Darwin Initiative Main Annual Report

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

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

Submission Deadline: 30th April 2021

Darwin Project Information

Project reference	25-005
Project title	Enabling ecosystems to deliver sustainable development goals at Lake Indawgyi
Country/ies	Myanmar
Lead organisation	Fauna & Flora International
Partner institution(s)	• Nature and Wildlife Conservation Division (NWCD), Forest Department (FD) • Indawgyi Environmental Conservation and Development Association (IECDA) • Indawgyi Natural Farming Association (INFA) • Inn Chit Thu Social Development and Eco-tourism Group • Mohnyin Natural Greening Development Association (NGDA) • Wetlands Work
Darwin grant value	329,590 GBP
Start/end dates of project	01 July 2018 - 30 September 2021
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	April 2020 – March 2021 (Annual Report #3)
Project Leader name	Frank Momberg
Project website/blog/social media	None
Report author(s) and date	Zaw Min Oo and Ngwe Lwin, 14 May 2021

1. Project summary

Lake Indawgyi, a Ramsar site, is Myanmar's most important wintering ground for >20,000 water birds. Indawgyi's wetlands support significant populations of threatened species: Sarus crane (VU), Woolly-necked stork (VU), Peacock softshell turtle (EN), Hog deer (EN), and threatened fish species, including 6 newly-described endemics. Watershed forests support Chinese pangolin (EN), Asiatic black bear (VU), Sun Bear (VU), Dhole (EN), Shortridge's leaf monkey (EN), Eastern hoolock gibbon (VU), and Rufous-necked Hornbill (VU). White-rumped and Slender-billed vultures (CR) are also present.

This rich biodiversity is under threat from multiple pressures. Unsustainable firewood collection, illegal timber extraction, and agricultural encroachment in the upper watershed are causing soil

erosion and sedimentation. Traditional low-input rice production is being replaced by chemical fertilizers and pesticides which are threatening the fish and bird species in the lake. Poor sanitation facilities are an additional, severe and increasing source of pollution in the wetlands. Elsewhere, at Lake Inle, chemical fertilizers and degradation of the watershed have caused the lake to silt by 2m, and rendered the lake water unsafe for drinking, threatening biodiversity and human health. It is imperative that we learn from this situation and take early mitigating action at Lake Indawgyi.

The livelihoods of 30,000 indigenous people depend on ecosystem services provided by Indawgyi's wetlands and forests. Most poor households undertake agricultural activities; farm sizes are small and many households lack sanitation. Addressing their urgent development needs is essential to promoting human health, economic development, and protecting the unique biodiversity of this globally important wetland.

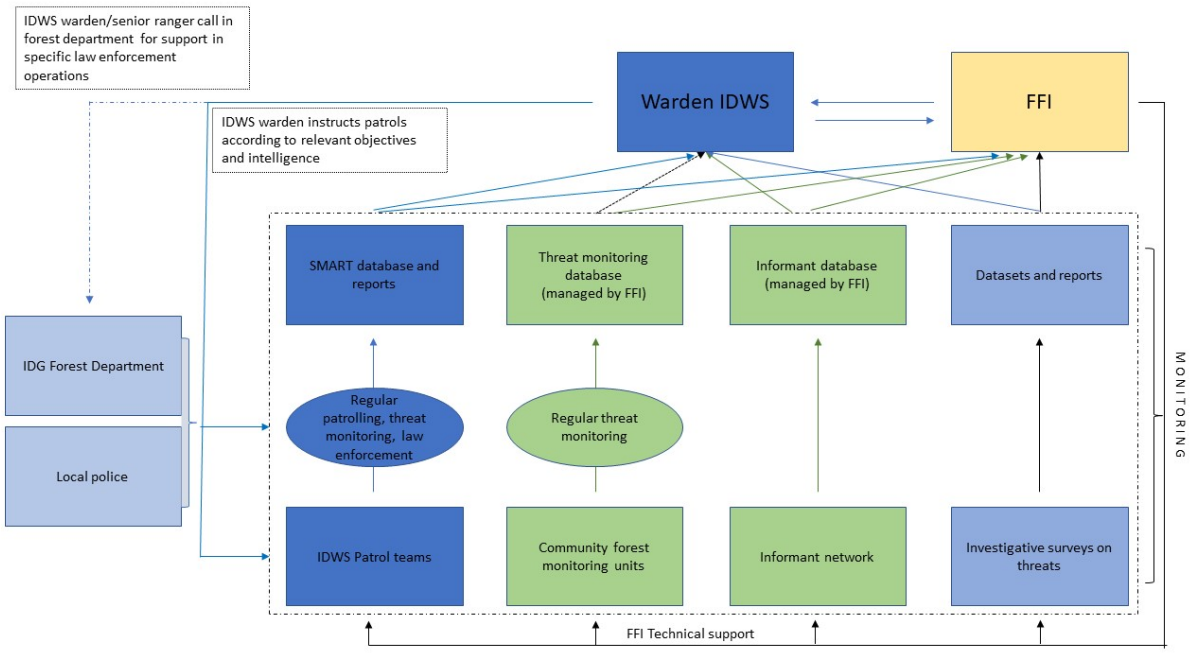
2. Project partnerships

Several partnerships with national and local organisations are central to this project. All have developed positively over the reporting period, with a number of achievements with respect to project planning, implementation, monitoring, achievements and lessons learned.

2.1 Nature and Wildlife Conservation Division (NWCD), Forest, Department (FD)

The capacity of the NWCD management unit for Indawgyi Lake Wildlife Sanctuary/ Indawgyi Biosphere Reserve (IBR) has significantly been improved in the following fields:

- Through a participatory process, the project supported the development and improvement of the overall collaborative law enforcement system:



- The Project has developed improved guidelines for SMART patrolling, provided class room and on-the-job training in collaborative SMART patrolling, which included threat monitoring, community-based intelligence work, patrolling and law enforcement. Intelligence gathering has been significantly improved through the establishment of informant networks, and patrol coverage has significantly increased.
- The project supported annual drone based monitoring of encroachment in the critical wetland habitats of the Indaw Chaung seasonally flooded grasslands. The monitoring data shows that encroachment has been significantly reduced during the project period, when a comprehensive awareness raising and collaborative patrolling campaign has been in place.

- FFI supported the establishment of joint lake patrols of NWCD rangers with township fisheries departments officers, which has led to increased capacity of fisheries department officers and NWCD rangers to patrol and enforce fisheries laws, in particular of the no-take zones in the lake.

2.2 Indawgyi Environment and Development Association (IEDA): Community forestry/ Mohnyin Natural Greening and Development Association (MNGDA)

FFI has continued to support IEDA and MNGDA through technical/ financial and administrative small grant management training and small grant support to expand community forestry and agroforestry.

2.3 Indawgyi Natural Farming Association (INFA)

FFI has provided comprehensive training to INFA and its members for organic rice farming techniques and the 'participatory guarantee system - PGS' for organic farming. 157 INFA members participated in the training and 157 farmers passed the PGS Myanmar organic certification. FFI also supports rice seed production training to INFA farmers in collaboration with township agricultural departments.

2.4 Inn Chit Thu ("Lovers of Indawgyi")

FFI's partner wetland work has trained an Inn Chit Thu team in the development of household waste-water 'handy pot' systems. The construction of household waste water treatments systems in the flood prone zone of Indawgyi lake is ongoing.

Inn Chit Thu also received hospitality training and training for the management of the newly opened visitor education centre.

FFI provided training in organisational development, restructuring of the board, financial management training, work planning and technical reporting, in particular in relation to the visitor education centre.

