

Darwin Initiative: Final Report

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

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

Darwin Project Information

Project reference	26-012
Project title	Ghodaghodi's Guardians: Communities Restoring a Ramsar Wetland at Watershed Scale
Country(ies)	Nepal
Lead organisation	Zoological Society of London
Partner institution(s)	Ghodaghodi Municipality (GM), Comprehensive Ghodaghodi Lake and Tourism Development Board (CGLTDB) and Himalayan Nature (HN)
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Project leader's name	Hem Sagar Baral
Project website/blog/social media	https://www.darwininitiative.org.uk/assets/uploads/Darwin-Newsletter-June-2021-A-Global-Restoration-FINAL.pdf https://www.darwininitiative.org.uk/assets/uploads/Darwin-Newsletter-September-2021-Our-Changing-Climate-FINAL.pdf https://twitter.com/HimalayanNature/status/1132969063913644034 https://www.facebook.com/himalayannaturenepal/posts/himalayan-nature-signed-a-project-agreement-with-zsl-nepal-in-an-event-held-at-z/2487959431223687/
Report author(s) and date	Zoological Society of London, June 2022

1 Project Summary

The project was implemented in Ghodaghodi Lake Area (GLA) and its surrounding communities, located in southwestern lowland Nepal in the Ghodaghodi Municipality of Kailali District, Sudurpaschim Province. This entire area is known by the name of the main and the largest lake – Ghodaghodi (28° 41'N, 80° 57'E), which is also a globally significant Ramsar wetland and a Key Biodiversity Area (KBA). GLA encompasses 10,670 ha and generally comprises a number of smaller wetlands, forest patches, grasslands/shrublands, and settlement and agricultural areas. In addition to this, the area lies within Basanta Protected Forest, a critically important biological corridor, supporting the movement of carnivores, herbivores, and other threatened species across the Terai Arc Landscape (TAL), and also lies between two national parks of the Western Terai Complex: Bardia National Park (park border approx. 30 km east) and Shuklaphanta National Park (park border approx. 60 km west) as shown in the map below.

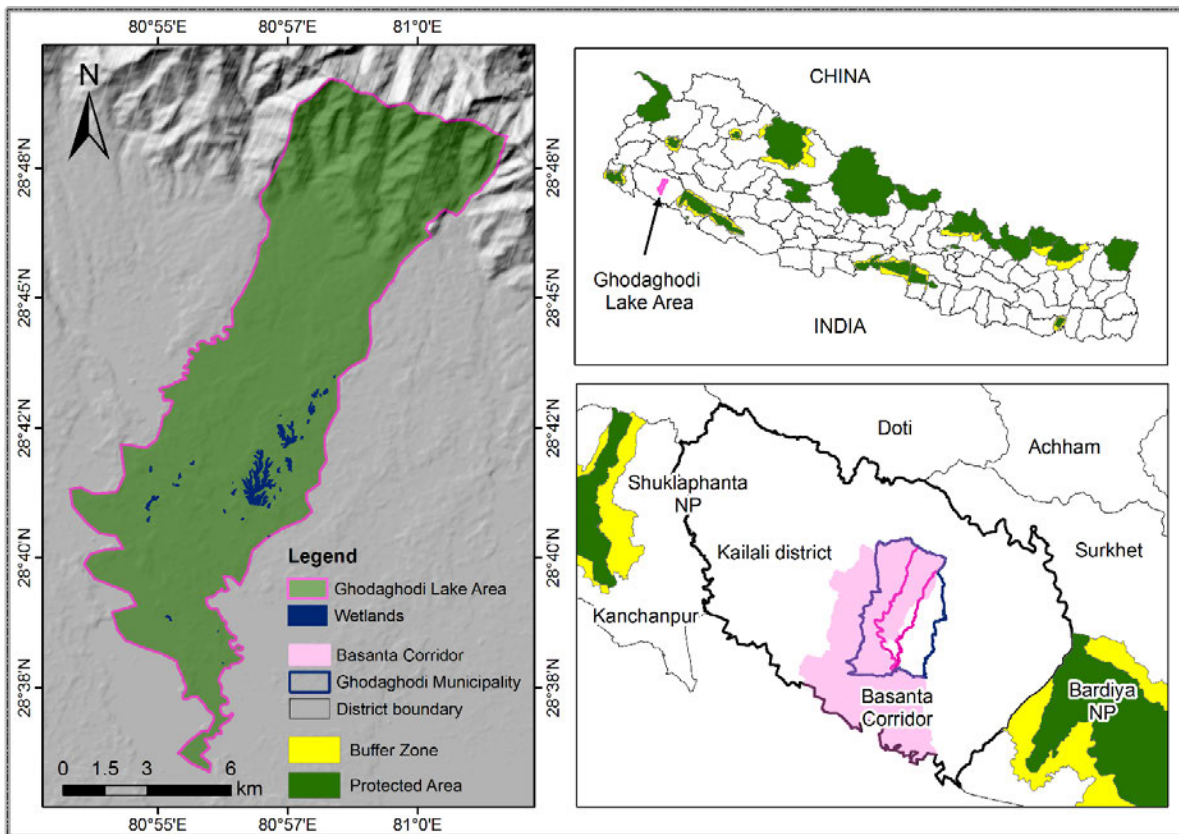


Fig 1: Location map showing Ghodaghodi Lake Area

Rapid population growth due to migration from the hills to the plains, fast-growing tourism, agro-pollution, over-exploitation of natural resources, over-grazing, and over-fishing have all combined to threaten this critical ecosystem, severely impacting wildlife and communities and eroding the livelihoods of vulnerable fish- and livestock-dependent communities. The 39 communities selected for this project were primarily vulnerable, indigenous and marginalised communities dependent on forest and aquatic resources, such as fuelwood, fodder, livestock grazing, fish, water chestnut and lotus plants. Therefore, this project aimed to improve our understanding of the underlying threats to GLA and develop appropriate mitigation measures, as well as to restore GLA's ecological integrity through community-led, natural capital-based sustainable management. This was expected to increase the well-being of local people and water security, while protecting biodiversity through sustainable tourism, women-led cooperatives, land-use planning and biological monitoring. Ultimately, the project aimed to work towards having the area declared a Bird Sanctuary, supporting the decision taken by community members and authorised agencies.

2 Project Partnerships

Over the years, ZSL's relationship with its partners - especially Ghodaghodi Municipality (GM), the Comprehensive Ghodaghodi Lake and Tourism Development Board (CGLTDB), and Himalayan Nature (HN), and including the Department of Forests and Soil Conservation (DoFSC) and the Department of National Parks and Wildlife Conservation (DNPWC) - has remained integral in conserving the biodiversity and ecological value of GLA, and was instrumental in executing the project. All these institutions were actively involved in developing the project concept, and their recommendations shaped the final project proposal.

GM, the local government authority responsible for the prosperity and development of all communities in the municipality along with the conservation of the GLA, has fully supported the implementation of this project. GM is taking a central role in engaging communities and stakeholders, both in and around the area, to secure the designation of the Bird Sanctuary, elevating the conservation status of Ghodaghodi, as well as to coordinate the development of plans including watershed management and tourism plans, ensuring the project's legacy through the long-term implementation and institutionalisation of the plans prepared through this project.

CGLTDB has played a significant role in implementing the project on site to ensure the long-term community-led sustainable management and conservation of GLA. In this reporting period, they were

particularly focused on sustainable management of GLA through alternative livelihood opportunities, especially through sustainable management of fisheries. Based on the outcome of this project, CGLTDB is expected to use its newfound management capability in future to empower communities to protect natural capital by reducing pressure from resource extraction and to improve their livelihoods.

HN has led community engagement through their team of social mobilisers, supporting communities to adopt supplementary livelihood opportunities through the formation of women-led groups under the local cooperatives, and carried out a biodiversity assessment of the area for GLA conservation planning and the establishment of the Bird Sanctuary.

CGLTDB and HN supported ZSL in drafting the final report, including feeding in activity reports and other inputs and providing reviews.

DNPWC and DoFSC, the government institutions leading country's biodiversity conservation, have provided technical support as needed to the project implementation.

