

Darwin Initiative Main Project Annual 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)

Submission Deadline: 30th April 2018

Darwin Project Information

Project reference	24-015
Project title	Community conservation of Chitwan National Park's freshwater ecosystems and gharials
Host country/ies	Nepal
Contract holder institution	Zoological Society of London
Partner institution(s)	Department of National Parks and Wildlife Conservation (DNPWC), National Trust for Nature Conservation (NTNC), Himalayan Nature (HN)
Darwin grant value	£ 397,692
Start/end dates of project	15 June 2017 - 31 March 2021
Reporting period (e.g., Apr 2017 – Mar 2018) and number (e.g., Annual Report 1, 2, 3)	June 2017 – March 2018
Project Leader name	Hem Baral
Project website/blog/Twitter	https://www.zsl.org/community-conservation-of-chitwan-national-park%E2%80%99s-freshwater-ecosystems-and-gharials https://www.zsl.org/blogs/asia-conservation-programme/community-crocodilian-coexistence
Report author(s) and date	Bhogendra Rayamajhi, Sailendra Raj Giri, Jake Williams

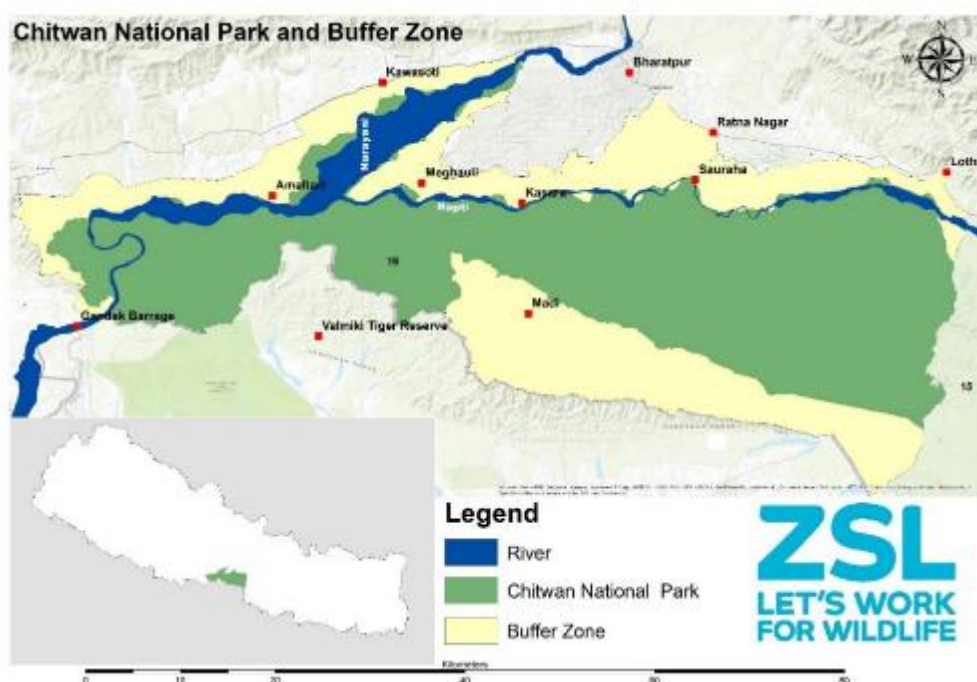
1. Project rationale

Globally, freshwater ecosystems are undergoing declines in biodiversity much higher than in most affected terrestrial ecosystems, mainly due to over exploitation, water pollution, flow modification, destruction or degradation of habitat and invasion by exotic species¹. Freshwater biodiversity protection and conservation is challenging as it is susceptible to pollution in the upstream drainage network, the surrounding land, the riparian zone and in downstream reaches in the case of migrating aquatic fauna. Although, freshwater biodiversity is vital for human health, it receives limited attention and funding for conservation and management.

In Nepal, the loss of freshwater species is almost double the loss of terrestrial species in the last 50 years (Living Planet Report 2016). Narayani and Rapti rivers within Chitwan National Park (CNP) are protected but are still affected by land use change, river bank disturbance, and harmful and unsustainable fishing practices. This has caused dramatic declines in water quality and fish stocks affecting the health, income and food security of local communities as well as the critically endangered gharials. Gharials are extinct from most of their historic range with their current distribution confined to only a few river systems in Nepal and India. In Nepal, gharials are confined to the Narayani, Rapti, Karnali and Babai rivers only. The conservation needs of gharials have been highlighted by the Department of National Parks and Wildlife Conservation in its 'Gharial Conservation Action Plan 2012-2016' and also by national experts.

Gharials play the ecological role of top predators in the river ecosystem and are a key indicator of a healthy freshwater ecosystem upon which the socio-economic wellbeing of local communities depends. The indigenous *Bote*, *Musahar* and *Tharu* communities along the Rapti and Narayani rivers rely heavily upon these rivers for their food and income.

This project aims to reverse the current rate of decline in the gharial population through: robust monitoring of the river ecosystem and gharial population; providing knowledge for the formulation of a river ecosystem management plan; increasing river protection through forming community-based protection units; and enhancing the effectiveness of the Gharial Conservation Breeding Centre (GCBC). By restoring the ecosystem health of Narayani and Rapti rivers, the project aims to deliver positive benefits to the local communities dependent upon these river ecosystems for



food (fish) and water. The project also supports indigenous fish dependent communities to

¹ Dudgeon, D., Arthington, A. H., Gessner, M. O., Kawabata, Z. I., Knowler, D. J., Lévêque, C., ... & Sullivan, C. A. (2006). Freshwater biodiversity: importance, threats, status and conservation challenges. *Biological reviews*, 81(2), 163-182.

enhance their food security as well as to raise their income through developing local communities' capacity in sustainable aquaculture livelihoods.

2. Project partnerships

A strong partnership has been formed by involving Nepal's major stakeholders in biodiversity conservation and protection. This partnership includes the Department of National Parks and Wildlife Conservation (DNPWC), the National Trust for Nature Conservation (NTNC), and Himalayan Nature (HN) along with ZSL, which is facilitating improved communication and coordination for project implementation as planned. A Project Coordination Committee (PCC) chaired by the Deputy Director General of DNPWC, with section heads of DNPWC and the Project Manager from ZSL as members has been formed at central level. The project proposal was shared with PCC for approval to carry out the project activities. A Project Management Unit (PMU) has been formed in CNP for project implementation. The PMU is chaired by the Chief Conservation Officer of CNP with representatives from NTNC, HN and ZSL as members. Representation of communities and protection units is ensured by inviting the chairman or a representative of the Buffer Zone Management Committee, and the head or a representative of the respective protection unit to each meeting. The PMUs are responsible for coordination among partners, Buffer Zone Management Committees and local communities, facilitating project activities, monitoring progress and reporting to PCC.

A project agreement has been signed between ZSL and the other project partners, specifying the activities and responsibilities for each partner. ZSL has been providing technical assistance to partners as well as facilitating coordination among partners to ensure effective project implementation as well as monitoring project progress periodically. Involvement of all partners and relevant stakeholders has been ensured throughout project implementation, monitoring and evaluation of the project.

ZSL along with all the project partners has established a good relationship with the local communities in all three project sites. Local communities are direct project beneficiaries and have a key role in ensuring the sustainability of the project activities. Communities have been well informed about the project, and their participation has been ensured during the implementation of project activities.

In total, three (two formal and one informal) PMU meetings and 11 community meetings/workshops have been conducted with participation of all the project partners and stakeholders. Activities have also been coordinated with local level government representatives, NGOs and community organizations as appropriate.

3. Project progress

3.1 Progress in carrying out project Activities

The project activities have been conducted smoothly during the first year of the project as planned. Inception meetings, an extensive literature review and signing of contracts with project partners were prioritised in the first few weeks of the project. Gharial and river monitoring guidelines were prepared. Surveys on gharial population, fish stocks and water quality in Rapti and Narayani rivers were conducted. 11 CBAPUs were formed in Year 1. GCBC infrastructure was renovated as prioritized by the assessment. 5 women-led groups from communities in the buffer zone of CNP were formed and were supported with seed money and training to carry out aquaculture. These communities were identified through consultation with all project stakeholders, including the communities themselves.

Output 1: Improved river ecosystem management delivered through improved management plans and environmental policy based on a robust Gharial and riverine ecosystem monitoring programme

Inception meetings were held at the beginning of the project as planned. Gharial and river monitoring guidelines have been prepared. For this, literatures comprising books, published reports, and journal articles were collected, and a large scale local ecological knowledge survey was conducted to inform the methodology. Also, 2 workshops were conducted with park

authorities, conservation organizations, experts and community members to facilitate the preparation of the gharial and river monitoring guidelines.

27 participants including CNP staff, CBAPU members, conservation stakeholders and university students were provided training on gharial and river monitoring based on the prepared guidelines. With participants of the trained personnel, gharial monitoring was completed in Rapti and Narayani Rivers. The survey was conducted on 5 segments of the Rapti river and 8 segments of the Narayani River. Each segment was surveyed three times. The number is as a total in Rapti and Narayani rivers. River ecosystem monitoring surveys with three sampling points in each river have been completed and ecological baselines have been established for Rapti and Narayani rivers.