3. Project progress

3.1 Progress in carrying out project Activities

NB: The activities are reported here as they are numbered in the original proposal.

Output 1. A decentralised and collaborative management committee and mainstreamed ecosystem services approach places the Indawgyi Lake Biosphere Reserve under management systems that respect integrated development and biodiversity needs

1.1 Facilitate regular meeting of the Biosphere Reserve Indawgyi management/ stakeholder committee

The third BR management/ stakeholder committee meeting was planned for October 2020. However, Covid-19 regulations meant restrictions were still in place and so the meeting was postponed to early 2021. On 14th January 2021, the meeting was held in Indawgyi Wetland Education Centre following Covid-19 regulations guidelines (gatherings of no more than 30 people with social distancing). A total of 29 participants from government departments (Indawgyi Wildlife Sanctuary, General Administration Department, Fisheries Department, Forest Department, Hotel and Tourism Department), CSOs and local communities attended the meeting. In the meeting, each department and CSO group shared previous activities such as actions based on 2019-20 budget year management plan and collaborative conservation achievements. Then, all the participants discussed the work plan for the next year of the project.

1.2 Facilitate regular meeting of the Indawgyi civil society network (bi-annual)

In Year 3, Indawgyi Civil Society Network meetings were not able to be held, due to Covid-19 restrictions on gatherings. However, individual group meetings were conducted in each

office in July and August 2020. In each meeting, each group prepared grant proposals and work plans for 2021.

1.3 Facilitate regular meetings of law enforcement agencies (forest department, Indawgyi wildlife sanctuary/ biosphere reserve management authority, fisheries department police).
Due to Covid-19 travel restrictions in Year 3, regular meetings facilitated by FFI were held via phone call with both forest and fishery departments every two months. Both departments also had regular meetings with the police on patrols and law enforcement planning and coordination.

1.4 Recruit and train local informant network
This activity was completed in Year 1.

1.5 Recruit local community rangers
This activity was completed in Year 1.

1.6 Establish two collaborative patrol units (5 pax each), including wildlife sanctuary rangers and community rangers for forest patrols
This activity was completed in Year 1.

1.7 Establish collaborative lake patrol team (fisheries department, WS, community ranger)
This activity was completed in Year 1.

1.8 Provide basic field equipment (GPS/ cameras/ field gear)
This activity was completed in Year 2. (GPS and cameras were provided in Year 1 and two cyber tracker devices were supported in Year 2)

1.9 Provide initial SMART patrolling training to collaborative patrol units, on the job training first 3 month.
This activity was completed in Year 1.

1.10 Provide SMART refresher training
A 3 day capacity building training was conducted together with the Wildlife Sanctuary office in August 2020. The training covered topics such as protected area rules and regulations, basic GIS mapping, GPS and Compass usage. A total of 25 staff from the Wildlife Sanctuary and 2 CSOs (Friends of Wildlife and, Inn Chit Thu) participated.

1.11 Monthly collaborative SMART patrols, operate informant network
Regular monthly collaborative SMART patrols were continued during the reporting period as in Year 2. Two forest patrol teams and one lake patrol team, with one community ranger in each team, conducted SMART patrol for 10-15 days per month. The SMART data documented a significant decline in illegal logging. During this reporting period, the number of key informants remains at 22.

1.12 Annual UAV monitoring of encroachment and illegal logging areas
Due to the travel restrictions resulting from the Covid-19 pandemic, the GIS team was not able to operate drone mapping in Indawgyi as planned. In September 2020, a Sentinel-2 satellite image was used instead of drone-captured images to analyse vegetation cover of grass land in Indawgyi's outlet stream and degraded buffer zone. The result indicated that there was no further agricultural land expansion in Indawgyi outlet stream compared to last year. However, burning of grass in the dry season is observed and further investigation is underway to get more information of the cause.

Output 2. Community forestry and agroforestry in designated buffer zones of Indawgyi Lake Biosphere Reserve reduce deforestation and forest degradation, while maintaining access to essential natural resources

2.1 Establish forest user groups

This was completed in Year 1 and Year 2.

2.2 Train forest user groups (FUGs) in forest inventory and forest management planning.
A 3-day training on Community forestry/ Agro-forestry technical concepts (forestry inventory, forest management planning and nursery development) and book keeping was carried out in December 2020. A total of 29 participants from 20 Community Forestry (CF) user groups joined the training.

2.3 Forest inventory and forest management planning
Forest inventory was not able to conduct in Year 3 as the CF user groups were conducting field measurement and preparing CF management plan. It was planned to conduct in Year 4 before end of project.

2.4 Train FUGs in tree nursery development
As indicated in Activity 2.2, the 3-day training also included tree nursery development (methods of nursery house establishment, seed bed preparation, seedling handling and transplanting).

2.5 Establish and make nurseries operational
FUGs produced seedlings at their own nursery for their community forestry. After attending CF/AF technical training in December 2020, each FUG has the capacity to establish their nursery house and began to produce about 8,000 to10,000 seedlings between April and July 2021.

2.6 Train FUGs in reforestation/ agroforestry techniques
As indicated in Activity 2.2, the 3-day training also included reforestation/ agroforestry techniques (propagation techniques for agroforestry plants).

2.7 Establish woodlots and agroforests
A total of 59,230 seedlings, produced from the FUGs' own nurseries, have been planted. In addition, direct sowing was done for more than 10,000 seeds in their CF areas in Year 3.

2.8 Facilitate community forestry certification
Community forestry awareness talks and discussion about the procedure for a community forestry certification application was conducted at 5 villages in December 2020, and 187 households attended the meeting. In November 2020, a 10-day field survey was conducted by FUG members and Wildlife Sanctuary staff in order to define the boundary of the Indawgyi buffer zone. In January 2021, a 9-day field survey for community forestry area boundary delineation was undertaken by FUG members and Wildlife Sanctuary staff. After that, management plans of the CF area including map were prepared and submitted to Indawgyi Wildlife Sanctuary authority in order to process the CF certificate.

Output 3. Organic rice farming and value-adding practices result in certified organic products that provide income to at least 200 households and protect wetland biodiversity

3.1 Undertake participatory consultation with farmers to establish their knowledge and priority learning needs (knowledge baseline)
This activity was completed in Year 1 and Year 2.

3.2 Develop training resources that are targeted to the farmer learning needs identified in 3.1, and pilot
This activity was completed in Year 1.

3.3 Roll out amended training modules and offer refresher training
Training courses, both class-room and on-the-job training, on internal control systems for Participatory Guarantee System - PGS, and the production of natural fertilizers and bio-pesticides, were organized in July 2020 with 41 new farmers who were interested in organic

farming. The courses were delivered by Dr. Than Than Sein, an organic farming expert and her team members.

3.4 Review the governance structure and capacities of INFA and identify priority development needs to enable scale-up, pending the anticipated new membership numbers.
This activity was completed in Year 1.

3.5 In consultation with INFA and the organic certifier, agree timeline and responsibilities for the certification process
This activity was completed in Year 1.

3.6 Train internal auditors
FFI introduced PGS organic for the farmers in Indawgyi for organic certification. PGS farmers were formed into groups of 5 to 10 farmers to apply internal control systems for their chemical free agricultural practice. In Year 3, more than 205 farmers were trained on internal control systems by Dr. Than Than Sein and her team in July 2020.

3.7 Revise and update the INFA governance structures and financial control mechanisms
This activity was completed in Year 1.