Some notable achievements, lessons, strengths and challenges during this reporting period:

- The support received from GM, CGLTDB and HN remained crucial and very well coordinated throughout the project's duration, despite the COVID-19 outbreak risks from the very first year of the project.
- GLA's conservation status has been upgraded to a Bird Sanctuary, the first of its kind in Nepal. For this, the project was able to build promising cooperation with local communities around GLA, relevant stakeholders, and project partners. The Ministry of Industry, Tourism, Forests and Environment (MoITFE) of Sudurpaschim Province, though not a formal partner for this project, has played an outstanding role in designating the area a Bird Sanctuary and took ownership of conserving GLA in future in coordination with GM and the Division Forest Office of Kailai District (**Annex 7.17**).
- Communities' attitudes remained positive towards GM and CGLTDB, and they are taking a lead in conserving GLA and its lake biodiversity. Likewise, DoFSC and Community Forest User Groups (CFUG) maintained strong bonds with GM and CGLTDB for eco-tourism promotion, watershed conservation and the sustainable preservation of the core value of GLA.
- CGLTDB, a board formed under GM, has now increased its capacity in taking ownership of the project – boding well for the impact and legacy of the project. They are especially committed to conserving the natural and cultural diversity of GLA including tourism development and community wellbeing.
- The COVID-19 pandemic and resulting nationwide lockdown created some difficulties for project partners in implementing project activities in the agreed timeframe, particularly targeted community consultation meetings and workshops. However, partners learnt to ensure proper health and safety measures for this situation, and ZSL facilitated virtual meetings and guidance to partners, which remained instrumental for the implementation of the project.

3 Project Achievements

3.1 Outputs

The application established five outputs: (1) natural capital of GLA governed equitably through CGLTDB, and established governance mechanism; (2) access to sustainable natural capital-based livelihood secured for the most vulnerable, marginalized fresh water dependent communities within GLA; (3) growing tourism industry in GLA is increasingly sustainable, with wider community benefits, based on a master plan that provides a model for other tourist destinations; (4) a robust protection framework is implemented, by designating GLA as Nepal's first Bird Sanctuary, and building on the existing Basanta Protected Forest designation in the upper watershed, to address upstream threats; and (5) data and experience from GLA, with its natural capital and socioeconomic monitoring, inform evidence-based conservation interventions, management plans and policy. All these outputs were designed to address the underlying threats to GLA and restore its ecological integrity through appropriate mitigation. The achievements towards the project outputs and indicators as laid out in the logical framework are described under the respective outputs below.

Output 1: Natural capital of GLA governed equitably through CGLTDB, and established governance mechanism.

To build the capacity and leadership of CGLTDB, the project has trained all nine members of CGLTDB (**indicator 1.1**). In addition, 64 people (40 female and 24 male) (Annex 7.1), representing GM, CGLTDB staff, project staff, women's groups, Community Forest User Groups (CFUGs), social workers, single women from indigenous and marginalised communities, community-based organisations (CBOs) and other local community members have been trained through Gender Equity and Social Inclusion (GESI) and equitable governance courses, building their capacity and leadership roles in a participatory approach. The majority of them were participating for the first time, and by the end of the course were able to understand the concept of GESI, governance principles, planning policy, and the roles and responsibilities of local government to achieve greater gender equality.

40 Freshwater Information System for Households (FISH) representatives were recruited from 39 settlements (**indicator 1.2**) as community focal points for disseminating accurate knowledge about conservation values in their respective communities, and as a channel to share information to the newly-established GLA working group (**Annex 7.2**). Both FISH representatives and working groups were trained and sensitized on GLA conservation issues, sustainable tourism development, watershed management and the importance of biodiversity protection that supports in the development of site-level plans. Also, the FISH representatives were invited in all kinds of workshops for their constructive suggestions and inputs to the working groups while developing GLA plans. Before this, no such representatives and working groups existed to voluntarily support CGLTDB in conserving GLA's ecological integrity as well as collecting and collating evidence and critical feedback from different settlements.

Later, two workshops with 173 participants representing GM, CGLTDB, women's groups, CFUGs, social workers, CBOs and local communities, including the indigenous Tharu community, were organized to provide their inputs, suggestions and conditional consent (pending acceptance of those inputs) to technical experts (**Annex 7.3**) in drafting the performance-based compliance and incentive mechanism for GLA in order to develop good governance principles (**indicator 1.4, Annex 7.2, Supplementary Document 1**) that was designed to increase public interest in investments into communities adopting environmentally friendly agri-businesses. The incentive mechanism supports the economic empowerment of vulnerable communities, including women and youth, private agricultural firms, and cooperatives, through needed farm equipment and production, processing and the distribution of farm commodities. This was also shared among the 176 people participating in the annual natural capital assessment workshop, representing 39 GLA settlements (**indicator 1.3**). During the natural capital assessment, participants were sensitized on the natural capital of GLA and its identified ecosystem services, environmental pressures and the impacts of development on GLA in order to help concerned authorities in managing development without affecting ecosystem services. Likewise, with input and suggestions from the participants, CGLTDM prepared a comprehensive master plan of GLA via a participatory approach (**indicator 1.5, supplementary document 2**) and it has been endorsed and is being implemented by GM.

Through focus group discussions and community consultations, this project has identified 204 active fishermen representing vulnerable and fish-dependent communities, mostly belonging to the indigenous Tharu community, within GLA. 66 of the fishermen (45 female and 21 male) who were frequently engaged in fishing activities were trained on using appropriate mesh size and proper gears for fishing, size of fish catch, time and season for harvesting fish, fishing malpractices and restricted fishing locations in GLA in order to conserve lake biodiversity and to restore the population of native fish, snails, and water chestnuts (**Annex 7.4**). The training was significant in raising awareness of wetland ecosystems' importance and the adoption of sustainable fishing practices. CGLTDB later hosted a workshop for 52 representatives from concerned stakeholders and fish-dependent indigenous people to agree on fisheries interventions in GLA. The fishers are no longer using gill nets, and fishing is regulated in two main lakes (Ghodaghodi and Nakhrod, the first and second largest lake of the complex), with a no-take zone delineated that comprises 66% of the total 147.17 hectare lake area (**indicator 1.5.3, Annex 7.5**). To mitigate any negative impacts on community well-being, vulnerable households were supported to manage two community fishponds and other alternative livelihood opportunities.

Similarly, in order to conserve the ecological integrity of the Ghodaghodi lakes and their surrounding area, 16 consultation workshops on regulating grazing and pesticide/fertilizer application in GLA were held for 797 CFUG members (**Annex 7.6**) residing close to GLA's forest habitat and wetlands. These workshops aimed to reduce the use of chemical fertilizers (pesticides, insecticides, and herbicides), promoting the use of more organic manure in agricultural fields rather than chemical fertilizers, and to encourage farmers to plant fodder plants to reduce the pressure of cattle grazing within GLA. The CFUGs have now agreed to sustainable grazing in around 13.1 sq.km. of GLA and its regular monitoring (**indicator 1.5.4**).

Output 2: Access to sustainable natural capital-based livelihood secured for the most vulnerable, marginalized fresh water dependent communities within GLA.

The project has established two women-led cooperatives (Fulwari and Gurans Saving and Credit Groups) with an initial total of 52 members, which has now reached 82 members (**indicator 2.1, Annex 7.7**), and two community-managed fishponds (the 2-ha Tendi pond and the 0.75-ha Parsehni pond, **Annex 7.8**) comprising 65 members from the most vulnerable, poor, Tharu indigenous and marginalised freshwater-dependent communities, to transition to sustainable livelihoods while promoting sustainable aquaculture and reducing fishing and other natural resource dependencies in Ghodaghodi Lake Area (GLA). Thus, altogether 147 members representing same number of households are directly benefiting through this activity. Of these, 130 members from the cooperatives and community-managed fishponds were trained in livestock rearing, agriculture, and sustainable aquaculture to carry out locally-suitable livelihood businesses while promoting self-employment opportunities (**Annex 7.9**). Also, a total of GBP 5000 to each women's cooperative and NRs. 9,22,650 (GBP nearly 6000) in total to both of the community-managed fishponds was provided as seed funding and operating costs respectively, based on agreed bylaws and guidelines (**indicator 2.1.1, Supplementary Document 3 & 4**). To ensure smooth operation, these women's and fishpond groups were regularly monitored, and a total of 22 cooperative meeting sessions were held in each group to review monthly progress on the support provided and to regularly encourage their businesses. Similarly, six natural capital cooperative exposure visits were conducted for 326 households (**Annex 7.10**) to promote the natural capital cooperative concept and further encourage adoption of more diversified income-generating activities. Workshops were held to expose 244 community members, including women's group members, to existing markets, covering important aspects of animal husbandry and its commercial schemes like improved breeding, feeds and nutrition, farm management, market linkages, identification of beneficial and steady markets, production promotion, and government subsidies.

