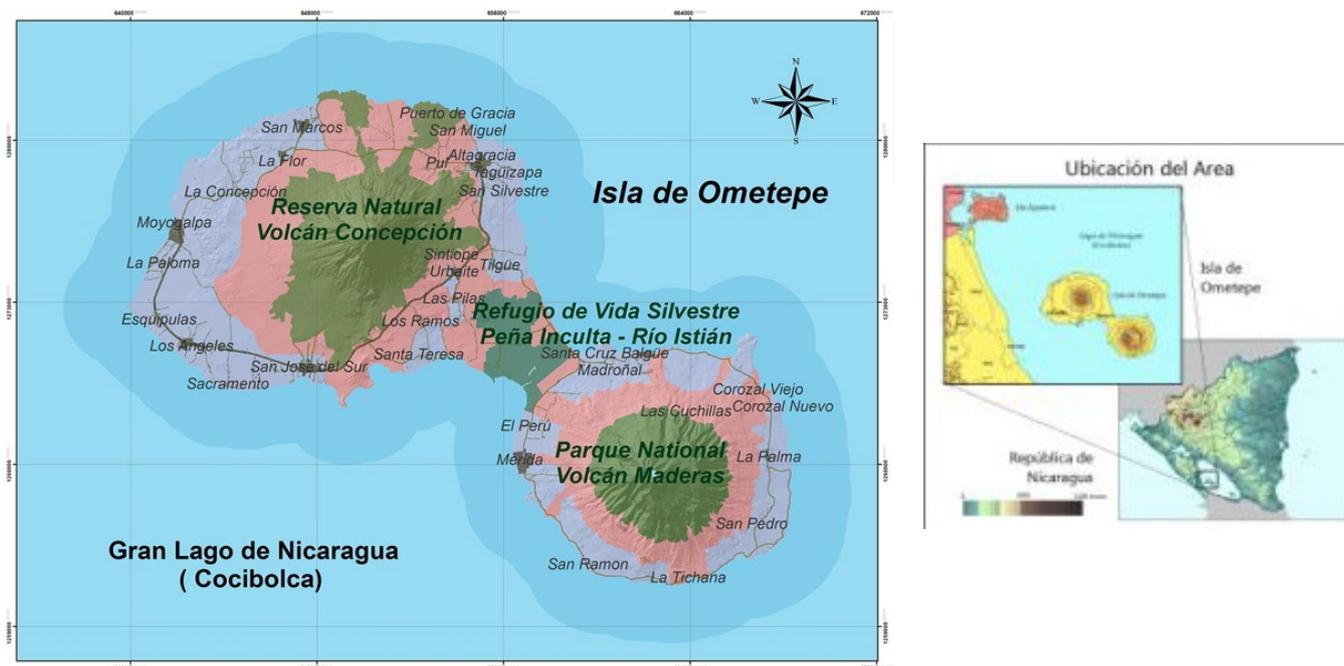
1. Project summary

Ometepe Island is a UNESCO Biosphere Reserve and Important Bird Area, whose wetlands and humid and dry forests support ~150 bird species (Morales, 2007). Biodiversity-rich habitats cover 32% of the island, providing ecosystem services to c.42,000 people, including water and regulating services for small-scale subsistence farming on which >50% of islanders rely. Whilst Biosphere Reserve status has raised local awareness of ecological dependencies and grassroots commitment to conserving Ometepe's natural heritage is strong, the Reserve's formal governance structures are not active.

Clearance of land for agriculture and illegal extraction of forest resources threaten Ometepe's wildlife - including its globally important population of yellow-naped parrot (EN) - and ecosystem services that underpin local livelihoods. Since 2001, Ometepe has lost an average of 58 hectares of forest cover (0.9%) per year (Global Forest Watch, 2018), with dry and riparian forests particularly under threat and clearance of moist forest (>400masl) observed for the first time. Threats have worsened since 2018, as socio-political instability has hindered already-weak environmental law enforcement and decimated tourism, prompting many islanders to return to farming. Worsening economic conditions exacerbated by the global Covid-19 pandemic, where rural poverty is already high (UNDP, 2019), are also contributing to an uptick of poaching of iguanas and parrots for trade (Urtecho, 2019).

Livelihoods and food security are further at risk due to unpredictable weather patterns and Ometepe's vulnerability to increasingly frequent natural disasters (FAO, 2015; Herrera, et al. 2018). Poor yields and lack of knowledge amongst farmers on how to improve production drive forest clearance in an effort to grow more.

Fauna & Flora International (FFI) has been working across the Ometepe Island Biosphere Reserve strengthen local capacity for biodiversity conservation and the sustainable management of natural resources. Whilst previous FFI-supported agroecological production has produced measurable benefits for 75 farming families - in year-round production and resilience to local impacts of climate change (Mena, 2018) - these were as yet insufficient pre-project to foster new social norms and promote widespread uptake of agroecological production across the island.



2. Project partnerships

FFI's formal partnerships for the delivery of this project Darwin Initiative include:

Biometepe (Cooperativa de Agroturismo Rural y Conservación Sostenible de la Biodiversidad de Ometepe R.L.): Biometepe is FFI's main local project partner. Biometepe is a community cooperative founded in 2018 by leading local conservation and tourism professionals from Ometepe (many of whom have been collaborating with FFI over the last decade). The organisation is focused on biodiversity conservation, sustainable livelihoods, environmental governance and conservation tourism on the island.

In 2019 (pre-project), FFI and Biometepe signed a 3-year Memorandum of Understanding outlining the technical scope of our partnership, and associated responsibilities, and confirms that both parties foresee this as a longer term collaboration. Biometepe's role in this Darwin-funded project has been formalised through a sub-grant agreement, signed by FFI and Biometepe in September 2020 (see Annex 4). To ensure successful project delivery, FFI has been working with Biometepe to identify organisational capacity needs that we can support, through our Partner Due Diligence process and associated actions, including a Finance and Governance review, completed in September 2020.

Biometepe technical specialists and field staff lead many of the project's field-level conservation and biological monitoring activities, alongside the provision of agroecological extension support to farmers and community outreach. Throughout Year 1 (Y1) of the project, Biometepe staff have worked closely with the FFI project team to plan and adaptively manage project activities. Biometepe also supports FFI in monitoring progress and impact of project interventions. Biometepe's President (female) is a member of the project's Steering Committee.

Network of Agroecological Producers of Ometepe (RAPO): The 'Network of Agroecological Producers of Ometepe' (RAPO) came together in 2017 and has an active membership of 25 farmer families (seven women-led) from five farming communities across the island. RAPO aims to pioneer and promote sustainable production compatible with conservation and the experiences of RAPO's farmers in trialling new agroecological practices for Ometepe informed the design of the project's approach.

RAPO is a key platform for fostering farmer-to-farmer learning and to promote uptake of agroecological practices amongst new farmer families through this project. The Network hosts

bimonthly meetings of its member farmers, which - alongside frequent farm visits/exchanges - provide a forum for members to share, discuss and analyse their experiences, access training, and demonstrate the economic and environmental benefits of agroecological approaches to other farmers. RAPO also has a role in the project as a platform through which Ometepe's agroecological farmers can foster alliances and linkages with local markets for the ecological produce being harvested.

Additional collaborations: The following stakeholder groups, organisations and government departments, not listed as formal project partners, have also collaborated on the project in Y1:

Nicaraguan government departments: The project aligns with national government strategies to increase food security and improve farm productivity, promote conservation, and incentivise sustainable production and agroecology. FFI's agreed shared annual workplans with six key Nicaraguan government departments (as signed off in March 2020 and March 2021) encompass the development of joint strategies and activities for biodiversity conservation and the promotion of agroecology on Ometepe. Key government departments for this project are: **MARENA** (Ministry of Environment and Natural Resources), **INTA** (Institute of Agricultural Technology), **MEFCCA** (Ministry of Family, Community, Cooperatives & Associative Economy) and **INTUR** (Institute for Tourism). A meeting was held with INTA at the start of the project (July 2020 - see Annex 4j) to agree coordination between INTA and project partners on support to agroecological farmers. Relevant applications for permits for wildlife research and conservation activities on Ometepe (with a focus on yellow naped parrot and migratory birds) were submitted to MARENA and issued in October 2020 for the period October 2020 to September 2021 (see Annex 4n).

Drinking Water Committees ('CAPs'): Communities located around the fringes of Ometepe's Maderas Volcano are supplied with drinking water from upstream natural water sources of the Maderas Volcano National Park through a network of aqueducts. Drinking Water Committees (nine 'CAPs' in total, one per community) are in charge of the drinking water system and are responsible for the administration and collection of tariffs, as well as maintenance and improvements to the supply network. However, the CAPs have not previously had the capacity to conduct adequate monitoring of water quality/flow. Through the project, FFI is helping the CAPs to develop and implement freshwater monitoring protocols, to inform improved management of upstream water catchments and to strengthen communities' understanding of upstream ecosystem services and benefits.

Antonio de Valdivieso International University (UNIAV): In September 2020, FFI entered a new agreement with UNIAV to support collaborative scientific research and student placement projects linked to species and ecosystem conservation in the Ometepe Island Biosphere Reserve (see Annex 4p).

Self Help International (SHI) is a US-registered non-profit organisation working to alleviate poverty and promote self-reliance by assisting the rural poor, small-scale farmers and related enterprises. In April 2020, FFI and SHI signed a 2-year Memorandum of Understanding focused upon our shared objectives to promote sustainable agriculture amongst Ometepe's farmers, contributing to the welfare of agricultural families, with a focus on those most vulnerable to climate change impacts. In Y1, SHI provided training to Biometepe's extensionists and farmers in the production of quality seed and seed selection in maize.

We also acknowledge the contribution of **Brooke America Central** (international NGO, headquartered in the UK and registered in Nicaragua) who are collaborating with Biometepe and FFI to maximise our combined potential to contribute to biodiversity conservation, sustainable natural resource use, and the welfare of families and their working equines on Ometepe. In Y1, Brooke provided training to Biometepe's extensionists and farmers on the health and welfare of working animals.

3. Project progress

Project start-up: In agreement with the Darwin secretariat, the start date for this 3-year project was amended to 1 July 2020, in line with the receipt of the Grant Award paperwork. The revised project Budget and Implementation Timetable was submitted to Darwin via Change Request in July and the associated movement of funds between financial years (the project will now continue until 30 June

2023) was approved by Defra in August 2020. This report therefore relates to the first nine months of the agreed project period.

Project Management: At project inception, the project was set up within FFI's institutional project management systems. The project team (four FFI staff, four members of lead partner Biometepe, plus representatives from RAPO and four of Ometepe's Drinking Water Committees / CAPs) held initial planning workshops in July and August, to review and update the project workplan and budget in line with the revised project dates. With support from FFI's Conservation Science & Design team, the project's Co-Leads also reviewed how best to incorporate recommendations from the Darwin Expert Committee into the project.

The project **Steering Committee** was established, in order to ensure participatory project management, to coordinate and feedback on implementation of activities amongst project partners, to oversee coordination with government and academic institutions and other project stakeholders, and to ensure appropriate adaptive management of the project within the context of Covid-19. The Committee comprises four FFI staff [Project Lead & Country Director (Nicaragua); Co-Project Lead & Senior Programme Manager, Central America (UK); Specialist, Community Livelihoods, (Nicaragua); Specialist, Biological Monitoring (Nicaragua)], plus Biometepe's President, RAPO's Coordinator and one representative from the CAPs. During the first 9 months of the project (Y1), four meetings of the project Steering Committee were held - two via Skype and two in-person (following Covid-protocols for social distancing).

3.1 Progress in carrying out project Activities

Output 1. Community-led forest protection and wildlife conservation strengthened

Activity 1.1 Strengthen and replicate existing community-led forest protection efforts on Ometepe, building protocols and incentives for groups, farmers and young people involved in community-led patrols.

In Y1, building on our previous engagement with local communities, FFI and Biometepe supported the formation and capacity building of four "Community Commissions" for forest protection on Ometepe. FFI and Biometepe held an initial meeting with 27 representatives from four communities (Balgue, Mérida, Santo Domingo and La Palma) in November 2020, to present and discuss the conservation need and functions of the proposed Commissions (see Annex 4a). Following this consultation, 22 people (50% women) signed up to form four Community Commissions. In collaboration with the local authorities (including representatives from the local police and MARENA) the project team provided training in monitoring protocols and the detection of illegal natural resource extraction. Importantly, FFI and Biometepe have helped establish links between the Commissions and the relevant authorities, and they have worked together to agree monthly plans for (day and night) forest protection patrols and locally-appropriate protocols for reporting environmental crimes.

Weekly patrols began in December 2020, with a focus on the protection of 1,950 hectares of forest identified as priorities for conservation of Ometepe's population of Endangered yellow-naped parrots (750ha in Mérida and Santa Cruz, 600ha in Balgue and Madroñal, 400ha in La Palma and Corozal, 200ha in the Peña Inculca Wildlife Refuge). By the end of Y1, a total of 20 patrols had been conducted across these areas. According to records made by the local authorities, these patrols are already having a beneficial effect on the rate of forest fires and illegal felling of forest trees, both of which were found to be lower in the six-month period October-March in comparison to rates recorded in the previous 2 years.

To further strengthen the role of local people in the protection of forested lands (community-owned, cooperative-owned, or on small-holders' land) we have also engaged with the indigenous community at Peña Inculca, the Cooperativa Carlos Dias Cajina on the flanks of Maderas volcano and with farmers (see also Activity 1.3).

Activity 1.2 Reforest four priority sites through propagation of seedlings in two community-run nurseries and planting of native forest/fruit trees (11 species /12 varieties).