Output 2: Threats to fish stocks and gharials are reduced through protection provided by 10 Community-Based Anti-Poaching Units (CBAPUs) patrolling sensitive riverine zones in the Narayani and Rapti watersheds to protect the area from unsustainable fishing, poaching and other damaging and unsustainable uses of the river.

A stakeholder meeting was conducted to assess the key locations for gharial conservation and CBAPUs were established in the identified key locations. The meeting identified 11 key locations and a CBAPU (consisting of 3 men) was established in each of them – the teams were titled Gharial Guard Groups (3Gs) (Annex 4.1). The members of the newly formed Gharial Guard Groups were provided with training on river patrolling and gharial conservation (Annex 4.2). Equipment including backpacks, cameras, GPS devices and other materials required for patrolling and data recording were provided to all 3Gs. This capacity building has motivated and engaged the 3Gs to carry out regular river patrols in order to monitor gharials; and assist CNP authorities in eliminating the poaching threat to gharials and minimising unsustainable and illegal fishing and other unsustainable use of rivers. The project has also provided 2 rubber boats to CNP to assist in river patrolling.

Output 3: Increased post-release survival of Gharial's from the Chitwan Gharial Conservation Breeding Centre (GCBC) delivered through implementing improved husbandry and release protocols, and post-release monitoring.

An assessment of the GCBC was completed through site visits and consultations with CNP authorities (Photo 6). Consultations were also conducted with independent gharial experts, officials of DNPWC and zoo authorities. To fill identified capacity gaps at GCBC: the visitor centre has been equipped with a display screen to provide information about GCBC, gharials and its conservation efforts to visitors; a camera was provided to collect photos in the field; and a laptop was provided for better reporting and communication. Additionally, a visitor platform has been constructed at the GCBC from which gharials and their habitat can be observed (Photos 3 and 4).

Output 4: Food security of local communities improved through implementing sustainable fishing, and reducing the dependence of local communities on fishing through generating sustainable aquaculture livelihoods.

Altogether 11 meetings were conducted with park managers and buffer zone committees to identify the households of indigenous fish depended communities. A socio-economic and livelihoods survey was carried out in the identified communities with a sample size of 391 households (Supplementary document 4 and Photo 7). The survey identified the majority of households as belonging to the Majhi (55 %) and Musahar (30 %) groups, both of which are highly dependent on fishing with 62 % of the sample population reporting fishing as their primary occupation. Also, the survey data indicated that the average monthly household income from fishing ranged between NPR 1000 to 7000 (USD10 to USD70).

Households within indigenous communities were prioritised for inclusion in alternative livelihood schemes based on the wealth ranking survey. Consultations were carried out with park authorities and buffer zone committees along with field visits to identify suitable areas for the establishment of community managed fish ponds (Annex 4.7). In total, five sites were identified for the establishment of community managed ponds. Five women-led committees under the respective Buffer Zone User's Committee were formed involving 59 households (Annex 4.3). A 1-day training on aquaculture was provided to 75 members from 5 women-led fish pond committees (Annex 4.4). The training covered pond design, stocking, feeding, harvesting, and

fish diseases and their management. The training also covered business and marketing to support the committees to sell the fish at a reasonable price in the local market. Each of these women-led committees has been supported with seed money from the project. Sub-contracts with each fish pond management committee were signed in the presence of the Chief Conservation Officer of CNP or a representative of CNP, and the chairperson of each Buffer Zone User Committee and any other relevant conservation partners and stakeholders. Letters from the relevant Municipality and Buffer Zone User Committee have been issued for the use of the ponds.

3.2 Progress towards project Outputs

Output 1: Improved river ecosystem management delivered through improved management plans and environmental policy based on a robust Gharial and riverine ecosystem monitoring programme		Output will be achieved by the end of the project. The proposed indicators are sufficient to measure the project output.																																									
	Baseline	Change recorded by 2017	Source of evidence																																								
Indicator 1 Ecological baselines established for prey fish stocks/biodiversity, and gharial distribution in year 1, and repeating every year following that	No ecological baselines	<p>Ecological baseline established for prey fish and gharial distribution in Rapti and Narayani river</p> <p><u>Rapti</u> Prey fish Total Fish Species = 20</p> <table border="1"> <thead> <tr> <th>Sampling site</th> <th>No of fish species captured</th> <th>Species Diversity Index (H')</th> <th>Species evenness (J')</th> <th>Fish per 100 M²</th> </tr> </thead> <tbody> <tr> <td>Lothar</td> <td>12</td> <td>1.881</td> <td>0.757</td> <td>63</td> </tr> <tr> <td>Kasara</td> <td>9</td> <td>0.571</td> <td>0.260</td> <td>90</td> </tr> <tr> <td>Golaghat</td> <td>5</td> <td>0.934</td> <td>0.521</td> <td>30</td> </tr> </tbody> </table> <p>Total Number of Gharial = 118</p> <p><u>Narayani</u> Prey fish Total Fish Species = 12</p> <table border="1"> <thead> <tr> <th>Sampling site</th> <th>No of fish species captured</th> <th>Species Diversity Index (H')</th> <th>Species evenness (J')</th> <th>Fish per 100 M²</th> </tr> </thead> <tbody> <tr> <td>Devghat</td> <td>2</td> <td>0.562</td> <td>0.811</td> <td>3</td> </tr> <tr> <td>Kahreghat</td> <td>7</td> <td>1.897</td> <td>0.975</td> <td>20</td> </tr> <tr> <td>Golaghat</td> <td>7</td> <td>1.501</td> <td>0.771</td> <td>34</td> </tr> </tbody> </table> <p>Total Number of Gharial = 100</p>	Sampling site	No of fish species captured	Species Diversity Index (H')	Species evenness (J')	Fish per 100 M ²	Lothar	12	1.881	0.757	63	Kasara	9	0.571	0.260	90	Golaghat	5	0.934	0.521	30	Sampling site	No of fish species captured	Species Diversity Index (H')	Species evenness (J')	Fish per 100 M ²	Devghat	2	0.562	0.811	3	Kahreghat	7	1.897	0.975	20	Golaghat	7	1.501	0.771	34	<p>Supplementary document 1</p> <p>Annex 4.8 and Photo 1. Detailed gharial survey report will be provided by next reporting period.</p>
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Indicator 2 Gharial and river ecosystem monitoring guidelines finalised, on the basis of successful monitoring in year 1, by end of year 2	No gharial and river ecosystem monitoring guidelines	Gharial and river ecosystem monitoring guideline prepared.	Supplementary document 2 and 3.																																								
Indicator 3 PhD student project underway and 2 Masters	No student projects	NA	NA																																								

students projects completed on Gharials and the river ecosystem by year 3 to feed into management plans			
Indicator 4 EDGE Fellow recruited with project focussed on gharial conservation to feed into management plans	No EDGE fellow	NA	NA
Indicator 5 Threats and impacts to Gharial population and fish biodiversity mapped across Narayani and Rapti ecosystems, including illegal fishing by year 2	No maps	NA	NA
Indicator 6 Management plan for CNP updated, including strengthened policies on sustainable use of riverine biodiversity and reducing industrial and domestic waste by year 4	No adaptive management plan	NA	NA

Output 2: Threats to fish stocks and gharials are reduced through protection provided by 10 Community-Based Anti-Poaching Units (CBAPUs) patrolling sensitive riverine zones in the Narayani and Rapti watersheds to protect the area from unsustainable fishing, poaching and other damaging and unsustainable uses of the river.		Output will be achieved by the end of the project. The proposed indicators are sufficient to measure the project output.	
	Baseline	Change recorded by 2017	Source of evidence
Indicator 1 6-person CBAPUs established in 10 local	0	11, 3-person CBAPUs established and named Gharial Guard Groups (3Gs).	See Annex 4.1.

communities with a total of 60 members trained in river patrolling, with support and enabling roles targeted at women by year 1		A two-day training session was provided to 27 participants (Male = 25, female = 2, among them Janajatis = 11, Dalit = 4 and Others = 12). Training included theoretical as well as practical sessions. More training is planned for next year.	See Annex 4.2 & Photo 1.
Indicator 2 Each CBAPU conducting 2 patrols of the river system per month in year 2	0	Project partners are coordinating with CBAPUs for conducting regular river patrolling, quantitative data not yet available.	NA
Indicator 3 Protected area authorities actively collaborating with CBAPUs and utilising intelligence gathered by year 2 to inform patrol planning	None	Protected area authorities have started collaborating with newly formed CBAPUs (Gharial Guard Groups)	NA
Indicator 4 Each CBAPU conducting 3 patrols of the river systems per month in year 3 with 100% of identified sensitive riverine zones being protected	0	Project partners are coordinating with CBAPUs for conducting regular river patrolling, quantitative data not yet available.	
Indicator 5 Illegal fishing incidents down 50% from baseline in year 1 to year 4	6 cases of illegal fishing recorded in year 1. (FY 073-074, DNPWC Report in CNP section) where 38 persons were arrested and legal actions has been taken.	NA	CNP annual reports (From DNPWC Annual Report for FY 073-074)
Indicator 6 Zero gharial poaching incidents in year 4	0 gharial poaching has been registered in DNPWC's Annual Report that corresponds to Year 1 of the Project.	NA	CNP annual reports

