



Darwin Initiative: Final Report

To be completed with reference to the “Writing a Darwin Report” guidance: (<http://www.darwininitiative.org.uk/resources-for-projects/reporting-forms>). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Darwin Project Information

Project reference	24-019
Project title	Developing a Community Based Ecotourism Model at Lake Natron, Tanzania
Country/ies	Tanzania, United Republic of Tanzania
Lead organisation	BirdLife International
Partner institution(s)	Tanzania Wildlife Authority (TAWA), Ngare Sero Eramatare Community Development Initiative (EECDI), Tanzania Association of Tour Operators (TATO), Tanzania Tourist Board (TTB), Honeyguide Foundation, Monduli District council, Ngorongoro District council and Longido district council, Nature Tanzania and Maasai Pastoralist Development Organization (MPDO-LARETO).
Darwin grant value	£311,351
Start/end dates of project	July 2017 – June 2020
Project Leader name	Ken Mwathe
Project website/blog/social media	https://www.birdlife.org/worldwide/news/bumper-breeding-season-flamingo-factory-lake-natron
Report author(s) and date	Ken Mwathe, Emmanuel Mгимwa, Lebaraka Laizer, Lebanguty Lekitony, 30 th October 2020

1 Project Summary

The project is implemented at Lake Natron Ramsar Site in Tanzania, East Africa. Lake Natron and Engaruka is listed by BirdLife International as an Important Bird Area (IBA) (see map below). Lake Natron is the most important breeding site for the Lesser Flamingo in the world. East Africa has 1.5-2.5 million lesser flamingos, representing 75% of the global population, all of these being hatched at Lake Natron. The breeding site is located in the three districts of Ngorongoro, Monduli and Longido in Arusha Region, Tanzania.

Until recently, Lake Natron was listed as an IBA in Danger (a set of IBAs requiring urgent action) as a result of the long-standing soda ash mining threat. In 2020, following ten years of campaigning by BirdLife International and collaborating institutions, the Government of Tanzania officially decided against locating the soda ash mine at Lake Natron and Lake Natron continues to be a breeding site for Lesser Flamingos.

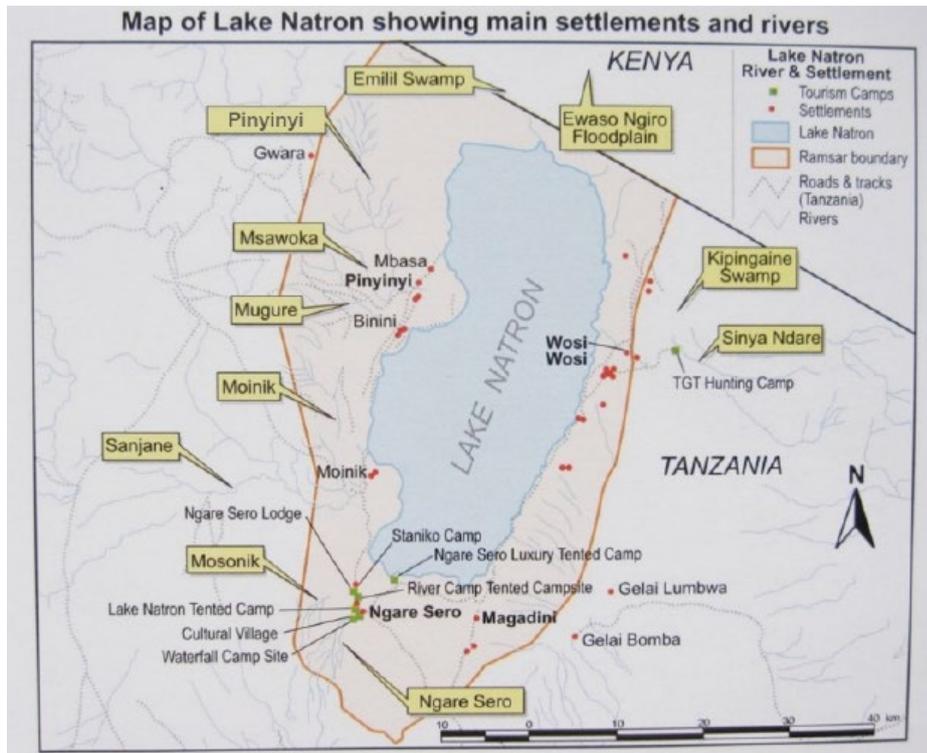


Figure 1: Location of main settlements, rivers (named in yellow boxes) and tourist sites at Natron. Tourism-related developments are concentrated around the Ngare Sero village in the South-West.

The project aimed at enhancing the conservation and protection of this key wetland site and its unique biodiversity. It improved ecological integrity by protecting key wetlands and developing a Catchment Action Plan (CAP). The wellbeing and livelihoods of communities at the site was improved through establishment of a sustainable, community-based eco-tourism business. The specific challenges addressed included:

- Socio-economic landscape and poverty:** More than 20,000 community members live around Lake Natron, of which 5,000 live in Ngare Sero Village, the centre of project implementation. The main economic activities which local communities engage in include ecotourism, livestock keeping, small businesses and small-scale irrigation at Pinyinyi village. Project baseline information showed the average income before the project was \$31 for men, \$52 for women and \$46 for youths. At the end of the project, the average monthly incomes increased to \$60 for men; \$75 for women and \$65 for youth.
- Poorly coordinated tourism development:** For many years, local communities at Lake Natron have been unable to capitalize on the unique tourism potential of the ecosystem. Even though Lake Natron is an important Ramsar Site (wetlands of global importance for biodiversity conservation) and is remarkable for supporting the breeding of 75% of the global Lesser Flamingo population, the site attracts on average 4,100 tourists per year (c.f. ~90,000 visitors to the Serengeti). The poor coordination of tourism and development at Lake Natron is primarily due to the lack of a Tourism Development Plan (TDP). Historically, 50% of Serengeti visitors passed through Lake Natron. However, a lack of security, bad roads and multiple tourism levies have discouraged visitors, reducing this percentage to a mere 4.4%. By 2017 security had been restored and roads are being upgraded, so if tourism levies can be consolidated and an agreed TDP put in place, it is anticipated that tour companies and investors will return¹.

¹ Serengeti National Park alone receives 90,000 visitors each year. Ecotourism must be supported at Lake Natron as opposed to mass tourism in order to preserve the ecosystem integrity.
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- **Inadequate appreciation of Lake Natron’s value for biodiversity and ecotourism:** The value of wetlands for sustainable development through the provision of ecosystem services is rarely appreciated across East Africa. The project raised awareness on the value of the lake ecosystem for the provision of clean water, sustainable land use and a workable ecotourism model, and successfully highlighted the long-standing threat to Lake Natron from soda ash mining. Tata Chemicals Limited proposed the initial soda ash mining plan in 2006, aiming to produce 500,000 tonnes of soda ash per year. In response, BirdLife International led an intensive campaign in partnership with 56 other conservation organizations, which cited possible decimation of flamingos through damage to the breeding grounds and affecting the integrity of the lake as an international flyway and a wetland of international importance. The campaign led to Tata’s withdrawal in 2008. However, the threat remained as the Tanzania Government, through the National Development Corporation (NDC), maintained interest in mining soda ash from Lake Natron actively exploring ways to actualise the mining proposal by looking for other potential investors but failed. BirdLife International’s continuous presence and the support of local communities have been instrumental in blocking these efforts. In February 2020, the Government of Tanzania announced its withdrawal of the soda ash mining plan. While encouraging, there remains a need for continued engagement with the government and maintained community awareness and engagement.
- **Inadequate capacity for local people to run ecotourism businesses for improved livelihoods:** A 2014 Cost Benefit Analysis conducted by the Department of Agricultural Economics and Agribusiness, BirdLife International, the Royal Society for the Protection of Birds (RSPB) and the Faculty of Forestry and Nature Conservation, Sokoine University of Agriculture, showed that tourism was a better livelihood option than soda ash mining² but benefits had not fully reached local people due to:

 - Limited skills amongst local communities to run sustainable ecotourism enterprises.
 - Limited community knowledge on their rights and governance for informed decision making regarding natural resources, especially land.
 - Limited support from government and other stakeholders for alternative sustainable livelihoods.
- **Degradation of wetlands, rivers and springs providing freshwater, vital for flamingo breeding and for sustaining biodiversity and communities:** Catchment degradation, overgrazing, over abstraction of water and sedimentation were amongst the key challenges at Lake Natron. The Tanzania Flamingo Action Plan, developed by the Ministry of Natural Resources and Tourism in consultation with stakeholders including BirdLife, recommended catchment protection through tree planting and water quality monitoring to protect water supplies for communities and biodiversity.
- **Shortage of replicable models applicable across East Africa:** By successfully demonstrating how community-based ecotourism at Lake Natron can lead to enhanced livelihoods and improved biodiversity conservation, the lessons learned and examples of best practice from Lake Natron was shared throughout Tanzania and more widely into East Africa. By raising awareness amongst NGOs, government agencies and other key stakeholders in the tourism industry, the Lake Natron model can be used to benefit the conservation of other important ecological sites across East Africa and address the shortage of replicable community-based ecotourism models.

² http://www.birdlife.org/sites/default/files/attachments/Journal%20of%20Environmental%20Research_Natron_CBA.pdf
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2 Project Partnerships

The Lake Natron Darwin Initiative Eco-tourism Project had eight partners; Tanzania Wildlife Authority (TAWA), District Councils of Monduli, Ngorongoro and Longido, the Ngare Sero Eramatare Community Development Initiative (EECDI) all representing their respective communities, Tanzania Association of Tour Operators (TATO), Tanzania Tourist Board (TTB), the Honeyguide Foundation, and the Arusha Regional Administrative Secretary (RAS) office. The partnership with all these institutions grew and remained strong throughout the project life. By working closely with these NGOs and government institutions, the partnership has strengthened capacity at the local level, especially the EECDI, village and ward governments, through the design and delivery of training and capacity building sessions. The curriculum, topics and handouts for ecotourism and business management trainings were designed with the Maasai Development Organization (MPDO – LARETO³), TTB, TATO and the RAS office, in consultation with the EECDI, village and ward governments.

Nature Tanzania which was not originally listed as a partner (as it was being established), was incorporated as a key project partner after signing the 2017 Memorandum of Understanding with BirdLife International as the main conservation NGO that BirdLife will work with in Tanzania. BirdLife will work with Nature Tanzania, providing technical support and training and in the longer term it is planned that Nature Tanzania will become a full BirdLife Partner once they meet all the BirdLife criteria⁴.

The Project Steering Committee (PSC)⁵ that coordinated project implementation (see details in PMA.5 below), was instrumental in bringing together partners and stakeholders to discuss project progress, achievements, challenges and provide crucial advice on project implementation. All project partners and PSC members were involved in making project decisions, for example, in the development and validation of the Tourism Development Plan (TDP).

One key strength and lesson was the involvement of various levels of government led by the office of the Regional Administrative Secretary. The RAS agreed to chair the Project Steering Committee from project inception and this provided a home for the project within government. It was therefore easy to receive goodwill and technical support from government officials at district, ward and village level throughout the project. The main project output, the TDP also found a home and became a government document once produced.

Project involvement and partnership with a local Community Based Organisation (CBO), Ngare Sero Eramatare Community Development Initiative EECDI⁶ also proved effective. The establishment and operation of the Community Revolving Fund (CRF) at Ngare Sero⁷ village depended on the ability of the CBO to manage it with support from BirdLife and other project partners. The project dedicated considerable time on developing the operational procedures which put in place checks and balances on selection of beneficiaries and loan disbursement.

³ LARETO means “self-help” in Maasai language

⁴ BirdLife criteria include governance, financial management, conservation, membership and ability to work at a national level.

⁵ PSC comprised of Arusha Regional Administrative Secretary (RAS) office, Lake Natron Ramsar Site office, Ngare Sero Village government, Pinyinyi village government, Magadini village government, Engaruka village government, Oldonyo Lengai village government, Ngare Sero Eramatare Community Development Initiative (EECDI) (Coordinator), District councils of Ngorongoro, Longido and Monduli, Tanzania Tourist Board (TTB), Tanzania Association of Tour Operators (TATO), Nature Tanzania, MPDO Lareto, Honeyguide Foundation and BirdLife International.

⁶ The EECDI employs 80 local tour guides but supports and builds capacity on up to 200 guides. They also support over 50 women who are under the Ngare Sero cultural boma but mobilised more than 500 women involved in beadwork. Most importantly, the EECDI coordinates and implements the Community Revolving Fund and other projects that benefit over 5,000 communities at Ngare Sero village with the supervision of the village government.

⁷ ‘Ngare Sero’ is used throughout the report to refer to the village to the South of Lake Natron which is its gateway, and ‘Ngare Sero’ is used to refer to the local CBO.

BEOP, the EECDI and supporting partners successfully established, implemented and grew the CRF (see section 3.1)

One key challenge faced at the beginning was how to handle information on credibility of one of the listed project partners. Honeyguide Foundation (HGF) was meant to lead in the development of the TDP. However, just before the project started, we became aware of damaging information on their credibility. Whilst not proven, it was clear that the project could not entrust such a key output to HGF. The project team moved quickly to consult with other project partners, the BirdLife project support team in Cambridge, and Darwin Initiative through LTSI. The project team proposed that all stakeholders be part of a TDP development committee and would appoint a Consultant to lead the process. The TDP Committee would then report to the Project Steering Committee. This approach was agreed across the board and the result was the iconic Tourism Development Plan emblazoned with the Coat of Arms of the Government of Tanzania (see section 3.1)

There is no doubt that partners will continue to maintain relationships after the project ends, with the Community Revolving Fund (CRF) and Tourism Development Plan as strong examples of this. The CRF was set up as a perpetual fund to support small businesses amongst the community. Its set up is such that Nature Tanzania, the office of the RAS, district, ward and village governments will continue to monitor its performance annually. Key elements of the Tourism Development Plan such as the revenue sharing mechanism will also bring stakeholders together as there are ongoing discussions in that regard. Nature Tanzania will make every effort to ensure that matters of Lake Natron continue to be highlighted during coordination meetings between the RAS office and the districts which takes place at least twice per year. Nature Tanzania will also continue to engage the PSC members regularly and updating them on the fundraising efforts.

This report was compiled with input from Nature Tanzania, EECDI and the office of the Regional Administrative Secretary Arusha (representing Districts) and MPDO Lareto.

Below is the list of most of the Acronyms used in this report:

AEWA - the African Eurasian Waterbird Agreement
BEOP – By End of the Project
BEOY2 – By End of Year 2
CAP – Catchment Action Plan
CBO – Community Based Organisation
CITES - the *Convention on International Trade in Endangered Species*
CMS - The Convention on the Conservation of Migratory Species of Wild Animals
COVID-19 – Corona Virus Disease 2019
CRF – Community Revolving Fund
DO – Dissolved Oxygen
EC – Electrical Conductivity
EAC – East Africa Community
EECDI – Ngare Sero Eramatare Community Development Initiative
ENHWS - Ethiopian Natural History and Wildlife Society
GBP – Great Britain Pound
GEF – Global Environment Facility
HGF – Honeyguide Foundation
IBA – Important Bird and Biodiversity Area
ISE - Ion-Selective Electrode
ITPGRFA - The International Treaty on Plant Genetic Resources for Food and Agriculture
KBA – Key Biodiversity Areas
LVBC – Lake Victoria Basin Commission
M&E – Monitoring and Evaluation
MPDO – LARETO – Maasai Pastoralist Development Organisation
MoV – Means of Verification
NCA – Ngorongoro Conservation Area

NCAA – Ngorongoro Conservation Area Authority
NDC – National Development Corporation
NGO – Non-Governmental Organisation
NT – Nature Tanzania
NTU – Nephelometric Turbidity Units
PMA – Project Management Activities
PFM – Participatory Forest Management
PSC – Project Steering Committee
RAS – Regional Administrative Secretary
RSPB – The Royal Society for Protection of Birds
SDG – Sustainable Development Goals
TANAPA – Tanzania National Parks
TATO – Tanzania Association of Tour Operators
TAWA – Tanzania Wildlife Management Authority
TAWIRI – Tanzania Wildlife Research Institute
TBC – Tanzania Broadcasting Corporation
TDP – Tourism Development Plan
TMA – Tanzania Meteorological Agency
TTB – Tanzania Tourist Board
TV - Television
UNDP – United Nations Development Program
UNFCCC - The United Nations Framework Convention on Climate Change
VEO – Village Executive Officer

3 Project Achievements

3.1 Outputs

Output 1: A COHERENT TOURISM DEVELOPMENT PLAN (TDP) AND CLEAR REVENUE SHARING MECHANISM IN PLACE.

Activity 1.1 Recruit consultant for market analysis and Tourism Development Plan (TDP)

Mr. Lota Melamari, a retired civil servant with a strong background and experience of tourism and sustainable conservation in Tanzania and across Africa, was recruited as a consultant for market analysis and TDP development. A former Director General of the Tanzania National Parks Authority (TANAPA) he previously supported Mozambique in building their capacity in wildlife conservation and sustainable management. Being Maasai he was able to engage local communities in their own language. Contract attached as Annex 7.

Activity 1.2 Collect data on ecotourism businesses conducted at Lake Natron including value chain.

Data and information on ecotourism business at Lake Natron was collected and included in the TDP document (Annex 8 section 8). Data collection was conducted by the TDP lead consultant, Mr. Lota Melamari, with key inputs from Ngare Sero Eramatare Community Development Initiative (EECDI) and enriched with input from other project partners, the Project Steering Committee (PSC) members and the TDP Multi-stakeholder committee. The collected data was used by the EECDI to develop the business plan to advise their operations.