In Y1, the project has supported two community-run nurseries for the propagation of native forest and fruit tree saplings for reforestation. Native forest tree species (including species of *Quercus*, *Gmelina*, *Cedrela*, *Swietenia*, *Morus*) alongside other forage plants and fruit tree species (e.g. citrus, avocado, mango, papaya) have been propagated (13,500 seedlings, to date) - with a focus on species of ecological importance for wildlife, including nesting and foraging parrots.

Priority sites for reforestation on Ometepe, covering 80 hectares, were formally agreed with MARENA through our joint workplan, with replantation efforts formally recognised by this agency. Priority sites include 20 hectares inside the Peña Inculca Wildlife Refuge and 60 hectares of privately owned land in the forest-agriculture buffer zone. Biometepe organised tree planting efforts, conducted jointly with the indigenous community of Peña Inculca, farmers and other community members, and provided guidance to stakeholders on appropriate medium- to long-term management and monitoring of planted sites. A total of 13,500 tree saplings of 14 forest and fruit tree species were planted in Y1.

The project team are drawing on FFI and partners' knowledge and experience of successful reforestation (which requires appropriate on-going management of planted sites, combined with natural forest regrowth and habitat management) and best practice guidance (e.g. Brancalion & Holl, 2020). Guidance was provided to landowners on appropriate follow-up care and management. Unfortunately however, monitoring of reforested sites indicates that ~20% of saplings have not survived, because the 2020/21 dry season (December – April) has proved particularly hot and dry. Biometepe has therefore begun working with local stakeholders to prepare sites for reforestation in advance of the 2021 wet season.

Activity 1.3 Strengthen the protection and ecological monitoring of the yellow-naped parrot population on Ometepe, through community patrols and incentives.

Ometepe supports one of the largest and most dense remaining populations of Endangered yellow-naped parrots (YNP) in its range. Accordingly, FFI and Biometepe are supporting community-led nest/habitat protection and monitoring, as well as an annual census of Ometepe's YNP population.

Population census: In July 2020, FFI's and Biometepe's specialists in biological monitoring led training on monitoring techniques, data collection and data confidentiality for the YNP population census (24 local people trained). The design, methods and effort of the 2020 annual population census was consistent with that applied on Ometepe over the last three years. The census was conducted in July 2020 and confirmed an encouraging count of 1,076 YNP across the four priority sites on Ometepe (three within the Maderas Volcano National Park and 1 in the Peña Inculca Wildlife Refuge). Our current best estimate from the annual population census data is that this relates to an island-wide population of ~1,800 YNP.

Nest monitoring: In Y1, FFI has provided technical capacity building to the Biometepe team in species conservation, ecology and behaviour, and associated monitoring and data analysis (recognising the role of Biometepe staff in multidisciplinary data collection, statistically robust performance data sampling and analysis methods). Led by FFI's Specialist in Biological Monitoring, a new combined protocol for the monitoring of YNP and neo-tropical migratory birds on Ometepe was compiled (see also Activity 1.4 and Annex 4b), based on existing protocols for YNP and Monitoring Overwintering Survival ([MoSI](#)). Prior to the start of the nesting season in October 2020, 8 members of Biometepe and 14 community members were trained in the monitoring protocol.

In Y1, Biometepe's specialist team led monitoring of the YNP nests at four priority sites - at Balgue, Mérida and La Palma (on the flanks of Maderas Volcano) and at Peña Inculca (NB. pre-project monitoring of nests indicates that Ometepe hosts two distinct YNP nesting seasons: October-January at Peña Inculca, and January-May at all other nesting sites on the island). Through the 2020/21 nesting season (until the end of March 2021), 69 nesting trees were recorded and monitored, of which 60% were *Terminalia oblonga*, with nest observations confirming a total of 41 active nests and 72 live chicks. Nests were geo-referenced and compiled into a map of active nests across the different YNP monitoring sites.

Nest/habitat protection: Monitoring data (including identification of trees with nesting activity) is used to inform the effort and location of community-led YNP protection patrols. In Y1, regular protection patrols began in November 2020, with patrols teams made up of four community members accompanied by three Biometepe field staff. Timings and locations of patrol routes (~2km per route) were designed to maximise next protection and deterrent of illegal poaching activity across the four priority sites for YNP nesting. FFI and Biometepe are also working with local farmers, farming communities and groups to protect parrot nesting sites on cultivated lands (e.g. within shade coffee plantations). We are working with 15 private farms, as well as the indigenous community of Peña Inculca and the Carlos Diaz Cajina agricultural and rural tourism cooperative located on the flanks of the Maderas Volcano National Park, to help them identify and protect roosting and nesting trees - both from the threat of poaching, but also to ensure that farm management (e.g. pruning of trees) do

not impact known nesting holes. Patrol teams monitor each of the YNP nests until chicks are recorded fledging the nest, and coordinate with Altagracia's municipal police for the reporting of any evidence of illegal poaching activity. So far this season, the patrol teams have recorded two nests (three YNP chicks) that have been illegally poached.

Activity 1.4 Train three community members in MoSI protocols and conduct annual monitoring of overwintering neo-tropical migratory birds.

In Y1, FFI has worked with Biometepe and other stakeholders to develop a series of protocols for community involvement in environmental monitoring. As mentioned under Activity 1.3, protocols for monitoring overwintering survival of migratory birds (MoSI) on Ometepe have been adapted from standard [methods](#). In October/November 2020, FFI and Biometepe led a series of five training sessions on bird identification, monitoring methods and the use of Apps to verify IDs or collate data on bird observations (i.e. Cornell's Merlin Bird ID and eBird apps). As a result, a total of 28 young people (20 male, 8 female) from the communities of Mérida, Balue, San José del Sur and Altagracia have improved knowledge and skills in bird identification and data collection and three community members have the knowledge and skills to apply the protocol for migratory bird monitoring on Ometepe.

Monitoring of migratory birds was conducted at four sites between November 2020 and March 2021 - two forest sites (one within the Maderas Volcano National Park and one in the Peña Inculca Wildlife Refuge) and two wetland sites. A point count sampling method was used, with a duration of 10 minutes at each point and a distance of 200 meters between each sampling point. Of 31,860 observations of 124 bird species, a total of 2,484 individuals of 32 migratory bird species were recorded across the sites (21 observers in total – 5 Biometepe staff, 16 community members, 50% female).

Activity 1.5 Design protocols for farmer-led monitoring of birds, insects (including pollinators) and other wildlife, and support their implementation on farmers' cultivated and forested lands.

In Y1, FFI has been leading a process to development protocols for farmer-led monitoring of biodiversity on farm plots on Ometepe, in coordination with Biometepe and local stakeholders. The aim is to develop a simple protocol which is easy for farmers to implement, so that they are more likely to do so (both during and post-project) and therefore gain insights into the value of biodiversity in their plots, ecosystem health and environmental change over time. As many of the farms are small (between 2 to 10 hectares), the protocol needed to be appropriate to provide an indication of ecosystem health at that scale. A first draft of the protocol was drafted and trialled on one farm in October 2020, following which it was revised and further simplified (see Annex 4c). The protocol focuses on a defined set of indicator species - i.e. easily recognizable species of insects (both important pollinators and pests) and birds, initially limiting the protocol to these two taxa.

By the end of Y1, monitoring data had been collected across 20 agro-ecological farms. An average of 119 individual birds and an average of 17 different bird species were recorded per farm. Insect monitoring has initially focused on pest species (including weevils, aphids and whitefly) on different crops (e.g. banana, watermelon, vegetables), to compare pest-load in sites where agroecological practices are already established (i.e. with better soil structure, crop diversity and rotation, and without use of insecticides) to non-agroecological plots.

Activity 1.6 Strengthen community engagement in monitoring freshwater quality/flow, updating and implementing protocols in collaboration with existing network of Drinking Water Committees.

In Y1, FFI has worked with a consultant to develop a protocol for locally-led monitoring of freshwater flow and quality (see Annex 4d), with macro-invertebrates being used as indicators of water quality. Representatives from four Drinking Water Committees (CAPs) of Balue, Mérida, La Palma and Madroñal have been engaged in this process (see Annex 4e). FFI has trained nine people from the CAPs in the application of the monitoring protocols and the first monitoring data was collected in January 2021, with FFI support. The macro-invertebrates sampled across four freshwater sources are being identified and the resulting first iteration of the catalogue of freshwater invertebrates for Ometepe is shared in Annex 4f. FFI is working to strengthen the capacities of the CAPs to implement the protocol, identify macro-invertebrate species, develop strategies to improve water harvesting,

and play a lead role in engaging the wider community in the conservation of up-stream ecosystems and freshwater sources.

Activity 1.7 Create series of 6 targeted biodiversity conservation awareness messages for Ometepe, disseminate through talks at local schools, community events and other fora.

In Y1, the FFI has begun work to develop materials and messages to raise conservation awareness on Ometepe. Our approach builds on existing pride amongst Ometepe residents of the island's forests and natural resources, as well as knowledge of the underlying drivers of threats to Ometepe's habitats and species (including what is currently known about the motivations of those engaged in illegal poaching and associated trade chains).

FFI has drawn on our in-house experience in environmental communications and behaviour change, to work with Biometepe to brainstorm ideas for targeted and locally-appropriate conservation messages. This first phase has focused on messages linked to the conservation of Ometepe's endangered parrots, as a flagship for conservation on the island - linked to slogans including "Our parrots, the pride of Ometepe", "Caring for our parrots is loving Ometepe" and "Our parrots' home is the forest, not a cage". In order to shortlist and validate the appropriateness and effectiveness of 17 possible slogans and messages, they were shared with islanders at four community meetings - 16 people provided feedback in total, 50% women, including members of the Community Commissions. Different slogans and messages are tailored to different audiences, for example those appropriate to motivate young people in conservation being distinct from messages intended to reach those involved in illegal trade. In Y1, the project team also recorded interviews with project stakeholders and existing beneficiaries, for compilation into a radio infomercial.

So far, the selected awareness messages have been shared as part of environmental education talks given in four local primary schools in the communities of Madroñal, Balgue, La Palma and Mérida (146 students, 42% female), via social media ([#CuidarNuestrosLorosEsAmarOmetepe](#)) and, in December, at the third annual yellow-naped parrot festival on Ometepe hosted by FFI and Biometepe (160 participants, 58% female).

Activity 1.8 Hold Ometepe contest in Youth Leadership in Conservation, to inspire and nurture future conservationists, and hold twelve youth fora using Arts and audio-visuals.

Reflecting the increasing move towards virtual communications and digital media, the first Ometepe-wide contest for Youth Leadership in Conservation was a call for local young people (i.e. Ometepe residents, aged 16 to 30 years) to create a 3 minute video highlighting the importance of yellow-naped parrots on Ometepe. The competition was launched in November 2020 and videos were linked to Biometepe's Facebook page and tagged with the hashtag [#CuidarNuestrosLorosEsAmarOmetepe](#). Altogether, the videos submitted were viewed over 10,000 times, illustrating the wide reach of such initiatives, and the winning video (www.facebook.com/1240316190/videos/10225097492964708/) was viewed over 6,500 times, received ~1,000 Likes and was shared 160 times.

In Y1, the project team have also organised 13 community theatre events for young people. At these events a local theatre group performed a play with a story centring on yellow naped parrot conservation and welfare, which they developed in collaboration with FFI and local communities in 2019. On average, 80 people attended each socially-distanced event – i.e. over 1,000 people in total, ~60% female.

Activity 1.9 Analyse changes in knowledge, attitudes and behaviours regarding biodiversity conservation on Ometepe amongst islanders.

The aim of this KAP (Knowledge, Attitudes and Perceptions) survey is to evaluate changes in knowledge and commitment to conservation of farmers, school children, youth, authorities and wider community, with data disaggregated by gender, from baseline to end-of-project. In Y1, Biometepe led the initial design of the KAP questionnaires, supported by FFI. However, testing/validation of the questionnaires, prior to the administration of the survey to an appropriate sample of the population, was put on hold in order to comply with current government restrictions on conducting community surveys in this election year.

Output 2. Sustainable agroecological production adopted by Ometepe's farmers.

Activity 2.1 Deliver nine training modules for Biometepe's agroecological extensionist team on crop diversification, soil conservation, use of mycorrhizae, composting, agroforestry and biodiversity conservation.

In order to provide agro-ecological extension support to an increasing number of beneficiary farmers on Ometepe, the project is expanding and training Biometepe's team of agroecological extensionists. Four young farmers from Ometepe, all recent graduates in agronomy, are receiving training and ongoing mentoring by FFI and Biometepe's lead specialists in agroecology, in order to support an Ometepe's farmers to adopt locally-appropriate climate-smart, biodiversity-friendly farming practices.

FFI's and Biometepe's specialists have worked together to design and deliver the series of nine training modules to Biometepe's agroecological extension team during Y1. The topics of the modules delivered were:

1. **Farm planning, administration and resource management** - to enable farmers to analyse costs and benefits of different crops, practices and technologies (delivered by Biometepe's lead Specialist in Agroecology & Agroforestry, supported by FFI's National Director and FFI's Specialist in Community Livelihoods);
2. **Principles of Agroecological Production** - with a focus on its complementarity with climate change adaptation (delivered by Biometepe and FFI);
3. **Crop Diversification** (delivered by Biometepe and FFI);
4. **Improving Soil Structure and Fertility** - with a focus on the benefits of mycorrhizae (naturally-occurring fungi in symbiotic associations with the roots of vascular plants) on root growth and tolerance to pests and diseases, their propagation and application (delivered by RAPO's Coordinator and Biometepe's Specialist in Agroecology & Agroforestry);
5. **Agroforestry** – the harmony of crops and forest, and benefits for the functionality and sustainability of the farming system (delivered by FFI's National Director);
6. **Reproducing High-quality Seeds and Seed Selection** - with a focus on seed selection methods in maize crops (delivered by Self Help International);
7. **Importance of Pollinating Insects** - highlighting the relationships between pollinating insects, crop fertilization and quality of production (delivered by FFI's Specialist in Biological Monitoring);
8. **Ethnoveterinary Medicine** - cultural approaches to animal health, including the use of native medicinal plants for the treatment of disease in working animals, and their complementarity with the agroecological model (delivered by Brooke);
9. **Project Development** – to build the technical capacity of Biometepe's extensionists team to identify new ideas for community and farm-level projects linked to agroecological practices (delivered by FFI).