Output 3: Increased post-release survival of Gharial's from the Chitwan Gharial Conservation Breeding Centre (GCBC) delivered through implementing improved husbandry and release protocols, and post-release monitoring.		Output will be achieved by the end of the project. The proposed indicators are sufficient to measure the project output.	
	Baseline	Change recorded by 2017	Source of evidence
Indicator 1 GCBC infrastructure improved and identified required equipment supplied by year 1	None	Visitor's platform has been constructed to install display screen. Display screen, camera and laptop has been provided. Renovation works to visitor centre by CNP in association with other conservation partners is underway	Photographs of the Visitor Platform (Photo 3) Handover of the Equipment (Photo 4)
Indicator 2 Gharial husbandry and release guidelines developed and implemented at GCBC by year 3	None	NA	NA
Indicator 3 All 12 GCBC staff trained in herpetology husbandry and release by year 2	0	NA	NA
Indicator 4 40 gharials tagged on release in year 2 as a pilot, and monitored from then on	0	NA	NA
Indicator 5 Released gharial annual mortality reduced 20% by year 4 from year 1 baseline	TBC Baseline to be provided after tagging the 40 gharials on release in year 2.	NA	NA

Output 4: Food security of local communities improved through implementing sustainable fishing, and reducing the dependence of local communities on fishing through generating sustainable aquaculture livelihoods.		Output will be achieved by the end of the project. The proposed indicators are sufficient to measure the project output.	
	Baseline	Change recorded by 2017	Source of evidence

Indicator 1 8 fish ponds, run by indigenous fish-dependent communities established of sufficient size to support at least 20 households each in the buffer zones of CNP, with a focus on management by women's groups by the end of year 1.	0	5 fish ponds run by indigenous fish dependent communities established. These fish ponds are managed by women led groups. Total members in all five groups is 59 among which 76 % are female. Further fishponds will be established next year.	Annex 4.3 Supplementary document 5
Indicator 2 60 households with a member trained in aquaculture are receiving 20% higher aquaculture income than baseline fishing income recorded in year 1, by year 2	Average household income from fishing in year first =NPR 4000	75 members trained from 5 women-led groups in aquaculture. Out of total, 24 were male and 51 were female. Quantitate income data not yet available.	Annex 4.4 Supplementary document 4
Indicator 3 20 people per day visiting each of 5 community conservation engagement centres in upstream communities by year 2	0	NA	NA
Indicator 4 120 households with a member trained in aquaculture livelihoods are receiving 20% higher aquaculture income than baseline fishing income recorded in year 1, by year 3	0	Training on aquaculture provided to 75 members in year 1.	Annex 4.4
Indicator 5 90% (180 households) of practicing fishermen with valid licenses are	TBC	NA	NA

using sustainable fishing methods by year 4			
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3.3 Progress towards the project Outcome

Outcome: Health of the Narayani and Rapti river ecosystems improved, with increased fish stocks, and stabilised Gharial population, supported by local communities benefiting from sustainable livelihoods		Outcome will be achieved by the end of the project. The proposed indicators are sufficient to measure the project outcome.	
	Baseline	Change by 2017	Source of evidence
Habitat utilisation by gharials increases by 10% by the end of Year 2 and 15% by the end of Year 4 (baseline that will be set in Year 1)	TBC – will be reported in next annual report.	Population monitoring of gharials completed.	Final report of gharial survey conducted in year 1.
By Year 4 100% of the fishermen in the Naranyi and Rapti river system will have a valid Fishing licenses, will be recording and reporting the weight of each catch (Baseline to be set in Year 1)	Socio economic survey conducted indicated 43% of fishermen have license and 57 % of fishermen record and report the weight of each catch	NA	Supplementary document 4
By Year 4 Fisherman's catches will show a 20% increase in weight per unit effort and with key high value fish species showing a population recovery (baseline to be set in Year 1)	Baseline will be reported from year 2.	NA	
By the end of Year 4 there will be a 30% increase in the Gharial populations in the wild within Chitwan National Park (Baseline to be set in Year 1)	Baseline established for gharials in Rapti and Narayani river through survey. 245 Gharials (119 in Narayani	NA	Detailed gharial survey report will be provided by next reporting period.

	and 126 in Rapti) recorded in Year 1		
By the end of Year 4 adaptive management plans and participatory approaches have been adopted and are being implemented in the management of the wild and released Gharial population in Chitwan NP	No adaptive management plans or participatory approaches	NA	NA
By Year 4 120 fish-dependent Household are sustainably managing fish-ponds, and receiving a regular income from farmed fish	None	5 groups involving 59 household have been formed. Financial support and training provided to 59 individuals from the 5 communities. A further 3 groups will be formed next year and further training will be conducted.	Annex 4.3 and supplementary document 5.

3.4 Monitoring of assumptions

	Outcome Assumptions	Comments
Assumption 1	A positive trend in these key indicators indicates an overall increase in the biodiversity value of these river ecosystems. This method has been used successfully in the Chambal river.	This assumption remains reasonable.
Assumption 2	Positive results in all ecological indicators indicates that successful ecosystem restoration has taken place	This assumption remains reasonable.
Assumption 3	Relevant authorities show continued commitment to implement robust management plans and monitoring programmes	DNPWC and CNP authorities are highly committed and gharial conservation has been the priority programme.

	Output 1 Assumptions	Comments
Assumption 1	Monitoring programme sustainably institutionalised by DNPWC in the long term	This assumption remains reasonable. DNPWC has prepared Gharial Conservation Action Plan. DNPWC played crucial role in preparation of gharial and river monitoring guideline. DNPWC have ownership of documents prepared by the project.

Assumption 2	DNPWC continues to have adequate resources to implement the required changes in all the relevant areas affecting the riverine ecosystem in the Narayani and Rapti watersheds	This assumption remains reasonable.
Assumption 3	Improved plans and policy are effectively translated into improved management	This assumption remains reasonable.
Assumption 4	Management plan is effectively implemented by DNPWC	This assumption remains reasonable.

	Output 2 Assumptions	Comments
Assumption 1	There will be an adequate number of suitable CBAPU applicants	There were an adequate number of suitable applicants. Park authorities and stakeholder meetings recommended the formation of 33-man gharial guard groups.
Assumption 2	Sufficient number and diversity of community members are willing to participate in CBAPUs, the community workshops explaining and demonstrating the benefits of the CBAPU concept will support this.	This assumption remains reasonable.
Assumption 3	That CBAPUs will use the towers and that they will be effective in increasing chances of spotting poacher activity	This assumption remains reasonable.

	Output 3 Assumptions	Comments
Assumption 1	Factors unrelated to the release procedures are not the primary cause of released gharial mortality	This assumption remains reasonable.
Assumption 2	Factors relating to post-release mortality are identified and adequately addressed through other project Outputs, specifically monitoring	This assumption remains reasonable.

	Output 4 Assumptions	Comments
Assumption 1	Aquaculture combined with increased awareness and strengthened protected area management disincentives illegal, and harmful fishing practices	This assumption remains reasonable.
Assumption 2	Sustainable fishing increases the food security of local communities	This assumption remains reasonable.
Assumption 3	Communities have the will to manage their resources sustainably long-term	This assumption remains reasonable.
Assumption 4	Unequal benefit sharing, corruption and theft do not fundamentally undermine community aquaculture	This assumption remains reasonable.

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

Target Impact: Naranyi and Rapti river ecosystems are protected and restored, with the recovered gharial populations safeguarded and viable long-term, and providing ecosystem services to local fishing communities practicing sustainable livelihoods, reducing poverty.

The project is contributing towards the recovery of gharial populations through enhancing the protection and facilitating the restoration of the Narayani and Rapti river ecosystems. This has been achieved through: improving the river ecosystem and gharial population monitoring methods (e.g. supplementary documents 2 and 3); enhancing the protection through engaging the CBAPUs and by enabling their capacity in controlling illegal activities by providing training and necessary equipment (e.g. annex 4.2); Improving the infrastructure of GCBC to improve the gharial release programme which supports the recovery of the gharial population in Narayani and Rapti (e.g. photos 3 and 4); and motivating local communities to safeguard the recovered gharial population in the long term by enabling them to adopt sustainable livelihoods (e.g. annexes 4.3 and 4.4), also reducing poverty.

The focus on the Narayani and Rapti river systems makes a major contribution towards gharial recovery as these two river systems harbours largest gharial population in Nepal and also highly significant in terms of global population.