The data is also advising the government specifically the Tanzania Tourist Board (TTB) and Tanzania Association of Tour Operators TATO inform areas which need development as well as in marketing plans for the Lake Natron. The data collected was compiled and included in the final Tourism Development Plan (TDP) in Annex 8 page 40.

Activity 1.3 Support production of ecotourism market analysis report (as part of TDP)

Ecotourism market analysis report for Lake Natron was produced and included in the TDP. The study identifies four key source countries as Germany, the United Kingdom, United States and Italy as primary source markets, and it proposes that France, the Netherlands, Canada, Australia

and Spain, be categorised as 'secondary existing mature source markets'. The strategy names China, Russia, Turkey, Brazil and the Gulf States as potential new source markets. The ecotourism market analysis report is included in the final TDP document in Annex 8 page 40.

Activity 1.4 Collect data and consult with stakeholders on TDP and revenue sharing plan (as part of TDP)

The revenue sharing plan can be seen on page 57 of the TDP - in Annex 8. Collection of data and information for the TDP was led by the TDP lead consultant. Data collection included desk review of reports, legal and policy frameworks and tourism publications. It also involved field visits and stakeholder consultations. The TDP team was established in February 2018 with the aim of supporting data collection and drafting of the TDP. The team conducted consultations and meetings with community members, local government leaders and tourism leaders of Ngare Sero, Pinyinyi, Magadini, Engaruka, Oldonyo Lengai and Wosiwosi villages. Further consultations were made between February 2018 and August 2018 with key tourism stakeholders in Arusha and Dodoma including the Ministry of Natural Resources and Tourism. The list of those consulted are listed on pages 62-68 of the TDP.

The key recommendation from the Revenue Sharing Plan is that financial gains from ecotourism business should come through competitive performance.

- i. The Ngare Sero Eramatare Community Development Initiative (EECDI) and their guides should not have a monopoly in the guiding of visitors to explore various amenities and attractions
- ii. The Government Institutions should continue to levy taxes and collect fees on tourism enterprises operating at Lake Natron, but this needs to be done in a rational manner – including by ensuring benefits are equitably shared.
- iii. The Tanzania Wildlife Agency (TAWA) should collect entry fees which support conservation of the site (the fees are used to employ the Ramsar Site manager).
- iv. The three District Councils should find discrete areas within the tourism businesses to charge fees and not continue the present system that results in double charging of entry fees.
- v. The communities have a niche through guiding and through the sale and rent of land.

Activity 1.5 Support production of the TDP and share with stakeholders

The final TDP document was produced in both English and Swahili and endorsed by the Arusha Regional Government in March 2020. The March 2020 formal launch of the TDP was cancelled due to public health concerns in light of the COVID-19 pandemic. Nevertheless, 200 copies were printed and distributed in March/April 2020 using a distribution list agreed with the Arusha Regional Administrative Secretary (RAS) office (Annex 9). Government agencies and project partners that received the report included the Arusha RAS office, Tanzania Wildlife Management Authority (TAWA), Tanzania Tourist Board (TTB), Tanzania Association of Tour Operators (TATO), other Non-Governmental Organizations (NGOs), Tour Operators and Community-Based Organizations (CBO). A soft copy of the TDP is available on BirdLife's⁸ and Nature Tanzania's⁹ websites. In August 2020, a Swahili version of the TDP was produced and distributed to various Stakeholders. The Swahili version is attached as Annex 29.

⁸ https://www.birdlife.org/sites/default/files/final_tdp_pgs_signed.pdf

⁹ <https://www.naturetanzania.or.tz/technical-publications/>

Activity 1.6 Organize a multi-stakeholder TDP validation and tourism revenue-sharing harmonisation meeting.

The TDP Multi-stakeholder validation meeting was held on the 24th September 2018 at Twiga Lodge and Campsite in Mto wa Mbu, Arusha region. Coordinated by the TDP lead consultant, Mr. Lota Melamari, and the project team, it was chaired by the Arusha Regional Tourism Officer from the RAS office, with support from John Salehe (Nature Tanzania) and Emmanuel Mjimwa (Project Manager), and involved all project partners. The meeting was held to review and improve the second draft of the TDP document (circulated to all relevant parties a month before the meeting). The draft was translated into Swahili and shared with local communities to ensure they were able to take a central part in the review and improvement of the TDP draft document. It was great to note that during the meeting, local communities read and understood the document and provided insightful and valuable inputs. The meeting was attended by a total of 48 participants (8 females). The report of the TDP validation meeting is attached as Annex 10.

Output 2: IMPROVED CAPACITY FOR ECOTOURISM BUSINESS AND NATURAL RESOURCES DECISION MAKING

Activity 2.1 Organize training on ecotourism and business management for men and women, and youth and follow up training in villages by trainees. Conduct post-training self-assessment to training participants

Ecotourism training at Ngare Sero village was conducted from 5th to 6th June 2018, at Engaruka Juu and Chini, Oldonyo Lengai on 26th June 2018 and for Pinyinyi village on 29th - 30th June 2018. Business management training for Engaruka Juu and Chini, Oldonyo Lengai and Irendeni was conducted on 27th June 2018, for Pinyinyi village on 1st July 2018 and for Ngare Sero and Magadini villages on 3rd and 4th July 2018. The training was delivered to local tour guides and communities from Engaruka Juu and Chini villages, Magadini village, Oldonyo Lengai, Irendeni village, Ngare Sero and Pinyinyi village. The training was conducted by consultants, Mr. Rajabu Mapunda and Mr. Amani Sikone Laizer with support from Project Manager, Mr. Emmanuel Mjimwa.

In all the villages, a total of 109 participants (6 of them female) were trained in ecotourism, while 255 (152 of them females) were trained in business management, ethics, and customer relations. The prevailing view within the Maasai community at the start of the project was that tour guiding was a primarily male profession. The project strongly recommended to village members and leaders that women be encouraged to become tour guides, and the 6 women who attended the training demonstrate a shift in attitudes. Most attending the training own or operate businesses; including restaurants, shops, bead making, keeping livestock, small scale farming (horticulture), local campsites, grocers and smaller vendors. The objective of the training was to improve the capacity and skills of local tour guides and women and men conducting ecotourism related business. Post training surveys indicated 100% of the tour guides “strongly agreed” that their visitor management, customer care, tour guiding ethics and campsite management capacity has improved after the training. All 74 interviewed tour guides also “agreed” that their confidence on tour guiding and ecotourism management and operation have improved after the training. The detailed ecotourism and business management training report is attached with this report as Annex 11.

At the end of the training, the participants were given handouts and presentations in Swahili. Training for village leaders from Ngare Sero, Pinyinyi, Magadini, Engaruka Juu and Oldonyo Lengai villages as well as EECDI was conducted at Pinyinyi village on 30th July 2018. This training equipped leaders with the vision and skills to support the implementation of various ecotourism activities at Lake Natron. This training was also used to train local tour guides and businesswomen and men on the disbursement of loans through the Community Revolving Fund

(CRF). A total of 252 people (152 women, 71 young people, 29 men) were trained in effective utilization and disbursement of the revolving fund during Year 2 business management training.

To address a knowledge gap in marketing beadwork, the project supported nine Maasai women from Ngare Sero and Oldonyo Lengai villages to attend an exchange visit to Tarangire National Park, Karatu town, Ngorongoro Conservation Area (NCA), Mto wa Mbu (Meserani Maasai Museum) and Arusha in May 2019. The exchange visit provided the women with strategies for marketing Maasai beadwork and developing ecotourism businesses. The participants learned from fellow women on how to effectively operate their businesses and acquire new markets for their products. The nine women secured five new markets¹⁰ for their beadwork which would yield an increase in their monthly incomes. The end of project monitoring exercise demonstrated that after the exchange visit above, the women sold beadwork worth a total of Tshs. (£) between May 2019 and March 2020. Prior to expanding to these new markets, the women had earned Tshs. (£) during a similar period.



Figure 2: Maasai women display their beadwork at Ngare Sero booth

Activity 2.2: Devise, distribute and analyse survey form for tour operators to report against quality of tour guiding.

A follow-up survey with tour operators conducted in Year 3 showed a great improvement in the capacity of tour guides to provide guiding services. For example: 71% of the surveyed tour operators reported that tour guides had “very good” tour guiding skills, including knowledge of attractions; 19% felt it was “good” while 9% said the skills were “excellent”. At the same time, 84% of tour operators rated the tour guides visitor management and customer care “very good”, 9% “good” and 7% “excellent”. Tour operators also raised the need for local tour guides to learn more international languages (e.g. French, German) in addition to English to cater for a wider range of clients. A tour operator survey report is attached as Annex 12.

Activity 2.3: Construct booth and use it for sale of beads and other merchandise

The project constructed two booths for women to sell their beadwork in Year 2, one near the Ngare Sero waterfalls area of Ngaresero village, benefitting 188 women, and the other at Shimo

¹⁰ In addition to the ability to sell their beadwork to the tourists who visit Lake Natron, the women will also sell their products through Tarangire National Park, Karatu, Meserani Maasai Museum, Mto wa Mbu and Arusha Maasai markets.
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la Mungu area at Oldonyo Lengai village, benefitting 132 women. All 320 women involved in the project benefited from selling their beads at the booths, with roughly 40-50 women attending the booths daily while the remaining women produced their beadwork at home. The women have established a quality assurance process to ensure the beadwork is of a high standard to be sold at the booth.

The monthly income before and after the construction of the two booths is summarized in Table 1 below. The income of women decreased by 90% as a result of the impacts COVID-19 pandemic which limited global travel and tourism. This information was gathered from EECDI's book of records that compared 2019 and 2020 records. However, there is renewed hope that tourism will rebound as some tourism activity resumed following the reopening of the country by the government In June 2020.

Table 1: Monthly income of women at Ngaresero and Oldonyo Lengai before and after booth construction

No.	Booth Location	Before the booth	Monthly income as at August 2019	Monthly income as at March 2020
1	Ngare Sero booth			
2	Oldonyo Lengai booth			

In year 3, the project supported the design and installation of 6 signposts (Figure 3) that were erected at strategic places along the roadways to direct tour vehicles carrying tourists.



Figure 3: Signpost to the booth (L) and (R) tourists visiting at the Ngare Sero village booth near the waterfalls

The Village governments pledged to support the women using the booths by seeking additional financial support from the district governments and ensure the booths are used sustainably and are protected from damage. This support is evidenced in the booth handover agreement which is attached as Annex 14.

Activity 2.4: Set up Revolving Fund, training community back to back with 2.1 operationalise and monitor its implementation

The project has trained a total of 682 people in the use of the CRF – the initial training (conducted back to back with the ecotourism and business management training) brought together 252 (152 women, 71 young people and 29 men) in Year 2 and EECDI training in Year 2 and EECDI training 430 people (245 women and 121 young people). In March 2019 the project launched a Community Revolving Fund (CRF) worth £ (approximately Tshs.) at Lake Natron, which is operated by EECDI. This followed a lengthy process of setting up guidelines and operational procedures. The loan disbursement was divided into two loan phases. The first phase disbursed

£ (Approx. Tshs.) in May 2019 and the second phase disbursed £ (Approx. Tshs.) in September 2019. The total amount of non-refundable fees collected during the process was £ (Tshs.).

The EECDI opened a special CRF bank account¹¹ at the NMB bank at Mto Wa Mbu village, with signatories representing various organisations. The CRF beneficiaries include women, men and young entrepreneurs (mainly local tour guides), cooperatives and CBOs that meet the eligibility criteria set out in the operational guidelines. A Loan Review Committee (LRC), guided by Terms of Reference within the guidelines, oversees the implementation of the CRF. The LRC is comprised of members from EECDI, Nature Tanzania (who has taken BirdLife's role), MPDO – LARETO, a Ward Community Development Officer and the Ngare Sero Village Executive Officer (VEO). The CRF guidelines give priority to individuals and groups improving or expanding their tourism-related businesses as opposed to those creating new businesses. The operational guidelines of the CRF are presented in Annex 13 and the contract between BirdLife/EECDI as Annex 14.

Table 2: Groups and the number of beneficiaries in each

No	Name of Group	No of beneficiaries
1	ENYWATA VICOBA B (Group)	51
2	LARAMATAK MONIC GROUP	34
3	MAJI MOTO A&B (Group)	58
4	MOSONIK YOUTH GROUP (Group)	35
5	IBRAHIM SAKAY AND GROUP	23
6	ENGONG'U ENGARE GROUP	35
7	KITAPUA NDOMONOK GROUP (Ngare Sero cultural boma women)	55
8	UKOMBOZI WOMEN GROUP	8
9	INDIVIDUAL beneficiaries	36
	TOTAL	335

Despite the challenges posed by COVID-19 including reduced global tourism and requirements for social distancing, the CRF grew and is now (September 2020) worth of Tshs. (£), a 17% increase from the principal investment amount of Tshs. (GBP). The third batch loan beneficiaries have been paid. Business supported are those that increase communities' resilience to COVID-19 impacts. The most recent CRF bank statement is attached as Annex 12

The third call for loan applications was made in Ngare Sero and Magadini villages in March 2020 and the applications were processed in July 2020. A total of Tshs. (GBP) was approved by the LRC in July 2020 and was paid to loan beneficiaries. The disbursement and repayment of CRF loans is progressing well as a result of the firm procedures that were developed by project stakeholders.

As at 31st March 2020, total of **335 individuals (222 women, 153 young people and 23 tour guides) benefited from the CRF.**

¹¹ Account number: 43810002535 in the name of NGARE SERO ERAMATARE CDI, has 3 signatories, representing EECDI. The Loan Coordinator (Mr. Lebanguti Lekitony), who is also the EECDI coordinator, manages the cheque books.



Fig 4: One of the beneficiaries of the revolving fund loans milks a cow she bought using the facility.

Sustainability of the CRF

The revolving fund was initially rolled out at Ngare Sero village to learn lessons prior to expanding to other project villages. During the March 2020 LRC meeting, the committee agreed to include Magadini Village in the third disbursement phase. As part of the expansion to Magadini village, leaders will sign a contract with EECDI committing to follow LRC guidelines and follow up loan repayments and any defaulters. A representative from Magadini will also be included into the LRC.

As part of the sustainability plan for this activity, Nature Tanzania took over the management of the CRF, including supporting EECDI from July 2020. BirdLife handed over the CRF to Nature Tanzania and expects biannual reports which will be copied to the Regional and district Governments. The handover note from BirdLife to Nature Tanzania is attached as Annex 16.

Activity 2.5: Conduct lands rights training.

The project delivered “Land Rights and Climate Change” training in three stages to raise awareness on the roles and responsibilities of the local communities in the management of natural resources, especially land. Based on the Village Land Act No. 4 & 5 of 1999, the training sessions trained participants on the land powers conferred to them by law, regarding land which is within the jurisdiction of a village.

The three phases of training are summarized below:

- Forty-three participants (10 women) attended the first 2 day training session (24th – 25th January 2018) at the Engaruka Ward conference room at Engaruka Juu village in Monduli district, Arusha Region. The meeting was attended by members of the village councils of Engaruka Juu and Chini, Oldonyo Lengai and Rerendeni villages, including village land committee and Engaruka ward councillor and traditional leaders and the Monduli District Wildlife Officer. The first part of the training was funded by the Royal Society for the Protection of Birds (RSPB) as part of the project’s co-funding.
- The second phase of the training was held at Ngare Sero village on 1st and 2nd September 2018, bringing together 58 (14 women) and leaders from villages of Pinyinyi and

Magadini. The leaders included village and ward representatives, women leaders' as well as traditional leaders (*Laigwanaans*).

- The final phase of the training was delivered to 17 leaders (4 women, 12 men and one young person) from 14th-15th October 2019. Participants attended from the four villages of Gelai, Wosiwosi, Alaililai and Ilchangit Sapukin, all situated close to the formerly proposed soda ash factory on the Eastern side of the Lake Natron. The land rights training sensitized participants on catchment conservation and advocating against catchment damage, highlighting the importance of Ngare Sero and Pinyinyi River in the Lake Natron ecosystem. Further emphasis on how these catchments are important to Lesser Flamingo breeding and ecotourism business as well (see activity 4.3). A sample of the land rights training report is attached with this report as Annex 17.

The sessions empowered communities to make informed decisions about their land and natural resources when faced with pressure from competing land investments such as soda ash mining, as well as awareness raising on adaptation to the harsh impacts of climate change and reducing land disputes and conflicts among communities. Training was conducted and facilitated in Swahili and local Maasai languages, by a consultant (from MPDO-Lareto, a local Maasai organization). Each participant received the handout used during the training. Key outputs from the first two sessions included strong agreement by all village and ward government leaders that land is an important resource that needs to be used sustainably. At Engaruka, the issue of unsustainable livestock keeping was highlighted, and leaders agreed on taking remedial actions for sustainable land use. Conservation and restoration of the key catchments flowing freshwater to Lake Natron need to be included in village plans, especially planting of indigenous trees and controlling cutting of trees. Implementation of village land use plans for Ngare Sero village was emphasized by the Project Manager and the need to have one at Pinyinyi village was highlighted by Pinyinyi Councillor, Hon. Joseph Seuri. Furthermore, implementation of village land use plans especially on rangelands was highly recommended by the village leaders to minimize wildlife-livestock resource use conflicts.