Trainings 1-8 were delivered to Biometepe's team of four agricultural extensionists (three male, one female), plus two further Biometepe staff (i.e. six trainees in total). Training 6 was also delivered to five RAPO farmers. Training 9 was delivered to three of Biometepe's agricultural extensionists (two male, one female) and will be replicated with the rest of the Biometepe team in Y2. Refresher training is scheduled in Y3.

Activity 2.2 Provide agroecological training and extension support to 200 farming households to improve productivity, competitiveness and ecological benefits, and reduce vulnerability to climate impacts.

Extension support: A meeting was held with INTA at the start of the project (July 2020 – see Annex 4j) to agree coordination between INTA and project partners on support to agroecological farmers. Throughout Y1, Biometepe's agroecological extension team (Specialist in Agroecology & Agroforestry, plus four extensionists) have been providing on-farm technical support to beneficiary farmers. The team have successfully rapidly scaled up support to a greater number of beneficiary farming households, from the pre-project baseline of 75 farming households supported. In Y1, the team have supported 200 farming families, through a total of 1,148 farm visits – i.e. an average of 5 to 6 visits per farm over the period). 30% of the beneficiary farms are led by women.

The farmers are supported to adopt agro-ecological practices, including crop diversification, intercropping, agroforestry (e.g. from plantain stands to melon, yucca, tomato, peppers, ginger and corn, as well as citrus and avocado trees) and phased planting cycles, alongside the use of mulching,

micro-irrigation, vermicomposting, organic fertilisers, legumes and mycorrhiza to improve soil quality and therefore crop yields. Importantly, in the context of the Covid pandemic, this extension support has helped strengthen food security and resilient production. The extensionist team also support farmers in the ongoing monitoring and adaptive management of the practices being applied.

Training: In addition to ongoing on-farm support and guidance, FFI and Biometepe also delivered 24 training sessions to Ometepe's farmers on agroecological practices, including soil health and composting, cultivation of mycorrhizae, agroforestry, biodiversity conservation and climate adaptation. The topics of the trainings (some of which were adapted from the trainings for the Biometepe extensionists) and total number of farmers trained (overall 25% of those trained were women) in Y1 were:

- Agroecological practices, production, and climate resilience (11 women, 19 men trained);
- Soil health and conservation, including use of mycorrhizae and composting (28 women, 72 men trained);
- Biodiversity conservation and agroforestry (38 women, 112 men trained);
- Health and welfare of working animals (24 women, 36 men trained);
- Compassionate management and peer support (2 women, 38 men trained);
- Biodiversity monitoring on farms and bird identification (15 women, 35 men trained).

As a result of these trainings, farmers have more practical knowledge for agroecological production and greater confidence when sharing their learning.

Activity 2.3 Provide beneficiary farmers with the tools, seeds and other resources necessary for the adoption of new biodiversity-friendly practices and technologies.

Where appropriate and necessary, the project is also providing practical support to beneficiary farmers in the form of tools, seeds and seedlings. Vegetable seeds have been provided for summer sowing - including tomato, pepper, squash, cucumber, onion, and celery – on 49 agroecological farms who have access to irrigation. Farms have also been supported in the application of bio-inputs, including gypsum and propagation of mycorrhizae. By the end of Y1, all 200 farms supported had access to the necessary skills and resources to implement at least two new agroecological practices to improve their yields.

Activity 2.4 Deliver fire awareness talks and training for farmers across at least ten communities on Ometepe.

In conjunction with MARENA, FFI and Biometepe have so far delivered seven talks to raise awareness regarding the reduction of forest fires. Over 250 people (35% female) from nine communities surrounding the Maderas Volcano National Park attended the talks - 75% of whom are farmers and beneficiaries already engaged with the project and 25% were other members of these communities.

Activity 2.5 Support RAPO's bimonthly meetings and help Network members to design and deliver 6 training modules per year to encourage the adoption of agroecological practices.

The 'Network of Agroecological Producers of Ometepe' (RAPO) has a membership of 25 farming families, 7 of whom are women-headed households, from six farming communities across the island. RAPO's Committee (seven representatives) is elected by the members. At RAPO's August meeting, FFI and Biometepe presented information regarding the scope and proposed activities under this Darwin project, providing an opportunity for RAPO members to discuss their role in the project.

The project is supporting regular meetings of RAPO members, which occur every two months. RAPO meetings are an opportunity for member farmers to share experiences and learning, and also to support member farmers to develop plans for their farms and the application of agroecological practices (see Annex 4h & 4i). In Y1, these meetings have enabled RAPO's committee led a collaborative process to support farmers to develop sowing plans for the summer season, drawing on successes and challenges from recent growing seasons. In the context of the Covid pandemic, RAPO has focused on supporting its members to increase food security and strengthen the local supply of fresh produce on the island.

At their August meeting, RAPO's committee and members discussed and identified their priority training needs. FFI and Biometepe subsequently supported RAPO to develop relevant training modules on the following topics, which were made accessible to all members of the Network (25 to 28 people participated in each):

- Agroecology practices, conservation and sustainable development;
- Bio-inputs and their practical application - preparation and use of mycorrhizae, composting and others;
- Development of agroecological farm action plans;
- Participatory Market Mapping (as per Activities 3.2 & 3.3).

Activity 2.6 Facilitate peer learning through farm open-days and exchange visits (>6 per year, including one visit to successful agroecological model in mainland Nicaragua).

RAPO is already assuming their key role in promoting sustainable practices and lesson sharing, and in motivating more of Ometepe's farmers to adopt an agroecological approach. In Y1, RAPO's committee and members facilitated five exchanges of experiences between farms on Ometepe and two field tours (7 events, 152 participants in total). These 'field days' provide valuable opportunities for members to share their successes and challenges, address problems and find solutions among themselves.

Activity 2.7 Evaluate progress and impact through agricultural practices survey and participatory socioeconomic impact assessment of target households.

Biometepe, with FFI support, led the design of protocols for evaluating progress and impact through an agricultural practices survey and socioeconomic impact assessment of target households. Baseline information was collected through interviews with a sample of 30% of project beneficiaries (i.e. 60 of 200 farming households) at end of the growing season in January 2021. The resulting data was compiled into a baseline report (see Annex 4g). Key indicators and baseline status include:

- *Demographics*: Farmers range in age from 26 to 76 years; whilst all have accessed primary education, only 20% have accessed secondary education; 30% of beneficiaries are women; average family unit is four people; only 50% of farms keep financial records of farm income and outgoings.
- *Size of farm plots*: All the farms are family-run smallholdings, ranging in size from 1/3 of a hectare to 62 hectares; accordingly 20% of farmers need to rent additional land in order to meet their subsistence needs.
- *Area under different production systems*: 50% of the land on these farms is plantain or banana plantations, 30% is basic grains and vegetables, 20% is forested. NB. Due to hurricanes Eta and Iota in November 2020, farmers recorded losses of up to 60% of their crops this growing season.
- *Type/extent of agroecological practices being applied*: 62% practice crop rotation, 44% have diversified crops, 52% incorporate stubble to improve soil structure, 45% are using vermicomposting techniques for fertiliser, 55% have living fences.
- *Hectares of agricultural land burnt*: 60% desist from burning.

Output 3. Stronger, equitable relationships established between agroecological producers and market system actors.

Activity 3.1 Drawing on expertise within project team, review and select market sub-sectors on Ometepe that best meet economic and biodiversity criteria for 'Participatory Market Systems Development'.

In Y1, FFI's Specialist in Community Livelihoods facilitated three meetings with Biometepe and RAPO (25 participants; 9 female, 16 male) to review opportunities for developing market linkages for agroecological products on Ometepe. This 'market system selection' process drew upon FFI's experience of 'Participatory Market Systems Development' (PMSD) processes in other market chains in Nicaragua (for example for red snapper on the Pacific coast). Based on both economic and environmental criteria, these discussions identified opportunities for PMSD within the following three market sub-sectors:

- Organic bio-inputs - i.e. propagation, processing and marketing of mycorrhizae products.
- Biodiversity-friendly fruits, vegetables and other crops produced under the agro-ecological model - many of which are organic, although not certified as such. Strong demand exists amongst tourism enterprises on the island for such produce. Seven agroecological products

have been long-listed for the PMSD process, with further analysis required to define the final shortlist.

- Processed and packaged produce – i.e. chutneys, jams, yucca crisps, sweets, etc. made through local processing of agro-ecological produce.

Activity 3.2 Deliver market literacy training, to include approaches for engaging key actors and empowering marginalised actors in the market chain.

‘Participatory Market Systems Development’ (PMSD) is an approach developed by [Practical Action](#) which brings together key actors to develop a shared, detailed knowledge of the market systems in which they operate, and to promote more active and empowered participation of these actors in the market. The process is designed to build trust and a joint vision, and helps actors to collectively identify opportunities and obstacles affecting their market system, and develop action plans to address these. PMSD is based on the principles of *Facilitation*, *Participation* and *Systems Thinking*, and aims to improve living conditions of poor populations and marginalised stakeholders by enabling market systems work in a more inclusive, equitable and efficient way.

In Y1, FFI’s Specialist in Community Livelihoods has worked with RAPO to strengthen their market literacy and understanding of key aspects of the PMSD approach, through a workshop in November 2020 (see Annex 4k) and further discussions at RAPO meetings. This training has highlighted PMSD’s systemic approach (i.e. it considers the market system as a whole, including the interrelationships that exist between market actors, as well as its context) and its focus on participation (which is critical to truly understand how the market works, its bottlenecks and potential, and it critical for the development of trusting relationships that allow establishment of joint action plans). FFI has also highlighted the value of creating a detailed Market Map as a graphical and intuitive way to visualize a market system, how it functions, actors involved and possibilities for change and transformation.

FFI and RAPO have worked together to identify key actors in the three market sub-sectors identified in Activity 3.1. These include: farmers, consumers, grocery stores, mobile market stalls, hotels, restaurants, other small businesses, individual sellers, Burke Agro S.A (organic fruit exporter), plus other non-market stakeholders (municipal authorities, NGOs, government departments including INTA, INTUR and MEFCCA). Through this process, the most appropriate means of engaging these actors were identified, as well as those currently marginalised from the market system. RAPO itself (currently one of the more marginalised actors) has strengthened its capacity to engage in the PMSD process and in relevant market systems, by selecting three members to form a ‘sales commission’ to lead commercialisation of their products across Ometepe, with the RAPO committee responsible for monitoring production and market processes.

Activity 3.3 Facilitate participatory market mapping, capacity assessment and action planning workshops (3 days) for each market sub-sector.

As the first step in the participatory market mapping process and capacity assessment, FFI facilitated a workshop for RAPO members (15 men, 9 women – see Annex 4l) to initiate an analysis of local markets for the seven longlisted agroecological products, using a community market survey. The results of this process are informing the focus and specific actors in the market chain to be involved in the next steps of the PMSD process. The process of reaching out to these actors is now underway.

It is worth noting that hurricanes Eta and Iota in November 2020 damaged many crops on Ometepe and impacted local and national markets for agricultural produce. In addition the Covid pandemic has affected national and international markets. Accordingly, this year’s significantly reduced harvest was directed to meet local food requirements and more detailed exploration of national market opportunities (beyond the local markets on the island) was delayed.

This process will serve to map all market chain actors, develop strategic alliances and synergies within the current and potential market chain, and inform collaborative decision-making to develop strategies for supply and demand.

Activity 3.4 Provide training in quality control, storage, handling and processing, alongside mentoring beneficiary producers in developing market relationships, meeting market demand and negotiating higher market prices.

Scheduled for Year 2. The next steps in this process will also involve MEFCCA (Ministry of Family, Community, Cooperatives & Associative Economy), which supports local cooperatives, and INTA

(Institute of Agricultural Technology), which offers a range of technologies that are relevant to PMSD processes.

Activity 3.5 Hold triannual monitoring meetings with market actors and facilitate visits for producers and traders to mainland markets to better understand value chains for their products.

Scheduled for Year 2.

Activity 3.6 Evaluate progress and impact through facilitation of annual evaluation workshop for beneficiary producers and market actors (alongside Activity 2.7).

Scheduled for Year 2.

Output 4. Ometepe as a model of conservation and sustainable development is known by stakeholders in Nicaragua, bird specialists and agroecological communities.

Activity 4.1 Collate results from environmental monitoring, conservation actions, socioeconomic and KAP surveys

Scheduled for Year 2.

Activity 4.2 Disseminate findings, outputs and lessons learned amongst stakeholders, through national workshop, local meetings and distribution of materials

Scheduled for Year 3.

Activity 4.3 Disseminate project outputs and lessons learned via FFI's networks in the UK and globally

Scheduled for Year 3.

3.2 Progress towards project Outputs

Output 1. Community-led forest protection and wildlife conservation are strengthened, supported by greater public engagement and action.

- *Baseline condition:* Over the last decade, Biosphere Reserve status has raised local awareness of ecological dependencies and grassroots commitment to conserving Ometepe's natural heritage is strong. However, there is limited capacity within formal governance structures or amongst Ometepe's residents to directly protect and conserve the island's natural resources and ecosystems.
- *Current condition:* Through active community involvement in environmental monitoring and conservation actions, 1,950 hectares of forest are better protected; 13,500 native forest and fruit trees have been planted across 20 hectares; 104 islanders better understand their ecological dependencies, enhancing their ability to influence local-level resource management decisions.
- *Likelihood of achieving Output:* Highly likely.