The project is also contributing to the human development and wellbeing of the river dependent communities near Rapti and Narayani river system. Currently, the declining river quality and the fish stock adversely impacts the well-being of the local communities, leading them to put further pressure on the declining fish stocks and river resources. This in turn undermines economic development, hampers community wellbeing and contributes to further marginalisation of these groups. Supporting sustainable aquaculture livelihoods, through infrastructure investment and training (e.g. annexes 4.3 and 4.4) for local communities increases their wellbeing in the short-term, and provides for sustainable well-being in the long-term. Additionally the socioeconomic survey has revealed the proportion of fishermen who have licenses and who record the weight of their catches (Supplementary document 4). This positions the project to target its interventions, planned for future years, to promote sustainable levels of fishing and fishing techniques. This has the dual benefit of supporting community wellbeing and food security while also tying this closely to the health of the river ecosystem and specifically fish stocks, therefore increasing community's incentives to conserve river ecosystems and the flora and fauna dependent on them - including gharials.

4. Contribution to the 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 5 women-led committees to manage the community fish ponds to increase their income from aquaculture. Seed money and training on aquaculture has been provided to these five groups, which represent 59 households from indigenous communities dependent upon fishing and river resources.

Goal 3: Good health and wellbeing: Through the promotion of 5 community managed fish ponds, the project is supporting an increase in the income of local communities contributing to their health and wellbeing. Since this project is in its initial stage no contributions have been quantified.

Goal 5: Gender equality: The membership of the women-led community fish ponds established under the project, consists of 76 % females from indigenous communities. This promotes women's role in the community and in income generating activities specifically.

Goal 6: Clean water and Sanitation: Contribution to this goal at this stage cannot be quantified but the project aims to restore the river quality and ecosystem through a robust river management plan providing for improved water quality.

Goal 11: Sustainable cities and communities: The project activities have contributed towards sustainable communities through the development of a sustainable community governance mechanism for the community managed fish ponds

Goal 12: Responsible consumption and production: No substantial contribution to this goal in Year 1 of the project.

Goal 15: Life on Land: Gharial and fish monitoring surveys and the upgrades to the GCBC have increased the evidence base and infrastructure base to support Gharials conservation and population recovery.

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 contributes to the goals.

5. Project support to the Conventions, Treaties or Agreements

S.N.	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 5: By 2020, 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.</p> <p>Target 6: By 2020 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.</p> <p>Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.</p> <p>Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.</p> <p>Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.</p> <p>Target 14: By 2020, 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.</p> <p>Target 18: By 2020, 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.</p> <p>Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences</p>

		of its loss, are improved, widely shared and transferred, and applied.
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6. Project support to poverty alleviation

The project directly supports poverty alleviation for the indigenous fish dependent communities in the buffer zone of CNP. Specific support for poverty alleviation has been provided through activities conducted under output four (for details please see 3.1 and 3.2). The project has already set up five women-led community fish pond management committees, and provided them with seed funding. 75 members of those 5 women-led committees have been provided training on aquaculture to enable them to effectively manage the fish ponds.

More generally the project is indirectly supporting the reduction of poverty through increasing the health of the river ecosystem leading to improved water quality and larger fish stocks; this is being delivered through ecosystem monitoring, management guidelines, gharial protection and sustainable fisheries. These impacts are not yet quantifiable but will be a key indirect impact of the project.

7. Project support to gender equality issues

The project has addressed the issue of poor women's representation in decision-making processes and limited access to resources which were evident through our preliminary socio-economic studies. Women were included in project planning meetings as well as heavily involved in the implementation of all project activities.

Women's leadership was prioritized in the formation of committees to manage the community fish ponds, and also more than 75% of the members of these committees are women. The project has also focused on providing better access to income generating activities for women, in particular through training with women comprising around two-thirds of community members trained in aquaculture skills.

8. Monitoring and evaluation

The Programme Coordination Committee and Project Management Unit are the key monitoring units established for monitoring and evaluation of project implementation, progress and results. Similarly, CNP in coordination with project partners is conducting regular monitoring of the project progress at the site. Regular visits as well as other organised for specific purposes have been conducted by the project manager to monitor and evaluate project implementation. One monitoring visit was also made by senior programme staff during year 1.

The project uses a performance appraisal framework (PAF), tied to the logframe, for ZSL staff to conduct M&E. The PAF uses ZSL's web-based systems to track progress and promote interaction between project partners. Monthly highlights reports will be generated from the PAF with input from all the relevant project components. These feed into the regular project reports both for the Darwin Initiative and ZSL's internal M&E procedures.

The PAF are supplemented with rapid appraisals anonymously completed at the end of training sessions, forums, workshops and seminars, with data disaggregated by gender. In order to promote adaptiveness project reporting also feed into an internal review process. Where amendments are deemed necessary these will be put forward to the Darwin initiative in a formalised approval process.

9. Lessons learnt

- Regular meetings among partners and project beneficiaries are vital for successful implementation of project activities.
- Involvement of existing and institutionalised community organizations such as Buffer Zone Management Committees and Buffer Zone User's Committees are vital for successful implementation of the project and to bring the positive change as planned in the biodiversity and community wellbeing.

- New targeted institutions, working in coordination with the existing institutions mentioned above, have proven to be an effective means of establishing and embedding new livelihood activities, such as aquaculture under this project. Forming these under the umbrella of Buffer Zone User's Committees also support the sustainability of these new institutions by helping them to access existing support and resources for the long term.

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

NA

11. Other comments on progress not covered elsewhere

NA

12. Sustainability and legacy

The key achievement towards sustainability of the project activities are:

- 1) Active involvement of DNPWC, Chitwan National Park Office, NTNC, Himalayan Nature, CBAPUs and local communities in gharial surveys.
- 2) Chitwan National Parks owns the river and gharial monitoring guidelines produced through the project support, and is committed to their implementation.
- 3) The 5 women-led community fish pond management committees have been formed within the existing institutional framework of BZMC. Therefore, BZMC fully owns the operation and management of these committees. Guideline documents for their management and operation are in place.
- 4) Other Government of Nepal line agencies such as the Metropolitan Office (Ward Office) have been informed for their cooperation, long term support and to avoid the duplication of programme activities.

13. Darwin identity

The Darwin Initiative has been mentioned in each agreement signed with the partners. DI logo and brief description of the project has been published in ZSL Quarterly Newsletter. The DI logo along with the partner logo will be placed on the rubber boats which will be handed over to CNP and NTNC for gharial monitoring and river patrolling. DI contribution will be mentioned in all the drop-in centres as well as in GCBC. DNPWC, partner organizations, other conservation organizations working at national and site level, office of BZMC, and local communities know about the DI support through inception workshops, meeting and interaction programmes.

The project webpage, hosted on the ZSL website, and the first project blog (details on cover page) have highlighted the critical support provided to the project by the Darwin Initiative.

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2017 – 31 March 2018)


Project spend (indicative) since last annual report	2017/18 Grant (£)	2017/18 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			1.10	
Consultancy costs			0.06	
Overhead Costs			-1.67	
Travel and subsistence			-6.01	

Operating Costs			2.15	
Capital items (see below)			-0.23	
Others (see below)			2.02	
TOTAL				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2017-2018

Project summary	Measurable Indicators	Progress and Achievements April 2017 - March 2018	Actions required/planned for next period
<p>Impact</p> <p>Naranyi and Rapti river ecosystems are protected and restored, with the recovered gharial populations safeguarded and viable long-term, and providing ecosystem services to local fishing communities practicing sustainable livelihoods, reducing poverty.</p>		<p>River and gharial monitoring guidelines prepared. Status of river ecosystem and gharial population in Narayani and Rapti established through survey. The Knowledge generated provides guidance for effective river management plan supporting to restore the ecosystems. 11 CBAPUs formed assist protected area authority in protection of gharials and river ecosystem through regular river patrolling. GCBC infrastructure renovated and equipped helped improve husbandry practices. Women led committees formed to manage community fish pond in the buffer zone for increasing the aquaculture income for indigenous community dependent upon fish. This increases the food security of those local communities and reducing their dependency upon river res. The fish stock in river improves supporting the restoration of gharial population.</p>	
<p>Outcome <i>Health of the Naranyi and Rapti river ecosystems improved, with increased fish stocks, and stabilised Gharial population, supported by local communities benefiting from sustainable livelihoods</i></p>	<ol style="list-style-type: none"> 1. Habitat utilisation by gharials increases by 10% by the end of Year 2 and 15% by the end of Year 4 (baseline that will be set in Year 1) 2. By Year 4 100% of the fishermen in the Narayani and Rapti river system will have a valid Fishing licenses, will be recording 	<p>Status of river ecosystem and gharial population completed based on prepared river and gharial monitoring guidelines. Monitoring team trained in survey techniques following the river and gharial monitoring guidelines.</p> <p>Socio economic survey carried out in the fish dependent communities. The results indicated</p> <p>43 % of fisher have valid fishing license</p>	<p>Key activities planned for next year</p> <ul style="list-style-type: none"> • Revise gharial and river monitoring guidelines as necessary according to the survey findings • Organise meeting with conservation stakeholders to support DNPWC in the development of river ecosystem management plan.