Additional key discussion/points during the training include;

- The project referenced the Catchment Action Plan (CAP) developed by the project in collaboration with local communities and their authorities. Please see Activity 3.1 below.
- For Pinyinyi River, village leaders highlighted and emphasized that ongoing irrigation activities need to be controlled for livelihood sustainability. The rate of soil erosion and sedimentation to the Lake is high and threatens conservation of Lake Natron and its natural resources.
- Village leaders highlighted unsustainable livestock keeping as an issue and implementation of village land use plans especially on rangelands was recommended as a solution to minimize wildlife-livestock resource use conflicts.
- For Ngare Sero river communities were reminded of respecting the existing catchments. Planting of indigenous trees were highly recommended in ensuring that the catchments are well conserved. Local communities agreed together that their life largely depends on these freshwater sources and any detrimental damage and water overuse can result into total collapse of socio-economic activities. This will make life impossible in their areas. It was therefore, in one voice, agreed that there is a need to ensure catchments are sustainably utilized and conserved for the current and future generations.

- Key recommendations made by government leaders included implementation of the produced Catchment Action Plan (CAP). *Laigwanaans* (traditional elders¹², seers) were tasked to raise communities' awareness during meetings.

Activity 2.6: Conduct end of project post-training survey to assess leaders' confidence in entering into negotiations and making sound decisions.

The March 2020 end of project survey surveyed 28 village council members and ward government in the three villages of Ngare Sero, Pinyinyi and Magadini. All 28 village and ward government leaders reported they felt confident in entering into negotiations and making sound decisions. Over 22% of the surveyed leaders requested follow-up training and capacity building to ensure they are up to date with any potential changes to the legal framework by the government of Tanzania.

Activity 2.7: Conduct End of Project survey to assess if communities feel better supported by trainees from activity 2.1.

EECDI conducted the March 2020 end of project survey among 82 community members, which revealed 78% of community members "strongly agreed" and 22% "agreed" that they were better supported by trainees (see Activity 2.1) who provide technical advice to members of the local community on best approaches to sustainable and profitable ecotourism and related businesses. The results of this survey are in Annex 18 and 27.

Output 3: KEY WETLANDS, RIVERS AND SPRINGS PROTECTED AND BIODIVERSITY ENHANCED THROUGH TREE PLANTING, CATCHMENT RESTORATION AND PROTECTION. STATE OF BIODIVERSITY, AND WATER QUALITY ENHANCED AND MONITORED.

Activity 3.1: Prepare and support endorsement of Catchment Action Plan for Pinyinyi and Ngaresero Rivers. Raise awareness on tree planting.

With the support from the Project, local communities of Ngare Sero and Pinyinyi villages developed and endorsed a Catchment Action Plan (CAP) for Ngare Sero and Pinyinyi Rivers in March 2018. The CAP identifies the challenges and threats to the two rivers that feed into Lake Natron and proposes key interventions. Some of the challenges identified include overgrazing, water over abstraction, sedimentation among others. The report also recommends intervention measures to address the challenges. The management interventions which have been grouped into four areas: i) sustainable catchment use and management ii) sustainable alternative livelihoods iii) awareness raising, capacity building and governance and iv) climate change adaptation and resilience. The detailed CAP report is attached with this report as Annex 19.

Sixteen village leaders from Pinyinyi and 13 village leaders from Ngare Sero approved the CAP on 30th July 2018. The attendance list of those who endorsed the plan is attached with this report as Annex 20 A copy of the CAP has been shared with the district and regional offices for reference.

Implementation of the CAP at the local level commenced in April 2018. This will be done by ensuring agreed actions are part of village and ward plans. Implementation of the CAP is ongoing and progress can be seen at Ngare Sero Village, where the village government and the EECDI

¹² Laigwana is an influential traditional leader or seer, whose opinion is highly respected. Their opinions are sought on key decisions made by the local community
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recommended that all CRF loan recipients plant and monitor indigenous trees as part of the signed contract with the EECDI. The trees planted by CRF loan recipients will contribute to EECDI's commitment to plant 5,000 indigenous trees annually. The Ngare sero village government is strictly implementing the CAP by ensuring livestock grazing is carried out in line with their approved rangeland management plan. Pinyinyi village is also following up on key actions in the CAP including tree planting and water management on the irrigation schemes.

The project delivered tree planting awareness sessions prior to the 2018 and 2019 tree planting (see Activity 3.2) reaching 850 key leaders, community members, young people, primary and secondary students during Year 3. The sessions, delivered by the Project Manager, EECDI and village government leaders, were held in the villages of Ngare sero, Pinyinyi, Engaruka Juu, Oldonyo Lengai, Wosiwosi, Alaililai, Ilchangit Sapukin and Magadini Village. Due to the lack of fresh water to nurture the planted seedlings, no tree seedlings were planted in Magadini village. However, at the end of last year, the Government, supplied water to Magadini village, which means that any future tree planting can include Magadini village. The sessions provided basic information on tree planting and land preparation and the participants will be able to cascade knowledge on tree planting and care during the project and beyond.

Activity 3.2: Prepare land and plant key wetland areas with at least 7,500 indigenous tree seedlings.

Tree planting was conducted during the rainy seasons, April and May 2018 and May 2019 and was preceded by preparation of land, awareness raising sessions (see Activity 3.1) and tree planting training. Land preparation involved digging holes and putting manure into the holes. Training involved consultation with village leaders and community groups and briefing about tree planting and the best approaches. More than 7,500 indigenous tree seedlings were planted by this project in the 5 villages of Ngare Sero, Pinyinyi, Engaruka Juu, Engaruka Chini and Oldonyo Lengai villages. The great demand for seedlings showed the enthusiasm community members had for tree planting. In April and May 2018, a total of 1,664 people were involved in tree planting with 1,002 being men or boys and 662 being women or girls. In May 2019, a total of 290 people (115 men and 175 women) were involved in tree planting. This commitment was further demonstrated by village governments and their public institutions, mainly primary and secondary schools, who took care of the planted trees and have resulted in a survival rate of 68%, despite the fact that Lake Natron is an arid area (see Activity 3.3). A detailed tree planting report is attached to this report as Annex 21.

The species planted include *Cassia siamea*, *Leucaena leucocephala*, *Acacia Nilotica*, *Moringa oleifera* and *Vachellia tortilis* (Umbrella Thorn). All the trees, mostly indigenous, have specific benefits to the communities such as medicinal properties, providing windbreak, soil conservation, shade, fodder, water purification and as a food source. The demand for seedlings was very high, demonstrating a great commitment by local communities to implement the tree planting programme. In response, the available seedlings were rationed in order to reach all targeted villages.

Activity 3.3: Tree seedling after care and monitoring.

In order to sustain the trees, a 3,000-litre water tank and 150-metre watering pipes were purchased and delivered to Ol Donyo Lengai Secondary School in June 2018. This ensured that the trees were watered even during the dry season. Engaruka Chini Primary School and Engaruka Juu Primary School were also provided with watering pipes. Tree seedlings aftercare and monitoring will continue even after the closure of this project, with support from respective village committees, governments and school administrations at Lake Natron. This is expected to continue after the project end with technical support and advice from Nature Tanzania.

To ensure the tree planting and care agenda is sustained, all CRF loan beneficiaries are expected to plant trees as part of their loan contract obligations. More than 1,700 indigenous tree seedlings have been planted from this effort/arrangement. Monitoring of the planted tree seedlings has been going on with active participation of village governments. As of March 2020, 68% of the trees planted during the project were surviving.

Activity 3.4: Set up and carry out water quality monitoring.

The baseline for water quality monitoring was conducted in September 2018 in collaboration with the Ngorongoro District Council and EECDI. Baseline information was collected using the HI 9829 Multi-Parameter pH/ISE/EC/DO/Turbidity Waterproof Meter which was purchased from Hanna Instruments. Data collected included dissolved oxygen, water turbidity, electrical conductivity and pH. Despite extensive investigation in Tanzania, Kenya and online, the only water flow meters available were priced at double the original budget so the project did not purchase a water flow meter. As a result, the baseline for water flow into the lake was not established and instead, the project focused on quality assessments. End of project monitoring was conducted in December 2019 and the results are summarized in Table 3 below.

Table 3: Water quality data for key rivers at Lake Natron

River	Ngaresero River			Pinyinyi River		
	Sept-18	Aug-19	Dec-19	Sept-18	Aug-19	Dec-19
Water Turbidity (NTU)	284	34.20	124	868	60.04	204.3
Dissolved Oxygen (mg/l)	22.7	5.07	7.85	8.6	4.18	7.90
pH	6.7	10.17	9.98	6.5	10.15	9.15
Electrical conductivity	10,800.00	9,030.00	12,330.00	8,750.00	2,6100.00	2,9710.00

Generally, water from the Ngaresero River has better quality parameters compared to the Pinyinyi river. There is a small-scale irrigation project at Pinyinyi village, which results in soil eroded from the farms being washed into the river. This results in higher suspended materials, higher turbidity and slightly less dissolved oxygen compared to Ngare Sero river. The water from Ngare Sero river flows through the village straight into the lake with limited human interference and therefore lower turbidity, electrical conductivity and higher dissolved oxygen. High rain from September 2019 may have contributed to increased soil erosion in the rivers, resulting in the turbidity target for Pinyinyi River not being reached. The baseline dissolved oxygen for Ngare Sero River was higher than subsequent readings, which could be due to it being taken early in the morning when river water is colder and therefore has a higher dissolved oxygen level.

As a follow up to the water quality work, Nature Tanzania has applied for UNDP GEF Small Grants Program Sokoine University of Agriculture. If this funding goes through NT will train local youths to monitor water quality.

Activity 3.5: Train 40 young people in IBA Monitoring (back to back with 2.1); complete IBA form and feed data into World Bird Database (including repeat monitoring in Yr2).

A total of 43 young people were trained in IBA monitoring (using State, Pressure and Response) in January and February 2019, to enable annual assessment of the state of biodiversity. The IBA Monitoring training was delivered by BirdLife International based on the IBA monitoring

framework and guidelines¹³ set forth by BirdLife International. This activity was done back to back with 3.6 below. IBA Monitoring form was filled during this activity (Annex 11). The bird data collected in 3.6 below is fed into the World Bird Database. Nature Tanzania has been given the mandate to update IBAs of Tanzania by BirdLife International and will therefore continue coordinating update of Lake Natron IBA and other IBAs in Tanzania. The detailed IBA monitoring training report is attached with this report as Annex 22. The information collected has been updated in the World Bird Database¹⁴ by Nature Tanzania using this data.



Figure 5: Youths participating in IBA monitoring training

Year of assessment		Threat status score (pressure)	Condition status score (state)	Action status score (response)	
2018		high	not assessed	low	
Was whole of site covered?			State assessed by	unset	
Accuracy of information		Medium - based upon reliable but incomplete / partially representative data	Favourable conservation status? (EU only)		
Assessment complete?		✓	Completed by		-,-

Threats to the site (pressure)					
Threat level 1	Threat level 2	Timing	Scope	Severity	Result
Agricultural expansion and intensification	annual & perennial non-timber crops - small-holder farming	happening now	small area/few individuals (<10%)	slow but significant deterioration	low
Agricultural expansion and intensification	livestock farming and ranching (includes forest grazing) - small-holder grazing, ranching or farming	happening now	some of area/population (10-49%)	moderate to rapid deterioration	high
Climate change and severe weather	drought	likely in short term (within 4 years)	majority/most of area/population (50-90%)	moderate to rapid deterioration	high
Natural system modifications	dams & water management/use - abstraction of surface water (agricultural use)	happening now	small area/few individuals (<10%)	slow but significant deterioration	low

Fig 6: An example of the Lake Natron page on the World Bird Database, still work in progress

Activity 3.6: Conduct annual Water bird census in collaboration with TAWIRI and local communities and obtain flamingos' breeding success data.

¹³ http://datazone.birdlife.org/userfiles/file/IBAs/MonitoringPDFs/IBA_Monitoring_Framework.pdf

¹⁴ https://www.globalconservation.info/wbdb/sit_ibamonitoredit.php?id=9604 - you need a password to access for now. The date will be uploaded to datazone after a peer review process

The annual water bird census and obtaining of flamingo's breeding success data was conducted in January/February 2018, 2019 and 2020. The activity was coordinated by BirdLife in consultation with the Tanzania Wildlife Research Institute (TAWIRI), MPDO-LARETO and with the EECDI at the local level. A training on water bird count methodology, protocols and ethics was conducted one day before the count each year to familiarize the participants with the protocols. During the count further training on bird identification was conducted by the Project Manager. A special form was provided by the National Coordinator for water bird count sitting at TAWIRI's offices.

The 2019 waterbird count was conducted in the same sites as 2018 i.e. shores of Ngare Sero mudflats and Pinyinyi shores. In 2019 a total of 34 people participated (27 young people) in both villages. The other members were older local tour guides working at the EECDI and village and ward government leaders who were curious to know about water bird count techniques.

During the 2019 water bird count, a total of 57 bird species were recorded. The team recorded at least 1,750,000 individual Lesser Flamingos and 955,000 chicks. The team observed that this was a successful breeding season compared to 2018, when the number of Lesser Flamingo chicks was estimated to be 86,000. The 2020 water bird count targeted three sites on the shores of Lake Natron, on the Northern part of the lake at Ngare Sero village, Pinyinyi Shores and Magadini shores. The Ngare Sero shores were surveyed on the 6th of February, Pinyinyi on the 7th of February and Magadini on the 8th of February 2020. A member of Nature Tanzania and avid birder based in Arusha provided additional technical support during the 2020 count. During the 2020 count, a total of 14 bird species were recorded. The team recorded at least 250 individual Lesser Flamingos and 35 fledglings.

Table 4: Comparison of Lesser Flamingo numbers in 2018, 2019 and 2020.

2018 water bird census results		2019 water bird census results		2020 water bird census results	
Lesser Flamingo	Chicks	Lesser Flamingo	Chicks	Lesser flamingo	Chicks
760,000	120,000	1,750,000	955,000	250	35

The 2019 number showed a tremendous improvement from the 2018 water bird count number and indicates improvement of breeding site, water quality which is the determinant of food production and communities' attitudes to conservation which reduced pressure and disturbances of Lesser Flamingo. Lake Natron received increased levels of rainfall from October to December 2019 according to Tanzania Meteorological Agency¹⁵. The area received 257.2 mm of rainfall in November 2019 compared to 23.4 mm during same time in 2018. It also received 343.4 mm in December 2019 compared to 85.5 mm in 2018. The increase in rainfall during Lesser Flamingo breeding season had implications on the number of birds and fledglings found at the lake¹⁶ in 2020. All data were shared with TAWIRI and has been used to update the national bird database.

As a result of the water bird count training and IBA monitoring training, the project saw a number of tour guides who had were trained in earlier years become trusted bird guides at EECDI, including the Mr Yohana Christopher Ndurway and six other tour guides who had been trained during the 2019 water bird count and later engaged in 2020. The water bird census report is attached with this report as Annex 23.



Figure 7: Massive Lesser Flamingo breeding activity (L) and thousands of their chicks (R) observed in February 2019 at Lake Natron.

Output 4: AWARENESS OF THE VALUES AND THREATS TO LAKE NATRON RAISED AMONG COMMUNITIES AND GOVERNMENT AGENCIES

Activity 4.1: Produce advocacy/awareness poster and booklet.

The project produced and printed 60 copies each of an advocacy and awareness poster in Swahili and a more detailed informational booklet on the project in English. The poster has been distributed and shared with villages, district and regional government offices and stakeholders to raise awareness about the values and threats of Lake Natron. The information booklet records the key achievements of the project, lessons learned and key recommendations. Soft copies of

¹⁵ <http://www.meteo.go.tz/>

¹⁶ The Lesser Flamingo breeding takes place in from October to January and is influenced by physical-chemical variables such as pH, nitrate and phosphate, which influence availability of critical food (spirulina) supply. Flooding in the lake caused by excessive rain can offset these variables. Furthermore, flooding can significantly affect feeding success of the lesser flamingos. Increased water level will make food in the water unavailable to the lesser flamingo. This is because lesser flamingo cannot feed while swimming as other Anatidae bird species. This could be the reason for the mass migration of the lesser flamingos to other lakes in a short period of time. The trailer can be found here: <https://www.youtube.com/watch?v=a8tKgBHFSVQ>

the document have been shared to the wider network of project partners and project stakeholders reaching national policy and decision-makers. The poster and booklet are attached to this report as Annex 24 and Annex 25 respectively.

Activity 4.2: Carry out awareness amongst government agencies on values and threats through public forums, film and radio.