Indicator 1.1 Area of forest and wetland habitat within core/buffer zones protected through community-led patrols (baseline 900 hectares; target 1,500 hectares at EoP).

- Weekly community-led patrols now protecting 1,950 hectares of forest (750ha in Mérida and Santa Cruz, 600ha in Balgue and Madroñal, 400ha in La Palma and Corozal, 200ha in the Peña Inculca Wildlife Refuge).

Indicator 1.2 Area of land reforested or under agroforestry in the agricultural buffer zone and number of native forest and fruit trees planted (targets: 75 ha and 30,000 trees by EoP).

- 13,500 native forest and fruit trees planted.

Indicator 1.3 Number of islanders (beneficiary farmers, school children, youth, wider community) engaged in ecological monitoring and associated conservation actions (targets: 100 in Y1, 200 in Y2, 250 by EoP, of which at least 40% female).

- 104 islanders actively engaged (8 members of Biometepe; 22 members of Community Commissions; 14 community members engaged in YNP monitoring; 15 private landowners engaged in YNP protection efforts; 16 community members engaged in migratory bird

monitoring; 20 farmers engaged in on-farm biodiversity monitoring; 9 members of CAPs engaged in freshwater monitoring) (26% female).

Indicator 1.4 Increase in number of islanders (of a proportional and gender balanced sample of beneficiary farmers, school children, youth, wider community) who are able to articulate the connections between conservation, the water cycle and their livelihoods, between project start and end.

- 104 islanders and ~460 additional farmers better understand their ecological dependencies. 306 people (including 146 children) received environmental education / awareness talks or engaged in YNP festival (50% female).

Output 2. Sustainable agroecological production is adopted by Ometepe's farmers, generating livelihood and biodiversity benefits and strengthening local adaptation to climate change.

- *Baseline condition:* FFI-supported agroecological production (pre-project) produced measureable benefits for 75 farming families, in year-round production and resilience to local climate impacts (Mena, 2018). However, these benefits were insufficient to foster new social norms and promote widespread uptake of agroecological production across the island.
- *Current condition:* Farmers from 200 farming households (HH) have accessed agroecological extension support and have improved knowledge, skills and resources to sustainably improve their agricultural production (evidence from Biometepe extension support records). 25 farming HHs are actively engaged in the RAPO peer learning network, providing a basis to adapt and support each other in the short and long terms (evidence from RAPO meeting minutes).
- *Likelihood of achieving Output:* Highly likely.

Indicator 2.1 No. of female and male farmers trained in agroecological practices (baseline 26 women, 62 men; target 380 of those identified as most vulnerable and/or farming priority sites for conservation by EoP, of which at least 40% female).

- 24 training sessions delivered to farmers in agroecological practices, reaching 118 female participants and 312 male participants across all trainings (NB. total number of is not equivalent to number of individuals trained, as numbers include some double counting). On-farm agroecological support and training also provided via visits to 200 farming HH (~5-6 farm visits per HH in Y1, reaching ~480 new people). 30% of beneficiary farms are led by women.

Indicator 2.2 No. of farming households (HH) identified as most vulnerable and/or farming near forest/wetland areas who have adopted agroecological production (baseline: 40HH; target: 200HH, by EoP).

- 200 beneficiary farming HH have access to the necessary skills and resources to implement at least two new agroecological practices to improve their yields.

Indicator 2.3 No. of hectares of existing agricultural land applying agroecological practices (baseline: 220 ha; target: 1,000 ha by EoP. Total agricultural land is ~10,400 ha).

- Data still being compiled on total area of the 200 beneficiary farms.

Indicator 2.4 Reduction in no. of new incursions into forest by beneficiary farmers / in forest areas adjacent to beneficiary farmers' fields, between start of engagement with farmers to project end (baseline: 60 incursions observed in 2018; target: 30% year-on-year reduction).

- Data being collated.

Indicator 2.5 No. of farmers actively sharing agroecological practices and experiences and promoting conservation to other farmers, through RAPO participation (baseline: 25; target: 60 by EoP, of which at least 35% female).

- 25 farming families actively participating in RAPO peer network, 7 of whom are women-headed households.

Indicator 2.6 Percentage of beneficiary farmers reporting decreased vulnerability of their plots/crops to the local impacts of climate change (target: 80% by EoP, of which at least 50% female).

- To be measured at EoP.

Output 3. Stronger and more equitable relationships established between Ometepe's agroecological producers (farmers and primary processors) and other agricultural market system actors.

- *Baseline condition:* Agroecological production is not driven by the current or potential market. Knowledge of the market systems is limited, and agro-ecological farmers do not have equitable relationships with agricultural market actors.
- *Current condition:* Market sub-sectors for PMSD and key actors in the market chains identified. RAPO, as one of the more marginalised actors, has better understanding of market systems and PMSD process (evidence from RAPO meeting minutes; evidence of change at system level will come from better terms and pricing for agro-ecological products).
- *Likelihood of achieving Output:* Highly likely.

Indicator 3.1 Percentage of agroecological producers (farmers and primary processors) reporting improved relationships with other market actors (target: 40% by March 2020; 80% by EoP of which at least 30% female).

- Too early to report improved relationships with other market actors.

Indicator 3.2. Percentage of agroecological producers reporting a net increase in income from agricultural produce (target: 40% by March 2020; 80% by EoP, of which at least 40% female).

- Too early to measure increase in income.

Output 4. The case of Ometepe Island Biosphere Reserve as a model of conservation and sustainable development is widely known by key stakeholders in Nicaragua, migratory bird specialists and agroecological communities.

- *Baseline condition:* Pre-project, FFI's programme has helped stimulate national and international recognition of the island's natural, cultural and touristic values, resulting in Ometepe's designation as a UNESCO Biosphere Reserve in 2010 and expansion of its core protected areas. The project aligns with national government strategies (of MARENA, INTA, MEFCCA, Ministry of Agriculture and Institute of Forestry) to increase food security and improve productivity (of farms and kitchen gardens), promote conservation, and incentivise sustainable production and agroecology.
- *Current condition:* Activities scheduled for Y2 and Y3.
- *Likelihood of achieving Output:* Highly likely.

Indicator 4.1 No. of decision makers, influencers, NGO partners, donor agencies and other stakeholders in Nicaragua who have access to project outputs and lessons learned from Ometepe (target: 60 by end of Y2, 100 by EoP, of which at least 40% female).

- To be measured in Y2 and EoP.

Indicator 4.2 No. of people across FFI's global staff and partner networks who have accessed project outputs and lessons learned from Ometepe (target: 50 by end of Y2, 80 by EoP).

- To be measured in Y2 and EoP.

3.3 Progress towards the project Outcome

We consider the indicators below to be adequate for measuring the intended Outcome.

Outcome: Ometepe's forest and wetland habitats and wildlife, including globally important populations of resident and migratory birds, are protected by community-led conservation and sustainable livelihood practices.

Indicator 0.1 Reduction in number of hectares of habitat in core zones of the Biosphere Reserve lost to agricultural encroachment or affected by anthropogenic fire (baseline:;.

- *Baseline condition:* Average 58 hectares p.a. forest cover loss, with 150 ha affected by fire in 2019. End-of-project [EoP] target: 50% reduction.

- *Current condition and sources of evidence for change:* According to the authorities' official registry, no forest fires occurred in Y1. However, community-led patrols recorded two sites affected by agricultural burns, covering an area of ~30ha. Field observations to be verified by remote sensing data from Global Forest Watch.

Indicator 0.2 Indices of forest and wetland health and biodiversity, including populations of resident and migratory birds, stable or increasing by EoP compared to baseline.

- *Baseline condition:* Baseline bird surveys conducted in November 2020 and recorded 31,860 observations of 124 bird species (32 migratory species). Freshwater monitoring underway.
- *Current condition and sources of evidence for change:* Not yet applicable.

Indicator 0.3 Percentage of target household members reporting improvements in food, income security and community-defined indicators of wellbeing, and improved understanding of links between wellbeing and biodiversity protection (target: 80% by EoP, of which at least 50% female).

- *Baseline condition:* Baseline data collected from sample of 30% of target households (HH) in January 2021 on demographics, household income (recognising that, so far, only 50% of households maintain financial records), food security and wellbeing. 60% of HH reported a 20% profit in 2019, increasing to 40% in 2020.
- *Current condition and sources of evidence for change:* Not yet applicable.

3.4 Monitoring of assumptions

Outcome Level Assumptions

Assumption O.1: The security situation in Nicaragua remains sufficiently stable for FFI to continue ongoing operations. *Comments: Assumption still holds true. The situation is currently stable and FFI has good relationships and agreements in place with the government. National elections scheduled for November 2021 could affect security situation.*

Assumption O.2: No new major drivers of deforestation emerge during the project. *Comments: Assumption still holds true. The Covid pandemic has increased dependencies on natural resource extraction on Ometepe and more widely across Nicaragua. Enforcement of environmental laws is likely to be lower in this electoral year.*

Assumption O.3: No major disruption to ecosystem function on Ometepe - through natural disasters, large-scale pollution or climate change - occur. *Comments: Assumption still holds true.*

Assumption O.4: Ometepe's populations of migratory birds do not suffer significant decline due to threats in their breeding grounds in North America or on their annual migration. *Comments: Assumption still holds true.*

Assumption O.5: The without-project scenario would likely see worsening of all outcome indicators, in line with national declines in socio-economic conditions and increasing pressures on natural resources. *Comments: Assumption still holds true.*

Assumption O.6: The concession to build a Nicaragua Inter-Oceanic Canal, whose route would cut through Lake Nicaragua, remains dormant and/or does not adversely affect conservation and sustainable development on Ometepe. *Comments: Assumption still holds true. Canal project remains on hold.*

Output Level Assumptions

Assumption 1.1: Island stakeholders continue willingness to cooperate on biodiversity conservation initiatives. *Comments: Assumption still holds true. Cooperation in Y1 has been high and there are no indications that this will change.*

Assumption 1.2: Farming families perceive positive cost-benefit of agroforestry and reforesting land within the agricultural buffer zone and are therefore willing to reforest. *Comments: Assumption still holds true. Engagement in reforestation efforts has been high in Y1.*

Assumption 2.1: The current positive attitude, locally and nationally, to developing sustainable livelihoods and trialling new agricultural practices is maintained. *Comments: Assumption still holds true. Interest in / uptake of agroecological practices amongst new farmer families is high.*

Assumption 2.2: Both female and male members of farming households will attend training and network meetings (assumption based on previous experience). *Comments: Assumption still holds true. Attendance in trainings and meetings has been high in Y1.*

Assumption 2.3: Improvements to resilience brought about by agroecological approaches are able to withstand even the most extreme weather events, such as, for example, a recurrence of Hurricane Mitch-force winds, rainfall and storm surge. *Comments: Assumption still holds true. 2017 study showed that agro-ecological methods conferred resilience (i.e. reduced loss of crops) to Tropical Storm Nate and anecdotal evidence following hurricanes Eta and Iota in November 2020 indicate the same.*

Assumption 3.1: Market actors are willing to work together to improve product quality, volume, diversity and timeliness. *Comments: Assumption still holds true. Initial discussions indicate sufficient willingness.*

Assumption 3.2: Market demand is not adversely affected by national economic/social instability. *Comments: Assumption still holds true. Covid has affected markets in Y1.*

Assumption 4.1: Decision makers, partners and stakeholders are receptive to the learning generated by the project. *Comments: Assumption still holds true. Alignment of project activities, outputs and outcomes with government strategies and stakeholder interests should ensure receptivity, interest and collaboration.*

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

Impact: Ometepe Island Biosphere Reserve is successfully demonstrating how innovative, integrated approaches to biodiversity conservation and ecosystem-based landscape management can generate long-term environmental, economic and social benefits.

Biodiversity: The change expected by project end is that forest cover and biodiversity will be stable or increasing due to reduced agricultural encroachment (driven by multiple livelihood benefits derived by farmers applying agroecological approaches, reducing the need for additional agricultural land), reforestation, agroforestry, and community-led patrols deterring illegal deforestation and extraction of forest resources. Linked to this, resident and over-wintering neo-tropical migrant bird populations will be stable or increasing, whilst decreases in agricultural run-off and erosion will lead to improvements in freshwater quality in key watercourses.

In the longer term, Ometepe will be a functioning Biosphere Reserve, with healthy forest and wetland ecosystems providing valuable services and benefits. The threat of habitat degradation in pristine forest areas will reduce, resulting in measurable benefits for biodiversity.

To date, the project has engaged more than 100 islanders in the protection, monitoring and restoration of Ometepe's habitats and species (including the Endangered yellow-naped parrot), across almost 2,000 hectares (7%) of the island. Baseline data on indices of forest and wetland health and biodiversity, including populations of resident/migratory birds and freshwater quality, has been collected. 480 people have a better understanding of the links between forest, soil and water conservation and their livelihoods. No forest fires have been recorded in two patrolled sites.

Poverty: This Darwin project is contributing to a reduction in poverty (SDG1) by building the resilience of all of Ometepe's residents, either directly or as indirect beneficiaries of sustained ecosystem services, and reducing their vulnerability to climate-related extreme events and other economic, social and environmental shocks. The project's Theory of Change incorporates: the scaling-up of climate-smart agroecological production to increase livelihood resilience and reduce demand for land (Output 2); and improving access to and equity of local agricultural markets to increase income and alleviate poverty (Output 3). Project actions are already contributing to increased family integration – the agro-ecological model generates year-round work (and therefore income) on the farms, reducing migration pressures of young people from farming families to seek work elsewhere. Diversified and phased planting / harvesting cycles also serve to improve both the food security and diet of rural families.

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

SDG 1. No Poverty: Project activities are building the resilience of Ometepe's farmers, reducing vulnerability to extreme climate events and economic, social and environmental shocks (1.5).

SDG 2. Zero Hunger: By increasing agricultural productivity and income of small-scale farmers, in particular women (2.3); and through resilient agricultural practices that help maintain ecosystems (2.4).