During the final year of the project, the seed fund has benefitted 82 households, and to date all 82 members of the women-led cooperatives (73 female and 9 male) have received soft loans (**indicator 2.1.5**) to establish and carry out local business ventures. The women's groups have earned NRs. 2,939,000 (GBP 19,144) in total apart from their daily business. The average additional annual income of the 43 cooperative members who took loans in year 1 has increased to NRs. 596,000 (GBP 3,882) in year 2 and 2,343,000 (GBP 15,262) in year 3 compared to the baseline of NRs. 144,000/year/person (12000/month/person). This shows a 9.63% increase in income in year 2 and 17% in year 3 from the baseline (**indicator 2.2, Annex 7.11**). Similarly, the seed fund grew by 26% through interest on soft loans and monthly savings (a total of NRs. 355,142) (**indicator 2.1.4**). Through the provided seed fund support, six species of native fish were released into the fishponds. Fish farmers have now started harvesting fishes that have attained market size. Up to March 2022, they have harvested 5168.44 kg of fish from the two community-managed fishponds and earned nearly NRs. 1,526,558 (**Annex 7.12**), meaning the group has already earned 65% more against the initial investment (NRs. 922,650), and they will have more fish ready for harvest over the next few months. More than 75% of the cooperative members are regularly attending the post-cooperative meetings (22 meetings in each cooperative groups) and the annual natural capital workshops held by CGLTDB (**indicator 2.3**).

Output 3: Growing tourism industry in GLA is increasingly sustainable, with wider community benefits, based on a master plan that provides a model for other tourist destinations.

The existing tourism infrastructure, capacity and markets were assessed to identify areas likely to negatively impact GLA's ecological integrity and were found to have a low impact (**indicator 3.1**). To date, the current level of tourism development has neither created any serious issues with regard to the degradation of the lake nor caused significant disturbances to wildlife movement or habitat. However, realizing the potential of tourism in future, a sustainable tourism management plan has been developed (**indicator 3.2**) in coordination with CGLTDB and GM for the conservation of the lakes and surrounding areas. During the development of the plan, 7 workshops were conducted throughout the project period, engaging 357 people from the local communities, tourism sector and other concerned stakeholders, whose input and feedback have helped identify the key needs of sustainable tourism development and management (**Annex 7.12**). This plan has now been approved and implemented by CGLTDB and shared with DoFSC, DNPWC, and the provincial and national governments as a model of best practice (**indicator 3.3, Supplementary document 5**).

Likewise, considering the need for green sustainable tourism infrastructure development, investments were made to construct 1160 m of environmentally friendly foot trails, renovate the existing information centre in GLA (**indicator 3.3.1**), place solid waste bins (**indicator 3.3.2**), and install 19 small to large information boards carrying messages about lake conservation, information on GLA, code of conduct, and waste management (**Annex 7.13**). CGLTDB and GM are now more aware about the likely negative impacts of haphazard infrastructure development on natural capital value within GLA (**indicator 3.3.3**), and minimal infrastructure has been built while preserving the beauty and crucial ecosystem of the lakes. The leadership of CGLTDB and the mayor of GM have become the dedicated custodians of GLA, ensuring its sustainable conservation going forward.

Output 4: A robust protection framework is implemented, by designating GLA as Nepal's first Bird Sanctuary, and building on the existing Basanta Protected Forest designation in the upper watershed, to address upstream threats.

Knowledge of Land Use and Land Cover (LULC) is essential to prepare plans and conserve GLA's biodiversity. As such, an initial participatory workshop on LULC mapping of upstream watershed was organised with the active participation of 125 local people. Participants' inputs were sought to map the LULC of GLA. These, along with satellite images, were used to create an inventory of all small and large lakes within the GLA, which were verified through field visits (**indicator 4.1.1**). The relative distribution of LULC classes in the study area in different time intervals was also calculated, and shows the drastic increase in human settlement areas while wetland area has decreased over the same 15-year period (**Annex 7.14**). Based on the results obtained from the participatory land use mapping, the preliminary results of the biodiversity survey, and the inputs and collective suggestions gathered from two community workshops attended by 125 participants with inclusive representation of upstream settlement, a participatory land use plan was developed (**indicator 4.1.4, supplementary document 6**) and local communities agreed to improve the riparian forests and the restrictions on illegal logging and excessive chemical fertilizer use around GLA (**indicator 4.1.2 & 4.1.3**) that would likely negatively impact the lake and surrounding habitats. Likewise, across three different workshops, collective suggestions for achieving long-term goals for watershed management were gathered from 314 community members, the participatory catchment level conservation management plan (watershed management plan) principles were introduced, and the fully developed plan was then agreed (**indicator 4.3, Annex 7.15, Supplementary document 7**). The upstream settlements were made aware of watershed conservation values in GLA through a total of 23 drop-in sessions held for 885 community members during the 3-year period (**Annex 7.16**). The importance of wetlands and their conservation issues were shared and discussed, and participants also helped identify problems and threats to water resources, helping guide the development of a participatory framework to address these issues in each specific watershed. Around 3000 copies of leaflets highlighting the need for, and importance of, watershed management were produced and distributed to community members.

Annual policy-level workshops were conducted to share the project's progress and impact and the importance of GLA, followed by a visit of the national and local government officials (**indicator 4.2**) to monitor the project's impact and provide national-level support to CGLTDB and GM in conserving the GLA watershed, sustainably developing its tourism, and protecting local biodiversity, watersheds, and livelihoods through GLA's designation as a Bird Sanctuary (**Annex 7.17**). The workshops discussed sustainable tourism development in the area, biodiversity, and wetland and watershed conservation, as well as the policy support needed for conserving GLA that can be facilitated by provincial and national government. Later, with the support received from local communities, CGLTDB; ZSL; the Ministry of Industry, Tourism, Forests and Environment (MoITFE) of Sudurpaschim Province; GM; and all other relevant stakeholders endorsed the concept and jointly declared the 6839.63 ha of GLA to be Nepal's first Bird Sanctuary on 11th March 2022 (**indicator 4.3, Annex 7.18**). The formal declaration was made by the Honorable Chief Minister of Sudurpaschim Province, Mr. Trilochan Bhatta, together with the Honorable Minister of MoITFE, Mr. Man Bahadur Dhimi, and the mayor of Ghodaghodi Municipality, Mr. Mamta Prasad Chaudhary. The Bird Sanctuary area accounts for 64% of the total GLA. The area was declared as per the provision of article 87 of 'Sudurpaschim Pradesh Ban Ain 2077' (Sudurpaschim Province Forest Act 2077) and MoITFE is currently working to prepare Bird Sanctuary regulations for its long-term management and conservation. CGLTDB and GM were further supported to develop a participatory land-use plan, tourism plan, watershed plan and biological monitoring plan to integrate later in the Ghodaghodi Bird Sanctuary Management Plan (**indicator 4.3**).

Output 5: Data and experience from GLA, with its natural capital and socioeconomic monitoring, inform evidence-based conservation interventions, management plans and policy.

A rapid assessment of key landscape biological monitoring methods and locations within Ghodaghodi watershed was conducted to obtain baseline data on lake diversity (site indicator species and natural capital within the GLA). Based on the preliminary results of the assessment, key indicator species of GLA were identified and later, with the inputs and suggestions gathered from 103 local community people, FISH representatives, local researchers and CGLTDB members through two workshops, an integrated monitoring plan for site indicator species and natural capital was developed and agreed among all participants (**indicator 5.1, Supplementary document 8**). Later, for biodiversity monitoring of GLA, especially indicator species monitoring and camera trapping, 3 annual trainings (one were year) were provided to 78 youths (71 FISH representatives and local volunteers and seven DFO staff) to build their capacity on local monitoring of Key Performance Indicator species (**indicator 5.2, Annex 7.19**). They were trained for the first time on theoretical knowledge and demonstrations using camera traps, and monitoring techniques on site. These youths were engaged annually to carry out and support the biodiversity survey of GLA. Likewise, annual natural capital assessments, for example, looking at GLA's water quality, fish stocks, and forest biomass, were carried out through this project. Furthermore, a household survey was carried out with the support of FISH representatives to understand the income and wellbeing of community members, their dependency on natural capital, and their wildlife knowledge.