The project raised awareness on the value of Lake Natron amongst all stakeholders, particularly through meetings and the media. The following are examples:

- The Project Manager met with the Minister of State in the Vice President's Office, Mr January Makamba, on 5th September 2018. During the meeting, the minister was briefed on the development of TDP and the project requested the government to support local communities in their implementation of the TDP. The minister requested for a copy of the TDP once completed. BirdLife was the only NGO invited to the meeting with the minister because of its credibility and experience working with communities and other stakeholders in the ecosystem.
- The National broadcaster, the Tanzania Broadcasting Corporation (TBC) aired a news item on the TDP validation workshop (see section 1.6) on the 25th September 2018. TBC has a viewership of 3.7 million people.
- On the 1st October 2018, a news article raising awareness about the threats and value of Lake Natron was published by Tanzanite Newspaper in Swahili. One copy of the newspaper was handed to the office of Arusha RAS, District Offices of Ngorongoro and Monduli and the article shared through WhatsApp to different platforms, reaching about 255 people.
- Project Coordinator, Ken Mwathe and Mr. John Salehe (Chair, Nature Tanzania) were interviewed by Sunrise Radio in Arusha in July 2018. The interview focused on the importance of birds in the economy of Tanzania. It also discussed some of the initiatives being undertaken by BirdLife International, such as the protection of critically endangered species in Eastern Usambara forests. Examples were given on how investment in bird tourism is changing the narrative at Lake Natron through the Darwin funded project. Sunrise Radio has a listening population of 650,000 people in Arusha, Kilimanjaro, Manyara and part of Singida region of Tanzania.
- A special delegation comprised of representatives from the district councils of Ngorongoro, Monduli and Longido, Ngorongoro Conservation Area Authority (NCAA), Lake Natron Ramsar Site office, and the TDP consultant visited the Regional Administrative Secretary (RAS) in February 2020. The objectives of the visit were to brief the RAS of the project progress, raise awareness of the project's achievements and future plans and lobby for post-project support especially on the initiatives established by the project.
- The film *Crimsonwing*¹⁷ was used to raise awareness about the values and threats of Lake Natron. A total of 976 people, including 327 children watched *Crimsonwing* at Lake Natron during the project period. These people are from the villages of Ngaresero, Magadini, Wosiwosi, Pinyinyi, Engaruka and Oldonyo Lengai.
- In February 2020, the project team visited the Vice President's Office and various ministries¹⁸ in Dodoma to report on project progress and feedback on project implementation. The teams

¹⁷ *Crimsonwing* is a special film by Disney Nature on the breeding of Lesser Flamingos and was produced by Matt Aeberhard. A copy of the film was specially donated to BirdLife by Matt for awareness raising at Lake Natron

¹⁸ Ministry of Natural Resources and Tourism, Ministry of Internal Affairs and Ministry of Works, Transport and Communications.

also discussed and agreed on possible collaboration in fundraising. It was agreed that consultations on a process to submit a concept to the Ramsar Secretariat would be initiated.

- In March 2020, the Project Manager met with the Principal Tourism Officer for the East African Community (EAC) and the Wildlife and Natural Resources Program Assistant in Arusha Tanzania. Discussions included project achievements, key outputs and fundraising opportunities. Discussions were initiated on potential for joint fundraising for a transboundary project between the EAC/Lake Victoria Basin Commission (LVBC) and BirdLife International.

A full report of the media coverage during the project is attached as Annex 31

BirdLife International participated in Mwenge celebrations at Ngaresero village in June 2019. The theme for 2019 Mwenge celebration was “Water is a right for all, let’s conserve catchments.” A total of 155 T-shirts were printed by the project to raise awareness messages of catchment conservation and restoration, featuring the Darwin Initiative logo, BirdLife International logo, Mwenge logo and coat of arms of Tanzania. The T-shirts were distributed to district government officials, ward government officials, village government officials and community members within the Ngorongoro District Council.



Figure 8: Local community members don the T-shirts inscribed with the Coat of Arms of the Government of Tanzania and BirdLife and Darwin logos © Emmanuel Mgimwa

In his remarks, Ngorongoro District Commissioner, Mr. Idd Kimanta emphasized the importance of Lake Natron to lesser flamingo breeding globally and thanked BirdLife and other stakeholders for their conservation efforts. This recognition raised awareness of the Lake Natron values to the estimated 1,317 national government officials and local communities attending, provided in table 6 below. The key messages were:

- The value and threats of Lake Natron site – Ngorongoro District Commissioner Mr. Idd Kimanta
- Conservation challenges at Lake Natron – Councillor Ibrahim Sakay
- The role of ecotourism business to local communities and sustainable conservation of Natron ecosystem –Councillor Ibrahim Sakay

Table 5: Estimated number of people who were reached during the June 2019 Mwenge event

No.	Category	Number
1	Local community members	1,200
2	District government officials	65
3	Regional government officials	30
4	National government officials	22
	TOTAL	1,317

OUTPUT 5: LESSONS FROM THE COMMUNITY-BASED ECOTOURISM MODEL SHARED AND REPLICATED LOCALLY, NATIONALLY, REGIONALLY AND INTERNATIONALLY

Activity 5.1: Produce advocacy/awareness poster and booklet.

A total of 60 advocacy/awareness posters and 60 booklets (see activity 4.1) were produced and shared with 23 institutions and 97 key people. It is estimated that the poster and booklet reached more than 1,800 people nationally. The awareness poster and booklet are attached to this report as Annex 21 and 22 respectively.

Activity 5.2 Share project lessons with tourism industry actors, and civil society organisations through online platform and in person

The project has shared project lessons with various stakeholders (see Activity 4.2 above). A project story on the successful breeding season of lesser flamingos in 2019 was published in June 2019 on BirdLife's website¹⁹ and the story was shared 755 times on Facebook.

Unfortunately, government restrictions due to the COVID-19 global pandemic led to several Year 3 meetings being postponed, including the high-level TDP launch meeting at the end of March 2020 which senior government officials were set to attend. A strategic meeting with the sectoral committee responsible for tourism at EAC and interviews with national radio stations, including Sunrise Radio and AAA Radio were postponed. The details of lesson sharing meetings during Year 3 are summarized in Table 7 below.

Table 6: Meetings in which project lessons were shared

No.	Name of meeting and date	Objective of the meeting	Issues presented
1	Mara Knowledge Exchange Workshop, 24 th – 26 th July 2019 in Mwanza, Tanzania	Knowledge exchange on conservation of Mara River Basin in Tanzania.	The Project Manager (PM) underscored the need for joint efforts to conserve the Mau forest and drop of unsustainable development projects. Mau forest is an important source of freshwater for Lake Natron through the Ewaso Ng'iro River. Mara River also receives water from the Mau forest in Kenya.
2	2 nd Annual General Meeting (AGM) of Nature Tanzania, 25 th September 2019	An annual meeting of members and partners of Nature Tanzania.	The PM shared the lessons learned from the project and the need for effective partnership and collaboration in the implementation of the developed TDP.
3	February 2020	Meeting with the four ministries in Dodoma, Tanzania – Permanent and Deputy Permanent Secretaries of Ministry of Natural Resources and Tourism, Ministry of Internal Affairs, Ministry of Vice-President's office, Union and Environment and the Ministry of Works, Transport and Communications; Director of Wildlife, Director of Tourism	Project achievements, key project outputs, lessons learnt, fundraising opportunities and the need for transboundary cooperation with Kenya for sustainable management of Lake Natron

¹⁹ <https://www.birdlife.org/worldwide/news/bumper-breeding-season-flamingo-factory-lake-natron>
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4	3 rd March 2020	Meeting with Mr. Mathew Mpanda during the national celebrations of the World Wildlife Day, 2020 at the College of African Wildlife Management, MWEKA.	The PM and Mr. John Salehe met with Mr. Mathew Mpanda of the European Union office in Tanzania. Discussions included key project achievements, project outputs and fundraising opportunities. Nature Tanzania was engaged as the main future collaborator for on-ground activities at Lake Natron and beyond.
5	March 2020	Meeting with Dr. Jasson John of the University of Dar es Salaam.	The PM discussed project achievements, project outputs including the TDP. Also discussed possible research areas that can benefit the university researchers and students.

Activity 5.3: Disseminate project lessons, best practice and through local radio and newspapers and through EAC committees national tourism ministries.

Dissemination of project lessons and best practise was conducted through various platforms. This includes an interview with Sunrise radio conducted by Ken Mwathe and John Salehe (See Activity 4.2 above). BirdLife has also published articles in a local newspaper *Tanzanite* about the values and threats facing Lake Natron. The article also highlights discussion between Project Manager and Hon. Minister January Makamba.

In Year 3, the dissemination of project lessons learned and best practice was conducted through newspapers, for example *Tanzanite*. The project was not able to meet with EAC committees due to the COVID-19 pandemic but was able to meet with Principal Tourism Officer for the EAC and Tourism and Wildlife Management Program Assistant. The project team met with national ministries, the Ministry of Natural Resources and Tourism and the Ministry of the Vice-President's office, Union and Environment, Ministry of Internal Affairs and the Ministry of Minister for Works, Transport and Communications (See activity 5.2 above).

Activity 5.4: Showcase project lessons regionally and internationally amongst other conservation NGOs in meetings, other relevant forums and through the BirdLife website and social media platforms.

Project lessons were shared at the national and international levels, including the Regional Participatory Forest Management (PFM) workshop, October 2019. The PFM workshop shared best practices for forest and natural resources management between the government and BirdLife partners in Tanzania, Uganda, Kenya, Ethiopia and Denmark. Nature Tanzania is in a discussion with the Tanzania Safari Channel of the Tanzania Broadcasting Corporation (TBC) for collaboration in awareness raising of Important Bird Areas (IBA) and Key Biodiversity Areas (KBAs). One of the priority sites is the Lake Natron Ramsar Site. At the national level, please refer to activity 5.2 above.

A summary of progress made with Project Management Activities is presented as Annex 32.

3.2 Outcome

Outcome: The biodiversity, wetlands, and the livelihoods of local communities at Lake Natron are enhanced and protected, through sustainable community-based ecotourism and water catchment management models.

Indicator 0.1: *BEOP, enhanced capacities of local people translate into greater incomes and contribute to poverty reduction: incomes of 1,100 people including 500 women, 200 men, 400*

youth, (including 90 guides) will increase from an average of \$31-\$60 for men; \$52-\$75 for women and \$46-\$65 for youth, per month.

Comment: Target well met. Income levels of local people were assessed in March 2020 (Annex 27). The average income of men in the project site increased from \$31 to \$68; women from \$52 to \$72 and youth from \$46 to \$75. The above outcome has been achieved as a result of the capacity building on ecotourism and business management conducted in Year 2 as well as the roll out of the Community Revolving Fund. Women's incomes were boosted by the additional extra markets for their beadwork in other locations while the youth were boosted by their improved capacity for tour guiding.

Indicator 0.2: BEOP number of tourists visiting Lake Natron increases sustainably from baseline of 5,018 to 7,000 per year, generating more income for the communities.

Comment: Target not met because of the COVID-19 impacts on the global travels. During Year 1 a total of 5,677 tourists visited Lake Natron and 5,800 tourists visited in Year 2. (Source, Ngare Sero Eramatare Community Development Initiative EECDI). It was expected that in Year 3 the number of tourists visiting Lake Natron would be at least 7,000. However, 5,146 tourists visited Lake Natron during the peak tourism season of December 2019 to March 2020, and so this target was not met.

Indicator 0.3: Sustainable Ecotourism model developed BEOP and endorsed by all three districts (indicator 1a), 50% of tour operators and shared nationally and internationally via an online platform with at least 100 civil society organisations signing up to endorse methodology (indicator 5b).

Comment: Target well met. The final Tourism Development Plan was endorsed by the Arusha Regional Administrative Secretary (RAS) on behalf of the three districts. The document has been endorsed by the government (English TDP is signed by the Arusha RAS) and tour operators i.e. TATO (which include more than 300 members) endorsed the TDP in the support letter attached as Annex 26. Local communities in areas that were not originally in the project requested to be included in some of the activities based on success in target villages. While it was not possible to fully stretch the project into these areas, efforts were made to make some inclusion in capacity building activities (See Activity 2.5).

Indicator 0.4: Over the project, the proportion of flamingo fledglings relative to estimated number of breeding pairs is stable or increasing compared to YR1 baseline, as a measure of breeding success and enhanced biodiversity.

Comment: Target met. The proportion of flamingo fledglings relative to the number of breeding pairs for 2018 was 120,000 fledglings to 760,000 flamingos and that of 2019 was 955,000 fledglings to 1,750,000 breeding flamingos. This shows a significant proportional increase from 16% to 55%. In 2020, the proportion of flamingo fledglings to breeding flamingos was 35 fledglings to 250 breeding flamingos. This dramatic decrease is because of climatic factors. For two years, the proportion remained relatively stable, and in fact increased to an all-time high in 2019. However, heavy rains prompted the flamingos to move to other soda lakes in Kenya and Tanzania and therefore few flamingos were counted in 2020. It is notable that breeding of flamingos varies from year to year depending on climatic factors. Discussion with bird experts in Tanzania provide a trend of successful breeding event after every two years. This is termed as a natural dynamics to control the population but climate change might interfere the natural cycle.

Indicator 0.5: BEOP 10,000 ha hectares of wetlands protected through a Catchment Action Plan (CAP) for Pinyinyi and Ngare Sero rivers, and endorsed by the village councils of the two villages (Output 3 indicators).

Comment: Target well met. Catchment Action Plan (CAP) for Pinyinyi and Ngare Sero rivers was developed in Year 1 and endorsed by community leaders. Implementation of the developed CAP by respective village governments is ongoing. The CAP now protects 10,000 hectares of wetlands.

3.3 Monitoring of assumptions

Assumption 1; National and district governments continue to work with tourism stakeholders to boost ecotourism and conserve biodiversity at Lake Natron

Comments; National, Regional and District governments have continued to support tourism development and conservation work at Lake Natron Ramsar Site. The Ministry of Natural Resources, the Ministry of State, Union Affairs and Environment Vice President, and the Arusha Regional Commissioner's office, have all been very positive towards this project.

As evidenced by their chairing of the Project Steering Committee, supporting key processes such as the development of the Tourism Development Plan and its adoption and emblazoning it with the Coat of Arms of the Government of Tanzania. The Arusha RAS has is the host of the TDP and is keen to coordinate the implementation of the document.

Assumption 2; Local communities around Lake Natron continue to be willing to engage in ecotourism activities and understand the benefits of protecting Lake Natron and its surroundings

Comments; Local communities and village government leaders around Lake Natron continued to be very positive to ecotourism activities. This is mainly because of the accrued benefits that they receive from Lake Natron and its surroundings. The employment opportunities and income provide a basis that this assumption will remain true beyond the lifetime of the project. This was evidenced by their commitment and collaboration during the project that resulted to successfulness of project activities i.e. the developed TDP, CAP, CRF etc.

Assumption 3: National and international tourism is not impacted by any terrorism actions in Tanzania

Comments; Security continued to be stable in Tanzania, especially in the project area. No insecurity incidences were reported during the project period. In addition, the government put up a police station at Ngare Sero village with more than five police officers and one vehicle. We had not foreseen the global pandemic (Covid-19) which affected tourism numbers after March 2019, thus affecting tourism revenues for both tour operators, tour guides, women whose livelihoods largely depend on tourism.

Output Level Assumptions:

Assumption; National and district governments continue to work with tourism stakeholders to boost ecotourism at Lake Natron

Comments; The interest and commitment of the National and district governments to work with stakeholders to boost ecotourism activities remained intact. The good collaboration and massive buy-in the project has seen continued to be evident.

Assumption; District administration from Ngorongoro, Longido and Monduli continue to engage on the issue of gates

Comments; The district administration of Ngorongoro, Longido and Monduli continued to engage on gate issues. Before the project there were three gates that three districts used to charge fees to tourists entering Lake Natron. One of the aims of the project was to negotiate removal of excess gates (seen as barriers to ecotourism) and maintain one gate to serve the three districts. All three districts participated in consultation on gates – especially the key one called by the Regional Administrative Secretary (facilitated by the project) for all tourism stakeholders. From

the meeting, the districts committed to implement the Revenue Sharing Plan in the Tourism Development Plan.

Assumption; *Once training is done, EECDI continues to ensure follow up and ensure deployment of skills*

Comments; EECDI has continued to follow up on the action plan and recommendations given during the training. During the reporting period, EECDI interviewed tour guides to assess their competency and capacity. This annual interview and tests are part of the measures to ensure its tour guides are up to skill and provide quality services to their customers, the tourists.

Assumption; *Local communities willing to use their increased capacity and new skills to effect transformational change*

Comments; This assumption holds true. It was evident during and after the business management training that the local people critically required the skills that were passed on to them. For example, a few days after the training, most women running small restaurants were seen wearing aprons. At the same time, there was evidence of improved level of hygiene and cleanliness as well as presentation by restaurant workers after the training.

Assumption; *Unfavourable weather conditions (e.g drought)*

Comments; 2017/2018 and 2018/2019 had favourable weather conditions. However, in 2019/2020, there were excessive rains that caused flooding in the lake. As a result, lesser flamingo were forced to migrate to other lakes soda lakes in the region in December 2019 and January 2020. While fluctuation in rainfall is a natural phenomenon, the rains in the final project year were excessive and unusual.

Assumption; *Communities attitudes and activities do not change*

Comments; This assumption still holds true. Communities' attitudes and perceptions of tourism business remained positive throughout the project.

Assumption; *External pressures such as massive industrial or agricultural development do not affect impact on ecosystem and project efforts*

Comments; The assumption still holds true. There have been no proposals for massive industrial or agricultural development at Lake Natron recently that would impact the ecosystem and project efforts. We are glad that the soda ash proposal remained halted in the course of the project and are confident it will remain that way.

Assumption; *Current economic, social and environmental factors do not change significantly during the lifetime of the project*

Comments; Unfortunately, the COVID-19 pandemic has impacted the global economy since January 2020 with international flights cancelled and many tourists cancelling their trips. This has largely affected the tourism business in Tanzania including Lake Natron. Reports from Tanzania National Parks (TANAPA) indicate more than 6,000 tourists visit Serengeti National Park in a day, but this number fell to only 24 tourists per day by the end of March 2020. However, there is now a hope that things will return to normal mid and end of 2021. This is following the approach of the Government by putting in place strategies to revive the tourism and travel sectors in Tanzania. This provides an opportunity for supporting communities and the local government in increasing their resilience and capacity to ecotourism activities once the business returns. Implementation of CRF activity has continued with third batch beneficiaries recruited in July 2020. The revolving fund has grew by 17% despite the COVID-19. This is a result of the good and integrated system.