3.8 Establish supply chain control points for rice and rice flour
The project team and INFA continued with the two supply chains, as in Year 2, after the harvesting period: distribution in the regional market and distribution in Yangon market. With the support of the project, INFA increased in local market linkage and continuously supplied organic rice to grocery shops in the Indawgyi area. Moreover, rice orders from Mandalay organic market were also received every two weeks. For Yangon market, the project has an agreement with KhoKoeYar organic shop to sell Indawgyi rice at their shop in January 2021. However, due to the current crises, the products were not able to be supplied to Yangon market yet.

3.9 Set up and prepare for physical installation of rice mill
Based on a cost-benefit analysis and the available Darwin budget for post-harvest rice processing equipment, a 22-ton rice mill and 500-basket capacity paddy drier were installed in INFA land near He Pu villages. All the equipment were transferred to INFA on 14^{h} December 2020 to start production of quality rice.

3.10 Procure rice mill
High quality rice producing mill (de-husking paddy and polishing rice) was procured and handed over to INFA on 14th December 2020 to start operation.

3.11 Deliver training on rice mill use and maintenance
Five days training was delivered to 3 INFA staff members by a mill constructor and local rice mill expert to be able to operate and troubleshoot the mill.

3.12 Develop INFA detailed 3 year business plan
The detailed business plan for rice production and distribution was planned to complete in Year 3. However, it was delayed due to Covid-19 restrictions on travel and group sizes for meetings. A market survey is being conducted during the reporting time, to collect information for preparing the business plan.

3.14 According to the business plan, identify the priority investments/ infrastructure/ capacities required and support INFA to address these
According to Business plan developed in 2018-2019 for organic rice in Indawgyi region, the priority infrastructure identified was a rice mill, which has been established in Year 3 (please see Activity 3.10).

3.15 According to business plan, establish local sales distribution systems for rice
With the support of the project, INFA members milled the rice at their own rice mill and distributed organic rice in Indawgyi region and to Mandalay. INFA also have an agreement

to supply KhoKoeYar organic shop in Yangon, when supply becomes possible again (please see Activity 3.8).

3.16 Support INFA to produce and sell rice
INFA staff are now able to operate the rice mill and distribute organic rice in Indawgyi region and to Mandalay organic market. The project is now supporting the development of local and regional market linkages.

3.17 Base and end line surveys on household incomes and expenditures related to farming
This activity has had to be postponed due to the ongoing Covid-19 and political crises in Myanmar at present.

Output 4. At least 1,000 households (c. 5,400 people) participate in community waste collection and safe disposal; at least 200 households (c.1,000 people/ approx. 50% of all households in flood prone areas) benefit from improved sanitation systems in flood prone areas with eutrophication problems

4.1 Develop a core team between Inn Chit Thu and Wetlands Work. Develop a HandyPod training programme for construction training and sanitation marketing using informational materials, presentations, workshops, field work, and demonstration sites.
Handy pod installation training was completed in Year 2 and members of Inn Chit Thu local association and local partner team (group of 3 persons from Lonton) continued to set up Handy pods in flood prone villages. In Year 3, 51 Handy pods were constructed between July to September 2020 in 5 villages and all together 101 handy pods have been constructed in Indawgyi region.

4.2 ID and train local business operators from the target villages who serve the HandyPod's supply side elements
Local partner team from Lone Ton (a group of 3 people) have already been trained on the Handy pod setup method in Year 2 and 101 individual Handy pods have been constructed in 7 villages. An additional 43 Handy pods are being installed in the current reporting period.

4.3 Organise a Sanitation Raffle (lucky draw) for flood-prone households in each target village involving various leadership levels; promotion, prizes, events coordination
Due to Covid-19 travel restrictions, the *Sanitation Raffle* event was unable to go ahead in Indawgyi. However, a survey was conducted in 5 villages during October 2020 and a number of flood prone households were investigated. Consequently, the number of households which are interested to receive Handy pods was collected, together with village heads.

4.4 Install winning HandyPods in dry season
Based on the households survey data from October 2020, 43 Handy pods are being installed during the current reporting period in households which meet sanitation selection criteria.

4.5 Provide faecal sludge management guidance and demonstrations
The guidelines for usage and maintenance of Handy pods was developed in the local language in Year 2 and posted in shelters of every new installed Handy pod.

4.6 Monitor and evaluate initial target village strategies; adapt as needed
The project team interviewed members of the HandyPod installed households in October 2020 and found out that the HandyPod system is more accepted in villages located on the east of the lake than villages in the west of the lake, due to a smell issue occurring from discharge water. The issue is being solved by adding one additional box to HandyPod and construction of a filter tank.

4.7 Explore and specifically define broader scale up of sanitation activities around Lake Indawgyi
In Indawgyi, both Inn Chit Thu group and Education Centre staff are continuously developing awareness-raising packages which include sanitation topics and delivered at

festivals and villages. Moreover, the local HandyPods constructor team has increased by one member during the reporting period.

4.8 Establish baseline information: nearshore pathogens (E. coli) and algal mat density in Year I wet and dry season
Completed in Year 2.

4.9 Develop waste management awareness materials
Posters raising awareness on solid waste were produced and posted in public reaching areas like road corners and parks in 6 villages, and Shwe Myit Zu pagoda.

4.10 Implement waste management awareness campaign
Awareness raising of waste management was conducted monthly for small groups of people along the track while collecting village waste by Indawgyi Social Development Association (ISDA), during the reporting period.

4.11 Facilitate establishment of village-based waste management systems, identify supply chain for recycling materials
The project continued financial support to ISDA (formally named Parami) to manage village waste in 8 villages, as per Year 2. The project also provided financial support to a new small waste management group form He Pa village, named "ThaBaWaAhLin Social Welfare Association", in January 2021. ISDA continuously run the waste collection truck and are now developing a waste segregation system (plastic, glass and organic waste), starting from Nam Mun Town. The association also constructed and operated a plastic burning stove, from August 2020.

4.12 Establish village land fill sites for safe disposal of waste
The project supported ISDA on regular maintenance of the village land fill site and established a new land fill site near HoPhar (a tourism destination place) in November 2020.

4.13 Provide support to the new waste collection system
Please see Activity 4.11.

3.2 Progress towards project Outputs

Output 1: A decentralised and collaborative management committee and mainstreamed ecosystem services approach places the Indawgyi Lake Biosphere Reserve under management systems that respect integrated development and biodiversity needs

In Year 3, township level multi-stakeholder BR management committee meeting was organized in January in 2021 and law enforcement operations for forest and lake has been continued. Study tour to German Biosphere Reserves for integrated conservation and sustainable development was cancelled in 2020 due to Covid-19 travel restrictions.

Three of four indicators in output 1 were achieved until end of Y3. For the indicator 1.4, KAP survey was planned to conduct in Year 3. However, due to Covid-19 and coup, it has to be postponed to Year 4.

Output 2: Community forestry and agroforestry in designated buffer zones of Indawgyi Lake Biosphere Reserve reduce deforestation and forest degradation, while maintaining access to essential natural resources

In Year 3, 20 forest user groups continued community forestry development and CF certificates application process.

Four of six indicators in output 2 were achieved until end of Y3. Activities of indicator 2.4 are still in the process and indicator 2.5 will not be met as energy used for cooking in the villages at the project area was changed from firewood to electricity.

Output 3: Organic rice farming and value-adding practices result in certified organic products that provide income to at least 200 households and protect wetland biodiversity

In Year 3, 205 farmers continued practicing organic farming and the rice mill began operating for organic rice, and an annual water birds count was also conducted. Two activities: Household expenditure on non- organic agricultural inputs per unit yield and net profit per unit yield were delayed in Year 3 due to Covid-19 travel and gathering restrictions.