	<p>and reporting the weight of each catch (Baseline to be set in Year 1)</p> <ol style="list-style-type: none"> 3. By Year 4 Fisherman's catches will show a 20% increase in weight per unit effort and with key high value fish species showing a population recovery (baseline to be set in Year 1) 4. By the end of Year 4 there will be a 30% increase in the Gharial populations in the wild within Chitwan National Park (Baseline to be set in Year 1) 5. By the end of Year 4 adaptive management plans and participatory approaches have been adopted and are being implemented in the management of the wild and released Gharial population in Chitwan NP 6. By the end of Year 4 there will be a 30% increase in the Gharial populations within Chitwan National Park (Baseline to be set in Year 1) 7. By Year 4 120 fish-dependent Household are sustainably managing fish-ponds, and receiving a regular income from farmed fish 	<p>57% of fisherman records and reports the weight of each catch.</p> <p>The gharial survey conducted indicated 118 population in Rapti and 100 in Narayani</p> <p>59 households from fish depended communities supported with seed money and 75 members received training in aquaculture.</p>	<ul style="list-style-type: none"> • Prepare husbandry and release guidelines for gharials of Nepal • Conduct training for GCBC staff on gharial handling and release. • Establish drop-in centres in upstream communities • Hold community workshop on sustainable fishing and gharial conservation
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<p>Output 1. Improved river ecosystem management delivered through improved management plans and environmental policy based on a robust Gharial and riverine ecosystem monitoring programme</p>	<ol style="list-style-type: none"> 1. Ecological baselines established for prey fish stocks/biodiversity, and gharial distribution in year 1, and repeating every year following that. 2. Gharial and river ecosystem monitoring guidelines finalised, on the basis of successful monitoring in year 1, by end of year 2 3. PhD student project underway and 2 Masters students projects completed on Gharials and the river ecosystem by year 3 to feed into management plans 4. EDGE Fellow recruited with project focussed on gharial conservation to feed into management plans 5. Threats and impacts to Gharial population and fish biodiversity mapped across Narayani and Rapti ecosystems, including illegal fishing by year 2 6. Management plan for CNP updated, including strengthened policies on sustainable use of riverine biodiversity and reducing industrial and domestic waste by year 4 	<p>Local ecological knowledge surveys were conducted. (Supplementary document 6) Ecological survey of river system established the baseline survey (See details in 3.2). Supplementary document 1. Gharial and river monitoring guidelines prepared. Gharial survey conducted and established the baseline of gharial population. (See details in 3.2).</p>
<p>Activity 1.1 Collect and collate relevant literature available for Gharial and riverine ecosystem research and conservation</p>	<p>Literatures collected which includes, research articles, books, manuals, guidelines etc.</p>	
<p>Activity 1.2 Recruit 1 PhD candidate, 2 MSc student and on EDGE Fellow</p>	<p>Planned in Year 2. </p>	

Activity 1.3 Conduct large scale Local Ecological Knowledge survey.	A survey has been conducted to document the knowledge of local communities on gharial, its habitat and conservation. A report has been prepared. (Supplementary document 6)
Activity 1.4 Organise 2 inception meetings with conservation stakeholders (including DNPWC, NTNC, HN and BZCs) and experts	Two inception meetings organised in CNP.
Activity 1.5 2 workshops with wider stakeholders, consultation meetings with experts and community members for developing guidelines	One workshop conducted in CNP with participation of protected areas authorities, buffer zone communities, representative of various national conservation partners and experts.
Activity 1.6 Produce gharial/river monitoring guidelines	Gharial and river monitoring guidelines produced. Supplementary document 2 and 3
Activity 1.7 Conduct field training courses to train participants for the use of monitoring guidelines for PA staff, CBAPUs, conservation stakeholders, and university students.	27 participants trained in the use of monitoring guidelines. Annex 4.2
Activity 1.8 Conduct baseline surveys for fish stock, amphibian stock, and water quality in major rivers of Chitwan National Park, these to repeat in year 4. Annual monitoring of Gharial's will start in year 2.	Baseline surveys for fish stock and water quality conducted. See detail in 3.2 and Supplementary document 1
Activity 1.9 Revise gharial/river monitoring guidelines as necessary according to survey findings.	Planned in Year 2.
Activity 1.10 Share findings to park managers and stakeholders in a wider forum and agree on an annual monitoring plan	Planned in Years 2, 3 and 4.
Activity 1.11 Publish at least 2 peer reviewed papers	Planned in Years 2 and 3.
Activity 1.12 Organise preliminary meeting with conservation stakeholders (including DNPWC, NTNC, HN and BZCs) and experts to support DNPWC in development of river ecosystem management plan for Chitwan National Park	Planned in Year 2.
Activity 1.13 2 workshops with wider stakeholders, consultation meetings with experts and community members to input into ecosystem management plan	Planned in Year 2.

Activity 1.14 Conduct training workshop for the park staff and buffer zone community for river ecosystem management	Planned in Years 2 and 3.	
<p>Output 2.</p> <p>Threats to fish stocks and gharials are reduced through protection provided by 10 Community-Based Anti-Poaching Units (CBAPUs) patrolling sensitive riverine zones in the Narayani and Rapti watersheds to protect the area from unsustainable fishing, poaching and other damaging and unsustainable uses of the river.</p>	<ol style="list-style-type: none"> 1. 6-person CBAPUs established in 10 local communities with a total of 60 members trained in river patrolling, with support and enabling roles targeted at women by year 1 2. Each CBAPU conducting 2 patrols of the river system per month in year 2 3. Protected area authorities actively collaborating with CBAPUs and utilising intelligence gathered by year 2 to inform patrol planning 4. Each CBAPU conducting 3 patrols of the river systems per month in year 3 with 100% of identified sensitive riverine zones being protected 5. Illegal fishing incidents down 50% from baseline in year 1 to year 4 6. Zero gharial poaching incidents in year 4 	11 3 -person CBAPUs established. 27 members of newly formed CBAPUs members trained in river patrolling. Annex 4.1 and 4.2
Activity 2.1 Assessment of status in the key locations for Gharial conservation for the establishment of CBAPUs	Stakeholder meeting organised in CNP and 11 key locations identified for establishing CBAPUs for gharial conservation. Annex 4.6	
Activity 2.2. Identify 10 existing CBAPUs and establish additional CBAPUs if needed	11 3- membered Gharial Guard Group (CBAPUs) formed. Annex 1	
Activity 2.3 Train and equip CBAPUs in river patrolling	27 members of the newly formed Gharial Guard Groups have been trained in river patrolling. Equipment such as cameras and GPS were provided to gharial	

		guard groups. In total 10 GPS and 10 Cameras were provided to gharial guard groups. Annex 2
Activity 2.4 Support the CBAPU for yearly monitoring programmes, linked with park authority to control illegal activities in the rivers		Planned in Years 2,3 and 4.
Output 3. Increased post-release survival of Gharial's from the Chitwan Gharial Conservation Breeding Centre (GCBC) delivered through implementing improved husbandry and release protocols, and post-release monitoring.	<ol style="list-style-type: none"> 1. GCBC infrastructure improved and identified required equipment supplied by year 1 2. Gharial husbandry and release guidelines developed and implemented at GCBC by year 3 3. All 12 GCBC staff trained in herpetology husbandry and release by year 2 4. 40 gharial tagged on release in year 2 as a pilot, and monitored from then on 5. Released gharial annual mortality reduced 20% by year 4 from year 1 baseline 	Assessment of Gharial Conservation and Breeding Centre conducted based on which infrastructure improved and necessary equipment provided.
Activity 3.1. Conduct assessment of the GCBC infrastructure and prioritise for improvement		Field meeting and interaction with CNP authority, BCBC manager and staff, as well as consultation with experts done and needs prioritised for improvement. (Photo 6)
Activity 3.2. Renovate GCBC infrastructure aiming to increase the egg laying, visitor experience, etc.		Visitor's platform has been constructed to install Display Screen. Display Screen, Camera and Laptop has been supported. Renovation works to Visitors Centre by CNP in association with other conservation partners is underway
Activity 3.3. Review GCBC's current egg collection practice from the wild and revise guidelines as appropriate		Planned in Years 2.
Activity 3.4. Prepare husbandry and release guidelines for gharials of Nepal		Planned in Years 2.
Activity 3.5. Conduct training for GCBC staff on gharial handling and release		Planned in Years 2 and 4.