Throughout the survey, a total of 39 fish species, 19 mammal species (16 camera trapped, 2 directly observed and 1 indirectly observed – pellet recorded), 297 bird species, and 16 mugger crocodile (11 adults and 5 juveniles), have been recorded (**Annex 7.20**). Of the 297 different bird species recorded (178 in year 1, 234 in year 2 and 159 in year 3), 20 species were completely new to GLA. GLA now has a total of 319 species of bird, which is an exceptionally high level of diversity. The diversity and estimated fish stocks in two lakes of GLA (Ghodaghodi and Nakhrod lakes) were calculated, with the average fish stock of Ghodaghodi and Nakhrod lake found to be 124 kg/ha and 12 kg/ha respectively in year 3 (increased from 30kg/ha and 10kg/ha in year 1) (**Annex 7.21**). The increase in fish stock results from the establishment of the no-take zone, training on fishing practices, and mass awareness, as well as the survey being carried out in monsoon season in year 3. Also, in year 3 (September 2021), the survey team identified a total of 8.6 ha covered with wild rice within the GLA (baseline 4.54 ha in year 1). Most of the patches of wild rice have been observed on the northern boundary of the main lake. Likewise, the physio-chemical parameters of the water of the lake cluster and 2 streams were assessed at 2 locations at Ghodaghodi main lake and 4 locations in each of the 2 streams. The results show no significant changes to the water quality parameters, and both the nitrate and phosphate concentration are within the favorable range and have no harmful impacts on fish species or the lake's food web (**Annex 7.22**).

The monitoring data was shared to local stakeholders in every participatory natural capital assessment workshop and with Nepal's NBSAP and Ramsar technical team during its preparation (**indicator 5.3**). The post project monitoring plan will be institutionalized with CGLTDB, FISH and CFUGs (**indicator 5.4**) by the project end.

3.2 Outcome

The project has made considerable progress towards achieving its intended outcome: 'GLA's globally significant biodiversity and natural capital secured through sustainable and equitable management as a Bird Sanctuary, with upstream watershed threats addressed, safeguarding globally threatened species recovery and communities' livelihood and culture'. Key local populations of nationally and ecologically indicator species were monitored annually and the results show an increase in the Cotton-Pygmy Goose population (increased to 300 from a baseline of 147) and a stable mugger crocodile population (11 adult individual and 5 juveniles recorded). Though Lesser Adjutant Stork was not recorded in GLA, a local surveyor in year 3 has recorded it approx. 7 km from GLA, indicating the chances of its dispersal in GLA in near future. In addition, 19 terrestrial mammal species have been reported, of which 16 species have been camera trapped. Of the 16 camera-trapped species, 1 is listed in the globally vulnerable category, 4 in the nationally vulnerable and 1 in the nationally endangered category (**indicator 0.1**). The status of GLA has upgraded to a Bird Sancturay, first of its kind in Nepal (**indicator 0.2**). MoITFE of Sudurpaschim Province has taken ownership of this declaration and GM has continuously supported this initiative and will remain supportive in the conservation and management of the area in future, as mentioned in their comprehensive masterplan for GLA, indicating their management inputs. Though the projected annual management budget has dropped in the last two years of the project compared to year 1 (NRs. 10 million in year 1, 2 million in year 2 and 5 million in year 3), it is believed that with the change in status, the

management input will be increased in coming years. As the Bird Sanctuary has been recently declared, supported by local communities and relevant stakeholders, various management plans (a comprehensive master plan of Ghodaghodi Lake Area, sustainable tourism management plan, catchment level conservation, land use plan, and natural capital monitoring plan) have been developed to support the implementation of an evidence-based Ghodaghodi Bird Sanctuary management plan in future, which is expected to be prepared once the Bird Sanctuary regulations under preparation by MoITFE are in place (**indicator 0.3**).

The project facilitated the decline of eutrophication drivers across the GLA through sustainable grazing management, including around the application of pesticides and chemical fertilizers. To understand the effect of eutrophication drivers, 13 bodies of water, including 2 streams, in GLA have been assessed annually. Over the course of the assessment, the average amounts of nitrate and phosphate content have dropped by 61% and 26% respectively compared to the baseline. At the same time, social surveys identified a decrease in the use of chemical fertilizers in year 3 (1.66 kg of fertilizers/338 sq.m.) compared to the baseline (3 kg of fertilizers/338 sq.m.) (**indicator 0.4**). Based on household survey data (445 HHs surveyed in year 1 and 501 HHs surveyed in year 3), households show an average of 14% improvement in their wellbeing, depending upon their income status, access to education, community organisations, agricultural land and improvement in other living standards. Likewise, 82 members from the most vulnerable, marginalised and indigenous households (those selected to form cooperatives) are now engaged in alternative income-generating activities such as fish farming, livestock rearing, local convenience stores, and agricultural production. These cooperative members have already started making a profit from such income-generating activities and demonstrate an average 19% increase in their wellbeing (**indicator 0.5**).

Despite the unforeseen global pandemic, the intended outcome has been achieved successfully. ZSL's role has remained crucial to support GM, CGLTDB, DoFSC, and HN in safeguarding GLA's biodiversity and the well-being of the communities.

3.3 Monitoring of assumptions

	Outcome Level Assumptions	Comments
Assumption 1	Ghodaghodi Municipality (GM) and CGLTDB remain committed to conservation of GLA.	GM and CGLTDB are the key stakeholders and authorised bodies to carry out conservation measures, and GLA conservation has been their priority programme. Members of both institutions are highly committed to this.
Assumption 2	Biodiversity conservation remains a national priority, with a political situation conducive for conservation and project implementation.	Ghodaghodi Lake complex is a Ramsar designated site of international importance, so all relevant authorities are monitoring its conservation and the implementation of this project, which indicates the continued prioritisation of conservation at the national level. The local government (GM) is one of the key institutions for effective implementation of the project. MoITFE of Sudurpaschim Province has declared the area Nepal's first Bird Sanctuary for its sustainable conservation.
Assumption 3	Increased financial resources devoted to the site reflects increased government commitment to its conservation and will result in improved conservation outcomes.	GM has formed a board (CGLTDB) supplied with financial resources to conserve GLA biodiversity and carry out tourism promotion activities. However, due to the Covid pandemic, resourcing has been challenging in the last two years.
Assumption 4	Communities will share this information willingly, including on levels of usage near watercourses	FISH representatives are acting as the focal persons to share the required level of information.
Assumption 5	ZSL's deployment of a locally defined participatory wealth- ranking wellbeing index will be appropriate to the local context. Given our experience applying it across different socioeconomic classes and self-identified community subgroups, in the Philippines, Mozambique and Cameroon.	This assumption remains reasonable.