Assumption; *Government agencies willingness to cooperate*

Comments; Throughout the life of the project, this assumption held true. The TDP (Annex 8) and the entire process of its validation (Annex 10) as well as support by government at village, district and regional level is evidence of this.

Assumption; *Communities willingness to receive message*

Comments; This assumption held true. The completion and endorsement of the Catchment Action Plans (Annex 19 and 20), the planting of 7,500 trees (Annex 21) and the successful implementation of the Community Revolving Fund (Annex 13-15) are examples of this.

Assumption; *Stakeholders including BirdLife partners' willingness to apply the lessons learnt*

Comments; This assumption held true. Examples are the support letter endorsing the model by TATO (Annex 26) and the efforts made by the project to share lessons with various stakeholders (see activity 5.1-5.4).

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

The original impact statement was: Development, piloting and promotion of an ecotourism model and restoration of key ecosystems for poverty alleviation and biodiversity protection in East Africa.

The higher-level contribution to biodiversity conservation is that Lake Natron continues to be the prime breeding site for Lesser Flamingos in the world – with 1.5-2.5 million birds (75% of the global population) still breeding there. For the first time, the 2019 surveys showed a total of **2,705,000** (1,750,000 adults and 955,000 fledglings) Lesser Flamingos breed at Lake Natron when environmental conditions are right, (see Table 2). This number is comparable to the often-quoted **1.5-2.5 million Lesser Flamingos recorded for Eastern Africa**. It is also comparable to Mlingwa and Baker (1995)²⁰ which recorded 2,759,026 and Mmassy et al (2017)²¹ that recorded 1,500,000 lesser flamingos. This finding will be published in a scientific journal for the record.

The project also facilitated communities to protect the site as well as restoring key catchments (by planting 7,500 tree seedlings) – while working with the government removed attention from its earlier intentions of mining soda ash from the site^{22 23}.

The project also had a positive impact in reducing poverty as it has improved average incomes of key sections of the community. For example (Annex 27), the average income of men in the project site has increased from \$31 to \$68; women from \$52 to \$72 and youth from \$46 to \$75. The above outcome was achieved as a result of the capacity building on ecotourism and business management (Annex 11) conducted in Year 2 as well as the roll out of the Community Revolving Fund.

The lessons and experiences from this project provide a replicable model for addressing ecotourism and livelihoods challenges at local/site level by involving communities and working with government agencies and other stakeholders. The actors in the industry are keen to take these lessons forward and apply them - as evidenced by the endorsement by Tanzania

²⁰ Mlingwa, C., & Baker, N. E. (2006). *Lesser Flamingo* *Phoenicopterus minor* counts in Tanzanian soda lakes: Implications for conservation. In: Boere, G.C., Galbraith, C.A. & Stroud, D.A. (eds). *Waterbirds around the world*. pp. 230-233.

²¹ Mmassy, E., Maliti, H, Nkwabi, A., Mwita, M., Mwakatobe, A., Ntalwila, J., Lowassa, A., Mtui, D., Liseki, S., & L, Nicephor. (2019). Population status and trend of lesser flamingos at Lakes Natron and Manyara, Tanzania.)

²² <https://www.theeastafrican.co.ke/tea/business/tanzania-shelves-lake-natron-soda-ash-project-1387878>

²³ <https://www.birdlife.org/worldwide/news/after-10-year-battle-tanzanias-flamingo-factory-safe>

Association of Tour Operators (Annex 26). The Tourism Development Plan model is another example that can be applied for other tour destinations across Tanzania and the larger East Africa. The project team already discussed this issue with the officer responsible for tourism at the East African Community on joint fund raising to help apply and replicate these ideas in other countries in East African Community member states.

Further, Nature Tanzania published lessons from the project in its 2nd and 3rd editions of its quarterly newsletter.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

This project has contributed towards the achievement of the following SDGs:

- **SDG 1: No poverty** – The project has contributed to poverty alleviation by improving income levels for men, women and young people
- **SDG 5: Gender Equality** – This project had a special focus on women and the impact on both their capacity and incomes is documented. This include the business management training (60% of the participants were women – Activity 2.1-2.4).
- **SDG 13: Climate Action**– The project provided training to 118 local community members on how to enhance resilience against climate change. The project also supported development of Catchment Action Plan that provides communities with better resource management including sustainable grazing and planting 7,500 seedlings to further protect the ecosystem (Activity 2.5 and 3.2).
- **SDG 15: Life above water**- The project contributed towards conservation of biodiversity by conducting annual monitoring (and building local capacity for the same), maintaining relatively stable flamingo population and the protection of 10,000 hectares of wetlands and their catchments by planting 7,500 tree seedlings (Output 3).

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

The project contributed to the achievement of the following conventions:

- **CBD**- The project has contributed to the CBD by monitoring and maintaining/improving the state of biodiversity, especially maintaining the integrity of sites for species in the Lake Natron ecosystem. This contributed to objective 1 of the Convention on Biological Diversity “the conservation of biological diversity”
- **CMS** - The project has contributed to the CMS by maintaining the integrity of the site so that it continues to play a key role for migratory species and conducting monitoring through the annual water bird counts including building local capacity for monitoring. The project also held consultations with the Ministry of Natural Resources and Tourism which hosts the focal point for CMS in Tanzania. The project in particular contributes to the achievement of the objectives of the African Eurasian Water bird Agreement (AEWA) which focuses on 254 bird species that depend on wetlands for at least part of their lifecycle and cross international borders in their migration patterns – of which flamingos are a classic example.

Ramsar Convention: Lake Natron is a Ramsar site and all the activities that this project has implemented contribute towards conservation and wise use of wetlands, which is one of the key convention principles. The project team also met with and made consultations with the administrative focal point for the Ramsar convention based at the Vice President's Office. The project contributed towards achievement of two key pillars of the convention including "work towards the wise use of all their wetlands" and "ensure effective management; cooperate internationally on transboundary wetlands, shared wetland systems and shared species".

- **UNFCCC:** The project trained 118 local community members on how to enhance their resilience to cope with climate change. The project contributed to the achievement of the UNFCCC, especially The Paris Agreement whose central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees. This among other things is achieved through increase ability of countries to deal with the impacts of climate change as well as provision of new technology, enhanced **capacity-building**. Training and ecosystem restoration contributes in a small way towards these goals.

4.3 Project support to poverty alleviation

The project contributed to poverty alleviation by supporting 1,038 people (757 women, 75 men, 204 young people (including 106 tour guides) with improved access to eco-tourism related income generation through the TDP and increased financial management skills. As clearly demonstrated in the section 3, 4 and 5, the income of these key groups increased as follows:

- Women's incomes have increased from \$52 to \$72, an increase of 38%
- Young people's incomes have increased from \$46 to \$75, an increase of 63%
- Men's incomes have increased from \$31 to \$68, an increase of 176%

It would appear that women benefitted less but there were more women in absolute numbers who participated in the project so the impact to their families is expected to be significant. In addition, the project contributed to capacity building in of women, youth and men with skills in ecotourism business and tour guiding (252) and land rights and climate resilience (118) as well as training in revolving fund management (335). These skills will remain with the communities for years to come.

Through the community revolving fund activity, communities at Lake Natron are able to borrow money with very small interest rates (5%). The loans are used to improve their businesses with the aim of meeting market demands, quality and standards. The result of this will be increased sales and benefit and therefore poverty alleviation. Booth construction give more than 320 women a safe and comfortable space to market their beads and other merchandise. This resulted in more coordinated business and therefore lead to greater revenues and therefore poverty alleviation. Business and ecotourism management training have equipped local communities and benefited women, men and youths with skills and capacity to improve their business. This resulted in improvement of their businesses and later customer satisfaction which will attract more customers and be defined into greater profits and therefore poverty alleviation. Key notable changes in Year 2 include introduction of uniforms to all local tour guides at EECDI. This was an action agreed during the ecotourism training. Their striking appearance has been noted by most tourists and there has been a notable increase in the numbers of visitors now visiting the EECDI office to organize a tour.

4.4 Gender equality

The project ensured issues pertaining to women, men and youth were addressed in an equitable manner. Given the few opportunities that women and girls have in the Maasai community, the project took considered measures to ensure that they were not left behind in project implementation and had interventions that targeted them: The following are examples:

- i. Of the 252 people trained in effective utilization and disbursement of the revolving fund during the business management training 152 (60%) were women, 71 young people and 29 were men.
- ii. Of the 335 people benefited from the CRF, 222 (66%) were women and 153 were youth (46%).
- iii. 6 women were trained as tour guides.
- iv. The project constructed two booths for use by 320 women at Ngare Sero and Oldonyo Lengai villages, which contributed to their incomes.
- v. In Year 2, the project supported nine women from Ngare Sero and Oldonyo Lengai villages to a knowledge exchange visit that improved their business skills and knowledge.

4.5 Programme indicators

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

The project brought local communities to the core of development and implementation of the Catchment Action Plans for Ngare Sero and Pinyinyi rivers. The implementation of the CAP contribute to better management of biodiversity in at Lake Natron.

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

The project facilitated local communities to develop two Catchment Action Plans for Ngare Sero and Pinyinyi River, with full participation of local people. The implementation of the CAP will contribute towards protection of key catchments that provide fresh water to Lake Natron that is essential for the breeding of Lesser Flamingos

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

The management structures of the project included a participatory approach. All stakeholders including local communities (including women and youth) were engaged in all decision-making processes through the established Project Steering Committee. Development of the TDP received input from all sections of society. At the same time, the implementation of the Community Revolving Fund benefited more women than any other group (see above)

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

This project has supported household income improvement through the implementation of capacity building programs and implementation of the CRF. Construction of two booths for sale of beads by women has also supported household income increase. More than 1,085 people (793 women, 86 men, 2014 youths (including 109 tour guides) benefited from programmes that resulted to their income increase. This is approximately 650 households.

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**
- Women's incomes increase by 38%
- Young people's incomes increase by 63%
- Men's incomes increase by 176%

Income was calculated at individual (and gender level) rather than at household level as the project was designed to increase individual level income. It was also calculated against the baseline and was not compared to national average.

4.6 Transfer of knowledge

- The project shared the ecotourism model from this project with policy makers - the Tourism lead at the East African Community (see section 3.1). Discussions also included potential for joint fundraising for a transboundary project(s) between BirdLife International, the East African Community Secretariat and its Lake Victoria Basin Commission. If the project becomes a reality it would provide an opportunity to share the lessons from the Darwin-funded project to within the East African Community member states.

Based on the annual water bird census data collected in the course of the project, Nature Tanzania supported the government of Tanzania in updating the national AEWA bird database for Tanzania. The project partly supported data collection that led to M.Sc. qualification of Mr. Emmanuel Mгимwa (Project Manager) who is from the United Republic of Tanzania. A draft manuscript has been submitted to the African Journal of Ecology and is being peer reviewed for publication.

4.7 Capacity building

Emmanuel Mгимwa (male) who was the Project Manager has now been promoted to the Executive Director position of Nature Tanzania, the potential national conservation NGO Partner of BirdLife in Tanzania.

Flora T Assey (female) who was initially the project contact at the Regional Administration office was promoted and appointed as the Principal Ecologist at the Ngorongoro Conservation Area Authority (NCAA). Her experience in this project played a role in her promotion.

5 Sustainability and Legacy

The project put measures in to ensure sustainability and legacy. The following will be the enduring legacy of the project:

- The Community Revolving Fund – this perpetual fund will continue long after the project. The structures include annual reports on its performance. The fact that a local CBO has the capacity to run this fund further solidifies this legacy (see activity 2.4)
- The Tourism Development Plan - developed with all relevant stakeholders and owned by the government (see activity 1)
- The capacity built and livelihood improved on women, tour guides and men will continue to benefit the communities of Lake Natron to tap into ecotourism business opportunities (see activity 2)
- Improved and restored ecosystem including by planting of 7,500 trees will continue to benefit the ecosystem. The fact that Lake Natron continues to be the prime breeding site for Lesser Flamingos is perhaps the biggest legacy (see activity and picture in Activity 3.6)
- A national institution, Nature Tanzania, has taken over post project activities and is committed to continue supporting the communities, working with government agencies and fund raising for future work.
- Communities and the Government of Tanzania are now committed to employ ecotourism business as a sustainable livelihood at Lake Natron. This is evident from the request received from other communities who were not engaged in this project to be included in some activities, which sets the foundation of a strong legacy into the future.

- BirdLife, Nature Tanzania and EECIDI are committed to ensuring the Community Revolving Fund continues in perpetuity. One, the operational procedures put in place to safeguard the funds will ensure its growth into the future, including through the little interest charged. We are also committed to raising funds to boost the principal amount of the CRF (see Annex 15). For example a recent application by Nature Tanzania to the UNDP/small grants included a component of the CRF.
- BirdLife is committed to continue working in Tanzania by developing Nature Tanzania's capacity to become a BirdLife partner by 2022. The long terms commitment spanning over 12 years at Lake Natron continues and will continue to seek fundraising opportunities to support work at the site. For example, BirdLife already submitted a Stage 1 application for Darwin Initiative's Round 27 call for proposals.

6 Lessons learned

The key lessons learnt and recommendations from this project include:

- External shocks such as COVID-19 can significantly affect community-based business including ecotourism business. It is crucial to plan and consider external shocks in development plans and projects. Community members and leaders need to be capacitated to effectively plan and respond to these shocks; this is one of the elements in BirdLife's application for Round 27 Darwin Initiative call for proposals.
- Active participation of project partners and stakeholders is key to successful project implementation. It is among the key reasons for the successful implementation of this project crucial to the all-round endorsement and support from local communities, village, ward and district governments and from the Government of Tanzania. Involvement of Maasai traditional leaders (*Laigwanaan*) made the process very smooth.
- Consistency and transparency are key at gaining the confidence of the community, government and other stakeholders. Trust was built through regular consultations and addressing any issues and challenges arising from project implementation. As a result, BirdLife became the 'go-to' NGO on conservation and community issues at Lake Natron by the Government of Tanzania, community members and other civil society organisations.
- The lessons from the Think Pink campaign (2007-2015) which advocated against the construction of soda ash mining at Lake Natron provided lessons for designing and implementation of win-win programs such as ecotourism activities. Discussions with some insiders indicate the presence of the project prompted government's decision to halt plans for soda ash mining in 2018 and shift focus on conservation and ecotourism business promotion for sustainable livelihoods. This is one key achievements at the Lake Natron ecosystem.
- Communities and the Government of Tanzania are now committed to employ ecotourism business as a sustainable livelihood at Lake Natron. This is evident from the request received from other communities who were not engaged in this project to be included in some activities. The request and commitment of the Government of Tanzania in supporting implementation of the TDP is evidence of government support.
- There needs to be flexibility when planning community based financial loan schemes such as the Community Revolving Fund. The project team had not anticipated the amount of time required to co-develop the guidelines and set up systems for the revolving fund. Working with local leadership, the team developed a clear path for application, review, disbursement and repayment of loans, which eventually worked very well. Eventually, the systems put in place worked extremely well as evidenced by the growth of CRF of 17.1% against the projected 10%.

6.1 Monitoring and evaluation

The project original Logframe was revised and approved in October 2018. The project has been reporting against this Logframe since then. The project also developed an M&E Plan which

guided tracking of indicators throughout the project. Some indicators required tracking annually, every 6 months and at the end of project. The project followed the M&E plan which was slightly tweaked at the end of Year 2. The Project Manager worked with EECDI in tracking most of the project indicators. Special questionnaires and data collection forms were kept at the EECDI office and were completed by the Coordinator with guidance from the Project Manager. Reports from the baseline, monitoring and end of project assessments are shared with this report as Annex 27.

Overall, the M&E plan was followed and was fit for purpose. Once approved, there was no amendment until the project ended.

6.2 Actions taken in response to annual report reviews

Below are the outstanding issues raised by the reviewer during Year 1, 2 and 3 of the project and our responses:

<p>Year 1 Feedback and Response</p> <p>Reviewer point 1: The reviewer queried the project’s means of verification during the review of Year 1 Annual Report for the increased awareness of the importance of trees in the catchment area by measuring the number of newly cut trees.</p> <p>Response: In response, the logframe and M&E plan were revised (see the project’s Year 2 Annual Report) and this indicator was updated. The project team counted the number of stumps present in a selected number of catchment plots to create a baseline in January 2018. The count was then repeated at the end of the project to survey how many (if any) new stumps are present. The indicator to assess the increased awareness of the importance of trees in the catchment area was set at less than two new stumps for every ten trees present against the current rate of stumps for every ten trees. After conducting the end of the project survey in March 2020, the project found that there are two new stumps for every ten trees present. From these survey results, grazing in the catchment areas seems to have been reduced significantly at least at Ngare Sero village.</p>
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<p>Year 2 Feedback and Response</p> <p>Reviewer point 1: The Report notes that, following consultation with local communities, it was decided to give priority for Revolving Funding to improve existing businesses rather than create new businesses. Is the project able to identify other sources of funding that would help new businesses that might increase tourist numbers?</p> <p>Response: The issue of funding existing business was based on the fact the experience of their owners and therefore the likeliness of success. This is by considering that these people already know the challenges and successes of their business than those who want to establish a new business. However, the district and regional governments have promised to link the communities with other relevant organizations that provide financial support at the same objectives as of this project. Furthermore, BirdLife and Nature Tanzania continue to fundraise for funds to complement the established CRF. The EECDI is also committed to investing small percent of its revenues into the fund.</p> <p>Reviewer point 2: Flamingo numbers in Year 2 are compared with Year 1 baseline data, but it would be useful to present them in the context of longer-term population data to emphasise the importance of the increase recorded over the past year. It would also be interesting to read more discussion on the reasons for such a significant increase over just one year. It is not clear what aspect(s) of the project work the team believe has contributed directly to the increase in flamingo numbers.</p> <p>Response: The data we have on flamingos is comparable to previous available studies. For example Mlingwa and Baker (1995) counted 2,759,026 flamingos and Mmassy <i>et al</i> (2017) counted 1,500,00 birds. It is accepted that Lake Natron supports the breeding of 1.5-2.5 million Lesser Flamingos - which is 75% of the global polulation of the species. At Lake Natron, breeding of the lesser flamingo occurs from October to February. However, the</p>
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species may not breed annually. This is largely depending on the onset and amount of rain received in that year. The water level has a great contribution to breeding conditions including physical-chemical variables. In 2019, it appears that there was enough and moderate rains to trigger a successful breeding event. Furthermore, it should be acknowledged that some efforts of the communities and their government authorities for working on conservation and restoration of the catchments creating ideal conditions for successful breeding events.