<p>Activity 3.6. Post-release monitoring of gharials with state of the art methods e.g. satellite tagging, data loggers, etc. Include research on some existing wild populations for comparison</p>	<p>Planned in Years 2,3 and 4.</p>
<p>Activity 3.7. Make recommendations to park managers and stakeholders in a wider forum based on findings</p>	<p>Planned in Year 4.</p>
<p>Output 4. Food security of local communities improved through implementing sustainable fishing, and reducing the dependence of local communities on fishing through generating sustainable aquaculture livelihoods.</p>	<ol style="list-style-type: none"> 1. <i>8 fish ponds, run by indigenous fish-dependent communities established of sufficient size to support at least 20 households each in the buffer zones of CNP, with a focus on management by women's groups by the end of year 1.</i> 2. <i>60 households with a member trained in aquaculture are receiving 20% higher aquaculture income than baseline fishing income recorded in year 1, by year 2</i> 3. <i>20 people per day visiting each of 5 community conservation engagement centres in upstream communities by year 2</i> 4. <i>120 households with a member trained in aquaculture livelihoods are receiving 20% higher aquaculture income than baseline fishing income recorded in year 1, by year 3</i> 5. <i>90% (180 households) of practicing fishermen with valid licenses are using sustainable fishing methods by year 4</i> <p>7 community meetings conducted in buffer zone of CNP in seven different locations (Annex 4.7). 5 women-led committees (Annex 4.3) to manage the community fish ponds established. 59 households from indigenous fish dependent community represent in those committees. Newly formed committees institutionalised under existing setup of BZMC. Seed money and training provided to each community to carry out sustainable aquaculture practices.</p>
<p>Activity 4.1. Meetings with park managers and buffer zone committees to identify indigenous fish dependent communities and households</p>	<p>Consultation done with park authorities and 7 community meetings conducted and identified five groups of fish dependent communities (Annex 4.7)</p>

Activity 4.2. Conduct socioeconomic and livelihoods survey in fish-dependent communities in years 1 and 4	Socio-economic survey conducted and report produced. Supplementary document 4 and Photo 6
Activity 4.3. Prioritise households based on the wealth ranking from the socioeconomic survey	59 households prioritised based on wealth ranking for the inclusion in income generation through sustainable aquaculture practices.
Activity 4.4. Identify areas suitable for the establishment of community managed ponds	5 existing community ponds identified as suitable for the establishment of community managed ponds.
Activity 4.5. Set up 5 women-led committees of 10 households to manage and operate community fish ponds	5 women led committees comprising total of 59 households established to manage and operate community fish ponds. Seed money provided to each committee.
Activity 4.6. Organise 2 aquaculture training workshops for 150 households and 2 exposure visits for community leaders of identified communities	One-day training organized on aquaculture for 75 members from 5 women led communities. (Annex 4.4)
Activity 4.7. 5 community conservation engagement centres will be established in upstream communities for awareness raising of the project and the benefits of gharial and freshwater conservation.	Planned in Years 2 and 3.
Activity 4.8. Hold 10 community workshops on sustainable fishing and gharial conservation reaching 200 households	Planned in Years 2, 3 and 4.

Annex 2: Project’s full current logframe as presented in the application form (unless changes have been agreed)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact: Naranyi and Rapti river ecosystems are protected and restored, with the recovered gharial populations safeguarded and viable long-term, and providing ecosystem services to local fishing communities practicing sustainable livelihoods, reducing poverty.</p>			
<p>Outcome: Health of the Naranyi and Rapti river ecosystems improved, with increased fish stocks, and stabilised Gharial population, supported by local communities benefiting from sustainable livelihoods</p>	<ol style="list-style-type: none"> 1. Habitat utilisation by gharials increases by 10% by the end of Year 2 and 15% by the end of Year 4 (baseline that will be set in Year 1) 2. By Year 4 100% of the fishermen in the Narayani and Rapti river system will have a valid Fishing licenses, will be recording and reporting the weight of each catch (Baseline to be set in Year 1) 3. By Year 4 Fisherman's catches will show a 20% increase in weight per unit effort and with key high value fish species showing a population recovery (baseline to be set in Year 1) 4. By the end of Year 4 there will be a 30% increase in the Gharial populations in the wild within Chitwan National Park (Baseline to be set in Year 1) 5. By the end of Year 4 adaptive management plans and participatory approaches have been adopted and are being implemented in the management of the wild and released Gharial population in Chitwan NP 6. By the end of Year 4 there will be a 30% increase in the Gharial populations within Chitwan National Park (Baseline to be set in Year 1) 7. By Year 4 120 fish-dependent Household are sustainably managing 	<ol style="list-style-type: none"> 1. GIS mapping of the habitat 2. Social survey results and Socioeconomic survey on livelihood composition, DNPWC records 3. Fisherman landing records 4. Gharial population monitoring records 5. DNPWC records showing iterative updates to Gharial management plans, and management plans 6. Gharial population monitoring records 7. Fish pond records, socioeconomic survey results 	<p>Positive trend in these key indicators indicate an overall increase in the biodiversity value of these river ecosystems. This method has been used successfully in the Chambal river.</p> <p><u>Original Assumption</u></p> <ul style="list-style-type: none"> • Positive results in all 3 ecological indicators (Gharial populations; fish populations; and water quality) indicate successful ecosystem restoration has taken place <p><u>Requested Revision</u></p> <ul style="list-style-type: none"> • Positive results in all ecological indicators indicate successful ecosystem restoration has taken place • Relevant authorities show continued commitment to implement robust management plans and monitoring programmes

	fish-ponds, and receiving a regular income from farmed fish		
<p>Output 1</p> <p>Improved river ecosystem management delivered through improved management plans and environmental policy based on a robust Gharial and riverine ecosystem monitoring programme</p>	<p>1.1. Ecological baselines established for prey fish stocks/biodiversity, and gharial distribution in year 1, and repeating every year following that.</p> <p>1.2. Gharial and river ecosystem monitoring guidelines finalised, on the basis of successful monitoring in year 1, by end of year 2</p> <p>1.3. PhD student project underway and 2 Masters students projects completed on Gharials and the river ecosystem by year 3 to feed into management plans</p> <p>1.4. EDGE Fellow recruited with project focussed on gharial conservation to feed into management plans</p> <p>1.5. Threats and impacts to Gharial population and fish biodiversity mapped across Narayani and Rapti ecosystems, including illegal fishing by year 2</p> <p>1.6. Management plan for CNP updated, including strengthened policies on sustainable use of riverine biodiversity and reducing industrial and domestic waste by year 4</p>	<p>1.1. Partner reports, Scientific Papers, survey reports, senior DNPWC briefing</p> <p>1.2. Guideline documents</p> <p>1.3. PhD and MSc researcher producing at least 2 briefings written to inform decision makers. 1 technical work shop host each year for PA and partners staff. Data from field research is incorporated in to M&E system.</p> <p>1.4. Scientific Papers, survey reports, policy briefing</p> <p>1.5. Scientific Papers, survey reports, policy briefing</p> <p>1.6. Management plan, DNPWC strategic documents, CNP reports, workshop with senior DNPWC leaders</p>	
<p>Output 2</p> <p>Threats to fish stocks and gharials are reduced through protection provided by 10 Community-Based Anti-Poaching Units (CBAPUs) patrolling sensitive riverine zones in the Narayani and Rapti watersheds to protect the area from unsustainable fishing, poaching and other damaging and unsustainable uses of the river.</p>	<p>1. 6-person CBAPUs established in 10 local communities with a total of 60 members trained in river patrolling, with support and enabling roles targeted at women by year 1</p> <p>2. Each CBAPU conducting 2 patrols of the river system per month in year 2</p> <p>3. Protected area authorities actively collaborating with CBAPUs and utilising</p>	<p>1. Partner reports, Scientific Papers, survey reports, senior DNPWC briefing</p> <p>2. Guideline documents</p> <p>3. PhD and MSc researcher producing at least 2 briefings written to inform decision makers. 1 technical work shop host each year for PA and partners staff. Data from field research is incorporated in to the M&E system.</p>	<ul style="list-style-type: none"> • Monitoring programme sustainably institutionalised by DNPWC in the long term • DNPWC continues to have adequate resources to implement the required changes in all the relevant areas affecting the riverine ecosystem in the Narayani and Rapti watersheds