SDG 5. Gender Equality: By working to ensure women's full and effective participation in project activities and equal opportunities for women's leadership and decision-making regarding their livelihoods and resource use (5.5).

SDG 12. Responsible Consumption and Production: By ensuring that Ometepe residents have relevant information and awareness needed to pursue sustainable development (12.8).

SDG 13. Climate Action: By strengthening Ometepe's adaptive capacity to climate-related hazards and natural disasters (13.1) through sustainable agroecological practices and forest conservation.

SDG 15. Life on Land: By supporting forest conservation, restoration and sustainable use (15.1), and working to reduce degradation of natural habitats, halt biodiversity loss of and protect threatened species (15.5).

5. Project support to the Conventions, Treaties or Agreements

The project supports Nicaragua's fulfilment of its obligations under the CBD by supporting the conservation of biodiversity within Ometepe Biosphere Reserve and the sustainable use of natural resources by local people. The project directly supports CBD Strategic Goals: B: Reduce the direct pressures on biodiversity and promote sustainable use; C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity; and D: Enhance the benefits to all from biodiversity and ecosystem services, by working to reduce direct pressure on biodiversity caused by land clearing for agriculture by local communities. The project also supports CBD Article 8 In situ Conservation (by managing resources important for the conservation of biological diversity outside protected areas; and contributing to maintenance of viable populations of bird and mammal species in natural surroundings), and Article 10 Sustainable Use of Components of Biological Diversity (by supporting Ometepe's farmers to adopt measures to minimise adverse impacts on biological diversity, specifically by sustainable agroecological production).

FFI is in regular contact with Mr. Rene Castellon, Nicaragua's CBD focal point within MARENA, most recently through the meetings and communications regarding FFI and MARENA's joint workplans for 2021 which includes activities under this Darwin project.

The project also contributes to the following Aichi Biodiversity Targets:

1. By raising awareness of multiple values of biodiversity, conservation and sustainable use;
4. Through engaging local stakeholders, including businesses, in sustainable production;
5. By addressing deforestation, habitat degradation and fragmentation;
7. Through sustainable, biodiversity-friendly agriculture;
8. By reducing use of agricultural chemicals and decreasing run-off from smallholder farms;
12. Through improving the status of threatened species, including the endangered yellow-naped parrot (*Amazona auropalliata*).
14. and 15. By helping to restore, safeguard and build the resilience of ecosystems that provide essential ecosystem goods and services to local communities, including traditionally marginalised groups such as indigenous people, women and the poor.

The project supports delivery of Nicaragua's National Biodiversity Strategy and Action Plan (2015-2020) targets: 1. Increase conservation knowledge; 4. Conserve vulnerable ecosystems; 6. Improve food security through agroecology; and 12. Protect and regenerate ecosystems affected by deforestation.

Under the CCC, the project contributes to Article 7 of the Paris Agreement by increasing the ability of Ometepe's farmers to foster climate resilience.

Whilst project activities do not directly address CITES, data from monitoring of yellow-naped parrot populations will inform FFI's wider work on Ometepe, which is addressing illegal trade in this CITES Appendix I listed species.

Likewise, whilst Nicaragua is not a party to the CMS, Ometepe provides vital over-wintering habitat for over 50 neo-tropical migratory birds, making this project consistent with the overall aims of the CMS.

6. Project support to poverty alleviation

Nicaragua is classified by the World Bank as a Lower Middle Income country, and rural poverty is high (UNDP, 2019). On Ometepe, the impacts of recent economic instability since 2018, and associated collapse in tourism, have prompted many islanders to return to subsistence farming and are contributing to an uptick of illegal poaching of wildlife and natural resources (Urtecho, 2019). Livelihoods and food security are further at risk due to unpredictable weather patterns and Ometepe's vulnerability to increasingly frequent natural disasters (FAO, 2015; Herrera, et al. 2018). Worsening economic conditions have been exacerbated by the Covid pandemic.

This Darwin project is contributing to a reduction in poverty (SDG1) by building the resilience of all of Ometepe's residents, either directly or as indirect beneficiaries of sustained ecosystem services, and reducing their vulnerability to climate-related extreme events and other economic, social and environmental shocks. The project's Theory of Change incorporates: the scaling-up of climate-smart agroecological production to increase livelihood resilience and reduce demand for land (Output 2); and improving access to and equity of local agricultural markets to increase income and alleviate poverty (Output 3).

Direct project beneficiaries include Ometepe's small-scale farmers. By project end, $\geq 10\%$ of all Ometepe farming households (≥ 200 HH) will have increased capacity to manage land and natural resources in such a way that sustains and improves their livelihoods and resilience to climate change, whilst reducing biodiversity loss and land and ecosystem degradation (Altieri, 2019; Gaudin *et al.* 2015; Jose, 2009; Mena, 2019; Sistla, *et al.* 2016).

The project will also benefit Ometepe residents who will have the capacity to directly protect and conserve the island's natural resources and ecosystems, until formal Biosphere Reserve co-management resumes. Through active involvement in environmental monitoring and conservation actions, by project end ≥ 250 islanders will better understand their ecological dependencies, enhancing their ability to influence local-level resource management decisions (as per Danielsen, et al., 2010, 2014 and past experience in parrot/forest conservation on Ometepe). Community members will be motivated to engage in forest and species protection through strengthened social norms, greater understanding of biodiversity values and livelihood benefits associated with healthy ecosystems, and incentives linked to agroecological support.

By project end, at least 380 farmers ($\geq 40\%$ female) - especially those known to be vulnerable and/or proximal to forest/wetland areas - will have accessed agroecological extension support and have the knowledge, skills and technologies to sustainably increase their agricultural production. These farmers will benefit from access to peer learning networks, providing a basis to adapt and support each other in the short and long terms. They will benefit from new, stronger and more equitable relationships with market actors, evidenced by better terms and pricing for their products.

As a result, food and income security and other community-defined indicators of wellbeing will be improved for c.960 people (from 200 farming households across ten communities, $\geq 50\%$ female), due to increased crop diversity and quality, reduced input costs, year-round harvesting, and greater resilience to pests, disease and extreme weather (Altieri *et al.* 2015). Improved economic and climatic resilience and dissemination of learning will increase the likelihood of further uptake of agroecological approaches across Ometepe.

7. Consideration of gender equality issues

FFI recognises that women and men interact with biodiversity and natural resources in different ways and thus have different skills, knowledge and perspectives. On Ometepe, as elsewhere in rural Nicaragua, women commonly have more domestic responsibilities, fewer rights, more limited access to / control over productive resources and land, and less of a voice in decision-making than their male peers. Nicaraguan culture generally fails to recognize women's significant role in, and

contributions to, both cash crop and subsistence agriculture. Hence, women are often excluded from access to agricultural extension services, including training, demonstration plots and farmer-to-farmer peer learning opportunities.

FFI strives to ensure gender equality in all its work. The project team draw on existing institutional policies and guidance, including FFI's 'Gender in Conservation' position paper (FFI, 2019). Notable achievements in Y1 include:

- This project seeks proportional representation of men and women whenever possible. This includes access to training, participation in KAP surveys, and planning and implementation at community and institutional levels. Women's inclusion is facilitated by considering the timing of meetings, location, facilitator, and using methods that do not only rely on reading and writing, where appropriate. On Ometepe, FFI has already seen that, when invited and included in activities alongside men, female members of farming households are active and willing participants, keen to put knowledge and skills gained into practice. In Y1, in terms of gender distribution of roles, we have multiple instances of women proposing that their husbands continue to work on the farm whilst they themselves participate in project activities and trainings.
- To assess the potentially gender-differentiated impacts of the project, data collection and monitoring for all relevant indicators is disaggregated by gender. This includes the number of women-headed farms, the number of women in decision-making role in the RAPO network, the number of women applying practices and technologies, etc.
- Crucially, our approach to empowering women also involves men in order to ensure that women can influence decisions over how their family farms are managed without exposing them to risk of gender-based violence as a result. As an example, we are witnessing women from farming families prioritizing their family diet and food security, convincing their husbands to diversify their crops, apply agro-ecological practices (to reduce pests and vulnerability to extreme climate events) and explore new market opportunities. Furthermore, as a result of strong participation of women in project activities, men from their households are actively encouraging them to become more aware of and lead the knowledge of their family in agroecological practices and conservation actions.

8. Monitoring and evaluation

The Steering Committee is responsible for monitoring and adaptive management, in line with project's Theory of Change, with both FFI and Biometepe staff assuming lead roles in coordinating M&E activities. The project's M&E plan is designed to capture evidence of change at key stages along the project's pathway of impact, based on project logframe and indicators, and defines responsibilities of project team members in data collection and analysis. The M&E plan, and associated data collection methods and tools, align with that envisaged in our project application.

In Y1, detailed monitoring protocols have been developed to assess changes in habitat health and biodiversity over the duration of the project, including annual YNP population census, protocols for monitoring neo-tropical migratory birds, and locally-appropriate protocols for farmer-led monitoring on farm plots and for monitoring of water quality/flow in priority watercourses. Led by Biometepe, baseline data has been collected on agricultural practices, and knowledge, attitudes and perceptions, to evaluate changes from baseline to end-of-project. All protocols and information generated are shared between project partners.

9. Lessons learnt

☺ *Project Steering Committee:* Drawing on FFI's experience in similar projects, the project has benefitted from the establishment, at project inception, of a Project Steering Committee. The Committee, and corresponding in-country project coordination team, have proved effective in ensuring good project communications, decision making and project management in this first 9 months of the project. Local partners have played an active role on the Steering Committee and have been empowered to share their specific perspectives, experiences and concerns and feed these into project-level planning and decision making.

☺ *Engagement with national authorities:* The joint annual workplans agreed between FFI and Nicaraguan central government departments substantiates the commitment of the parties involved

to shared conservation goals. Our collaboration has progressed well in Y1 of the project, for example with respect to aligned activities to reduce environmental crime on Ometepe.

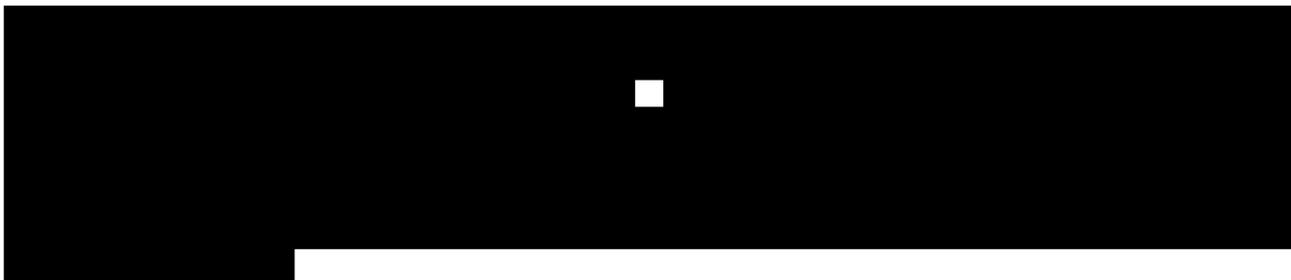
☺ *Empowerment of women and young people:* In many project activities, young people are encouraged to participate (for example in the YNP census, migratory bird monitoring and reforestation efforts) – their enthusiasm to take on new challenges, address conservation issues, and their attitude to catalysing change, is generating positive momentum for conservation on Ometepe. The project is also successfully empowering women in decision-making for the management of their farms (see Section 7 for more detail).

☹ *Baseline data collection:* Despite the project team largely “hitting the ground running”, with good progress on all activities planned for Y1, we underestimated the time needed to design protocols and questionnaires and roll out baseline data collection. This has meant that baseline data was not necessarily collected prior to implementation of activities that this monitoring intends to measure. In the case of the KAP (Knowledge, Attitudes and Perceptions) survey, the time taken to design and test the questionnaires meant that this survey was not rolled out prior to current government restrictions on conducting community surveys in this election year. We would therefore recommend greater prioritising of time and resources in the first months of the project to baseline data collection and also the use of digital platforms for data collection (which also facilitate remote and socially-distanced (i.e. ‘Covid compliant’) data collection. The project team are also creating an M&E sub-committee responsible for the design, coordination and application of surveys and case studies as necessary to measure the impacts of the project.

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

Not applicable.

11. Other comments on progress not covered elsewhere



12. Sustainability and legacy

Project actions are endorsed by relevant national government departments, as formalised through FFI's agreed joint workplans with MARENA, INTA, MEFCCA and INTUR for 2020 and 2021 (as described in Section 2). Project sustainability is boosted by the project's alignment with existing national government strategies to increase food security and improve farm productivity, promote conservation, and incentivise sustainable production and agroecology. Already, two municipal authorities in mainland Nicaragua have expressed their interest in learning from project experiences on Ometepe and in exploring opportunities for replication of the project's approach.

In line with the project's open access plan, project experiences and lessons will be shared with island stakeholders, decision makers and through relevant national and regional forums, via FFI's established relationships and networks on Ometepe and across Nicaragua. For example, in coordination with INTA, FFI engages in the Regional Commission for Agricultural Research and Innovation (CRIA) for the Pacific region of Nicaragua – this Commission is a forum for government, private sector and NGO actors to share experiences and research into new agro-ecological practices and technologies and inform the development of further initiatives. At the grassroots level, FFI is already building capacity and sharing project experiences through Biometepe, RAPO and amongst beneficiary farmers, as well as through wider community events, and with NGOs working elsewhere in Nicaragua. Any media produced in relation to capacity building and raising awareness will be made available in appropriate formats, to facilitate knowledge sharing and access.