Five of seven indicators in output 3 are already achieved until end of Y3. We will carry out assessment of household expenditure decreasing from changing their farming practice of non-organic to organic (indicator 3.5) and of higher net profit per unit yield in Y4, to measure indicators 3.5 and 3.6.

Output 4: At least 1,000 households (c. 5,400 people) participate in community waste collection and safe disposal; at least 200 households (c.1,000 people/ approx. 50% of all HH in flood prone areas) benefit from improved sanitation systems in flood prone areas with eutrophication problems.

In Year 3, an additional 51 Handy Pods were installed, a waste separation system at one village was introduced, and the community-based waste management system continued.

Two of three indicators in output 4 were achieved until end of Y3. Activities to contribute to indicator 4.2 are not completed yet.

3.3 Progress towards the project Outcome

Participatory management systems, sustainable natural resource use and improved sanitation bring biodiversity benefits to the Indawgyi Lake Biosphere Reserve and livelihoods and health benefits to more than 10,000 residents.

Five of six indicators in the project outcome are already achieved at the end of Year 3. One indicator is in the process of implementation to meet the target.

a) *By the end of 2020, a collaborative management committee for Indawgyi Lake Biosphere Reserve will be established and operating*

   A biosphere reserve management committee was established and meetings with all relevant stakeholders have been conducted in 2018, 2019 and January 2021.

b) *Number of resident water-birds is stable or increasing throughout the project period (including increasing number of Sarus cranes, VU, feeding in the paddy fields as an indicator species)*

   Mid-winter count (Asia Waterbird Census) was conducted in January 2019, 2020 and 2021 together with local and national bird watchers and number of water birds recorded are 16,496, 25,358 and 22,264 respectively. Based on this counting result, the number of water birds significantly increased in Year 2 and slightly decreased in Year 3.

c) *At least 200 farming households (c.1,000 people, 50:50 male/ female) adopt organic farming practices near lakeshore areas with eutrophication problems, by the end of the project*

   Total of 205 farming households (M = 605, F = 573, Total = 1,178) followed PGS organic farming practices in 2020.

d) *By December 2020, at least 20 forest user-groups representing 1,000 households (50 households per forest group) adopt community forestry, agro-forestry practices, and establish wood lots*

   Total of 20 CF user group representing 981 households were established by the project in 2019 and they follow CF/AF practices and establish wood lots.

e) *By December 2020, at least 1,000 people (200 households/ approx. 50% of all households in flood prone areas) benefit from improved sanitation systems in the flood prone areas with most severe eutrophication problems*

The project has setup 101 Handy pods in 7 villages until end of Year 3. Due to Covid-19, the project will not be able to complete the target number of Handy pod setup by end of 2020 and due to the political coup, there was no activities in February and March 2021. The remaining Handy pods will be set up in May, June and July 2021.

f) *At least 6 villages establish community-based waste management systems; 5,400 people (1,000 households) benefit from waste collection, recycling and safe disposal, by project end*

By the end of Year 3, a total 2,907 households were actively participating in the villages waste management system.

3.4 Monitoring of assumptions

Overall the assumptions made are still valid and there have been few changes during the project and this reporting year, although it must be noted that COVID-19 restrictions came into force from last year and military coup happened in early February. We acknowledge that the COVID-19 outbreak challenges project activities and additional impacts from the military coup suspends project activities. During the next period of this project, FFI will closely monitor the effect of COVID-19 and the military coup on activities and communities at the project site.

- We assumed new Military government, which is de facto government starting from 1st February 2021, continues to support multi-stakeholder engagement in protected area management.
- The security situation in Indawgyi is moderately safe and travelling around is still possible.
- Total 20 CF user groups already applied CF application to forest department via park warden and the applications are under processing in departments.
- The market demand for value-added organic/ gluten-free rice products (rice flour) continues to grow.
- Improvements in waste management and sanitation lead to a decrease in water-borne disease and infection.
- Major natural disasters do not take place within the project sites and period that undermine the access to or availability of forest and forest products.
- If only organic agricultural inputs are in use then the chemical inputs and run off will proportionally reduce.
- Local communities willing to change behaviour in favour of improved sanitation and waste management. The initial assessment showed the household members which live on the lake shore are willing to improve the sanitation system.
- There are no significant lakeside developments in this project period that cause an additional source of untreated waste pollution to the lake. There is no development project on the lake site during the current government period.

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

- Total 193 farmers from 2020 growing season received the Myanmar PGS organic certification for their rice, vegetables, fruit trees and tea, and secondary crops (soya beans/ peanuts), and Indawgyi organic rice has already been distributed in local, Mandalay and in Yangon markets with 6% price higher than non-organic rice.

- The members of patrol units for both forest and lake patrols have significantly improved their capacity to control illegal activities particularly the fishery department improved their skills for patrolling and law enforcement operations. These activities reduced more than 50% illegal timber extraction and firewood collection.
- Total 27,039 peoples from seven villages are now aware of waste issues and now actively participating in the waste collection and landfill site management, reducing the negative impact of plastic pollution on land and in the lake.
- Local authorities in Indawgyi area have approved the handy pod sanitation program, which will improve the water quality and make a contribution to improved public health.
- Total 101 handy pods has been installed in seven villages.
- The farmers have increased capacity for growing and post harvesting processing (rice drying and milling) to produce a quality product for the export market. However, INFA staff are trying to familiarise with the rice mill and rice dryer handling system. It will need to collaborate and acquire experience from other rice mill owners to fine tune the mailing machine.

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

At impact level, this project supports SDG 15 by protecting and sustainably managing forests and associated biodiversity through collaborative protected area management contributing to Targets 15.1, 15.2, 15.5, 15.7.

Additionally, through the approach and activities, this project contributes to Target 1.1 by decreasing the number of people living on less than $1.25 per day through the introduction of post-harvest processing and production of value-added organic rice products that secure premium prices and for which market demand is increasing. Target 1.4 is addressed by securing legal access rights to forest and wetland resources through implementing newly designated buffer zones.

The project contributes to Target 2.4, by implementing resilient agricultural practices – organic rice and dry-seasons crops - that maintain ecosystem services, and that mitigate an emerging threat to land and water quality, namely chemical agricultural inputs. Women are actively involved in management and this project is ensuring women take meaningful decision making roles, thereby contributing to Target 5.5.

Promoting organic agriculture mitigates the use of chemicals, thereby safeguarding and improving water quality, contributing to Target 6.3. Addressing water and sanitation needs around the lakeside also contributes to Targets 6.2, 6.6 and 6b.

The project has contributed to sustainable production by promoting organic inputs and achieving organic certification, thereby positioning natural resources explicitly as the economic asset on which this economic activity depends. This decouples economic growth from environmental degradation, directly contributing to Target 8.4.

During the reporting period, the project contributed to Target 8.4 because of the project's support to farmers to achieve organic certification.

5. Project support to the Conventions, Treaties or Agreements

The project has supported 205 rice farmers to establish sustainable rice cultivation in the Indawgyi area to reduce the impact on the lake.

Sustainable rice cultivation is a particular area of focus for the CBD in Myanmar, recognizing the threats and opportunities posed by the industry. Target 7.1 is that 'By 2020, SRI and other forms of environmentally friendly rice production have been implemented in 10% of rice paddy area'. This project, through output 3, directly addresses this target and both supporting actions.

The NBSAP aims for improved management of protected areas. The project contributed to improved collaborative management of Indawgyi biosphere reserve, including collaborative patrolling and law enforcement.