	<p>intelligence gathered by year 2 to inform patrol planning</p> <p>4. Each CBAPU conducting 3 patrols of the river systems per month in year 3 with 100% of identified sensitive riverine zones being protected</p> <p>5. Illegal fishing incidents down 50% from baseline in year 1 to year 4</p> <p>6. Zero gharial poaching incidents in year 4</p>	<p>4. Scientific Papers, survey reports, policy briefing</p> <p>5. Scientific Papers, survey reports, policy briefing</p> <p>6. Management plan, DNPWC strategic documents, CNP reports, workshop with senior DNPWC leaders</p>	<ul style="list-style-type: none"> Improved plans and policy are effectively translated into improved management <p>Management plan is effectively implemented by DNPWC</p>
<p>Output 3</p> <p>Increased post-release survival of Gharial's from the Chitwan Gharial Conservation Breeding Centre (GCBC) delivered through implementing improved husbandry and release protocols, and post-release monitoring.</p>	<p>1. GCBC infrastructure improved and identified required equipment supplied by year 1</p> <p>2. Gharial husbandry and release guidelines developed and implemented at GCBC by year 3</p> <p>3. All 12 GCBC staff trained in herpetology husbandry and release by year 2</p> <p>4. 40 gharial tagged on release in year 2 as a pilot, and monitored from then on</p> <p>5. Released gharial annual mortality reduced 20% by year 4 from year 1 baseline</p>	<p>1. Equipment records, installation records and GCBC reports</p> <p>2. Training attendance records, results of post-training assessment</p> <p>3. Gharial tagging and monitoring reports</p> <p>4. Guideline document approved by GCBC, GCBC records</p> <p>5. Release reports, reports from post release monitoring</p>	<ul style="list-style-type: none"> Factors unrelated to the release procedures are not the primary cause of released gharial mortality <p>Factors relating to post-release mortality are identified and adequately addressed through other project Outputs, specifically monitoring??</p>
<p>Output 4</p> <p>Food security of local communities improved through implementing sustainable fishing, and reducing the dependence of local communities on fishing through generating sustainable aquaculture livelihoods.</p>	<p>1. 8 fish ponds, run by indigenous fish-dependent communities established of sufficient size to support at least 20 households each in the buffer zones of CNP, with a focus on management by women's groups by the end of year 1.</p> <p>2. 60 households with a member trained in aquaculture are receiving 20% higher aquaculture income than baseline fishing income recorded in year 1, by year 2</p> <p>3. 20 people per day visiting each of 5 community conservation engagement</p>	<p>1. Fish pond management, environmental safeguarding guidelines on fishpond construction and management, and lease records</p> <p>2. Partner reports, alternative livelihood records, social surveys</p> <p>3. Partner reports of drop in centres</p> <p>4. Partner reports, alternative livelihood records, social surveys</p> <p>5. Fishing techniques survey at start of project and in year 4, and a reduction in</p>	<ul style="list-style-type: none"> Aquaculture combined with increased awareness and strengthened protected area management disincentives illegal, and harmful fishing practices Sustainable fishing increases the food security of local communities Communities have the will to manage their resources sustainably long-term Unequal benefit sharing, corruption and theft do not fundamentally undermine community aquaculture

	<p>centres in upstream communities by year 2</p> <p>4. 120 households with a member trained in aquaculture livelihoods are receiving 20% higher aquaculture income than baseline fishing income recorded in year 1, by year 3</p> <p>5. 90% (180 households) of practicing fishermen with valid licenses are using sustainable fishing methods by year 4</p>	<p>the number of accidental deaths of gharials</p>	
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.1 Collect and collate relevant literature available for Gharial and riverine ecosystem research and conservation</p> <p>1.2 Recruit 1 PhD candidate, 2 MSc student and on EDGE Fellow</p> <p>1.3 Organise 2 inception meetings with conservation stakeholders (including DNPWC, NTNC, HN and BZCs) and experts</p> <p>1.4 2 workshops with wider stakeholders, consultation meetings with experts and community members for developing guidelines</p> <p>1.5 Produce gharial/river monitoring guidelines</p> <p>1.6 Conduct field training courses to train participants for the use of monitoring guidelines for PA staff, CBAPUs, conservation stakeholders, and university students.</p> <p>1.7 Conduct baseline surveys for fish stock, amphibian stock, and water quality in major rivers of Chitwan National Park, these to repeat in year 4. Annual monitoring of Gharial's will start in year 2.</p> <p>1.8 Revise gharial/river monitoring guidelines as necessary according to survey findings.</p> <p>1.9 Share findings to park managers and stakeholders in a wider forum and agree on an annual monitoring plan</p> <p>1.1 Publish at least 2 peer reviewed papers</p> <p>1.11 Organise preliminary meeting with conservation stakeholders (including DNPWC, NTNC, HN and BZCs) and experts to support DNPWC in development of river ecosystem management plan for Chitwan National Park</p> <p>1.12 2 workshops with wider stakeholders, consultation meetings with experts and community members to input into ecosystem management plan</p> <p>1.13 Conduct training workshop for the park staff and buffer zone community for river ecosystem management</p> <p>2.1 Assessment of status in the key locations for Gharial conservation for the establishment of CBAPUs</p> <p>2.2 Identify 10 existing CBAPUs and establish additional CBAPUs if needed</p> <p>2.3 Train and equip CBAPUs in river patrolling</p> <p>2.4 Support the CBAPU for yearly monitoring programmes, linked with park authority to control illegal activities in the rivers</p> <p>3.1 Conduct assessment of the GCBC infrastructure and prioritise for improvement</p> <p>3.2 Renovate GCBC infrastructure aiming to increase the egg laying, visitor experience, etc.</p> <p>3.3 Review GCBC's current egg collection practice from the wild and revise guidelines as appropriate</p> <p>3.4 Prepare husbandry and release guidelines for gharials of Nepal</p> <p>3.5 Conduct training for GCBC staff on gharial handling and release</p>			

- 3.6 Post-release monitoring of gharials with state of the art methods e.g. satellite tagging, data loggers, etc. Include research on some existing wild populations for comparison
- 3.7 Make recommendations to park managers and stakeholders in a wider forum based on findings
- 4.1 Meetings with park managers and buffer zone committees to identify indigenous fish dependent communities and households
- 4.2 Conduct socioeconomic and livelihoods survey in fish-dependent communities in years 1 and 4
- 4.3 Prioritise households based on the wealth ranking from the socioeconomic survey
- 4.4 Identify areas suitable for the establishment of community managed ponds
- 4.5 Set up 5 women-led committees of 10 households to manage and operate community fish ponds
- 4.6 Organise 2 aquaculture training workshops for 150 households and 2 exposure visits for community leaders of identified communities
- 4.7 5 community conservation engagement centres will be established in upstream communities for awareness raising of the project and the benefits of gharial and freshwater conservation.
- 4.8 Hold 10 community workshops on sustainable fishing and gharial conservation reaching 200 households

Annex 3: Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Total planned during the project
2	Number of people to attain Masters qualification		Nepalese	0	-	-	-	0	3
6A	Training on Aquaculture	51Female 24 Male	Nepalese	75	-	-	-	75	150
6A	Field training course for the use of gharial monitoring guidelines	2females 25 Males	Nepalese	27	-	-	-	25	102
6A	Training on river patrolling to CBAPU Members	2 Females 25 Males	Nepalese	27	-	-	-	27	60
9	River Ecosystem Management Plan			0	-	-	-	0	1
10	River and Gharial Monitoring Guidelines			0	-	-	-	0	2
10	Gharial Husbandry and release Guidelines			0	-	-	-	0	1
11 B	Peer Reviewed papers			0	-	-	-	0	2
14A	Workshops	-	-	0	-	-	-	0	3
20	2 Rubber Boats (£10,300)			2	-	-	-	2	2
20	1 Display Screen (£550)			1	-	-	-	1	1
20	1 Computer (£850)			1	-	-	-	1	1
20	11 Camera (£1,350)			11	-	-	-	11	11
20	10 GPS (£950)			10	-	-	-	10	10

21	Community outreach drop-in centres			0	-	-	-	0	5
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Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Gharial monitoring begins in Chitwan Park	Online News	Chandan Kumar Mandal, 2018	Male	Nepalese	Ekantipur	http://kathmandupos t.ekantipur.com/news/2018-02-25/gharial-monitoring-begins-in-chitwan-park.html
Community-crocodilian Coexistence	Blog	February 2018			ZSL	https://www.zsl.org/b logs/asia-conservation-programme/commu nity-crocodilian-coexistence
Gharial Conservation and poaching control workshop organised (Published in Nepali Language)	Newsletter	July 2017			ZSL Nepal	ZSL Nepal Office
Gharial conservation information centre to be constructed (Published in Nepali Language)	Newsletter	October 2017			ZSL Nepal	ZSL Nepal Office

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

Annex 4.1: List of 11 CBAPUs (Gharial Guard Groups) formed by project support.

Sn.	Name of BZUC	Segment	Name of Member of CBAPU (Gharial Guard Group)
1.0	Lother UC	Lothar - Baliya Ghat	Provided throughout
2.0	Buddhi Rapti UC	Baliya Ghat - Icharni	
3.0	Migrakunja UC	Saura to Dudhaura	
4.0	Patihani UC	Patihani	
5.0	Kerunga UC	Jagatpur	
6.0	Kalabandar UC	Kalabandar	
7.0	Sisuwar UC	Kujauli	
8.0	Lamichaur	Laukhani/Laugai	
9.0	Nanda-Bhauju UC	Nandapur/Seri	
10.0	Amaltari UC	Amaltari	
11.0	Amaltari UC	Sergung	

Annex 4.2: List of participants (CBAPU members) of training on gharial monitoring and river patrolling.