In terms of exit strategy, this project is part of a progressive approach - combining insitutorial capacity building and training of partners and beneficiaries, with the promotion of sustainable livelihood activities and associated benefits, and the strengthening of peer-networks. The sustainability of biodiversity benefits are supported by the project's focus on building conservation capacity, increasing awareness and reducing drivers of biodiversity loss. As such, the project's planned exit strategy is still valid. In fact, project strategies to support sustainable livelihoods, generate systemic market-driven change and increase islanders' resilience, combined with actions to motivate community-led conservation, are now increasingly relevant and necessary in the context of the Covid pandemic (see Section 14). Accordingly, and as noted in the original project application, the "shock" of the Covid pandemic and associated threats/impacts (for example, continued suppression of tourism limiting opportunities for the local generation of funds for environmental conservation activities) may necessitate additional investment to continue the project's legacy to safeguard biodiversity and sustainable livelihoods on Ometepe over the coming years.

13. Darwin identity

This Darwin Initiative project forms part of FFI's integrated conservation programme on Ometepe, nevertheless the project has a clear identity amongst project partners and stakeholders. At project inception, the project theory of change, logframe and workplan were presented to local project partners, stakeholders and communities on Ometepe, and the support of the Darwin Initiative was recognised. In meetings with government departments, including MARENA and INTA, the support of the Darwin Initiative and the UK government to shared priority activities have been highlighted and understood. Through these links we continue to build understanding of the aims and approach of the Darwin Initiative amongst project stakeholders in Nicaragua.

A dedicated page of the FFI website (<https://www.fauna-flora.org/projects/improving-sustainable-use-natural-resources-ometepe>) recognises the support of the Darwin Initiative and is due to be updated in Y2 Q1. Neither the project, nor FFI Nicaragua, have dedicated social media channels, but there is potential to link future posts by FFI and Biometepe to @Darwin_Defra. Where appropriate and possible, we explicitly publicise the Darwin Initiative and its support to this project, with Darwin Initiative and UK Government logos used on meeting/workshop invites, participant lists, and awareness materials and other publications resulting from the project.

14. Impact of COVID-19 on project delivery

The Covid-19 pandemic has compounded existing socio-economic vulnerabilities amongst rural communities across Nicaragua, resulting in increased dependencies on natural resource extraction, and Ometepe is no exception. Within this context, project strategies to support sustainable livelihoods and increase islanders' resilience, combined with actions to increase local understanding of the value of biodiversity and motivate community-led conservation, remain highly relevant and necessary.

FFI has so far been able to maintain our operations in Nicaragua throughout the pandemic; we remain focused on our long term objectives whilst mitigating against current risks and challenges wherever possible. At the start of the pandemic, FFI Nicaragua put in place Covid-19 protocols (including use of PPE and social distancing measures) which are kept under review, and staff conduct activity-specific risk assessments. Fortunately, to date, the island of Ometepe has remained somewhat insulated from the pandemic and recorded cases of Covid-19 on the island remain low.

The project's design, with many activities led by local partners and island stakeholders, reduces risk and has enabled us to largely deliver project activities as planned. The project's local FFI/Biometepe team, have been able to continue operations and delivery of all essential field activities (including direct support to farmers where needed), in line with agreed Covid-19 protocols and associated risk assessments. We have also supported RAPO to educate its members and other islanders about necessary measures to reduce the risk of transmission. Some project activities (such as training workshops and awareness activities) have needed to be adapted to involve fewer people.

Project planning and Steering Committee meetings have largely taken place remotely (using Zooms, Teams and WhatsApp) and we anticipate this will continue. FFI and the project Steering Committee will continue to monitor the situation and apply an adaptive management process. We will keep the

Darwin secretariat informed of any developments which may affect project activities, budget or implementation timetable.

15. 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.

FFI's Safeguarding Children and Adults at Risk Policy & Procedure was developed in December 2014 and last updated in March 2018. The policy applies to Members of Council and its sub-committees, FFI employees, temporary staff provided through agencies, volunteers and interns, contractors, consultants, service providers and any third parties who carry out work on behalf of FFI, in partnership with FFI or in conjunction with FFI. The policy demonstrates the organisation's commitment to safeguarding children and adults at risk and to complying with the UN Convention on the Rights of the Child; confirms the arrangements and procedures in place to safeguard children and adults at risk, including FFI's code of conduct; and provides clear guidance on how to raise, and how FFI responds to, concerns and allegations regarding the maltreatment of children and adults at risk. The policy expressly states that FFI does not tolerate sexual exploitation and abuse of any kind.

FFI's Anti-bullying and Anti-harassment Policy was developed in March 2018. The policy applies to Members of Council and its sub-committees, FFI employees, temporary staff provided through agencies, volunteers and interns, contractors, consultants and any other third parties who carry out work on FFI's behalf. The stated purpose of the policy is to ensure a safe, welcoming and inclusive working environment, which is free from intimidation, threats, discrimination, bullying or harassment; to communicate clearly FFI's zero-tolerance of any form of bullying or harassment; to define the terms 'bullying' and 'harassment' and provide examples, so that there is a clear understanding of the types of conduct that are prohibited; to communicate the importance of reporting incidents of bullying and harassment; and to communicate the procedures in place to manage incidents of bullying and harassment. The policy expressly states that bullying or harassment of any kind against a person or group of people, whether persistent or an isolated incident, will not be tolerated under any circumstances.

FFI's Whistleblowing Policy was developed in June 2013 and last updated in December 2019. The policy applies to FFI employees. The stated purpose of the policy is to encourage employees to report suspected wrongdoing in the organisation as soon as possible, in the knowledge that their concerns will be taken seriously and investigated as appropriate, and that their confidentiality will be respected. It provides guidance on how to raise those concerns and aims to reassure employees that they can raise genuine concerns in good faith without fear of reprisals, even if they turn out to be mistaken.

FFI's partner due diligence procedures include checking whether any safeguarding concerns have arisen with the partner concerned and the Safeguarding Children and Adults at Risk Policy & Procedure forms part of contracts and agreements with third party contractors and sub-grantees. We are also currently researching LMS platforms (Learning Management Systems) which would enable online training in policies & procedures.

We monitor updates in Government and Charity Commission guidance and review our policies and procedures accordingly.

In terms of social safeguards, FFI has publicly available position papers on our approach to Livelihoods and Governance, Free, Prior and Informed Consent, Gender in Conservation, Displacement and Restrictions on Access to Resources and Conservation, and Rangers and Human Rights (links below). Our specialist Conservation, Livelihoods and Governance team supports regional FFI staff and partners to take a holistic, people-centred approach to biodiversity conservation, and ensure project activities are strongly aligned with these principles.

https://cms.fauna-flora.org/wp-content/uploads/2019/06/FFI_2019_Position-on-free-prior-and-informed-consent.pdf

<https://www.fauna-flora.org/approaches/livelihoods-governance/gender>

https://cms.fauna-flora.org/wp-content/uploads/2017/11/FFI_2013_FFIs-position-and-approach-to-conservation-livelihoods-and-governance.pdf

https://api.fauna-flora.org/wp-content/uploads/2017/11/FFI_2016_Displacement-and-restrictions-on-access-to-resources.pdf

https://cms.fauna-flora.org/wp-content/uploads/2021/03/FFI_2020_Position-on-rangers-and-human-rights.pdf

16. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)

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

As described in Section 3, a Change Request was submitted in July 2020 (approved August 2020) which included an amended project Budget and Implementation Timetable to reflect the project start date of 1 July 2020 and associated movement of funds between financial years. The above budget and expenditure analysis reflects the approved amended budget for the 2020/21 financial year. Overall, expenditure was in line with the budget and no significant variances occurred.

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
<p>Impact</p> <p>Ometepe Island Biosphere Reserve is successfully demonstrating how innovative, integrated approaches to biodiversity conservation and ecosystem-based landscape management can generate long-term environmental, economic and social benefits.</p>		<p>>100 islanders engaged in the protection, monitoring and restoration of Ometepe's habitats and species, across almost 2,000 hectares (7%) of the island.</p> <p>Baseline data collected on indices of forest and wetland health and biodiversity, including populations of resident / migratory birds and freshwater quality.</p> <p>480 people have better understanding of links between forest, soil and water conservation and their livelihoods.</p> <p>No forest fires have been recorded in two of four patrolled sites.</p> <p>Farmers from 200 farming households (HH) have improved knowledge, skills and resources to sustainably improve their agricultural production (applying methods compatible with forest, water and soil conservation).</p> <p>Diversified and phased planting / harvesting cycles are serving to improve food security and diet of rural families, and generate year-round work thereby reducing migration pressures for young people away from the island.</p>	
<p>Outcome</p> <p>Ometepe's forest and wetland habitats and wildlife, including globally important populations of resident and migratory birds, are protected by community-led</p>	<p>0.1 Reduction in number of hectares of habitat in core zones of the Biosphere Reserve lost to agricultural encroachment or affected by anthropogenic fire (baseline: average 58 ha p.a. forest cover loss, 150 ha</p>	<p>0.1 According to the authorities' official registry, no forest fires occurred in Y1. However, community-led patrols recorded two sites affected by agricultural burns, covering an area of ~30ha. Field observations to be verified</p>	<p>01. Continue to collate data on agricultural encroachment and anthropogenic fires, and corroborate field observations through collaboration with authorities and remote sensing data.</p>

<p>conservation and sustainable livelihood practices.</p>	<p>affected by fire in 2019; target: 50% reduction by end-of-project [EoP]).</p> <p>0.2 Indices of forest and wetland health and biodiversity, including populations of resident and migratory birds, stable or increasing by EoP compared to baseline.</p> <p>0.3 Percentage of target household members reporting improvements in food, income security and community-defined indicators of wellbeing, and improved understanding of links between wellbeing and biodiversity protection (target: 80% by EoP, of which at least 50% female).</p>	<p>by remote sensing data from Global Forest Watch.</p> <p>0.2 Baseline bird surveys conducted in November 2020 and recorded 31,860 observations of 124 bird species (32 migratory species). Freshwater monitoring underway.</p> <p>0.3 Baseline data collected from sample of 30% of target households (HH) in January 2021 on demographics, household income (recognising that only 50% of households maintain any financial records), food security and wellbeing. 60% of HH reported a 20% profit on their farms in 2019, increasing to 40% in 2020.</p>	<p>02. Continue to collect data on resident and migratory birds, freshwater biodiversity, forest/wetland habitat health.</p> <p>0.3 Socioeconomic impact assessment scheduled for Y3.</p>
<p>Output 1. Community-led forest protection and wildlife conservation are strengthened, supported by greater public engagement and action.</p>	<p>1.1 Area of forest and wetland habitat within core/buffer zones protected through community-led patrols (baseline 900 hectares; target 1,500 hectares at EoP).</p> <p>1.2 Area of land reforested or under agroforestry in the agricultural buffer zone and number of native forest and fruit trees planted (targets: 75 ha and 30,000 trees by EoP).</p> <p>1.3 Number of islanders (beneficiary farmers, school children, youth, wider community) engaged in ecological monitoring and associated conservation actions (targets: 100 in Y1, 200 in Y2, 250 by EoP, of which at least 40% female).</p> <p>1.4 Increase in number of islanders (of a proportional and gender balanced sample of beneficiary farmers, school children, youth, wider community) who are able to articulate the connections between conservation, the water cycle</p>	<p>1.1 Weekly community-led patrols are now protecting 1,950 hectares of forest (750ha in Mérida and Santa Cruz, 600ha in Balgue and Madroñal, 400ha in La Palma and Corozal, 200ha in the Peña Inculca Wildlife Refuge).</p> <p>1.2 A total of 13,500 native forest and fruit trees planted.</p> <p>1.3 A total of 104 islanders actively engaged (8 members of Biometepe; 22 members of Community Commissions; 14 community members engaged in YNP monitoring; 15 private landowners engaged in YNP protection efforts; 16 community members engaged in migratory bird monitoring; 20 farmers engaged in on-farm biodiversity monitoring; 9 members of CAPs engaged in freshwater monitoring) (26% female).</p> <p>1.4. A total of 104 islanders and ~460 additional farmers better understand their ecological dependencies and 306 people (including 146 children) received environmental education / awareness talks or engaged in YNP festival (50% female).</p>	

	and their livelihoods, between project start and end.	
Activity 1.1 Strengthen and replicate existing community-led forest protection efforts on Ometepe, building protocols and incentives for groups, farmers and young people involved in community-led patrols.	<p>Four Community Commissions for forest protection established (22 community members, 50% women), and trained in patrol protocols in collaboration with local police and MARENA.</p> <p>Weekly patrols conducted (n=20), protecting 1,950 ha of forest.</p>	Weekly protection patrols will continue across 1,950 ha of forest (750 ha in Mérida / Santa Cruz; 600 ha in Balgue / Madroñal; 400 ha. in La Palma / Corozal; 200 ha in Peña Inculca Wildlife Refuge.
Activity 1.2, Reforest four priority sites through propagation of seedlings in two community-run nurseries and planting of native forest and fruit trees (11 species / 12 varieties).	<p>80ha of priority sites for reforestation formally agreed with MARENA - Ministry of Environment (20ha in Peña Inculca Wildlife Refuge, 60ha of forest-agriculture buffer zone.</p> <p>13,500 forest and fruit tree saplings planted (14 species). Guidance provided to landowners on follow-up care and management.</p> <p>Monitoring of planted sites confirm 80% survival rates so far (dry season led to reduced survival rates).</p>	Prepare sites for reforestation in advance of 2021 wet season. Plant further native tree saplings, in coordination with MARENA, landowners, communities and youth groups.
Activity 1.3 Strengthen the protection and ecological monitoring of the yellow-naped parrot population on Ometepe, through community patrols and incentives.	<p>Population census conducted in July 2020 (24 local people trained in census methods), confirming count of 1,076 YNP and reinforcing population estimate of 1,800 YNP on the island.</p> <p>Community-led YNP nest monitoring and protection conducted across 4 priority sites (Balgue, Mérida, La Palma & Peña Inculca) - 41 active nests and 72 chicks were successfully protected, alongside evidence that 2 nests were illegally poached.</p>	Continue community-led protection and monitoring of YNP on Ometepe across 4 priority sites, throughout the two distinct YNP nesting seasons (Oct-Jan in Peña Inculca and Jan-May at all other sites on the island).
Activity 1.4 Train three community members in MoSI protocols and conduct annual monitoring of overwintering neo-tropical migratory birds.	28 young people (20 male, 8 female) trained in bird identification.	Collect and share bird monitoring data as part of global initiatives - Cornell Lab's #GlobalBigDay and World Migratory Bird Day on 8 May 2021.