Reviewer point 3: Clarification of the actual benefits of the two booths to the income of local people during the second year of the project would be helpful.

Response: This is included in the year 3 annual report and is summarized in the table below

No.	Before the booth	Monthly income as at August 2019	Monthly income as at March 2020
1			

Reviewer point 4: The reports detail the uses of five of the eight tree species planted, suggesting that species choice was determined by their usefulness to local people, but this is not discussed in the reports. It is also unclear how the planting sites were selected.

Response: The planted trees were chosen based on their usefulness to local communities but also being indigenous so that they can survive the harsh environment of Lake Natron. The planting trees were selected based on the willingness of the relevant authorities and people to plant and take care of the trees, availability of fresh water to support the planted trees and based on the need for planting the tree.

Year 1 Feedback and Response

Reviewer point 1: BirdLife International has been advocating for the conservation of this site since 2006. The government decision to halt plans for soda ash mining and to embrace conservation is a major achievement and key lessons from the advocacy process would benefit similar sites facing the same problems.

Response: This is included in the lessons learnt section. In addition, BirdLife will share lessons from this project with other partners in Africa who are facing similar issues

Reviewer point 2: In relation to COVID-19, provide details of measures the project taken in relation to health and safety of project partners (NT and EECDI) who are expected to continue supporting key project activities beyond the project timeframe and beneficiaries.

Response: Several restrictions were made by the government of Tanzania to contain the COVID-19 pandemic. All project activities stopped but the government announced that Tanzania was COVID-19 free. This allowed the resumption of some activities, including ecotourism. The project partners and businesses are ensuring strict adherence to the COVID-19 health protocols such as social distancing and providing hand sanitizers.

Reviewer point 3: Evaluate the activities that may be affected by COVID-19 which have not been completed and if necessary make recommendations on how they will be implemented beyond the timeframe of this project.

Response: Activities which were not implemented because of the COVID-19 impacts are included in the priorities for future actions to be led by Nature Tanzania, including the future operations of the CRF. BirdLife will continue to work with, mentor and support Nature Tanzania by continuing to provide support and be involved with the work at Lake Natron, until Nature Tanzania is a fully fledged and fully funded NGO in its own right.

7 Darwin identity

The project publicized and acknowledged the Darwin Initiative and the UK Government in all consultations and meetings and training and capacity building sessions conducted during the project. This included the land rights training, ecotourism and business management trainings and key consultations with stakeholders at the village, ward, district, regional and national level. The project team made every attempt to recognise Darwin and the UK government contribution

in communications and media reports. Several stories on the BirdLife website²⁴ and social media platforms made an explicit mention of the Darwin Initiative²⁵

All structures (e.g. booths and their signposts) built in this project were branded with the Darwin Initiative and project partner logos and recognised the contribution of the Government of UK. The TDP document has acknowledged Darwin Initiative as the donor of this project. All awareness materials developed have acknowledged the Darwin Initiative and their logo is prominently captured in both. The project logo was used in all formal letters to government and private institutions as well as local communities.

In all Nature Tanzania quarterly newsletters, Darwin Initiative and the Government of UK were recognised and acknowledged as the main donor and support of Lake Natron activities.



Figure 9: project logo

8 Finance and administration

8.1 Project expenditure

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

Staff employed (Name and position)	Cost (£)
Project Manager	
Finance & Admin Assistant	
Project Coordinator	
Communications Officer	

²⁴ <https://www.birdlife.org/worldwide/news/bumper-breeding-season-flamingo-factory-lake-natron>

²⁵ <https://www.birdlife.org/worldwide/news/after-10-year-battle-tanzanias-flamingo-factory-safe>

Financial Manager	
Senior Advisor: Legal and Risk Management	
TOTAL	

Capital items – description	Capital items – cost (£)
TOTAL	

Other items – description	Other items – cost (£)
Consumables- TDP documents distribution	
Stationery & Signposting	
TOTAL	

8.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
TOTAL	

Source of funding for additional work after project lifetime	Total (£)
TOTAL	

8.3 Value for Money

Name of Seller	Vehicle Model	Quote	Comment
George Peter Karpa	Toyota L/Cruise Moel HZJ75RV-MR		
Humprey Kisamo	Toyota L/C ZJ75 Station Wagon		
Africarriers Ltd	Toyota L/C HZJ77		

The above is an example of value for money. We evaluated the bids that we received and bought the vehicle that cost £, which was purchased in good condition and enabled the project to meet all transportation needs.

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

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

- The project improved the monthly income of 1,038 people: 757 women from of \$52 to \$72; 204 youth from \$46 to \$75 and 75 men from \$31 to \$68
- 7,500 trees planted, a Catchment Action Plan for the Ngare Sero and Pinyinyi villages developed, the integrity of Lake as a breeding site for flamingos maintained and 10,000 ha of wetlands protected.
- A Tourism Development Plan (TDP) to coordinate ecotourism investment was developed and endorsed by the government with participation of all stakeholders. The TDP is domiciled at the office of the Regional Administrative Secretary in the Arusha Region.
- Two booths were constructed at Ngare Sero and Oldonyo Lengai villages to help Maasai women to sell their beadwork in a sheltered environment.
- A total of 335 individuals (222 women, 153 young people and 23 tour guides) benefited from the Community Revolving Fund and the revolving fund grew by 17% from £ to £by end of project.
- For the first time since 1995 (see section 3.4) the project recorded one of the highest number of Lesser Flamingos ever counted at one place in Eastern Africa (and possibly the world), with **2.7 million** flamingos recorded in the project's 2019 annual count.

Quote:

Mama Esuphat Ngoyasi, the Chairperson of Ngare Sero Women, says: "We feel empowered and thank BirdLife International and the Government for investing in women. We now have space to comfortably sell our beadwork to tourists. The women of Lake Natron are starting to enjoy the fruits of conservation".

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

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators ²⁶	Means of verification	Important Assumptions
Impact: (Max 30 words)			
Development, piloting and promotion of an ecotourism model and restoration of key ecosystems for poverty alleviation and biodiversity protection in East Africa.			
<p>Outcome: (Max 30 words) 26 words</p> <p>The biodiversity, wetlands, and the livelihoods of local communities at Lake Natron are enhanced and protected, through sustainable community based ecotourism and water catchment management models.</p>	<p>0.1 BEOP, enhanced capacities of local people translate into greater incomes and contribute to poverty reduction: incomes of 1,100 people including 500 women, 200 men, 400 youth, (including 90 guides) will increase from an average of \$31-\$60 for men; \$52-\$75 for women and \$46-65 for youth, per month.</p> <p>0.2 BEOP number of tourists visiting Lake Natron increases sustainably from baseline of 5,018 to 7,000 per year, generating more income for the communities.</p> <p>0.3 Sustainable Ecotourism model developed BEOP and endorsed by all three districts (indicator 1a), 50% of tour operators and shared nationally and internationally via an online platform with at least 100 civil society organisations signing up to endorse methodology (indicator 5b).</p>	<p>0.1 Ngare Sero Eramatare Community Development Initiative (EECDI) Records²⁷</p> <p>0.2 Records of entries at the gates</p> <p>0.3 Tourism Development Plan in place. Endorsement letter from TATO (representing ~62% of all tour operators), newspaper reports; Final Project Report. Web site statistics for the online platform. EECDI report file records at start and BEOP.</p>	<p>National and district governments continue to work with tourism stakeholders to boost ecotourism and conserve biodiversity at Lake Natron</p> <p>Local communities around Lake Natron continue to be willing to engage in ecotourism activities and understand the benefits of protecting Lake Natron and its surroundings</p> <p>National and international tourism is not impacted by any terrorism actions in Tanzania</p>

²⁶ During the inception phase, we will conduct a baseline study that will enable us to refine the indicators and ensure that the baseline data we have provided here is still up-to-date. Getting all the baseline data at the start of the project will enable us to adequately measure progress during and at the end of the project.

²⁷ EECDI records capture information on members (including incomes), minutes of meetings, tourism data, accounts, records of incidences around the ecosystem and illegal activities.

	<p>0.4. Over the project, the proportion of flamingo fledglings relative to estimated number of breeding pairs is stable or increasing compared to YR1 baseline, as a measure of breeding success and enhanced biodiversity</p> <p>0.5. BEOP 10,000 ha hectares of wetlands protected through a Catchment Action Plan (CAP) for Pinyinyi and Ngare Sero rivers, and endorsed by the village councils of the two villages (Output 3 indicators)</p>	<p>0.4 Annual water bird census report; IBA monitoring reports</p> <p>0.5 Catchment plan published on EECDI and Nature Tanzania website Village council minutes endorsing CAP</p>	
<p>Outputs:</p> <p>1. A coherent TDP and clear revenue sharing mechanism in place.</p>	<p>1.a. BEOP a sustainable TDP has been developed and validated by stakeholders in 3 districts with clear revenue sharing mechanism (indicator 1.c.) and guidance on optimum tourist numbers to protect the fragile ecosystem, in place.</p> <p>1.b By end of Year 2, market analysis for ecotourism at Lake Natron developed (as part of TDP)</p> <p>1.c. Revenue sharing plan drawn up in YR 2, agreement and endorsement coordinated by the Regional Administrative Secretary, and being implemented by YR 3 .</p> <p>1.d BEOP, Two (2) out of the three gates (physical barriers) erected by districts at Lake Natron removed. The one remaining gate agreed upon by all three districts.</p>	<p>1.a TDP and consultation meetings reports, project progress report</p> <p>1.b. Market analysis report within the TDP</p> <p>1.c. Revenue sharing plan Minutes of meetings of Regional Administrative Secretary spelling out revenue sharing</p> <p>1.d. Actual number of gates being used, and annual report from office of the Regional Administrative Secretary showing revenue distribution as per indicator 1.c.</p>	<p>National and district governments continue to work with tourism stakeholders to boost ecotourism at Lake Natron</p> <p>District administration from Ngorongoro, Longido and Monduli continue to engage on the issue of gates</p>
<p>2. Improved capacity of local communities to conduct ecotourism business and natural resources</p>	<p>2.a BEOY2, 75% of 100 recipients (community representatives, tour guides, community campsite operators) show increased confidence through self-</p>	<p>2.a Training materials and reports for indicators 2a and 2b, attendance records, pre and post training surveys to assess course effectiveness</p>	<p>Once training is done, EECDI continues to ensure follow up and ensure deployment of skills</p>

<p>decision making through relevant training and capacity building.</p>	<p>assessment by the end of a 2 day training course in ecotourism management, business management, revolving fund management, customer care, and responsible guiding This will include 40 women and 40 youth and 20 men.</p> <p>2.b A 1 day training in ecotourism planning, marketing and hospitality will be conducted for at least 30 ecotourism leaders selected from the above group. End of project survey to assess if the communities feel better supported by the leaders.</p> <p>2.c. BEOP, the existing 80 tour guides have their capacity built through training and an improvement in tour guiding is indicated in a follow up survey with the tour operators.</p> <p>2.d. Up to 40 tour guides benefit from the revolving fund through financial support e.g. start up money, money for essential equipment, etc.</p> <p>2.e BEOY2, 100 people, (20 women,40 youth and 40 men), including village leaders, trained in natural resource governance and land rights (Land Act No 4 and 5 of 1999). End of Project post-training survey shows 90% of trained leaders have increased confidence in entering negotiations and making sound decisions for the benefit of the village and natural resources.</p> <p>2.f. BEOY2, 1 booth for sale of Maasai beads is in place and at least 300 women using it BEOP.</p>	<p>2.b. Increased capacity evident from increased income (indicator 0.1), tourist numbers (indicator 0.2) and tour company satisfaction surveys (see MoV 2c). Post project survey to qualitatively assess whether communities have benefited from increased knowledge of trainees.</p> <p>2c. Brief follow up quality survey with tour operators to assess efficiency of the tours. Collected weekly/fortnightly from the operators</p> <p>2.d Survey on utilisation of revolving fund and beneficiaries</p> <p>2.e Land rights training report, training evaluation report, project progress report. MoV if a village has had the opportunity to act: self-assessment questionnaire – did the village leaders make the right decision for the village and for nature (as the land laws state)? MoV if a village has not had the need to act: self-assessment questionnaire - do they feel confident they would know how to act to the benefit of the village and nature?</p> <p>2.f Project report. Sales records at booth. EECDI records, project evaluation, training reports</p>	<p>Local communities willing to use their increased capacity and new skills to effect transformational change</p> <p>Beneficiaries will be assessed, and must qualify for the revolving fund, in order to benefit from it.</p> <p>Assume villagers gain the confidence through knowledge of the Land Act to voice their opinions against larger bodies such as soda ash mining companies and that these bodies then listen</p>
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	<p>2.g. BEOY2, revolving fund operational procedures in place. At least 100 people including 40 women, 40 youth and 20 men trained in effective utilization and disbursement of the revolving fund.</p> <p>2.h. BEOP, a total of 500 people (200 women, 200 youth – including 40 guides (indicator 2.d) - and 100 men) trained and effectively utilising loans disbursed through the revolving fund with their monthly income rising from \$45 to \$70 BEOP (indicator 0.1).</p> <p>2.i. The revolving fund grows by 10% (from £ at start of project) BEOP.</p>	<p>2.g Annual Revolving Fund Procedures</p> <p>2.h. See MoV 2.d, EECDI records</p> <p>2.i. Revolving Fund Audit Report</p>	
<p>3. Key wetlands, rivers and springs protected and biodiversity enhanced through tree planting, catchment restoration and protection. State of biodiversity, and water quality enhanced and monitored.</p>	<p>3a Catchment Action Plan for Pinyinyi and Ngare Sero rivers developed and endorsed by at least 95% of village leaders in 2 villages.</p> <p>3b. During YR 2 at least 1,300 people made aware of the need to plant trees through community meetings. At least 7,500 seedlings planted with indigenous tree seedlings BEO Y2 and at least 60% surviving BEOP.</p> <p>3c. BEOP Reduce from an historic baseline of 4 new tree stumps in every ten at start of project to two newly cut tree stumps out of every ten by the end of YR 3.</p> <p>3.d. BEOP Percentage of people grazing in sensitive areas is reduced to 15% or better (from a baseline of 35%)</p>	<p>3a. Catchment Action Plan and village council meeting minutes and attendance lists from the two villages endorsing the plan. Project progress reports; reports from community awareness meetings Pre and post awareness surveys</p> <p>3b. Project reports quantifying i) number of people reached in awareness raising ii) number of seedlings planted and iii) seedling survival at end of project Pre and post awareness surveys</p> <p>3c Survey report on new tree stumps in the catchments.</p> <p>3.d. Survey of resource use at start and end of project.</p>	<p>Unfavourable weather conditions (e.g drought)</p> <p>Communities attitudes and activities do not change</p> <p>External pressures such as massive industrial or agricultural development do not affect impact on ecosystem and project efforts</p> <p>Current economic, social and environmental factors do not change significantly during the lifetime of the project</p>

	<p>3.e. BEOP the volume of water abstracted from Pinyinyi river for irrigation reduced by 25% from YR 2 volume baseline measurements. See below.</p> <p>3.f. BEOP turbidity of water flowing into the lake improved by 30% c.f. YR 2 baseline.</p> <p>3.g. BEOP Dissolved Oxygen²⁸ maintained at not less than 5 mg/litre at key rivers</p> <p>3.h. BEO Y2, at least 40 young people, including tour guides, trained in IBA monitoring²⁹ (using State, Pressure, Response) to enable annual assessment of the state of biodiversity.</p> <p>3.i. BEOP, biodiversity state, pressure, and response monitoring data targeting status of flamingos and key habitat quality available³⁰</p> <p>3.j. (Indicator 0.4) BEOP, the proportion of flamingo fledglings relative to estimated number of breeding pairs is stable or increasing compared to YR1 baseline, as a measure of breeding success.</p>	<p>3.e. Water use survey.</p> <p>3.f. 3.g. M&E Water quality and volume reports from YR2</p> <p>3.h. IBA monitoring training reports</p> <p>3.i. IBA monitoring reports, project reports</p> <p>3.j. Annual water bird census conducted by Project Manager with local community and TAWIRI. IBA monitoring report.</p>	
<p>4. Awareness raised of local communities and government officials on Lake Natron's ecosystem value and threats to it (including deforestation, overgrazing, water use and catchment</p>	<p>4.a BEOP awareness on the value of Lake Natron and its ecotourism potential (and threats) raised through various means including through radio, TV, newspapers and production and distribution of 100 Posters reaching</p>	<p>4a. TV and newspaper records – as well as recorded estimates of viewership and readership from various TV, radio stations and newspapers.</p>	<p>Government agencies willingness to cooperate</p> <p>Communities willingness to receive message</p>

²⁸ Dissolved Oxygen is a measure of the amount of oxygen available in water to support living organisms. The more a water source is polluted, the less the amount of Dissolved Oxygen. This will be especially important for Pinyinyi river where there is a small irrigation project. The baseline measurements for this will be established during the baseline study

²⁹ <http://www.birdlife.org/datazone/info/ibamonitoring> - IBA monitoring is a simple, locally adaptable method of assessing the stage of biodiversity and pressures it faces at site level

³⁰ Biodiversity state, pressure, and response monitoring baseline data targeting status of flamingos and key wetlands will be collected during the baseline study.