6. Project support to poverty alleviation

The project is supporting poverty alleviation by improving the rice cultivation system from non-organic agriculture to organic agriculture to get higher prices for their products. The project also supported the market development for their product to link with the premium market for their quality products. In Year 2 and Year 3, Indawgyi organic rice received 6% higher price than non organic rice in regional and Mandalay markets.

In Year 3, a newly set up rice mill was operating and INFA received income from the rice mill.

7. Consideration of gender equality issues

Both women and men are key stakeholders in all aspects of the project. Men and women had equal opportunities to participate in trainings (about 80% Men and 20% Women) and meetings (about 80-90% Men and 10-20% Women). The project also encouraged women to become members of the community forestry and farmer groups. Green Land group who produce value-added products became Green Land Development Association and only composed of women membership.

However, in recognition of gender bias in activities such as CF, FFI organised a gender equality training workshop in Year 2, targeting FFI project staff and members of CSOs working in the Indawgyi area. The training developed guidelines for participatation of women across all project activities, and are now being applied from Year 3 activities onwards.

8. Monitoring and evaluation

The project was monitored and evaluated based on the project work plan and the agreed measurable indicators (Annex 1 and 2). There have been no changes to the M&E plan during the reporting period.

We shared progress to all partners involved in the proejct at the multistakeholder meeting in January 20201 to ensure they are up to date on overall project progress and that the project gets feedback from them. Montly progress update is also submitted to the forest department. The internal team supporting the M&E are:

- Finance Manager, Wint War Tun centrally evaluates financial issues and works closely with Eaint, Indawgyi finance officer;
- Mark Grindly – project management oversight provided feedback and technical support for Biospehere Reserve commiittee operation.

9. Lessons learnt

- A few organic farmers were not able to follow the PGS organic standard completely because of a labour shortage in weed management. To solve this labour shortage in weed management issue, the technical team will introduce low-cost organic weedicides and inter-cultivation tools to farmers in the coming Y4 training.
- Discharge water from Handy Pods with 2 tanks design installed in Year 2 and 3 released smell and affected some neighbouring households. Therefore, the project updated two different designs of Handy Pod: (1) Two tanks with filter sand bed for existing Handy Pod unit and (2) three tanks with filter sand bed for new installed Handy Pod.
- One of the waste management activities is giving talks on waste separation at waste collecting points to people disposing rubbish. This activity is an effective way to deliver knowledge of waste separation, indicated by an increased number of people who practice waste separation in Year 3.

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

No.	Comment	Action
1	Greater clarity (of reporting) would be achieved if revisions of the logical framework as suggested in the review to AR1 were to be made: '…consider amalgamating some of the activities; and SMARTen those indicators which are not currently time-bound; consider re-wording Outputs 3 and 4 (move targets to indicators); Consider an Outcome-level indicator to capture income benefit to farmers of adopting organic rice production'	We would like to request to revise Outcome indicator 3: "At least 200 farming households (c. 1,000 people, 50:50 male/ female) adopt organic farming practices near lakeshore areas with eutrophication problems, by the end of the project" To: "At least 200 farming households who practice organic farming increase minimum 10% of their income from organic farming"
2	Provide a summary of progress towards achievement of project Outputs in section 3.2 (rather than focusing on activities)	Followed in AR3.
3	Signpost relevant evidence in the narrative of the report; consider extracting/quoting data given in annexes; make it clear how Darwin funding fits into this larger project.	Followed in AR3.
4	Try to provide a balanced set of evidence that covers all aspects of the project	Followed in AR3.
5	Please fill in the final column of the table of Standard Measures (annex 3)	Followed in AR3.

11. Other comments on progress not covered elsewhere

Due to Covid-19 restrictions, the annual Indawgyi BR management committee meeting was not able to be held in 2020. Travel restrictions and village-based quarantine restrictions substantially impacted on organising training, meetings, field data collection and monitoring. Moreover, Myanmar had military coup in 1st of February 2021. Consequently, most of the project activities will not be able to implement from 1st February onwards. However, started from late April, some of the activities can be resumed with local project teams. Due to the difficulties faced by the coup and Covid-19 restrictions on completing activities, we submitted a project extension request on 30th March 2021 for an additional six months, to complete the delayed activities.

12. Sustainability and legacy

Sustainability has been built from the first year into the project approach through our focus on capacity building for local partners and by supporting local communities with the implementation of sustainable development interventions.

13. Darwin identity

All project activities with communities, partners and government stakeholders convey that the activities are supported by the Darwin Initiative, including publications, training materials and workshops resources featuring the Darwin Initiative logo.

14. Impact of COVID-19 on project delivery

Due to Covid-19 measures, travel is restricted and most community meetings have had to be postponed. Unavailability of public transportation during mid and end of 2020 has delayed market supply for organic products to regional markets. We have also not been able to hold training sessions due to Covid-19 restrictions and some trainers not being available in the project period.

Phone conversations have become the main communication media and exchanging of documents and materials among community has been delayed. Staff were not able to access project sites often due to village based quarantine restrictions developed during the pandemic.

To enable the project to complete all its activities, a six-month extension request was submitted on 30th March 2021, to revise the end date to the end of September 2021.

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 it 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)	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL				

The above figures are provisional; the actual spend will be confirmed by 31st May 2021, in time for the final Actuals Claim submission.

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
Impact The collaborative management and ecosystem services approach achieves effective biodiversity conservation and improved livelihoods in Indawgyi. Lessons learned are shared in Myanmar and through the global network of Biosphere Reserves.		Project progress updates were shared in Indawgyi BR management committee meeting and received the feedback from the committee. Organic farmers increased their income from organic rice because price of their organic rice got 6% higher than non-organic rice in Year 3. Monthly law enforcement patrol reduced illegal activities in the Wildlife Sanctuary compared to previous year.	
Outcome Participatory management systems, sustainable natural resource use and improved sanitation bring biodiversity benefits to the Indawgyi Lake Biosphere Reserve and livelihoods and health benefits to more than 10,000 residents.	1. By the end of 2019, a collaborative management committee for Indawgyi Lake Biosphere Reserve will be established and operating 2. Number of resident water-birds is stable or increasing throughout the project period (including increasing number of Sarus cranes, VU, feeding in the paddy fields as an indicator species) 3. At least 200 farming households (c. 1,000 people, 50:50 male/ female) adopt organic farming practices near lakeshore areas with eutrophication problems, by the end of the project 4. By December 2020, at least 20 forest user groups representing	1. A biosphere reserve management committee was established and meetings with all relevant stakeholders have been conducted in 2018, 2019 and January 2021. 2. Mid-winter count (Asia Waterbird Census) was conducted in January 2019, 2020 and 2021 together with local and national bird watchers and number of water bird are recorded 16,496, 25,358 and 22,264 respectively. Based on this counting result, number of water birds significantly increased in Year 2 and slightly decreased in Year 3. 3. Total of 205 farmers (M = 605, F = 573, Total = 1,178) followed PGS organic farming practices in 2020.	Key actions planned for next period: 1. N/A 2. One Sarus Crane population survey. 3. Together with INFA, awareness campaign will be conducted again for more farmer to follow the organic farming practice. 4. Providing technical support for CF/AF practices. 5. Additional 43 sanitation systems will be set up. 6. Waste segregation system will be introduced in two villages.