	<p>3 community members with knowledge and skills to apply the protocol for migratory bird monitoring on Ometepe.</p> <p>Monitoring of migratory birds (point count sampling) conducted at 4 sites between Nov'20 and Mar'21 – 31,860 observations of 124 bird species, including 2,484 observations of 32 migratory species recorded.</p>	<p>Repeat migratory bird monitoring between Nov'21 and Mar'22.</p>
<p>Activity 1.5 Design protocols for farmer-led monitoring of birds, insects (including pollinators) and other wildlife, and support their implementation on farmers' cultivated and forested lands.</p>	<p>Protocol for farmer-led monitoring of biodiversity (birds & insects) on farm plots developed and refined, following an initial trial.</p> <p>On-farm biodiversity monitoring data collected across 20 agroecological farms, largely collected by young people who value the biodiversity on their lands and are already starting to transfer their understanding to other family members.</p>	<p>Support further roll-out of farmer-led monitoring of birds and insects.</p> <p>Trial addition of including mammal and reptile species within the monitoring protocol.</p>
<p>Activity 1.6 Strengthen community engagement in monitoring freshwater quality/flow, updating and implementing protocols in collaboration with existing network of Drinking Water Committees.</p>	<p>Protocol for local-led freshwater monitoring developed, incl. monitoring of macroinvertebrates as indicators of water quality.</p> <p>9 people from Drinking Water Committees (CAPs) trained in application of protocols.</p>	<p>Continue to compile catalogue of freshwater invertebrates.</p> <p>Strengthen capacities of CAPS to implement the protocol, identify macroinvertebrates, improve water harvesting and conservation of up-stream ecosystems.</p>
<p>Activity 1.7 Create a series of six targeted biodiversity conservation awareness messages for Ometepe, and disseminate through talks at local schools, community events and other fora.</p>	<p>17 environmental awareness messages created and tested.</p> <p>Environmental education talks given in 4 primary schools (146 students, 42% female).</p> <p>Awareness messages shared via social media and 3rd annual YNP festival in Dec'20 (160 participants, 58% female).</p>	<p>Conservation awareness messages will be disseminated to target audiences via a series of talks, events, social media and the 2021 YNP festival.</p>
<p>Activity 1.8 Hold an Ometepe-wide contest in Youth Leadership in Conservation, to inspire and nurture future conservationists, and hold twelve youth fora using interactive Arts and audio-visuals.</p>	<p>Youth Leadership in Conservation contest was held virtually - islanders aged 16-30 were asked to submit 3min videos highlighting importance of</p>	<p>The Youth Leadership in Conservation contest will be held annually, to nurture future conservationists and help raise</p>

	<p>Ometepe's YNPs. 5 young people entered the contest, and the videos submitted were viewed over 10,000 times on social media.</p> <p>13 community theatre events for young people were held (~80- people attended per event, totalling >1,000 overall, 60% female).</p>	<p>the profile of conservation amongst young people and on social media.</p>
<p>Activity 1.9 Analyse changes in knowledge, attitudes and behaviours regarding biodiversity conservation on Ometepe amongst islanders.</p>	<p>KAP survey and questionnaires designed, but data collection was delayed to comply with government restrictions on conducting community surveys in this election year.</p>	<p>KAP survey will be conducted when approved by the relevant authorities (likely to be Dec'21).</p>
<p>Output 2. Sustainable agroecological production is adopted by Ometepe's farmers, generating livelihood and biodiversity benefits and strengthening local adaptation to climate change.</p>	<p>2.1 No. of female and male farmers trained in agroecological practices (baseline 26 women, 62 men; target 380 of those identified as most vulnerable and/or farming priority sites for conservation by EoP, of which at least 40% female).</p> <p>2.2 No. of farming households (HH) identified as most vulnerable and/or farming near forest/wetland areas who have adopted agroecological production (baseline: 40HH; target: 200HH, by EoP).</p> <p>2.3 No. of hectares of existing agricultural land applying agroecological practices (baseline: 220 ha; target: 1,000 ha by EoP. Total agricultural land is ~10,400 ha).</p> <p>2.4 Reduction in no. of new incursions into forest by beneficiary farmers / in forest areas adjacent to beneficiary farmers' fields, between start of engagement with farmers to project end (baseline: 60 incursions observed in 2018; target: 30% year-on-year reduction).</p>	<p>2.1 A total of 24 training sessions delivered to farmers in agroecological practices, reaching 118 female participants and 312 male participants across all trainings (NB. total number of is not equivalent to number of individuals trained, as numbers include some double counting). On-farm agroecological support and training also provided via visits to 200 farming HH (~5-6 farm visits per HH in Y1, reaching ~480 new people). 30% of beneficiary farms are led by women.</p> <p>2.2 A total of 200 beneficiary farming HH have access to the necessary skills and resources to implement at least two new agroecological practices to improve their yields.</p> <p>2.3 Data still being compiled on total area of the 200 beneficiary farms.</p> <p>2.4 Data being collated.</p>

	<p>2.5 No. of farmers actively sharing agroecological practices and experiences and promoting conservation to other farmers, through RAPO participation (baseline: 25; target: 60 by EoP, of which at least 35% female).</p> <p>2.6 Percentage of beneficiary farmers reporting decreased vulnerability of their plots/crops to the local impacts of climate change (target: 80% by EoP, of which at least 50% female).</p>	<p>2.5 A total of 25 farming families actively participating in RAPO peer network, 7 of whom are women-headed households.</p> <p>2.6 To be measured at EoP.</p>
<p>Activity: 2.1 Deliver nine training modules for Biometepe's agroecological extensionist team on crop diversification, soil conservation, use of mycorrhizae, composting, agroforestry and biodiversity conservation.</p>	<p>Nine training modules delivered to Biometepe's agroecological extensionist team in Y1</p>	<p>Refresher training scheduled for Y3.</p>
<p>Activity 2.2 Provide agroecological training and extension support to 200 farming households to improve productivity, competitiveness and ecological benefits, and reduce vulnerability to climate impacts.</p>	<p>Biometepe's agroecological extension team have provided on-farm technical support to 200 farming HH, through a total of 1,148 farm visits in Y1 (5-6 visits / farm). 30% of beneficiary farmers are led by women.</p> <p>FFI & Biometepe also delivered 24 training sessions for farmers (24% of those trained were women)</p>	<p>Agroecological extension support will continue to be provided to beneficiary farmers throughout Y2, with the aim of increasing agroecological knowledge, capacity and reach throughout Ometepe's communities.</p>
<p>Activity 2.3 Provide beneficiary farmers with the tools, seeds and other resources necessary for the adoption of new biodiversity-friendly practices and technologies.</p>	<p>Practical support, in the form of tools, seeds and seedlings provided to all beneficiary farmers, including vegetable seeds for summer sowing provided to 49 farms with access to irrigation.</p>	<p>Practical support, in the form of tools, seeds and seedlings will continue to be provided to all 200 beneficiary farming HH.</p>
<p>Activity: 2.4 Deliver fire awareness talks and training for farmers across at least ten communities on Ometepe.</p>	<p>In coordination with MARENA, FFI & Biometepe delivered 7 fire awareness talks, reaching 250 people (35% female) from 9 communities surrounding Maderas Volcano Nacional Park.</p>	<p>In coordination with MARENA, training will continue to be given to communities on forest fires, especially in those where there were more cases of burning this year, according to the observation of residents.</p>
<p>Activity: 2.5 Support RAPO's bimonthly meetings and help Network members to design and deliver 6 training modules per year to encourage the adoption of agroecological practices.</p>	<p>Project supported RAPO meetings, which are held every 2 months.</p>	<p>FFI and Biometepe will continue to support RAPO meetings and help</p>

		Training needs of RAPO members discussed and identified, and training delivered on four topics.	deliver trainings in line with capacity needs.
Activity: 2.6 Facilitate peer learning through farm open-days and exchange visits (>6 per year, including one visit to successful agroecological model in mainland Nicaragua).		5 exchanges of experience and 2 field tours held (152 participants in total)	Facilitate on-farm open-day or exchange visit, once every two months. Visit to mainland Nicaragua is Covid-dependent.
2.7 Evaluate progress and impact through agricultural practices survey and participatory socioeconomic impact assessment of target households.		Baseline data collected from a sample of 30% of beneficiary HH on demographics, size of farm plots, area under different production systems, type/extent of agroecological practices being applied, and area of agricultural land burnt.	Finalise data analysis. Repeat survey scheduled for EoP.
Output 3. Stronger and more equitable relationships established between Ometepe's agroecological producers (farmers and primary processors) and other agricultural market system actors.	<p>3.1 Percentage of agroecological producers (farmers and primary processors) reporting improved relationships with other market actors (target: 40% by March 2020; 80% by EoP of which at least 30% female).</p> <p>3.2. Percentage of agroecological producers reporting a net increase in income from agricultural produce (target: 40% by March 2020; 80% by EoP, of which at least 40% female).</p>	<p>Indicators are appropriate.</p> <p>RAPO, as a more marginalised actor, has better understanding of market systems and PMSD process, and capacity to engage.</p> <p>However it is too early to measure better terms and improved market relationships or better prices and associated increases in income.</p>	
Activity 3.1 Drawing on expertise within project team, review and select market sub-sectors on Ometepe that best meet economic and biodiversity criteria for 'Participatory Market Systems Development'.		Three market sub-sectors for PMSD identified (organic bio-inputs; raw agroecological produce (to be selected from 7 possible crops); processed agroecological products.	Finalise selection of market sub-sectors with market actors in Y2 Q1.
Activity 3.2 Deliver market literacy training, to include approaches for engaging key actors and empowering marginalised actors in the market chain		<p>RAPO, as a more marginalised actor, has better understanding of market systems and PMSD process, and capacity to engage.</p> <p>Key actors in the market chains identified.</p>	Activity completed in Y1. However, if necessary, FFI will support and empower further marginalised actors through next stage of PMSD process.

Activity 3.3 Facilitate participatory market mapping, capacity assessment and action planning workshops (3 days) for each market sub-sector.	Community market survey completed. Planning for market mapping and action planning workshops in progress.	Facilitate participatory market mapping and action planning workshops with actors in each market chain.
Activity 3.4 Provide training in quality control, storage, handling and processing, alongside mentoring beneficiary producers in developing market relationships, meeting market demand and negotiating higher market prices.	Activity scheduled for Y2.	Facilitate discussion of capacity needs, then design / access / deliver training and mentoring as necessary.
Activity 3.5 Hold triannual monitoring meetings with market actors and facilitate visits for producers and traders to mainland markets to better understand value chains for their products.	Activity scheduled for Y2.	Organise and facilitate meetings.
3.6 Evaluate progress and impact through facilitation of annual evaluation workshop for beneficiary producers and market actors (alongside Activity 2.7).	Activity scheduled for end of Y2.	Organise and facilitate annual evaluation workshop in Y2 Q4.
Output 4. The case of Ometepe Island Biosphere Reserve as a model of conservation and sustainable development is widely known by key stakeholders in Nicaragua, migratory bird specialists and agroecological communities.	<p>4.1 No. of decision makers, influencers, NGO partners, donor agencies and other stakeholders in Nicaragua who have access to project outputs and lessons learned from Ometepe (target: 60 by end of Y2, 100 by EoP, of which at least 40% female).</p> <p>4.2 No. of people across FFI's global staff and partner networks who have accessed project outputs and lessons learned from Ometepe (target: 50 by end of Y2, 80 by EoP).</p>	<p>The project aligns with national government strategies (of MARENA, INTA, MEFCCA, Ministry of Agriculture and Institute of Forestry) to increase food security and improve productivity (of farms and kitchen gardens), promote conservation, and incentivise sustainable production and agroecology.</p> <p>Activities, and associated monitoring, is scheduled for Y2 and beyond. Indicators are appropriate.</p>
Activity 4.1 Collate results from monitoring (of resident and migratory birds, forest cover, agroecological biodiversity and freshwater), conservation actions (patrols, reforestation), socio-economic and KAP surveys.	Activity scheduled for Y2.	FFI and Biometepe will collate baseline data from project activities and monitoring to date in Y2 Q1.
Activity 4.2 Disseminate findings, outputs and lessons learned amongst stakeholders through national workshop, local meetings and distribution of materials.	Activity scheduled for Y3.	N/A
Activity 4.3 Disseminate project outputs and lessons learned via FFI's networks in the UK and globally, through digital media and internal and external presentations.	Activity scheduled for Y3.	N/A