Assumption 6	A 10% stratified sample of households in GLA is sufficient to identify wellbeing increases generally and disaggregate this by groups.	This assumption remains reasonable.
Assumption 7	Local communities are supportive of conservation and keen to diversify livelihood opportunities.	Local communities have supported the idea of Bird Sanctuary and the conservation practices adopted by the local government as well as some community people are engaged in alternative livelihood rather than depending in GLA natural resources (Annex 7.8)..
Assumption 8	Equal wellbeing gains between Tharu, women and less marginalised groups are achievable given that 36 % of the population are Tharu and around 12% are Dalit.	Almost all the selected community members who receive benefits are women and/or from the Tharu or other marginalised communities.
Output Level Assumptions		
Assumption 9	Suitable and diverse candidates to be selected as FISH representatives are willing and available from the pool of community members. And these individuals do not overlap with the chairmen/women of the CFUGs.	FISH representatives were selected from all the settlements and comprise both men and women, especially those representing indigenous Tharus, CFUG members, and other vulnerable people.
Assumption 10	Community members make the connections between wellbeing increases and the package of measures/natural capital approach of the project, and therefore abide by the sustainability measures as agreed in the management plans.	Community members have shown positive responses to the plans, but additional support is expected (via GM's commitments as laid out in its annual development plans) for those who do not benefit directly through this project. Additionally, the provincial government has publicly committed to support wellbeing of marginalised people in Ghodaghodi Bird Sanctuary area.
Assumption 11	Most community members will readily identify a relationship between their livelihoods and natural capital as the vast majority of community members, if not all, have livelihoods dependent on GLA's natural capital, mostly either livestock, fishing, aquaculture or tourism livelihoods.	This assumption remains reasonable. In addition, people who received trainings on sustainable livelihood practices and those who attended natural capital workshops have been supported to identify this relationship.
Assumption 12	CGLTDB investment, together with other project activities, provides a robust incentive for communities to be supportive of protecting natural capital, while the workshops are able to provide unbiased evidence on community performance.	GM is supporting CGLTDB annually and is committed to provide incentives to vulnerable communities.
Assumption 13	Bringing CFUG leaders, from the 26 settlements with established CFUGS, together with inclusive representatives from the 13 settlements without CFUGs will enable equal representation of all settlements interests and help promote Nepal's Community Forestry Programme.	CFUGs leaders as well as community people of all settlements were involved in workshops such as regulating grazing, riparian forest management including pesticide control, catchment level conservation management plan, land use plan etc. while promoting Nepal's Community Forestry Programme.
Assumption 13	We assume that 10% of water area protected from harmful fishing impacts is achievable, based on community consultations and ZSL's early-stage experiences in the Philippines where communities have been willing to protect an average of 3ha each.	GM and CGLTDB in consultation with community members were able to establish nearly 50% (100 ha) of the waterbodies (Ghodaghodi main lake and Nakhrod lake) as a no-take zone.
Assumption 14	Freshwater no-take zones (NTZ) have the potential to protect valuable intact habitat and spawning areas for freshwater biodiversity, and the community engagement and success of these no take zones will be enhanced by utilising lessons from ZSL trials in the Philippines (DI24-016, DI21-020).	This assumption remains reasonable. If other anthropogenic pressures are reduced and GM and CGLTDB take actions to support NTZs, this is still expected to hold true.
Assumption 15	CGLTDB members remain receptive to equitable and sustainable governance approaches.	This assumption remains reasonable. However, periodic trainings on equitable and sustainable governance will be helpful for members.
Assumption 16	Natural capital cooperatives, building on ZSL's successful livelihood cooperative model from DI-funded project DI22-009 are effective and equitable management institutions for natural capital-based sustainable livelihoods.	This assumption remains reasonable.

Assumption 17	Participatory natural capital assessments prove an effective means of engaging communities with the link between natural capital and their livelihoods, so making the case for sustainable management of natural capital management transparent, and contributing to GLA conservation.	Communities actively participated in natural capital workshops and remained supportive in GLA conservation as well as opting other alternative livelihood rather than depending on GLA natural resources.
Assumption 18	Take up of loans is similar to demand on other ZSL projects and another DI-funded Nepal project (i.e.87 loans), DI22-009	True. Soft loans received and used by members for income-generating activities, and periodic deposits in cooperatives by the members, can make positive changes over a longer time period. This project has provided training on livelihood practices and is encouraging members to contribute their own investments. The 100% uptake of loans is slightly higher than the rates in other DI-funded Nepal projects.
Assumption 19	Participatory Natural Capital Assessment Workshops will be attractive for community members to attend due to the opportunity to participate in local resource governance decisions.	A total of 176 people have attended the participatory natural capital assessment workshops.
Assumption 20	Government remains supportive of development of tourism and green tourism	GM and CGLTDB has prepared sustainable tourism management plan to promote green tourism at GLA.
Assumption 21	Green infrastructure are sustainable and adopted by government.	This assumption remains reasonable.
Assumption 22	Participatory tourism master plan agreed by all stakeholders is subsequently respected and implemented with ZSL's ongoing technical support and engagement.	Sustainable tourism management plan of GLA developed and implemented by CGLTDB.
Assumption 23	On advice from local partners, this proposal assumes that this existing Protected Forest designation of the upper watershed and its associated land-use zoning provides an effective framework upon which a land-use plan can be built and implemented, within the timeframe, with sufficient compliance mechanisms pre-built in.	Catchment-level conservation management and land use plan is in place. GM and CGLTDB are bringing all concerned stakeholders together for effective land-use planning.
Assumption 24	All 10 communities are willing to participate, under the existing framework of the protected forest, in sustainable management of their upstream freshwater system.	Communities are positive towards the sustainable management of their upstream watershed.
Assumption 25	Community members will be keen to agree collective management of riparian forests and fertilisers/pesticides. This is due to commitment to the Community Forestry Programme, which will be built upon, and the existing level of compliance with Basanta Protected Forest land-use zones, in combination with local communities' active desire to seek support to protect GLA.	GM and CFUGs are regularly supporting alternative livelihood schemes for local communities to further strengthen their participation in management of riparian forests. CFUGs have agreed on the sustainable management of the forest.
Assumption 26	Agreement of plans, alongside technical support, government investment, and encouragement will lead to effective conservation actions on the ground.	This assumption remains reasonable.
Assumption 27	Government remains committed to protection of GLA, and supportive of declaring GLA a Bird Sanctuary.	MoITFE and GM have jointly declared GLA Nepal's first Bird Sanctuary on 11 th March 2022.
Assumption 28	Diverse stakeholders are able to agree KPIs that effectively capture the relevant metrics and demonstrate the value of participatory watershed management.	KPIs are agreed by all community members and stakeholders.
Assumption 29	Being a FISH representative will be attractive to local community members as a route to greater participation in resource governance decision making, and a status position associated with CGLTDB, which is a respected body.	40 FISH representatives were recruited as community focal points and are voluntarily working for the conservation of GLA. This assumption remains reasonable.
Assumption 30	Agreed KPIs will be monitorable in the long-term, with buy in from provincial level down to settlement level.	78 youths have been trained in biological monitoring and this assumption remains reasonable.

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

Target impact: Ecological connectivity through the critical Western Terai Corridor is restored, with a well-managed community-led protected area at its heart, providing an innovative model of freshwater-based conservation of Nepal's ecological connectivity.

The project has contributed significantly towards the ongoing restoration of Ghodaghodi Lake Area, one of the key biodiversity sites linking north-south corridor via Basanta protected forest at the western landscape of Nepal. The project has supported the provincial and local government authorities in the declaration of GLA as the first Bird Sanctuary in Nepal (**indicator 4.3**). This declaration has been appreciated by all local communities and central-level conservation partners and is believed to be a key component in conserving the biodiversity of this vital area. Besides this, a catchment-level conservation management plan, sustainable tourism management plan, land use plan, and monitoring plan (**indicator 3.2, 4.1, 4.3**) have been endorsed by GM, promoting sustainable biodiversity conservation and restoring the ecological value and services of GLA. Alternative livelihood support provided to newly-formed women's group members through this project, the reduction in communities' dependence on GLA, training in sustainable fishing practices, and spreading knowledge on natural capital and sustainable biodiversity will help to restore and recover fish species in wetlands and support in maintaining food supplies and shelter for wetland birds.

Contributing to poverty alleviation for local indigenous and fish-dependent communities, local alternative livelihood opportunities have been explored and 82 members of the two women's groups were provided with soft loans at a low interest rate (4%) (**indicator 2**), enabling them to invest in sustainable income-generating activities. Likewise, this project has supported the establishment and operation of two community-managed fishponds and contributed to improving the wellbeing of 65 indigenous households. All women's group members who benefitted from the soft loans are receiving a regular income (an estimated 9.63% and 17% increase in average income in year 2 and year 3), and fish-dependent communities are now sustainably managing the fishponds on their own (increasing the amount of their initial investment by 65%, indicator 2.2). These increased incomes are accompanied by increased access to food, education, health and other basic requirements. This project has also assisted CGLTDB and GM in endorsing the incentive mechanism that directly supports poor and marginalised households to carry out income-generating activities (**indicator 1.4**). Furthermore, in the long run, GLA's designation as Nepal's first Bird Sanctuary will help to promote tourism and create employment opportunities for the local communities.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

The following SDGs are relevant to the project.

Goal 1: No poverty: The project has supported the formation of two cooperatives, and provided them with seed funding that has been distributed to 82 members of the cooperatives (from vulnerable and marginalised households) in the form of soft loans (**indicator 2**). Additional support was provided to manage the two fishponds that help provide food security for 65 indigenous households. Soft loan recipients have used these loans for income-generating activities to enable long-term income generation. Besides this, other support, including trainings and education, policy framework support, and infrastructure for tourism development, will contribute to poverty reduction and sustainable development.