	1,000 households (50 households per forest group) adopt community forestry, agro-forestry practices, and establish wood lots 5. By December 2020, at least 1,000 people (200 households/ approx. 50% of all households in flood prone areas) benefit from improved sanitation systems in the flood prone areas with most severe eutrophication problems 6. At least 6 villages establish community-based waste management systems; 5,400 people (1,000 households) benefit from waste collection, recycling and safe disposal, by project end	4. Total of 20 CF user group representing 981 households were established by the project in 2019 and they follow CF/AF practices and establish wood lots. 5. The project has setup 101 handy pods in 7 villages until end of Year 3. Due to Covid-19 crises, the project will not able to complete the target number on handy pod setup by end of 2020 and due to coup, there was no activities in February and March 2021. The remaining hand pods will be set up in May, June and July 2021. 6. By the end of Year 3, a total 2,907 households were actively participating in the villages waste management system.	
Output 1. A decentralised and collaborative management committee and mainstreamed ecosystem services approach places the Indawgyi Lake Biosphere Reserve under management systems that respect integrated development and biodiversity needs	1.1 Collaborative multi-stakeholder Biosphere Reserve Management Committee operating by 2018 1.2 The Biosphere Reserve Management Committee is trained in collaborative protected area management by February 2019 and starts implementing integrated conservation and sustainable development plans 1.3 By end of the project improved law enforcement through collaborative patrolling; illegal commercial logging and firewood extraction, forest and	1. Township level multi-stakeholder BR management committee meeting was organized in January 2021 to update the 2019-20 conservation intervention and to discuss Biosphere Reserve operational plan 2021-2022. 2. Study tour to German Biosphere Reserves was cancelled in 2020 due to Covid-19 travel restrictions. 3. Due to intensive training and refreshment training, the law enforcement team improved their capacity and implement regular collaborative lake and forest patrols and law enforcement operations. 4. KAP survey was planned to conduct in Year 3. However, due to Covid-19 and coup, it has to be postponed to Year 4.	

	wetland encroachment reduced by 50% against baseline. 1.4 By December 2020, all BR stakeholder committee members exhibit improved environmental knowledge and attitudes against baseline knowledge, attitude and practice survey.		
Activity 1.1 Facilitate regular meeting of the Biopshere Reserve Indawgyi management/ stakeholder committee (quarterly)		Township level multi-stakeholder BR management committee meeting was organized in January 2021.	N/A
Activity 1.2 Facilitate regular meeting of the Indawgyi civil society network (bi-annual)		No network meeting in Year 3, only separate meetings with each CSO.	One network meeting in Year 4.
Activity 1.3 Facilitate regular meetings of law enforcement agencies (forest department, Indawgyi wildlife sanctuary/ biosphere reserve management authority, fisheries department police.		Forest department, fishery department and police occasionally met to prepare law enforcement plan.	N/A
Activity 1.4 Recruit and train local informant network		Completed this activity in Year 1.	N/A
Activity 1.5 Recruit local community rangers		Completed this activity in Year 1.	N/A
Activity 1.6 Establish two collaborative patrol units (5 pax each), including wildlife sanctuary rangers and community rangers for forest patrols		Completed this activity in Year 1.	N/A
Activity 1.7 Establish collaborative lake patrol team (fisheries department, WS, community ranger)		Completed this activity in Year 1.	N/A
Activity 1.8 Provide basic field equipment (GPS/ cameras/ field gear)		Completed in Year 1 and 2.	N/A
Activity 1.9 Provide initial SMART patrolling training to collaborative patrol units, on the job training first 3 month		Completed in Year 1.	N/A
Activity 1.10 Provide SMART refresher training		Completed in Year 1 and Cyber tracker training was organized in Year 2.	N/A
Activity 1.11 Monthly collaborative SMART patrols, operate informant network		Completed.	N/A

Activity 1.12 Annual UAV monitoring of encroachment and illegal logging areas		Completed.	Satellite image based assessment will continue on Year 4.
Output 2 Community forestry and agroforestry in designated buffer zones of Lake Indawgyi Biosphere Reserve reduce deforestation and forest degradation, while maintaining access to essential natural resources	2.1. At least 20 community forestry user groups established representing >1,000 households (c. 5,400 people, app. 50 households per group) by December 2018 2.2. At least 20 community forestry management plans established by December 2019 2.3. At least 20 wood lots established by December 2020 2.4. At least 20 community forestry licences issued by the end of the project 2.5. At least 50% of forest user group members utilise fire-wood saving or electric stoves. 2.6. The number of observable illegal logging roads in the project areas is reduced by at least 50% from project baseline to project end (post-monsoon)	1. Nine groups (549 households) in Year 1, 11 groups in Year 2 (442 households). Currently total 981 households are members of forest user groups. 2. Initial meetings for preparation of management plan was carried out in Year 2. The management plan was prepared in Year 3 already submitted to the Wildlife Sanctuary authority. 3. Twenty FUGs planted seedlings in their community forest area in Year 3. 4. Applications for community forestry licenses are in process. 5. Electrical power is now available in most villages and most of FUGs' members use electric stoves. 6. Five main logging roads were blocked to stop logging tracks go into the forest area in Year 1 and 2. The SMART patrol data indicated that there was a significant reduction in illegal logging.	
Activity 2.1. Establish forest user groups		Total 20 CF user groups (9 groups in Year 1 and 11 groups in Year 2).	N/A
Activity 2.2 Train forest user groups in forest inventory and forest management planning		Basic forest management was trained in Year 3.	N/A
Activity 2.3 Forest inventory and forest management planning		Forest inventory was not able to be conducted in Year 3 as CF user groups were focusing on field measurement and preparation of management plan for CF certification.	Forest inventory will be conducted in Year 4.
Activity 2.4 Train FUGs in tree nursery development		Twenty nine members from 20 FUGs received training in Year 3.	N/A

Activity 2.5 Establish and manage nurseries operational		Twenty FUGs established the nursery in Year 3.	N/A
Activity 2.6 Train FUGs in reforestation/ agroforestry techniques		Agroforestry plants propagation techniques was delivered along with CF/AF technical training.	N/A
Activity 2.7 Establish woodlots and agroforests		Total 20 FUGs established woodlots in Year 3.	No activity.
Activity 2.8 Facilitate community forestry certification?		Field measurement and documents preparation are already done and submitted to Indawgyi Wildlife Sanctuary authority in Year 3.	Follow up activity for CF certification.
Output 3 Organic rice farming and value-adding practices result in certified organic products that provide income to at least 200 households and protect wetland biodiversity	3.1 By May 2019, farmers representing 200 households, are trained in organic farming rules and concept of group certification 3.2 INFA operated rice mill established and processing milled rice by December 2020 3.3 By December 2019, at least 200 households (c.1,000 people) in the Indawgyi Lake Biosphere Reserve are using only organic agricultural inputs and zero chemical fertilisers and chemicals 3.4 By December 2020, at least 70% of target farmers have achieved organic certification by national and/or international standards 3.5 Household expenditure on non-organic agricultural inputs per unit yield has decreased from project baseline to end 3.6 Households are achieving a higher net profit per unit yield as a result of	1. Total 205 farmers were trained in both Year 2 and 3 for the organic farming rules and concept of group certification. 2. Rice mill is already setup and operating in Year 3. Rice mill business plan was under development. 3. Total 205 farmers followed the organic agriculture rules in Year 3. 4. In 2021, 193 farmers received PGS organic certificates and 60 farmers from 2019 also obtained Control Union for EU certificate. 5. The assessment will be conducted in Year 4. 6. The assessment will be conducted in Year 4. 7. Annual water bird counting was conducted in every January and the result show that the number birds significantly increased in Year 2 and slightly decreased in Year 3.	