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: Ometepe Island Biosphere Reserve is successfully demonstrating how innovative, integrated approaches to biodiversity conservation and ecosystem-based landscape management can generate long-term environmental, economic and social benefits.</p>			
<p>Outcome: Ometepe's forest and wetland habitats and wildlife, including globally important populations of resident and migratory birds, are protected by community-led conservation and sustainable livelihood practices.</p>	<p>0.1 Reduction in number of hectares of habitat in core zones of the Biosphere Reserve lost to agricultural encroachment or affected by anthropogenic fire (baseline: average 58 ha p.a. forest cover loss, 150 ha affected by fire in 2019; target: 50% reduction by end-of-project [EoP]).</p> <p>0.2 Indices of forest and wetland health and biodiversity, including populations of resident and migratory birds, stable or increasing by EoP compared to baseline.</p> <p>0.3 Percentage of target household members reporting improvements in food, income security and community-defined indicators of wellbeing, and improved understanding of links between wellbeing and biodiversity protection (target: 80% by EoP, of which at least 50% female).</p>	<p>0.1 Remote sensing data from Global Forest Watch forest cover maps and deforestation alerts; Reports from community-led patrols; Direct observations of land use and agricultural encroachment in core/buffer zones.</p> <p>0.2 Annual population census of resident yellow-naped parrot (EN); Annual monitoring records of overwintering neo-tropical migratory birds from MoSI station; Report compiling data from farmer-led monitoring of birds/insects on farm plots and forest fringes (at project start and EOP); Collation of data from Drinking Water Committees and community-led monitoring of freshwater quality (incl. measures of sedimentation, invertebrates) and flow in rivers and wetlands (at project start and EoP).</p> <p>0.3 End-of-project Socio-economic Participatory Impact Assessment, with data disaggregated by gender; Knowledge, attitudes and practices (KAP) survey, with data disaggregated by gender (at project start and EoP).</p>	<p>The security situation in Nicaragua remains sufficiently stable for FFI to continue ongoing operations.</p> <p>No new major drivers of deforestation emerge during the project.</p> <p>No major disruption to ecosystem function on Ometepe - through natural disasters, large-scale pollution or climate change - occur.</p> <p>Ometepe's populations of migratory birds do not suffer significant decline due to threats in their breeding grounds in North America or on their annual migration.</p> <p>The without-project scenario would likely see worsening of all outcome indicators, in line with national declines in socio-economic conditions and increasing pressures on natural resources.</p> <p>The concession to build a Nicaragua Inter-Oceanic Canal, whose route would cut through Lake Nicaragua, remains dormant and/or does not adversely affect conservation and sustainable development on Ometepe.</p>
<p>Output 1. Community-led forest protection and wildlife conservation are strengthened,</p>	<p>1.1 Area of forest and wetland habitat within core/buffer zones protected through community-led</p>	<p>1.1 Reports from community-led patrols; Biometepe's annual conservation reports.</p>	<p>Island stakeholders continue willingness to cooperate on biodiversity conservation initiatives.</p>

<p>supported by greater public engagement and action.</p>	<p>patrols (baseline 900 hectares; target 1,500 hectares at EoP).</p> <p>1.2 Area of land reforested or under agroforestry in the agricultural buffer zone and number of native forest and fruit trees planted (targets: 75 ha and 30,000 trees by EoP).</p> <p>1.3 Number of islanders (beneficiary farmers, school children, youth, wider community) engaged in ecological monitoring and associated conservation actions (targets: 100 in Y1, 200 in Y2, 250 by EoP, of which at least 40% female).</p> <p>1.4 Increase in number of islanders (of a proportional and gender balanced sample of beneficiary farmers, school children, youth, wider community) who are able to articulate the connections between conservation, the water cycle and their livelihoods, between project start and end.</p>	<p>1.2 Biometepe's annual agroecological programme reports.</p> <p>1.3 Biometepe's annual conservation reports; Information from community-led biodiversity/freshwater monitoring schemes; FFI's annual report for Ometepe Programme.</p> <p>1.4 KAP survey of beneficiary farmers, school children, youth, wider community, with data disaggregated by gender (at project start and EoP).</p>	<p>Farming families perceive positive cost-benefit of agroforestry and reforesting land within the agricultural buffer zone and are therefore willing to reforest.</p>
<p>Output 2. Sustainable agroecological production is adopted by Ometepe's farmers, generating livelihood and biodiversity benefits and strengthening local adaptation to climate change.</p>	<p>2.1 No. of female and male farmers trained in agroecological practices (baseline 26 women, 62 men; target 380 of those identified as most vulnerable and/or farming priority sites for conservation by EoP, of which at least 40% female).</p> <p>2.2 No. of farming households (HH) identified as most vulnerable and/or farming near forest/wetland areas who have adopted agroecological production (baseline: 40HH; target: 200HH, by EoP).</p>	<p>2.1 Records of training sessions and workshops.</p> <p>2.2 & 2.3 Agricultural practices survey (at project start and EoP), including measures of size of plot, no. of hectares under agroecological systems, type/extent of agroecological practices being applied, soil health (% of organic material), hectares of agricultural land burnt, rate of agrochemical use.</p> <p>2.4. Agricultural practices survey (above), triangulated with: reports from community-led patrols; Remote</p>	<p>The current positive attitude, locally and nationally, to developing sustainable livelihoods and trialling new agricultural practices is maintained.</p> <p>Both female and male members of farming households will attend training and network meetings (assumption based on previous experience).</p> <p>Improvements to resilience brought about by agroecological approaches are able to withstand even the most</p>

	<p>2.3 No. of hectares of existing agricultural land applying agroecological practices (baseline: 220 ha; target: 1,000 ha by EoP. Total agricultural land is ~10,400 ha).</p> <p>2.4 Reduction in no. of new incursions into forest by beneficiary farmers / in forest areas adjacent to beneficiary farmers' fields, between start of engagement with farmers to project end (baseline: 60 incursions observed in 2018; target: 30% year-on-year reduction).</p> <p>2.5 No. of farmers actively sharing agroecological practices and experiences and promoting conservation to other farmers, through RAPO participation (baseline: 25; target: 60 by EoP, of which at least 35% female).</p> <p>2.6 Percentage of beneficiary farmers reporting decreased vulnerability of their plots/crops to the local impacts of climate change (target: 80% by EoP, of which at least 50% female).</p>	<p>sensing data from Global Forest Watch maps and deforestation alerts; direct observations of land use and agricultural encroachment in core/buffer zones.</p> <p>2.5 Minutes of RAPO meetings; RAPO's records of number of members.</p> <p>2.6 End-of-project Socio-economic Participatory Impact Assessment; Agricultural practices survey (at project start and EoP).</p> <p>All relevant data disaggregated by gender.</p>	<p>extreme weather events, such as, for example, a recurrence of Hurricane Mitch-force winds, rainfall and storm surge.</p>
<p>Output 3. Stronger and more equitable relationships established between Ometepe's agroecological producers (farmers and primary processors) and other agricultural market system actors.</p>	<p>3.1 Percentage of agroecological producers (farmers and primary processors) reporting improved relationships with other market actors (target: 40% by March 2020; 80% by EoP of which at least 30% female).</p> <p>3.2. Percentage of agroecological producers reporting a net increase in income from agricultural produce (target: 40% by March 2020; 80%</p>	<p>3.1 Documented outputs of Participatory Market Mapping workshops (baseline workshop in Yr1; quarterly monitoring meetings; final evaluation workshop Yr3).</p> <p>3.2 Agricultural practices survey (inputs & yield data – at project start and EoP); Farmer/trader sale volumes and price records.</p> <p>All relevant data disaggregated by gender.</p>	<p>Market actors are willing to work together to improve product quality, volume, diversity and timeliness.</p> <p>Market demand is not adversely affected by national economic/social instability.</p>

	by EoP, of which at least 40% female).		
Output 4. The case of Ometepe Island Biosphere Reserve as a model of conservation and sustainable development is widely known by key stakeholders in Nicaragua, migratory bird specialists and agroecological communities.	<p>4.1 No. of decision makers, influencers, NGO partners, donor agencies and other stakeholders in Nicaragua who have access to project outputs and lessons learned from Ometepe (target: 60 by end of Y2, 100 by EoP, of which at least 40% female).</p> <p>4.2 No. of people across FFI's global staff and partner networks who have accessed project outputs and lessons learned from Ometepe (target: 50 by end of Y2, 80 by EoP).</p>	<p>4.1 Minutes from national lesson sharing workshop; minutes of meetings with national stakeholders; email communications with decision makers, influencers, NGO partners, donor agencies and other stakeholders.</p> <p>4.2 Distribution of hardcopies of project reports and case studies at learning events; download data from Google analytics for electronic copies of project reports and case studies - through FFI's internal (intranet, yammer, email) and external (website, learning networks) communications channels.</p>	Decision makers, partners and stakeholders are receptive to the learning generated by the project.
<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)</p> <p>1.1 Strengthen and replicate existing community-led forest protection efforts on Ometepe, building protocols and incentives for groups, farmers and young people involved in community-led patrols.</p> <p>1.2 Reforest four priority sites through propagation of seedlings in two community-run nurseries and planting of native forest and fruit trees (11 species / 12 varieties).</p> <p>1.3 Strengthen the protection and ecological monitoring of the yellow-naped parrot population on Ometepe, through community patrols and incentives.</p> <p>1.4 Train three community members in MoSI protocols and conduct annual monitoring of overwintering neo-tropical migratory birds.</p> <p>1.5 Design protocols for farmer-led monitoring of birds, insects (including pollinators) and other wildlife, and support their implementation on farmers' cultivated and forested lands.</p> <p>1.6 Strengthen community engagement in monitoring freshwater quality/flow, updating and implementing protocols in collaboration with existing network of Drinking Water Committees.</p> <p>1.7 Create a series of six targeted biodiversity conservation awareness messages for Ometepe, and disseminate through talks at local schools, community events and other fora.</p> <p>1.8 Hold an Ometepe-wide contest in Youth Leadership in Conservation, to inspire and nurture future conservationists, and hold twelve youth fora using interactive Arts and audio-visuals.</p> <p>1.9 Analyse changes in knowledge, attitudes and behaviours regarding biodiversity conservation on Ometepe amongst islanders.</p>			

- 2.1 Deliver nine training modules for Biometepe's agroecological extensionist team on crop diversification, soil conservation, use of mycorrhizae, composting, agroforestry and biodiversity conservation.
 - 2.2 Provide agroecological training and extension support to 200 farming households to improve productivity, competitiveness and ecological benefits, and reduce vulnerability to climate impacts.
 - 2.3 Provide beneficiary farmers with the tools, seeds and other resources necessary for the adoption of new biodiversity-friendly practices and technologies.
 - 2.4 Deliver fire awareness talks and training for farmers across at least ten communities on Ometepe.
 - 2.5 Support RAPO's bimonthly meetings and help Network members to design and deliver 6 training modules per year to encourage the adoption of agroecological practices.
 - 2.6 Facilitate peer learning through farm open-days and exchange visits (>6 per year, including one visit to successful agroecological model in mainland Nicaragua).
 - 2.7 Evaluate progress and impact through agricultural practices survey and participatory socioeconomic impact assessment of target households.
-
- 3.1 Drawing on expertise within project team, review and select market sub-sectors on Ometepe that best meet economic and biodiversity criteria for 'Participatory Market Systems Development'.
 - 3.2 Deliver market literacy training, to include approaches for engaging key actors and empowering marginalised actors in the market chain.
 - 3.3 Facilitate participatory market mapping, capacity assessment and action planning workshops (3 days) for each market sub-sector.
 - 3.4 Provide training in quality control, storage, handling and processing, alongside mentoring beneficiary producers in developing market relationships, meeting market demand and negotiating higher market prices.
 - 3.5 Hold triannual monitoring meetings with market actors and facilitate visits for producers and traders to mainland markets to better understand value chains for their products.
 - 3.6 Evaluate progress and impact through facilitation of annual evaluation workshop for beneficiary producers and market actors (alongside Activity 2.7).
-
- 4.1 Collate results from monitoring (of resident and migratory birds, forest cover, agroecological biodiversity and freshwater), conservation actions (patrols, reforestation), socio-economic and KAP surveys.
 - 4.2 Disseminate findings, outputs and lessons learned amongst stakeholders through national workshop, local meetings and distribution of materials.
 - 4.3 Disseminate project outputs and lessons learned via FFI's networks in the UK and globally, through digital media and internal and external presentations.

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people	Nationality of people	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during project
7	Number of training materials to be produced for use by host country	N/A	N/A	2	2	0	3	4
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	N/A	N/A	3	0	0	3	3
12B	Number of computer based databases to be enhanced and handed over to the host country	N/A	N/A	0	1	0	0	1
14A	Number of conferences/seminars/workshops to be organised to present/disseminate findings	N/A	N/A	0	0	1	0	1
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	N/A	N/A	█	█	█	█	█
23	Value of resources raised from other sources (i.e., in addition to Darwin funding) for project work	N/A	N/A	█	█	█	█	█

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)
Community-led stewardship and conservation of the Ometepe Island Biosphere Reserve	Darwin Initiative newsletter "Hungry for Biodiversity" (November 2020)	A Gunn & A Valdivia; 2020	Female	British	Darwin Initiative, UK.	www.darwininitiative.org.uk/resources-for-projects/newsletter/

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

Output 1:

- Annex 4a: Community Environmental Commissions
- Annex 4b: Monitoring Protocol – yellow naped parrots & migratory birds
- Annex 4c: Monitoring Protocol – farm biodiversity
- Annex 4d: Monitoring Protocol – freshwater
- Annex 4e: Freshwater monitoring – meeting minutes (October 2020)
- Annex 4f: Freshwater monitoring – MacroInvertebrate Catalogue

Output 2:

- Annex 4g: Agricultural practices - baseline survey (March 2021)
- Annex 4h: RAPO Network – meeting minutes October 2020
- Annex 4i: RAPO Network – meeting minutes February 2021
- Annex 4j: Coordination with INTA – meeting minutes July 2020

Output 3:

- Annex 4k: PMSD workshop – November 2020
- Annex 4l: RAPO Network (agricultural markets data) – meeting minutes March 2021

Output 4:

- N/A

Other:

- Annex 4m: Project workplan Y1
- Annex 4n: MARENA Research permit – YNP & migratory bird conservation and research on Ometepe
- Annex 4o: FFI Subgrant agreement to Biometepe – Darwin Y1 (& signature page)
- Annex 4p: Agreement FFI & UNIAV
- Annex 4q: Images

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.	N/A
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	✓
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	N/A
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.	