<p>damage and soda ash threat) and remedial action taken.</p>	<p>minimum of 25% of the local community at Lake Natron, 70% of government officials and at least 2.5 million Tanzanians.</p> <p>4.b. BEY3, local community members taking remedial action on deforestation, water overuse and catchment damage through not overgrazing as evidenced by indicators 3.c-3.e.</p>	<p>Near end of project qualitative survey on level of awareness at Lake Natron, taken at village community meetings and assessed via project steering committee meetings</p> <p>4.b. Pre and post resource use survey. Numbers of new tree stumps. Water monitoring reports at start and end of project</p>	
<p>5. Lessons from the community-based ecotourism model shared and replicated locally, nationally, regionally and internationally</p>	<p>5.a 50 hard copies of A 4-page Booklet produced and distributed for local and national advocacy and awareness raising³¹.</p> <p>5.b BEOP, lessons and best practice shared via an online platform reaching 1,500 people within the tourist industry in Tanzania and at least 100 civil society/tourism players signing up to endorse methodology.</p> <p>5.c BEOP, lessons shared with the Sectoral Committee responsible for tourism within East African Community, as well as with the Agriculture and Natural Resource and Tourism Committee of the East African Legislative Assembly, reaching 300 people.³²</p> <p>5.d Lessons shared internationally amongst other conservation NGOs in meetings in 2019/2020, other relevant meetings and through the BirdLife website, reaching 800 people.</p>	<p>5.a Booklet</p> <p>5.b Meeting reports, PowerPoint presentations; record of online endorsements</p> <p>5.c Meeting reports, including head count of attendees, PowerPoint presentations</p> <p>5.d Poster and/or PowerPoint presentation, records of no. of users of the website, participant lists at meetings.</p>	<p>Stakeholders including BirdLife partners willingness to apply the lessons learnt</p>

³¹ It will be distributed to tour operators, govt officials, village leadership offices, Community based organisations, BL project office, project partner offices and on line

³² BirdLife International has signed an MoU with the East African Community. This target might therefore be increased if BirdLife is allowed to participate as an observer during inter-ministerial meetings and summits of the EAC.

	5.e Lessons shared with relevant ministries in at least 5 East African countries and commitment to replicate received in form of letters	5.e Government letters and reports; Press reports	
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Annex 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements for the life time of the project
<p>Impact Development, piloting and promotion of an ecotourism model and restoration of key ecosystems for poverty alleviation and biodiversity protection in East Africa.</p>		<p>7,500 trees planted, the integrity of Lake as a breeding site for flamingos maintained and 10,000 ha of wetlands protected. The income of 1,038 people (757 women from of \$52 to \$72; 204 youth from \$46 to \$75 and 75 men from \$31 to \$68 monthly income of men to be \$68) [Annex 27]</p>
<p>Outcome The biodiversity, wetlands, and the livelihoods of local communities at Lake Natron are enhanced and protected, through sustainable community based ecotourism and water catchment management models.</p>	<p>Indicator 0.1: BEOP, enhanced capacities of local people translate into greater incomes and contribute to poverty reduction: incomes of 1,100 people including 500 women, 200 men, 400 youth, (including 90 guides) will increase from an average of \$31-\$60 for men; \$52-\$75 for women and \$46-65 for youth, per month.</p>	<p>The end of the project survey in March 2020 revealed that the project improved the monthly income of 1,038 people: 757 women from of \$52 to \$72; 204 youth from \$46 to \$75 and 75 men from \$31 to \$68 [Annex 27]</p>
	<p>Indicator 0.2: BEOP number of tourists visiting Lake Natron increases sustainably from baseline of 5,018 to 7,000 per year, generating more income for the communities.</p>	<p>The baseline report has established that 5,018 tourists visited Lake Natron in 2017. The number of tourists who visited Lake Natron in year 2 of the project was at least 5,800. The number of tourists visited Lake Natron In the 2019/2020 was 5,146. This low number compared to the project expectation is a result of COVID-19 impact which had limited global movements.</p>
	<p>Indicator 0.3: Sustainable Ecotourism model developed BEOP and endorsed by all three districts (indicator 1a), 50% of tour operators and shared nationally and internationally via an online platform with at least 100 civil society organisations signing up to endorse methodology (indicator 5b).</p>	<p>The sustainable ecotourism model was developed through the Tourism Development Plan (TDP) and agreed by all stakeholders, including the umbrella organisation of all Tanzanian tour operators – TATO, comprising more than 300 organisations. TATO has provided a letter to BirdLife endorsing the tourism model and has promised to support implementation of key actions proposed in the TDP. [Annex 26]</p>
	<p>Indicator 0.4: Over the project, the proportion of flamingo fledglings relative to estimated number of breeding pairs is stable or increasing compared to YR1 baseline, as a measure of breeding success and enhanced biodiversity</p>	<p>The proportion of flamingo fledglings relative to the number of breeding pairs was:</p> <ul style="list-style-type: none"> - In 2018 there were 120,000 fledglings and 760,000 adult birds, which was 16% - In 2019 there were 955,000 fledglings against 1,750,000 adult birds which was 55% - In 2020 45 fledglings were counted against 250 adult birds which was 18%

		In Year 3, there was a decrease from 55% to 14% because excessive rains discouraged flamingo breeding. It is notable that the 2019 survey for the first time showed flamingo numbers (2,705,000) exceeding the stated estimate of 1.5-2.5 million birds for East Africa. This is a clear indication that the population is growing in spite of the differences in breeding success between years due to climate variability.
	Indicator 0.5: BEOP 10,000 ha hectares of wetlands protected through a Catchment Action Plan (CAP) for Pinyinyi and Ngare Sero rivers, and endorsed by the village councils of the two villages (Output 3 indicators).	Catchment Action Plan for Pinyinyi and Ngare Sero Rivers was produced in Year 1 and endorsed by 100% of village leaders in the two villages. The implementation of the CAP now protects 10,000 hectares of wetlands in two villages. See Activity 3.1
Output 1. A coherent TDP and clear revenue sharing mechanism in place.	1.a. 1.a. BEOP a sustainable TDP has been developed and validated by stakeholders in 3 districts with clear revenue sharing mechanism (indicator 1.c.) and guidance on optimum tourist numbers to protect the fragile ecosystem, in place.	The TDP was developed in Year 2 and endorsed in Year 3, by the Regional Administrative Secretary on behalf of the three districts. The document includes a chapter on the revenue sharing mechanism and recommends the maximum carrying capacity of Lake Natron at 10,000 tourists per year. Further details are in Activity 3.1 above.
	1.b By end of Year 2, market analysis for ecotourism at Lake Natron developed (as part of the TDP).	Market analysis for ecotourism at Lake Natron was developed as part of the TDP (See Activity 1.3)
	1.c. Revenue sharing plan drawn up in YR 2, agreement and endorsement coordinated by the Regional Administrative Secretary, and being implemented by YR 3 .	The revenue sharing mechanism plan is part of the TDP. See Activity 1.4.
	1.d BEOP, Two (2) out of the three gates (physical barriers) erected by districts at Lake Natron removed. The one remaining gate agreed upon by all three districts.	Two of the three gates erected by the district governments of Ngorongoro, Monduli and Longido were removed in Year 2. The situation remained the same in Year 3. The remaining gate is used by the three districts to collect revenue for sharing by the districts. This situation was maintained in Year 3.
Activity 1.1 Recruit consultant for market analysis and Tourism Development Plan (TDP)		Mr. Lota Melamari was recruited as a market analysis and TDP consultant in year 1. See activity 1.1. 3.1
Activity 1.2, Collect data on ecotourism business conducted at Lake Natron including value chain.		Data collection on ecotourism business at Lake Natron is completed and included in the final and endorsed TDP document. See activity 1.5.
Activity 1.3: Support production of ecotourism market analysis report (as part of TDP)		Ecotourism market analysis has been produced and is part of the final and endorsed TDP document. See activity 1.3.

Activity 1.4: Collect data and consult with stakeholders on TDP and revenue sharing plan (as part of TDP)	The collection of data and stakeholders' consultation on TDP and revenue sharing plan was completed and concluded in Year 2. Please see activity 1.4.	
Activity 1.5: Support production of the TDP and share with stakeholders	The final TDP was produced with 200 English language and 100 Swahili language hard copies printed. The project began sharing hard copies with relevant stakeholders and this will continue beyond the project. Soft copies have been shared widely and are uploaded in the BirdLife ³³ and Nature Tanzania's ³⁴ websites.	
Activity 1.6: Organize a multi-stakeholder TDP validation and tourism revenue-sharing harmonisation meeting	A multi-stakeholder TDP validation and tourism revenue-sharing harmonisation meeting was conducted on 24 th September 2018. See Activity 1.6.	
Output 2. Improved capacity of local communities to conduct ecotourism business and natural resources decision making through relevant training and capacity building.	2.a. BEOY2, 75% of 100 recipients (community representatives, tour guides, community campsite operators) show increased confidence through self-assessment by the end of a 2 day training course in ecotourism management, business management, revolving fund management, customer care, and responsible guiding This will include 40 women and 40 youth and 20 men.	A total of 252 people attended a 2 days training course in ecotourism management, business management, revolving fund management, customer care and responsible guiding. This included (152 women, 71 youths and 29 men). Post training surveys conducted by BirdLife International reported that 100% of the trainees strongly agreed that their visitor management, customer care, tour guiding ethics and campsite management capacity has improved after the training.
	2.b. A 1 day training in ecotourism planning, marketing and hospitality will be conducted for at least 30 ecotourism leaders selected from the above group. End of project survey to assess if the communities feel better supported by the leaders.	The end of the project survey conducted in March 2020 found that 100% of the surveyed community members (125) felt better supported by their leaders in making ecotourism ad business related decisions as a result of the conducted ecotourism planning, marketing and hospitality training. See Annex 11.
	2.c.. BEOP, the existing 80 tour guides have their capacity built through training and an improvement in tour guiding is indicated in a follow up survey with the tour operators.	A total of 106 tour guides were trained in year 2 and their capacity built to effectively undertake tour guiding. A follow up survey of 58 tour operators indicated they had noted improvement in the services provide by tour guides. 71% of the tour operators said tour guides had "very good" tour guiding skills, including knowledge of attractions and 84% said tour guides' visitor management and customer care skills were "very good". See annex 28.
	2.d. Up to 40 tour guides benefit from the revolving fund through financial support	In Year 2 a total of 106 tour guides were trained on utilizing the revolving fund. BEOP, a total of 31 tour guides benefited from the revolving fund. Please see activity 2.1 and 2.4.

³³ https://www.birdlife.org/sites/default/files/final_tdp_pgs_signed.pdf

³⁴ <https://www.naturetanzania.or.tz/technical-publications/>

	e.g. start up money, money for essential equipment, etc.	
	2.e BEOY2, 100 people, (20 women, 40 youth and 40 men), including village leaders, trained in natural resource governance and land rights (Land Act No 4 and 5 of 1999). End of Project post-training survey shows 90% of trained leaders have increased confidence in entering negotiations and making sound decisions for the benefit of the village and natural resources.	A total of 101 people (24 women, 30 young people and 47 men) were trained in natural resource governance and land rights. End of Project post-training survey showed that 100% of the trained leaders (101 leaders) have increased confidence in entering negotiations and making informed decisions for the benefit of the village and natural resources in their areas. Please see activity 2.5.
	2.f. BEOY2, 1 booth for sale of Maasai beads is in place at the cultural boma and at least 300 women using it BEOP.	Two booths for the sale of beadwork by Maasai women were constructed in Year 2. The booths are being used by a total of 320 women. See Activity 2.3.
	2.g. BEOY2, revolving fund operational procedures in place. At least 100 people including 40 women, 40 youth and 20 men trained in effective utilization and disbursement of the revolving fund.	The revolving fund operation was operationalised in March 2020. A total of 252 people (152 women, 71 young people and 29 men) were trained in effective utilization and disbursement of the revolving fund during business management trainings in Year 2. An end of Year 2 survey showed that 96% of the trained members understood how the revolving fund operated and were aware of the guidelines and policies of the revolving fund. See activity 2.4.
	2.h. BEOP, a total of 500 people (200 women, 200 youth – including 40 guides (indicator 2.d) - and 100 men) trained and effectively utilising loans disbursed through the revolving fund with their monthly income rising from \$45 to \$70 BEOP (indicator 0.1).	A total of 682 people were trained in the use of the CRF – the initial training brought together 252 (152 women, 71 young people and 29 men) in Year 2 and EECDI training 430 people (245 women and 121 young people). The monthly income increased from \$31 to \$68 for men; from \$52 to \$72 for women and from \$46 to \$75 for young people as of end of the Year 3 survey. See activity 2.4.
	2.i. The revolving fund grows by 10% (from £ at start of project) BEOP.	BEOP the revolving fund has grown by 17%. The disbursement and repayment is intact and effective because of the integrated system developed participatory by project stakeholders. See activity 2.4 and annex 13.
Activity 2.1. Organize training on ecotourism and business management for men and women, and youth and follow up training in villages by trainees. Conduct post-training self-assessment to training participants		Ecotourism and business management trainings were conducted in Year 2. The revolving fund has provided further financial support to women, men and young people at Ngaresero village. Considering the COVID-19 impacts Magadini and Pinyinyi villages will be added to the activity in future. In May 2019, the project supported to nine women from Ngare Sero cultural boma and Oldonyo Lengai with a knowledge exchange visits to Tarangire National Park, Arusha, Mto wa Mbu and Karatu. Five additional markets were secured increasing their sales and income. See annex 11.
Activity 2.2 Devise, distribute and analyse survey form for tour operators to report against quality of tour guiding.		The post training self-assessment survey conducted in Year 2 revealed that 100% of 94 tour guides felt that their visitor management, customer care,

		tour guiding ethics and campsite management capacity had improved after the training. At least 71% of the surveyed tour operators reported that tour guides had “very good” tour guiding skills, including knowledge of attractions (see annex 12 and annex 28.
Activity 2.3. Construct booth and use it for sale of beads and other merchandise		Two booths have been constructed at Ngare Sero and Oldonyo Lengai villages in year 2. They are currently been used by more than 320 women to sell beads and other merchandise. In Year 3, five additional markets were secured and they are now used to sell their beads and other merchandise on top of their traditional markets (see Activity 2.1)
Activity 2.4 Set up Revolving Fund, training community back to back with 2.1 operationalise and monitor its implementation.		The revolving fund system and the process are now in place and the activity is in operation since March 2019. The activity was sub granted to the EECDI, the project partner. First, second and third batch loan beneficiaries received payments. Repayment for the first loan beneficiaries is completed and the revolving fund grew by 17%.(See Activity 2.1 and annex 17)
Activity 2.5 Conduct lands rights training (includes preparations).		Land rights and natural resource governance training was conducted in Year 1 and Year 2 and Year 3. See Activity 2.5 and Annex 17.
Activity 2.6 Conduct end of project post-training survey to assess leaders’ confidence in entering into negotiations and making sound decisions.		End of project post-training self-assessment on leaders’ confidence in entering into negotiations and making sound decisions was conducted in March 2020. 100% of the surveyed leaders report that their confidence in entering into negotiations and making sound decisions have significantly improved due to the land rights and natural resources training conducted in years 1, 2 and 3. See annex 18. Village and ward government leaders and district officials requested that the project train local leaders on some of the miscellaneous laws that have recently been changed by the government of Tanzania. This is an opportunity for future work at the landscape.
Activity 2.7 Conduct End of Project survey to assess if communities feel better supported by trainees from activity 2.1.		End of project survey to assess if communities feel better supported by trainees was conducted in March 2020. 100% of the surveyed communities report that they are better supported by the trainees. This is through follow up training conducted by those trainees to the communities and technical advise and guidance provided by them. See annex 27.
Output 3. Key wetlands, rivers and springs protected and biodiversity enhanced through tree planting, catchment restoration and protection. State of biodiversity, and water quality enhanced and monitored.	3a. Catchment Action Plan for Pinyinyi and Ngare Sero rivers developed and endorsed by at least 95% of village leaders in 2 villages.	Catchment Action Plan for Pinyinyi and Ngare Sero Rivers was developed in Year 2 and validated by 100% of village leaders in the two villages. See annex 19.
	3b. During YR 2 at least 1,300 people made aware of the need to plant trees through community meetings. At least 7,500 indigenous tree seedlings planted BEO Y2 and at least 60% surviving BEOP.	By the end of Year 3, a total of 2,800 people were made aware of the need to plant trees through several community meetings. Details are reported in Section 3.2 above. By end of Year 3 more than 7,500 indigenous tree seedlings were planted. The end of the project survey shows that 68% of all planted seedlings are thriving. See annex 21.