	value-adding activities between project start and end (expected profits and income increases to be confirmed during business case development in Yr1) 3.7 Number of resident water-birds is stable or increasing (including the number of Sarus cranes feeding in the paddy fields indicator species for water quality/ absence of chemical contamination)		
3.1 Undertake participatory consultation with farmers to establish their knowledge and priority learning needs (knowledge baseline)		Conducted with the PGS farmers during the training and monitoring trip in Year 1, 2 and 3.	N/A
3.2 Develop training resources that are targeted to the farmer learning needs identified in 3.1, and pilot		Project worked with Myanmar Organic Grower and Producer Association for the PGS system training in Year 1, 2 and 3. Project also collaborated with Agricultural Department to obtain technical assistant.	N/A
3.3 Roll out amended training modules and offer refresher training		Dr. Than Than Sein from Myanmar Organic and Producer Association provided the training to the Internal control system and organic compose making.	N/A
3.4 Review the governance structure and capacities of the INFA and identify priority development needs to enable scale-up, pending the anticipated new membership numbers		Completed in Year 1.	N/A
3.5 In consultation with INFA and the organic certifier, agree timeline and responsibilities for the certification process		Completed in Year 1.	N/A
3.6 Train internal auditors		Organic Farmer groups were trained for Internal Control system by Dr. Than Than Sein and team.	N/A

3.7 Revise and update the INFA governance structures and financial control mechanisms	This activity was completed in Year 1. Project provided basic bookkeeping training and financial support for two full-time INFA staff members	N/A
3.8 Establish supply chain control points for rice and rice flour	In Year 1 and Year 2, INFA milled and distributed Indawgyi organic rice in the region and exported to Mandalay and Yangon. In Year 3, INFA produced organic rice from their own mill and continue distribution of it.	N/A
3.9 Set up and prepare for physical installation of rice mill	Rice mill already installed in Year 3 and operating now.	N/A
3.10 Procure rice mill	We conducted procurement for a rice mill, instead of a flour mill based on a cost-benefit analysis	N/A
3.11 Deliver training on rice mill use and maintenance	Two INFA members received training of rice mill handling and maintenance.	N/A
3.12 Develop INFA detailed 3 year business plan	Business plan is under development.	N/A
3.14 According to the business plan, identify the priority investments/ infrastructure/ capacities required and support INFA to address these	Rice mill was installed in Year 3.	N/A
3.15 According to business plan, establish local sales distribution systems for rice	INFA members milled the rice at own rice mill and distributed organic rice in Indawgyi region and to Mandalay. INFA also have an agreement to supply KhoKoeYar organic shop in Yangon.	
3.16 Support INFA to produce and sell rice	INFA staff are able to operate rice mill and distribute organic rice in Indawgyi region and to Mandalay organic market. The project is now supporting the development of local and regional market linkages.	

3.17 Base and end line surveys on household incomes and expenditures related to farming		The survey was postponed.	
Output 4 At least 1,000 households (c. 5,400 people) participate in community waste collection and safe disposal; at least 200 households (c.1,000 people/ approx. 50% of all HH in flood prone areas) benefit from improved sanitation systems in flood prone areas with eutrophication problems	4.1 By end of 2020, at least 200 new treatment systems are in place located in flood prone areas with severe eutrophication 4.2 Reduced pathogens (E-coli) and reduced littoral BOD during the flood season in near shore water in 2021 compared to base line data collected in 2018 and 2019 (wet and dry seasons) 4.3 By end of project, at least 1000 households in Lake Indawgyi area are participating in waste collection; land fill sites established in 3 villages where dumping of waste in the lake is most severe, paid for by users	1. A total 101 sanitation systems were set up in 7 villages in Year 2 and 3. Additional 43 system will be set up in Year 4. 2. In progress. 3. Project extended community-based waste management system at ten villages in Year 1, 2. In Year 3, the project also introduced a waste separation system. The project already over-exceeded the target with more than 2,900 households participating in community-based waste management.	
4.1 Develop a core team between Inn Chit Thu and Wetlands Work. Develop a HandyPod training programme for construction training and sanitation marketing using informational materials, presentations, workshops, field work, and demonstration sites		Since Year 1, Inn Chit Thu and Wetlands Work formed a group and started implementation of the sanitation activity. Handypod training programme was completed in Year 2.	N/A
4.2 ID and train local business operators from the target villages who serve the HandyPod's supply side elements		Local partner team from Lone Ton (a group of 3 people) already trained for handy pod setup method and total 101 handypods has been setup in 7 villages.	The setup will continue in Year 4.
4.3 Organise a Sanitation Raffle (lucky draw) for flood-prone households in each target village involving various leadership levels; promotion, prizes, events coordination		Sanitation Raffle was postponed and only flood-prone households survey was able to be conducted in Year 3.	
4.4 Install winning HandyPods in dry season		No activities in Year 1, 2 and 3.	

4.5 Provide faecal sludge management guidance and demonstrations	From end of Year 2, every newly installed handypods were shipped with maintenance guideline.	Continue activity in Year 4.
4.6 Monitor and evaluate initial target village strategies; adapt as needed	Monitoring and evaluation was carried out in Year 2 and 3. The result indicated that one additional HandyPod box (total 3 boxes) needed to be set up in order to reduce smell from discharge water.	N/A
4.7 Explore and specifically define broader scale up of sanitation activities around Lake Indawgyi	No activity in Year 3.	Inn Chit Thu will explore opportunities to upscale the household waste water treatment system
4.8 Establish baseline information: nearshore pathogens (E. coli) and algal mat density in Year I wet and dry season	Evaluation of E.coli density was delayed.	Looking at possible way for analysing of E.coli at Lab in Yangon.
4.9 Develop waste management awareness materials	Waste awareness signboards were developed and erected at 6 villages in Year 2 and 3.	N/A
4.10 Implement waste management awareness campaign	Waste awareness frequently conducted by ISDA with small groups of people along with the waste collection truck.	N/A
4.11 Facilitate establishment of village-based waste management systems, identify supply chain for recycling materials	The project provided financial support to the one CSO (ISDA) and one CBO to establish village-based waste management systems.	N/A
4.12 Establish village land fill sites for safe disposal of waste	Project supported ISDA and one CBO to develop landfills and maintain 6 dump sites. ISDA also developed methods for plastic burning stove.	N/A
4.13 Provide support to the new waste collection system	The project supported the establishment of a weekly waste collection system in ten villages.	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
Impact: The collaborative management and ecosystem services approach achieves effective biodiversity conservation and improved livelihoods in Indawgyi. Lessons learned are shared in Myanmar and through the global network of Biosphere Reserves. .			
Outcome: Participatory management systems, sustainable natural resource use and improved sanitation bring biodiversity benefits to the Indawgyi Lake Biosphere Reserve and livelihoods and health benefits to more than 10,000 residents.	0.1 By the end of 2019, a collaborative management committee for Indawgyi Lake Biosphere Reserve established and operating 0.2 Number of resident water-birds is stable or increasing throughout the project period (including increasing number of Sarus cranes, *VU*, feeding in the paddy fields as an indicator species) 0.3 At least 200 farming households (c.1,000 people, 50:50 male/ female) adopt organic farming practices near lakeshore areas with eutrophication problems, by the end of the project 0.4 By December 2020, at least 20 forest user groups representing 1,000 households (50 households per forest group) adopt community forestry, agro-forestry practices, establish wood lots and reduce the consumption of firewood 0.5 By December 2020, at least 1,000 people (200 households/ approx. 50% of all households in flood	0.1 Government decision on management committee and minutes of committee meetings 0.2 Annual mid-winter bird water census 0.3 Organic farming certificates, internal annual audit and inspection reports 0.4 Community forestry management plans, CF certificates, annual forest user group reports 0.5 Annual sanitation assessment to verify numbers of HH adopting improved sanitation.	Myanmar government continues to support multi-stakeholder engagement in protected area management The security situation in Indawgyi remains moderately safe and travel around is still possible. Myanmar government continues to support the issuance of community forestry licences in buffer zones of protected areas The market demand for value-added organic/ gluten-free rice products (rice flour) continues to grow Improvements in waste management and sanitation lead to a decrease in water-borne disease and infection