Goal 3: Good health and wellbeing: The project has supported communities to adopt income-generating activities, helping them generate long-term income. Beyond the project's end, the project-supported management plan will help ensure the intactness of GLA's ecological integrity, while promoting tourism. Through this, GLA will be increasingly conserved and opportunities in the tourism sector will increase. The communities will have the opportunity to leverage this to diversify/increase their income sources and gain access to improved healthcare, securing their wellbeing.

Goal 5: Gender equality: Gender Equity and Social Inclusion (GESI) training sessions were organized to promote gender equality. Likewise, we have formed two women-led cooperatives, consisting of 89% female members from indigenous communities (**indicator 2**). We are striving to support women's participation in natural capital governance by ensuring women and indigenous communities are adequately represented in all community consultations, workshops and trainings. To date, more than 2100

women have participated in such events. This will help empower women's role in the community and income-generating activities.

Goal 6: Clean water and sanitation: Increased income has contributed to improved access to clean drinking water and better sanitation. Over the long term, awareness around watershed conservation and the implementation of GLA's new catchment-level conservation management plan will contribute to restoring water quality and ecosystems, ensuring continuous access to clean drinking water (**indicator 4.3**).

Goal 12: Responsible consumption and production: Communities have been trained on aquaculture and reduced-impact fishing practices, the importance of native species, and productivity-raising techniques for native fish, snails and water chestnuts (**indicator 2.1.1**). Participatory management plans in place will guide resource harvest and consumption in a sustainable way. Alternative income-generation activities are being promoted to increase resource production (animal husbandry, vegetable farming), which will help alleviate poverty along with possible pressure on GLA biodiversity. This will improve fisheries/livestock management, reducing human-wildlife conflict and pressure on wild fish stocks.

Goal 15: Life on Land: Development and implementation of evidence-based management plans (**indicator 3..3, 4.1**), designation of GLA as a Bird Sanctuary (**indicator 4.3**), and implementation and monitoring of no-take zones (**indicator 1.5.3, 1.5.4**), complemented by wise-use programmes, scientific knowledge, capacity building and conservation measures, will protect terrestrial and freshwater biodiversity.

Goal 16: Peace, Justice and Strong Institutions: A responsive, participatory and representative decision-making approach, across different jurisdictions within the GLA area, and cooperatives have been facilitated through strengthening the institutional capacity of CGLTDB and GM, their partnerships with communities, and local institutions (NGOs, CFUGs and cooperatives).

Goal 17: Partnership for the goals: Close partnerships have been built among the communities, conservation stakeholders and government agencies to carry out the activities that contribute to the goals.

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

The project and its findings have been shared with the Department of National Parks and Wildlife Conservation (the focal point of the Ramsar Convention) twice a year. They are also shared at the ministry level to the Environment and Biodiversity Division as well as the Climate Change Management Division of the Ministry of Forests and Environment. The former Division is the focal point for CBD work and the latter for the UNFCCC in Nepal. These findings have been shared through oral presentations as well as by submitting written documents. ZSL has a reporting compliance with the Department of National Parks and Wildlife Conservation as well as the ministry under the MoUs signed with them. In addition to this, we also provide six-monthly update and annual reports from ZSL to the British Embassy and FCDO on Nepal conservation activities, including all UKAID-funded projects.

SN	Convention, treaty, agreement	Project contribution to meet national obligations
1	Convention of Biological Diversity	<p>The project contributes to following Aichi Biodiversity Targets:</p> <p>Target 1: Raising awareness of wetland ecosystems' importance (section 3.2, indicator 0.2), through education and engagement of local people in natural resource management (section 3.2, indicator 0.3). This particularly benefits the Tharu indigenous people, who combine a desire to understand and protect the natural resources on which they depend with limited pathways and opportunities to act on this desire.</p> <p>Target 2: Integration of biodiversity conservation into existing local tourism/development strategies, by bringing together multiple stakeholders to develop a sustainable tourism plan for GLA and a participatory management plan (section 3.2, indicator 0.3). Securing sustainable land use by addressing the impacts of the highway along the southern edge of GLA, and establishing sustainable grazing regimes, aquaculture and no-take zones for fish.</p> <p>Target 5,6,7,8: The GLA management plan and associated measures will aim to reduce habitat loss (target 5); secure sustainable management and harvest of agricultural land, forests (target 7) and fish (target 6); and reduce pollution to levels that are not detrimental to the functioning of the GLA ecosystem (target 8). The management plans (section 3.1, indicator 0.3) are implemented and endorsed by CGLTDB and GM.</p> <p>Target 12: Improving the conservation status of threatened species, such as Mugger Crocodile (<i>Crocodylus palustris</i>) (VU) and nationally recognised biodiversity indicator species such as Cotton Pygmy Goose (<i>Nettapus coromandelianus</i>) (LC), wild rice (<i>Oryza spp.</i>) and</p>

		<p>the religiously important and threatened Lotus (<i>Nelumbo nucifera</i>). Key indicator species were monitored (section 3.2, indicator 0.1).</p> <p>Target 14: Safeguarding the GLA ecosystem and its services, through participatory planning for tourism and natural resource management (Section 3.2, indicator 0.3), while safeguarding and embedding the needs and culture of local indigenous populations. Supporting women's livelihoods through establishing cooperatives (Section 3.1, indicator 2.1). Safeguarding indigenous Tharu people's rights to celebrate cultural traditions and the annual festival at the lake. Utilising a green growth approach, including agreeing a sustainable framework to construct tourism infrastructure and capturing sustainable economic benefits from the growing number of national and international tourists (Section 3.1, indicator 3.3)</p> <p>Target 17: Progressing implementation of the National Biodiversity Strategy and Action Plan (NBSAP) for the Nepal Government (Section 3.2, indicator 0.2).</p> <p>Target 18 and 19: Providing robust data on the GLA ecosystem and wetland-dependent species. Integrating this with local needs and practices (section 3.2, indicator 0.1).</p>
2	Ramsar Convention on Wetlands (Ramsar)	<p>The project also responds to some of the key challenges set out in Nepal's National Ramsar Report 2018. These are limited technical capacity for wetland management, low awareness of the role of wetlands among stakeholders and beneficiaries and limited financial resources. It also responds to key future priorities such as monitoring and research to ensure Ramsar sites have robust baseline data to inform management; sustainable livelihoods; ecotourism; and wetland management. GLA requires protection and a new management plan, as – unusually – it has been a Ramsar site with no recognised protected area status, which its recently declared Bird Sanctuary status will address (section 3.2, indicator 0.2).</p>
3	Convention on the Conservation of Migratory Species of Wild Animals (CMS)	<p>The project also supports key habitat conservation of several species of migratory waterfowl and raptors listed in CMS Appendix I, such as Ferruginous Duck (<i>Aythya nyroca</i>), Egyptian Vulture (<i>Neophron percnopterus</i>), Red-headed Vulture (<i>Sarcogyps calvus</i>), Slender-billed Vulture (<i>Gyps tenuirostris</i>), White-rumped Vulture (<i>Gyps bengalensis</i>), Greater Spotted Eagle (<i>Clanga clanga</i>), and Steppe Eagle (<i>Aquila nipalensis</i>) (indicator 0.2, indicator 0.3)</p>

4.3 Project support to poverty alleviation

The beneficiaries of this project are mostly the Tharu indigenous people, women and, over the longer term, approximately 5000 fish-, agriculture- and livestock-dependent communities of GLA. The project has created an opportunity for both direct and indirect benefits for the communities. To directly contribute towards poverty alleviation, we have formed and trained two women-led cooperatives comprising 82 members, representing indigenous and vulnerable communities, and provided them with seed money to facilitate soft loans, as well as provided support to 65 households to manage community fishponds, and trained both the cooperative members and the fishpond members in different alternative livelihood skills. The members are now engaged in livelihood-based activities like livestock rearing, running small groceries and fish farming to alleviate poverty. Members of the women's groups have now started earning and reported an average increase in income of 17% per household per month compared to the baseline of NRs 12,000 per month. Likewise, the community-managed fishponds started harvesting the fish from year 2 and have reported an increase in income by NRs 1,526,558 by year 3, compared to only NRs 123,184 in year 2. Through trainings and engagement in different interactive meetings/workshops, the members are being supported to build on their skill sets to take advantage of diverse income-generating opportunities (section 3, output 2).