	3c. BEOP Reduce from an historic baseline of 4 new tree stumps in every ten at start of project to two newly cut tree stumps out of every ten by the end of YR 3.	The end of the project survey conducted in March 2020 reported that are only two newly cut trees out of ten. This is a result of community leaders' commitment in the implementation of the developed CAP, implementation of village land use plans and rangeland management plans. See annex 27.
	3.d. BEOP Percentage of people grazing in sensitive areas is reduced to 15% or better (from a baseline of 35%)	At baseline, 35% of the people (3.5 out of 10) were found to be grazing in sensitive catchment areas at Ngaresero and Pinyinyi. The end of project monitoring conducted in March 2020 revealed that 14% of people (1.4 out of 10) are grazing in sensitive catchment areas at Ngaresero and 15% of people (1.5 out of 10) at Pinyinyi village. See annex 27.
	3.e. BEOP the volume of water abstracted from Pinyinyi river for irrigation reduced by 25% from YR 2 volume baseline measurements. See below.	Due to the project's difficulty in obtaining water flow meter, the baseline for water flow into the lake was not established.
	3.f. BEOP turbidity of water flowing into the lake improved by 30% c.f. YR 2 baseline.	The baseline turbidity readings were 284 NTU for Ngare Sero River and 868 NTU for Pinyinyi River. The monitoring conducted in December 2019 reported 124 NTU for Ngare Sero River and 204.3 NTU for Pinyinyi River, an improvement of 43% for Ngare Sero River 23% for Pinyinyi River. See annex 27.
	3.g. BEOP Dissolved Oxygen ³⁵ maintained at not less than 5 mg/litre at key rivers	This indicator was achieved to a great extent except for Pinyinyi river in August 2018 when the reading was below 5mg/litre. This could be attributed to a peak in agricultural activities in the small irrigation at Pinyinyi. In general, dissolved oxygen measurements were better for Ngare Sero than Pinyinyi as expected. The baseline dissolved oxygen for Ngare Sero River was higher than subsequent readings, which could be due to it being taken early in the morning when river water is colder and therefore has a higher dissolved oxygen level.
	3.h. BEO Y2, at least 40 young people, including tour guides, trained in IBA monitoring ³⁶ (using State, Pressure, Response) to enable annual assessment of the state of biodiversity.	A total of 43 young people were trained on IBA monitoring (using State, Pressure and Response). A detailed report is in Activity 3.5 above.
	3.i. BEOP, biodiversity state, pressure, and response monitoring data targeting status of flamingos and key habitat quality available ³⁷	Baseline data on biodiversity state, pressure and response on the flamingo status and habitat quality is available and is reported in Activity 3.5 above.

³⁵ Dissolved Oxygen is a measure of the amount of oxygen available in water to support living organisms. The more a water source is polluted, the less the amount of Dissolved Oxygen. This will be especially important for Pinyinyi river where there is a small irrigation project. The baseline measurements for this will be established during the baseline study

³⁶ <http://www.birdlife.org/datazone/info/ibamonitoring> - IBA monitoring is a simple, locally adaptable method of assessing the stage of biodiversity and pressures it faces at site level

³⁷ Biodiversity state, pressure, and response monitoring baseline data targeting status of flamingos and key wetlands will be collected during the baseline study.

	3.j. (Indicator 0.4) BEOP, the proportion of flamingo fledglings relative to estimated number of breeding pairs is stable or increasing compared to YR1 baseline, as a measure of breeding success.	The proportion of flamingo fledglings relative to the number of breeding pairs for 2018 was 120,000 fledglings to 760,000 flamingos, for 2019 was 955,000 fledglings to 1,750,000 breeding flamingos and for 2020 is 35 fledglings to 250 breeding flamingos. There was, therefore, a proportion increase from Year 1 to Year 2 but in Year 3 there has been a significant decrease. The decrease in Year 3 is because of climate reasons and is explained in Section 3.1 above.
<i>Activity 3.1</i> Prepare and support endorsement of Catchment Action Plan for Pinyinyi and Ngaresero Rivers. Raise awareness on tree planting		The Catchment Action Plan for Pinyinyi and Ngare Sero Rivers was developed by local communities with technical support from BirdLife International and Ngorongoro District government. The document has been validated by the two village governments and the Swahili version distributed. Implementation of the CAP is ongoing by the 2 villages. Awareness raising on tree planting was conducted during various meetings and workshops with communities. More than 2,800 people have been reached by Year 3. Please see Activity 3.1 above and annex 20.
<i>Activity 3.2</i> Prepare land and plant key wetland areas with at least 7,500 indigenous tree seedlings		Preparation for land and tree planting was conducted in Year 2 and 3. A total of 7,500 indigenous tree seedlings were planted in 4 villages of the project site. Of these 68% were surviving BEOP. Please see activity 3.2 above and annex 21.
<i>Activity 3.3</i> Tree seedling after care and monitoring		Tree seedlings after care and monitoring are ongoing with the support and coordination of respective village governments and school administrations. In Year 1, 2 water tanks and pipes were provided to schools where trees were planted – this was to ensure tree survival in the absence of sufficient water. The end of the project monitoring reports that 68% of the planted seedlings were thriving. Please see Section 3.2 above and annex 21.
<i>Activity 3.4</i> Set up and carry out water quality monitoring		Water quality monitoring commenced in September 2018 with only dissolved oxygen, water turbidity, electrical conductivity and pH data collected. Further monitoring were conducted in August 2019, December 2019 and March 2020. The purchase of water flow meter has been a challenge. The project was not able to get one and therefore water flow data have not been obtained despite other efforts. Please see activity 3.4 above for a detailed report.
<i>Activity 3.5</i> Train 40 young people in IBA Monitoring (back to back with 2.1); complete IBA form and feed data into World Bird Database (including repeat monitoring in Yr2)		A total of 43 young people were trained in IBA monitoring, IBA form has been filled and feed of data to the World Bird Database was done by Nature Tanzania. Xx
<i>Activity 3.6</i> Conduct annual Water bird census in collaboration with Tawiri and local communities and obtain flamingos' breeding success data		The water bird censuses were successfully conducted in 2018, 2019 and 2020. Please see activity 3.6 above and Annex 23 for detailed results.
4. Awareness raised of local communities and government officials on Lake Natron's ecosystem value and threats to it (including deforestation, overgrazing, water use and catchment	4.a BEOP awareness on the value of Lake Natron and its ecotourism potential (and threats) raised through various means including through radio, TV, newspapers and production and distribution of 100 Posters reaching	Awareness raising on the value and threats of Lake Natron was conducted throughout the project. 60 posters were produced by the project and distributed to local communities and other project stakeholders as soft

<p>damage and soda ash threat) and remedial action taken.</p>	<p>minimum of 25% of the local community at Lake Natron, 70% of government officials and at least 2.5 million Tanzanians.</p>	<p>copies. The project reached at least 50% of the community³⁸ at Lake Natron with awareness raising messages in various meetings and events conducted during Year 1, Year 2 and Year 3. The project also reached more than 80% of government officials at the village and ward government level at Lake Natron³⁹. It is also estimated that the project reached radio, TV, newspapers reached more than 4.3 million people in Tanzania and beyond.</p>
	<p>4.b. BEY3, local community members taking remedial action on deforestation, water overuse and catchment damage through not overgrazing as evidenced by indicators 3.c-3.e.</p>	<p>Local communities took remedial actions on tree cutting, water overuse and catchment protection by not overgrazing. The end of project survey conducted in March 2020 indicated that grazing in sensitive areas including catchment areas have reduced to 14% at Ngare Sero and 15% at Pinyinyi village respectively, compared to the baseline of 35%. At Ngare Sero village, up to 80% are now grazing in Leparakash plains on top of the rift valley escarpment. This has largely reduced pressure in sensitive wetland areas.</p> <p>Communities at Ngare Sero village have also established a community-owned cattle ranch to raise awareness of the need for the improved breed and reducing the number of livestock. The March 2020 survey also found that there are only two newly cut stumps out of every ten trees in the ecosystem. This achievement is because of the implementation of the CAP. Efforts and commitment of the village government in the project sites are also contributed to these achievements.</p>
<p><i>Activity 4.1</i> Produce advocacy/awareness poster and booklet</p>		<p>Awareness raising posters and booklets were produced by the project. 60 hard copies of the poster and booklet were printed and distributed with project partners, stakeholders and community members. The two materials raise awareness of Lake Natron, the values, threats, key achievements of this project. They also provide key recommendations for policy and decision makers as well as for tourism stakeholders.</p>
<p><i>Activity 4.2</i> Carry out awareness amongst government agencies on values and threats through public forums, film and radio</p>		<p>As indicated in Activity 4.2 above, awareness was raised in Year 1 and Year 2 and Year 3 and it is estimated to have reached a total of 6.8 million people and 18 government agencies including Arusha RAS office, district councils of Ngorongoro, Monduli and Longido, TTB, TAWIRI, TANAPA, Ministry of Natural Resources and Tourism, Ministry of Works, Transport and Communication, Ministry of Internal Affairs, TAWA, Ngorongoro Conservation Area Authority (NCAA), Ministry of State in the Vice President Office for Union and Environment.</p>

³⁸ For example the project reached 53% of people at Ngare Sero village and raised their awareness on the value and threats of Lake Natron and its ecotourism potential. Ngare Sero has a total of 5,500 people and the project reached more than 2,923 during the following activities: 1,317 people during Mwenge celebrations in Year 2; 242 during Crimsonwing film; 310 during tree planting awareness; 430 people during CRF awareness conducted by the EECDI; 320 women using the 2 booths and 335 loan beneficiaries.

³⁹ For example, Ngare Sero village and ward governments have a total of 30 government officials. During the TDP consultation conducted in March 2018, a total of 25 government officials (83%) were reached and their awareness raised,

Output 5 Lessons from the community-based ecotourism model shared and replicated locally, nationally, regionally and internationally	5.a 50 hard copies of A 4-page Booklet produced and distributed for local and national advocacy and awareness raising.	60 copies of a 20-page booklet produced and distributed for local and national advocacy and awareness raising.
	5.b BEOP, lessons and best practice shared via an online platform reaching 1,500 people within the tourist industry in Tanzania and at least 100 civil society/tourism players signing up to endorse methodology.	The lessons and best practise were shared online reaching more than 1,500 people. The project reached the TATO which has more than 300 members and have endorsed the developed methodology and are committed to support its implementation and replication (annex 2). Furthermore, by using national media and print media, reaching regional and national leaders, radio stations, using the Crimsonwing film. Over 4 million people are estimated to have been reached. Please see activity 4.2 for more details.
	5.c BEOP, lessons shared with the Sectoral Committee responsible for tourism within East African Community, as well as with the Agriculture and Natural Resource and Tourism Committee of the East African Legislative Assembly, reaching 300 people. ⁴⁰	Due to the government's assembly restrictions as a result of the COVID-19 pandemic, the project was not in a position to meet with the sectoral committee responsible for tourism and natural resources and agriculture. However, the project had a meeting with the Principal Tourism Officer and the Wildlife and a Natural Resource Program Assistant in March 2020. Discussions included project achievements, outputs and possible fundraising for a follow-up transboundary project. See activity 4.2 and 5.2 above.
	5.d Lessons shared internationally amongst other conservation NGOs in meeting 2019/2020, other relevant meetings and through the BirdLife website, reaching 800 people.	The Project Manager attended the Regional Participatory Forest Management (PFM) Workshop in October 2019 in Entebbe, Uganda. The workshop was attended by government authorities and NGOs from Tanzania, Kenya, Uganda, Ethiopia and Denmark. In the workshop, the project was able to share the lessons learned from this project including key project achievements. BirdLife also used its website in 2019 to post a story about the project and the bumper breeding at Lake Natron. More than 1 million people are estimated to have reached globally from the above initiatives.
	5.e Lessons shared with relevant ministries in at least 5 East African countries and commitment to replicate received in form of letters.	The project shared lessons with the Ministry of Natural Resources and Tourism, the Ministry of the Vice-President's Office, Union Affairs and Environment, Ministry of Works, transport and Communication and the Ministry of Internal Affairs in February 2020. In October 2019, PM was able to meet with the Ministry of Water and Environment of Uganda during the PFM workshop.

⁴⁰ BirdLife International has signed an MoU with the East African Community. This target might therefore be increased if BirdLife is allowed to participate as an observer during inter-ministerial meetings and summits of the EAC.

<p>Activity 5.1 Produce advocacy/awareness booklet</p>	<p>Awareness raising posters and booklets were produced by the project. 60 hard copies of the poster and booklet were printed and distributed with project partners, stakeholders and community members. The 2 materials raise awareness of Lake Natron, the values, threats, key achievements of this project. They also provide key recommendations for policy and decision makers as well as for tourism stakeholders. See activity 4.2 above.</p>
<p>Activity 5.2 Share project lessons with tourism industry actors, and civil society organisations through online platform and in person</p>	<p>The project shared project lessons with tourism stakeholders, CSOs and online platforms and in persons. The following have been reached so far; the Ministry of Natural Resources and Tourism of Tanzania, Ministry of Water and Environment of Uganda, Forest Department of Kenya government, TTB, TATO, TAWA, TANAPA, NCAA. For persons, the project has reached Permanent and Deputy Permanent Secretaries of the Ministry of Natural Resources and Tourism, Ministry of the Vice-President Office, Union Affairs and Environment. Director of Wildlife and Director of Tourism and his Deputy have also been reached in February 2020.</p>
<p>Activity 5.3 Share lessons with East African Community (EAC) on responsible tourism through relevant committee of EAC and the East African Legislative Assembly.</p>	<p>During Year 3, dissemination of project lessons and best practices was conducted through newspapers. The project was not able to meet with EAC committees and the East African Legislative Assembly (due to COVID-19) but see Activity 4.2 for meeting with Principal Tourism Officer. PM discussed with the two officials about project achievements, key project outputs including the developed TDP and the need for its implementation. Potential fundraising opportunities for a follow up transboundary project at Lake Natron was also brainstormed. A key agreement was brainstorming for a transboundary project. Discussions are ongoing for this objective.</p>
<p>Activity 5.4 Showcase project lessons regionally and internationally amongst other conservation NGOs in meetings, other relevant forums and through the BirdLife website and social media platforms.</p>	<p>Dissemination of project lessons and best practise have been conducted through various platforms. This includes radio, newspaper and through social media and BirdLife website. A total of 6.8 million people were reached. Nature Uganda, Nature Kenya, Ethiopian Natural History and Wildlife Society (ENHWS) were also reached.</p>

Annex 3 Standard Measures

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis						
1b	Number of PhD qualifications obtained						
2	Number of Masters qualifications obtained	1	Tanzania	Male	The influence of physical-chemical variables on phytoplankton and lesser flamingo (<i>Phoeniconaias minor</i>) abundances in lake Natron, Tanzania.	English	Study was partially supported by using water quality data collected during the project
3	Number of other qualifications obtained						
4a	Number of undergraduate students receiving training						
4b	Number of training weeks provided to						

	undergraduate students						
4c	Number of postgraduate students receiving training (not 1-3 above)						
4d	Number of training weeks for postgraduate students						
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)						
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	371	Tanzania	197 females, 174males and xx youth	Business management training and ecotourism trainings		
6b	Number of training weeks not leading to						

	formal qualification						
7	Number of types of training materials produced for use by host country(s) (describe training materials)						
Research Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	1	Tanzania		Lake Natron Tourism Development Plan	English and Swahili	https://www.birdlife.org/sites/default/files/final_tdp_pgs_signed.pdf
10	Number of formal documents produced to assist work related to species						

	identification, classification and recording.						
11a	Number of papers published or accepted for publication in peer reviewed journals	1			The influence of physical-chemical variables on phytoplankton and lesser flamingo (<i>Phoeniconaias minor</i>) abundances in lake Natron, Tanzania.	English	Review in progress in the Journal of African Ecology.1
11b	Number of papers published or accepted for publication elsewhere						Location?
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	1	Tanzania		IBA Monitoring Results were uploaded to WBDB by Nature Tanzania.	English	To be shared
12b	Number of computer-based databases enhanced (containing						

	species/genetic information) and handed over to host country						
13a	Number of species reference collections established and handed over to host country(s)		Tanzania		Nature Tanzania supported the government of Tanzania updating the AEWA bird database for the Tanzania country.	English	
13b	Number of species reference collections enhanced and handed over to host country(s)						

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	2	Tanzania		PSC workshops in Arusha, Tanzania and Multi-stakeholder workshop, Arusha Tanzania	Swahili	

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	1	Uganda		Participatory Forest Management workshop in Uganda;	English	

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)		BirdLife International donated to Nature Tanzania assets with a value of GBP.
21	Number of permanent educational, training, research facilities or organisation established		
22	Number of permanent field plots established		Please describe

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work						A revolving fund with a value of more than GBP is in operation supporting communities at Lake Natron in improving their businesses even after the end of the project.

Annex 4 Aichi Targets

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	√
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	√
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	√
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	√
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	√
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	

14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	√
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	√
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	√
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 5 Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)
Paper	The influence of physical-chemical variables on phytoplankton and lesser flamingo (<i>Phoeniconaias minor</i>) abundances in lake Natron, Tanzania. Authors; Emmanuel F. Mgimwa, Jasson R. John and Charles V. Lugomela, 2020.	Tanzanian	Tanzanian	Male	African Journal of Ecology	Under review by the African Journal of Ecology.

Annex 6 Darwin Contacts

Ref No	24-091
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Annex 7 Supplementary material (optional but encouraged as evidence of project achievement)

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@itsi.co.uk putting the project number in the Subject line.	✓
Is your report more than 10MB? If so, please discuss with Darwin-Projects@itsi.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 need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	✓
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. 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	✓
Have you completed the Project Expenditure table fully?	✓
Do not include claim forms or other communications with this report. No	