	prone areas) benefit from improved sanitation systems in the flood prone areas with most severe eutrophication problems 0.6 At least 6 villages establish community-based waste management systems; 5,400 people (1,000 households) benefit from waste collection, recycling and safe disposal, by project end	0.6 Annual waste management assessment of the adoption of community-based waste management systems and number of households that join waste collection system	
Output 1 A decentralised and collaborative management committee and mainstreamed ecosystem services approach places the Indawgyi Lake Biosphere Reserve under management systems that respect integrated development and biodiversity needs	1.1 Collaborative multi-stakeholder Biosphere Reserve Management Committee operating by 2018 1.2 The Biosphere Reserve Management Committee is trained in collaborative protected area management by February 2019 and starts implementing integrated conservation and sustainable development plans 1.3 By end of the project improved law enforcement through collaborative patrolling; illegal commercial logging and firewood extraction, forest and wetland encroachment reduced by 50% against baseline. 1.4 By December 2020, all BR stakeholder committee members and at least 70% of all beneficiaries exhibit improved environmental knowledge, attitude and behavior against baseline KAB survey.	1.1 Minutes of meetings 1.2 Training reports/ participant evaluation; annual Biosphere Reserve progress reports for the of implementation of the 5 year management plan 1.3 Monthly SMART patrol reports, drone-based threat assessment at the beginning and end of the project. 1.4 Minutes of meetings of BR stakeholder committee; Knowledge/Attitude and Behaviour surveys pre and post project interventions.	Myanmar government continues to support multi-stakeholder engagement in protected area management
Output 2 Community forestry and agroforestry in designated buffer zones of Indawgyi Lake Biosphere Reserve reduce deforestation and forest degradation,	2.1. At least 20 community forestry user groups established representing >1,000 households (c. 5,400 people, app. 50 households per group) by December 2018	2.1. Training reports (participant evaluation, monitoring & evaluation reports	Myanmar government continues to support the issuance of community forestry licences in buffer zones of protected areas

while maintaining access to essential natural resources	2.2. At least 20 community forestry management plans established by December 2019 2.3. At least 20 wood lots established by December 2020 2.3. At least 20 community forestry licences issued by the end of the project 2.6. At least 70% of forest user group members utilise fire-wood saving or electric stoves. 2.7. Reduction of illegal logging roads by at least 50% 2.8 Pilot timber harvesting in 6 year old established CF based on VPA timber legality standards	2.2. Group formation reported to forest department 2.3.Community forestry management plans 2.4. Annual reports on Community forestry implementation 2.5. Community forestry certificates. 2.6. Firewood household survey before and post interventions. 2.7. UAV survey at the beginning and end of the project 2.8 Forest department licence for first legal CF timber harvest in existing CF	Major natural disasters do not take place within the project sites and period that undermine the access to or availability of forest and forest products. Forest Department issues licence for pilot CF timber harvesting based on VPA standards
Output 3 Organic rice farming and value-adding practices result in certified organic products that provide income to at least 200 households and protect wetland biodiversity	3.1 By May 2019, farmers representing 200 households, are trained in organic farming rules and concept of group certification 3.2 INFA operated rice mill established and processing milled rice by December 2020 3.3 By December 2019, at least 200 households (c.1,000 people) in the Indawgyi Lake Biosphere Reserve are using only organic agricultural inputs	3.1 Training reports 3.2 Rice mill (INFA equipment register) records showing volumes processed 3.3 Stock control, invoices and financial records showing volumes sold; prices and income to INFA by household. 3.4 Organic certification	Local and regional markets for organic rice and gluten free products continues to grow during the project period The domestic and international markets for organic rice products continues to grow during the project period SMM remain financially stable and committed to developing the Indawgyi supply chain

	and zero chemical fertilisers and chemicals 3.4 By December 2020, at least 70% of target farmers have achieved organic certification by national and/or international standards 3.5 Household expenditure on non-organic agricultural inputs per unit yield has decreased from project baseline to endline 3.6 Households are achieving a higher net profit per unit yield as a result of value-adding activities between project start and end (expected profits and income increases to be confirmed during business case development in Yr1) 3.7 Number of resident water-birds is stable or increasing (including the number of Sarus cranes feeding in the paddy fields – indicator species for water quality/ absence of chemical contamination)	3.5 Receipts showing expenditure for farm inputs 3.6 Receipts showing purchase of rice & rice flour/income for INFA members 3.7 Annual mid-winter water bird census	If only organic agricultural inputs are in use then the chemical inputs and run off will proportionally reduce.
Output 4 At least 1,000 households (c. 5,400 people) participate in community waste collection and safe disposal; at least 200 households (c.1,000 people/ approx. 50% of all HH in flood prone areas) benefit from improved sanitation systems in flood prone areas with eutrophication problems	4.1 By end of 2020, at least 200 new treatment systems are in place located in flood prone areas with severe eutrophication 4.2 Reduced pathogens (E-coli) and reduced littoral BOD during the flood season in nearshore water in 2021 compared to base line data collected in 2018 and 2019 (wet and dry seasons)	4.3 Photo evidence of treatment systems 4.1 Repeat pathogen survey report showing reduced level of pathogens (E-coli)	Local communities willing to change behaviour in favour of improved sanitation and waste management There are no significant lakeside developments in this project period that cause an additional source of untreated waste pollution to the lake.

	4.3 By end of project, at least 1000 households in Lake Indawgyi area are participating in waste collection; land fill sites established in 3 villages where dumping of waste in the lake is most severe, paid for by users	4.3. Village waste collection agreements; photo documentation of land fill sites	
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)			

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
6A.	No. of farmers received Internal control system training for organic certificate application and compose making	Male: 150, Female: 43		80	157	193	430	200
6A.	Number of people to receive SMART Patrol training	Male: 17		17	17		34	17
6A	Number of people to receive Community Forestry training	Male: 25, Female: 4	Shan and Kachin	30	36	29	95	50
6A	Number of people receive sanitaion training	5 male, 1 female	Shan	6	6		12	6
14B	Number of persons attend workshop to present law enforcement	1 Female		0	1	0	1	1
7	Number of information leaflets or posters on the Community foresty	NA		100	100	100	300	300
7	Number of information leaflets or posters on organic rice project	NA		100	100	100	300	300
7	Number of information lealfets or poster on saniation.	NA			100	30	130	200

Annex 5: Report List

The following reports are available on request from FFI, or for download via the links in the table.

Name of Reports	PDF Link
Report #1, Community Forestry Annual Progress Report, IDGWS (Jan 2020-Jan 2021)	Here
Report #2, PGS Inspection Trip Report (Jul 2020)	Here
Report #3, PGS Inspection Trip Report (Aug 2020)	Here
Report #4, Progress on Organic Farming in IDGWS (2020)	Here
Report #5, Report on Floodplain Sanitation for Lake Indawgyi (2018-2021)	Here

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