The project has supported the preparation of GLA's sustainable tourism management plan (Section 3, Output 3), and catchment level conservation management plan (section 3, output 4) to promote GLA's ecological integrity and sustainable tourism development. Moreover, this project has facilitated upgrading GLA's existing status into Nepal's first Bird Sanctuary (section 3, output 4), which is confidently expected to create employment opportunities for the local communities in the tourism sector, alleviating poverty and securing their wellbeing. Apart from this, an ecologically intact and protected GLA will support increased ecological services to the local communities, procuring food and water security for improved community health.

4.4 Gender equality

Women are often less involved than men in decision-making processes regarding natural resources and income generation because of the lack of opportunities to learn and grow. To promote gender equality, cooperative members were promoted to participate in natural capital assessment workshops (ind 2.3). Further, we are striving to support women's participation in natural capital governance by ensuring women

and indigenous communities are adequately represented in all community consultations, workshops, trainings, and meetings (**section 3, output 1, indicator 1.3**). Moreover, the project focused on providing better access to income-generating activities and two women-led cooperatives were formed, with a 89% female membership and members from indigenous communities in decision-making roles (**output 2, indicator 2.1**). The members were continuously supported through trainings and cooperative meetings. This will help support women and their increased role in community decision-making and income-generating activities. Additionally, to offset the existing gender gap in income-generation activities in local communities, women were prioritised for inclusion in training programmes on aquaculture and indicator species monitoring (**section 3, output 2 and 5, indicator 5.2**).

To date, more than 4000 participants have attended workshops, trainings, and consultation meetings through this project, out of which more than 2000 were women from poor, marginalised and indigenous communities, indicating that gender equality has been taken into account effectively in this project.

4.5 Programme indicators

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

Yes, the project led to greater representation of local poor people and indigenous communities in the project-formed management structures of biodiversity through cooperatives, forest management groups, and FISH representatives. There is also a working group now established to provide advice and input from local people into the making of any plans and policies that concern the management of Ghodaghodi natural resources and development.

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

Yes, five management plans for biodiversity were developed, namely: (1) Comprehensive Master Plan of Ghodaghodi Lake Area (the development of which was supported by ZSL as well as by GM and others), (2) Sustainable Tourism Management Plan, (3) Catchment-Level Conservation Management Plan, (4) Land Use Plan, and (5) Monitoring Plan. All these were formally accepted by CGLTDB and GM.

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

They were participatory in nature. Inputs from a range of stakeholders were collected and incorporated in all the plans. More than 500 women representing indigenous and marginalised communities were invited by CGLTDB to give feedback prior to the development of the plans.

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

The project involved 147 households in alternative livelihood businesses and the management of two fishponds, giving them the means and tools through trainings, guidance, financial support, and exposure visits to help improve their income. The profit received from the fishponds were equally distributed to 65 households, and all 82 households engaged in local businesses have also reported an increase in their income.

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Per household income from fishing increased on average from NRs 1900 (baseline in year 2) to NRs 21,590 at the end of the project, which is more than 10 times the baseline. The huge increase is because of the establishment of fishponds late in year 2. These households have harvested more fish in year 3. Likewise, from alternative livelihood businesses, the average income increased from NRs 12,000 per month (baseline in year 1) to NRs 14,381, an increase of 17% by the end of the project. This was measured through a socio-economic survey conducted at the end of the project.

4.6 Transfer of knowledge

This project facilitated GM and CGLTDB to formulate the Comprehensive Master Plan of Ghodaghodi Lake Area, incorporating inputs from the project-drafted Sustainable Tourism Management Plan, Catchment-Level Conservation Management Plan, Land Use Plan, and Monitoring Plan. A national

sharing workshop was also held in Lumbini Province, convening representatives of federal, provincial and local governments, along with NGOs active in promoting environmental conservation. GM staff and Sudurpaschim province representatives shared the process involved in declaring a Bird Sanctuary and the project's success. This helped inform Lumbini Province's ongoing conservation of the Jagadishpur Reservoir, which is now slated to be declared a Bird Sanctuary within the next month.

4.7 Capacity building

While drafting the Sudurpaschim Province Forest Rules and Regulations 2078, MoITFE invited CGLTDB staff member Mr. Daya Ram Chaudhary (male) as a local expert to provide his feedback on incorporating the provision for declaring a particular area a Bird Sanctuary.

5 Sustainability and Legacy

Some of the project achievements that are most likely to endure in future are:

- The project has formed two women-led co-operative groups and community-managed fishponds under the direct supervision of CGLTDB and GM, ensuring a sustainable financial mechanism beyond the completion of the project.
- GM and CGLTDB have endorsed the plans prepared through the project, such as the catchment-level conservation management plan, tourism plan, and land use plan.
- The project has worked on the capacity building of CGLTDB staff, local youths, women and other community members. The training provided on good governance and natural capital monitoring has strengthened their capacity to carry out self-assessment of GLA's natural capital.
- The joint declaration of GLA as a Bird Sanctuary by MoITFE and GM will help to sustainably manage the ecological integrity of GLA and leave a strong legacy in future.
- The project has created a replicable model for the conservation of other Ramsar sites. This model has already informed Lumbini Province's work around preserving a second Ramsar site, Jagadishpur Reservoir in central Nepal, which the provincial government will declare Nepal's second Bird Sanctuary in July 2022.

Collectively, the close involvement of all responsible federal and local governments, local agencies and the phased hand-over of all project achievements to them remains a sound exit strategy to ensure a sustained legacy. In addition, GLA, Nepal's first Bird Sanctuary, is one of the country's key biodiversity areas and a Ramsar site and ZSL will continue to work for its conservation.

6 Lessons learned

The involvement of government bodies such as GM and DoFSC, along with project partners such as CGLTDB, HN, local communities and other stakeholders, has been instrumental throughout the project in delivering the project activities to bring about positive changes. The commitment of local government (GM) has been integral in achieving the project objective via natural resource conservation and community wellbeing. Likewise, the coordination with MoITFE, particularly MoITFE's taking an active role in declaring the GLA area Nepal's first Bird Sanctuary through amending the existing Sudurpaschim Province Forest Act 2020 (*Sudurpaschim Pradesh Ban Ain 2077*), has been one of the outstanding achievements for conserving the ecological integrity of the project site.

The Covid-19 outbreak has slightly delayed a few of the project activities in the last two years. That said, the support from partners has been very well coordinated. We have built a very good relationship with GM and all stakeholders, which has brought about positive changes in conserving GLA and improving community wellbeing. Such positive feedback and support from all stakeholders is important for creating the desired changes, both during the project and over the long term.

Communities should be one of the key components in conserving local natural resources and play a fundamental role in biodiversity conservation. Supporting them with alternatives to the direct use of natural resources will protect the ecosystem in the long run, while enabling communities themselves to be the stewards of nature.

6.1 Monitoring and evaluation

The M&E system was effective in providing useful feedback. The project activities have primarily engaged CGLTDB, GM and GLA-dependent communities to lay a foundation for building an ecologically intact GLA, with local communities accruing benefits over the long term. In order to monitor and evaluate the effectiveness of these activities, members of GM, CGLTDB, ZSL and HN visited the intervention sites quarterly, overseeing project progress and adaptively planning the future course of action. All partners share the monitoring and evaluation (M&E) work, with M&E visits facilitated by ZSL. One staff member of HN and a CGLTDB focal person were based at the project site throughout the project period, and they kept ZSL informed about ongoing project implementation. ZSL compiles the partner-submitted M&E reports and shares these among stakeholders.

Similarly, project milestones have been developed to measure monthly progress. The completion of milestones is being monitored through monthly reports submitted using ZSL's web-based system - these include activity tracking, indicator tracking, and finance tracking systems. Together, these allow the different aspects of successful project implementation to be monitored simply and effectively, while enabling the information sources to be readily combined to assess overall progress and enable highly flexible adaptive management in response to the changing conditions.

Besides this, a Programme Coordination Committee (PCC) formed centrally under the chairmanship of the Deputy Director General of Department of National Parks and Wildlife Conservation (DNPWC), with DNPWC section heads and ZSL as members, has monitored the overall project progress and makes recommendations.

6.2 Actions taken in response to annual report reviews

1. *A dramatic increase in Cotton Pygmy Goose numbers was recorded, and the reviewer wonders if this reflects a real increase in the population, or under recording in the previous year?*

Response: We conducted our first survey in the month of February 2020. At that time, only 147 Cotton Pygmy Geese were recorded from GLA, but during our second survey, conducted in February 2021, 434 Cotton Pygmy Geese were recorded. This shows a dramatic increase in the number of Cotton Pygmy Goose. We agree with the reviewer that in year 1, this number was under recorded, as evidenced by the fact that 357 Cotton Pygmy Geese were counted by other surveyors during the Asian Waterbird Census programme in January 2020.

2. *Are there English versions of the GLA tourism master plan and the watershed management plans for example that could be included with future annual reports?*

Response: The English versions of the Tourism Plan (Sustainable Tourism Management Plan) and Watershed Plan (Ghodaghodi Lake Area Catchment Level Conservation Management Plan) are provided as supplementary document 5 & 7 respectively along with this final report.

3. *The reviewer also notes that the Fishing Cat was not mentioned in the current report (in reference to its support for Aichi Target 12) - perhaps the project could comment on this.*

Response: We have conducted the camera trap survey and line transect covering 10670 hectares of Ghodaghodi Lake Area. However, no Fishing Cat was photographed in our camera traps, and neither did the surveyors make any indirect observations of Fishing Cat. Therefore, Fishing Cat was not mentioned in our year 2 annual report.

4. *It would be helpful to translate or summarise some of the feedback received from participants of training courses and workshops.*

Response: Some of their feedback is reflected in section 3 of this final report.

7 Darwin identity

This project supported by the Darwin Initiative (DI) is a distinct project. However, the project aligns with the government programmes of Ramsar site conservation and management as outlined in the National Ramsar Strategy and Action Plan 2018 – 2024. The DI has been mentioned in each agreement signed with the partners. The DI logo and a description of the project have been published in ZSL's Quarterly Newsletter. The DI logo, along with the partner logo, has been placed on sign boards, watershed and tourism plans. DI's contribution has been mentioned in all programme and workshops. MoITFE, DNPWC, DoFSC, partner organizations, other conservation organizations working at national and site levels, and

local communities know about the DI support for this project through inception workshops, meetings, and interaction programmes.

The project webpage, hosted on ZSL's as well as HN's websites, and the first in a series of blogs (details above) have highlighted the critical support provided to the project by the Darwin Initiative.

8 Impact of COVID-19 on project delivery

COVID-19 has had a moderate impact on this project in last two years and the progress of a few of the activities has been slightly delayed. We responded by altering our workplan to help maintain delivery. The health and safety of all project staff and beneficiaries was assured through following government-mandated regulations. All project staff were provided with face masks and sanitisers and advised to follow social distancing. In this instance, we don't expect any of the project outcomes to assist with the response to COVID-19 or reduce the risk of future pandemics in a trackable way. Greater use of virtual meetings to reduce the need to travel is feasible for coordination with government and in-country partners, and will continue to be used with these partners, but virtual meetings will not be feasible for communicating with local communities.

9 Finance and administration

9.1 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)			-7	
Consultancy costs			-12	
Overhead Costs			-6	
Travel and subsistence			9	
Operating Costs			-5	
Capital items (see below)				
Others (see below)			5	
TOTAL	94,219	97,812.83		

Staff employed (Name and position)	Cost (£)
Dr Hem Sagar Baral, Country Representative	
Dr Bhagawan Raj Dahal, Deputy Country Representative	
Bhogendra Rayamajhi, Sr. Programme Officer	
Sailendra Raj Giri, Freshwater Officer	
Amit Pajiyar, Finance Officer	
Ram Budhathoki, Driver	
Matt Gollock, Marine and Fresh water programme manager	
Jake Williams, Project Coordinator	
Laba K. C., Community Officer	
Daya Ram Chaudhary, Project Advisor	
Manisha Chaudhary, Social Mobilizer	
Bishna chaudhary, Social Mobilizer	
TOTAL	

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

Other items – description	Other items – cost (£)
Monitoring and Evaluation	
Print/Publication	
Information Boards	
Press release and Inauguration programme	
TOTAL	

9.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
Himalayan Nature	
Government of Nepal	
TOTAL	

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

9.3 Value for Money

ZSL has 25 years' experience in working with DNPWC, the government of Nepal and local communities, improving ZSL's access to information, tools, permits, and local expertise to enable cost-effective impact. The project utilised methods, infrastructure and learning from our existing ZSL Nepal programmes and wider portfolio of community conservation and species recovery work.

Economy

The construction of foot trails and check dams and the renovation of the information centre were accomplished through CGLTDB to ensure quality, given CGLTDB's presence at the site, and were monitored by GM throughout the construction period. Similarly, two community-managed fishponds were established, along with their operational guidelines. These community fishponds are running with a very low administrative cost, ensuring the value and sustainability over a longer period with the provided resources.

Efficiency/Effectiveness

With minimum investment, the fishpond and women's group members involved in alternative livelihood opportunities were able to improve their economic status. Drop-in sessions organized in upstream settlements have contributed to raising awareness among local communities regarding GLA's biodiversity and freshwater conservation. In addition, the declaration of GLA as the first Bird Sanctuary in Nepal was successful and MoITFE and GM are now committed to take up responsibility for conserving the biodiversity of the area.

Equity

Both the women's groups and fishponds were formed in a way that benefitted the households belonging to indigenous, marginalised and vulnerable communities. The two women's groups formed through this project consist of 89% women. All members of the women's groups have been provided with soft loans at very low interest rates to ensure equitable benefits, coordinated by the cooperatives. Likewise, the participation of more than 2000 women in workshops and consultation meetings while drafting the plans for GLA has helped them to raise their voices for their sustainable development and economic empowerment.

Legacy

The joint declaration of GLA as a Bird Sanctuary by MoITFE and GM, as well as project-supported plans such as the sustainable tourism management plan, catchment-level conservation management plan, land use plan and monitoring protocol, will provide value for money beyond the life of the project. Likewise, capacity development trainings for women, local youths, and FISH representatives on topics including securing alternative livelihoods and biodiversity monitoring will have long-lasting benefits in terms of supporting income generation and promoting GLA's conservation.

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

Ghodaghodi Lake Area is a globally significant Ramsar site (declared in 2003) and a key biodiversity area for Nepal. Located in Kailali District, Sudurpaschim Province, the area is famous for its biodiversity and cultural significance. It is home to more than 300 bird species, including both migratory and residential birds, and serves as an important corridor between the Terai plains and Shivalik hills for migrating wildlife.

Because the site lacked any protected status beyond its Ramsar designation, the project, in consultation with concerned stakeholders, aimed to establish this as the first Bird Sanctuary in Nepal's history, thereby protecting its ecological integrity. ZSL facilitated Ghodaghodi Municipality (GM) and the Comprehensive Ghodaghodi Lake and Tourism Development Board (CGLTDB) to hold a series of consultation meetings with government agencies and local communities to endorse the idea.

As a result, GM and the Ministry of Industry, Tourism, Forests and Environment (MoITFE) of Sudurpaschim Province jointly declared the 6839.63 ha of GLA Nepal's first Bird Sanctuary on 11 March 2022. The formal declaration was made by the Honourable Chief Minister of Sudurpaschim Province, Mr. Trilochan Bhatta, together with the Honourable Minister of MoITFE, Mr. Man Bahadur Dhimi, and the mayor of Ghodaghodi Municipality, Mr. Mamta Prasad Chaudhary, in the presence of 1200 local community members, provincial MPs, and representatives of the finance ministry, division forest office, Department of National Parks and Wildlife Conservation, Nepal Tourism Board, media, local NGOs and leading national conservation organisations. After the designation of the Bird Sanctuary, MoITFE and GM are committed to protecting the biodiversity and cultural and religious values of Ghodaghodi Lake Area and securing the future of this vital landscape.

A national sharing workshop was held in Lumbini Province, close to another important Ramsar site, Jagadishpur Reservoir in central Nepal. This meeting brought together representatives of federal, provincial and local governments, along with NGOs active in promoting environmental conservation, in order for Sudurpaschim province and GM staff to share the process involved in and progress made by the project. This informed and galvanised Lumbini Province's ongoing work to declare the Jagadishpur Reservoir a Bird Sanctuary. We have since been informed that the provincial government will declare Jagadishpur Nepal's second Bird Sanctuary next month. This demonstrates the vital impact our work in Ghodaghodi is already having on securing the protection, not just of the biodiverse and internationally important GLA, but of Ramsar sites throughout Nepal over the long term.