Sn.	Name	Concern Organization	Name of UC
1	Provided throughout	CBAPU/Gharial Guard Group	Lother UC
2.		CBAPU/Gharial Guard Group	Lother UC
3.		CBAPU/Gharial Guard Group	Lother UC
4.		CBAPU/Gharial Guard Group	Buddhi Rapti UC
5.		CBAPU/Gharial Guard Group	Buddhi Rapti UC
6.		CBAPU/Gharial Guard Group	Buddhi Rapti UC
7.		CBAPU/Gharial Guard Group	Mirgakunga UC
8.		CBAPU/Gharial Guard Group	Mirgakunga UC
9.		CBAPU/Gharial Guard Group	Mirgakunga UC
10.		CBAPU/Gharial Guard Group	Patihani UC
11.		CBAPU/Gharial Guard Group	Patihani UC
12.		CBAPU/Gharial Guard Group	Patihani UC
13.		CBAPU/Gharial Guard Group	Kerunga UC
14.		CBAPU/Gharial Guard Group	Kerunga UC
15.		CBAPU/Gharial Guard Group	Siswar UC
16.		CBAPU/Gharial Guard Group	Siswar UC
17.		CBAPU/Gharial Guard Group	Nanda Bhauju UC
18.		CBAPU/Gharial Guard Group	Nanda Bhauju UC
19.		CBAPU/Gharial Guard Group	Amaltari UC
20.		CBAPU/Gharial Guard Group	Amaltari UC
21.		CBAPU/Gharial Guard Group	Amaltari UC
22.		CBAPU/Gharial Guard Group	Amaltari UC
23.		CBAPU/Gharial Guard Group	Amaltari UC
24.		CBAPU/Gharial Guard Group	Kagendramalli UC
25.		CBAPU/Gharial Guard Group	Lamichaur UC
26.		CBAPU/Gharial Guard Group	Lamichaur UC
27.		CBAPU/Gharial Guard Group	Lamichaur UC

Annex 4.3: List of members of five women led community managed fish pond.

a) Samudayama Aadharit Ghaaila Maachapalan Samuha (Ka)

GPS Point of Pond: 27°33'42.70" N, 84°19'36.28"E

S.N	Name of Member	Designation	Licence Holder	
			Husband	Wife
1	Provided throughout	Chairperson	x	x
2.		Vice Chairperson	x	x
3.		Secretary	x	x
4.		Treasure	x	x
5.		Vice Secretary	x	x
6.		Member	✓	✓
7.		Member	x	x
8.		Member	x	x
9.		Member	x	x
10.		Member	x	x
11.		Member	✓	✓

b) Samudayama Aadharit Ghaaila Maachapalan Samuha Kha

GPS Point of Pond: 27°33'42.82" N, 84°19'39.90" E

S. N	Name of Member	Designation	License Holder	
			Husband	Wife
1	Provided throughout	Chairperson	x	x
2.		Vice Chairperson	x	x
3.		Secretary	x	x
4.		Treasure	x	x
5.		Vice Secretary	x	x
6.		Member	x	x
7.		Member	✓	x
8.		Member	✓	✓
9.		Member	x	x
10.		Member	x	x
11.		Member	x	x

c) Majhi Utthan Samuha

GPS Point of Pond: 27°37'18.72" N, 84°09'17.11"E

S.N	Name of Member	Designation	License Holder	
			Husband	Hhs Member
1	Provided throughout	Chairperson	✗	✗
2.		Vice Chairperson	✗	✗
3.		Secretary	✓	✗
4.		Treasure	✗	✗
5.		Vice Secretary	✗	✗
6.		Member	✗	✗
7.		Member	✓	✗
8.		Member	✗	✗
9.		Member	✗	✗
10.		Member	✗	✗
11.		Member	✗	✗
12		Member		✓ (Father holds license)
13		Member	✓	✗
14.		Member	✓	✗
15		Member	✓	✗
16		Member	✗	✗
17.		Member	✓	✗

d) Santi Srijana Kirsak Samuha

GPS Point of Pond: 27°33' 5" N, 84°8'56" E

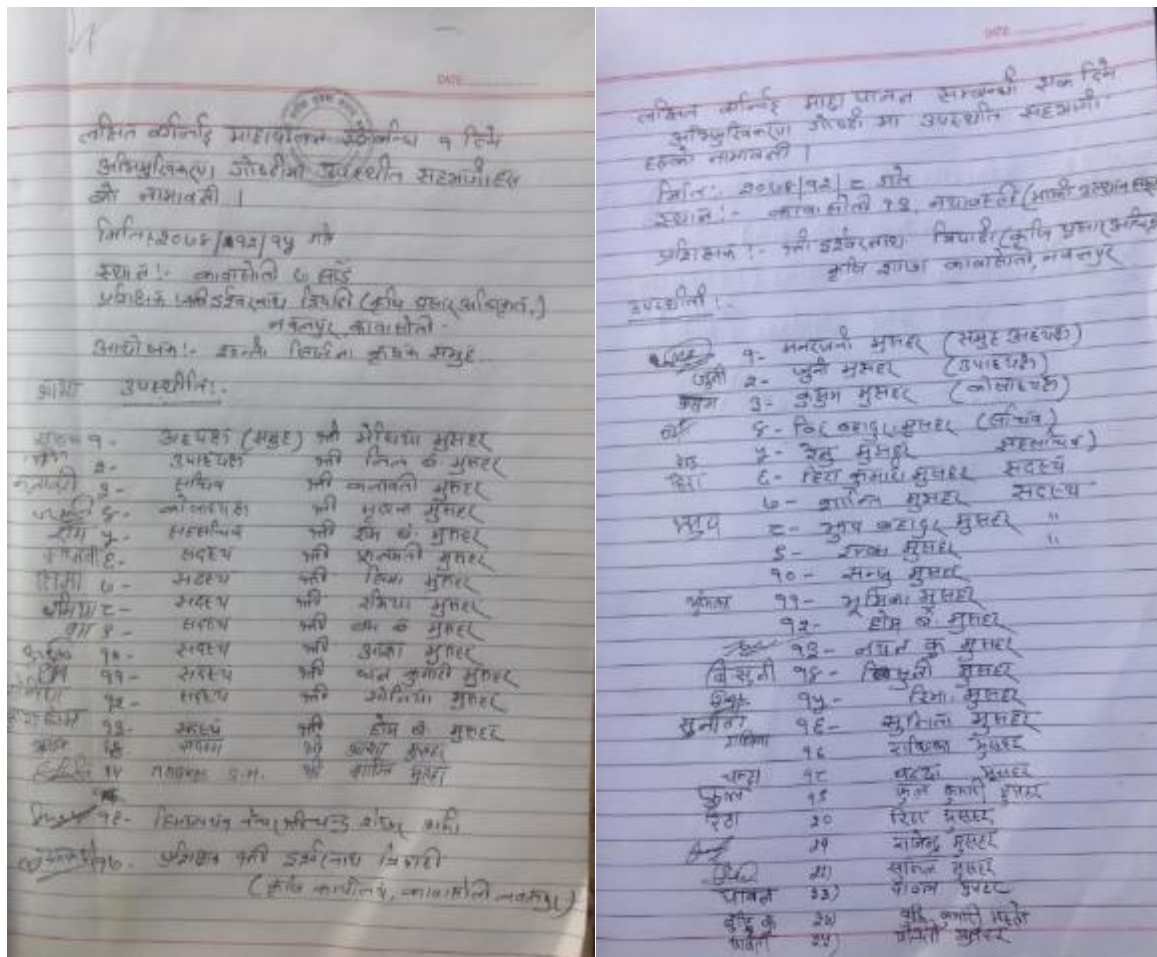
S.N	Name of Member	Designation	License Holder	
			Husband	Wife
1	Provided throughout	Chairperson	✓	✗
2.		Vice Chairperson	✓	✗
3.		Secretary	✗	✗
4.		Treasure	✓	✗
5.		Vice Secretary	✓	✗
6.		Member	✗	✗
7.		Member	✗	✗
8.		Member	✗	✗
9.		Member	✗	✗
10.		Member	✗	✗
11.		Member	✗	✗

e) Shreee Gyan Jyoti Krisak samuha

GPS Point of Pond: 27°66'16.05" N, 84°21'60.66" E

S.N	Name of Member	Designation	License Holder	
			Husband	HHs member
1	Provided throughout	Chairperson	x	x
2.		Vice Chairperson	x	x
3.		Secretary	x	x
4.		Treasure	x	x
5.		Vice Secretary	x	x
6.		Member	x	x
7.		Member	x	x
8.		Member	x	x
9.		Member	x	x

Annex 4.4 Minutes of one-day Aquaculture trainings.



पश्चिम बंगाली प्रजासत्ताक संसदीय कलेज दुर्गापुर (बी.एड.) जोधरी मा. उपस्थिति सट्टा एड.मा. नामावली			
स्थान :- दिव्य मद्रुपवती आमुदयीय कलेज दे.क.नु.मी. नगरपालिका बाई न.प.न.नु.मी. समु.प. विद्यालय दिनांक :- 2076/9/28 प्रतिबन्धा - श्री उ.उ.म.पि. अ.पु.ल.			
क्र.सं.	नाम / पद	हेतुना/समु.प.	हस्ताक्षर
1	श्री विजय शिखर	उपस्थित (पि.ए.डी.)	विजय
2	न्याय शिखर शर्मा	उपस्थित (पि.ए.डी.)	शर्मा
3	मि.प्रकाश कर्	उपस्थित (पि.ए.डी.)	प्रकाश
4	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
5	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
6	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
7	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
8	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
9	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
10	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
11	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
12	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
13	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
14	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
15	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
16	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
17	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
18	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.
19	श्री उ.उ.म.पि. अ.पु.ल.	उपस्थित	अ.पु.ल.

आज मिति २०७४ असार ७ गतेका दिन चितवन राष्ट्रिय निकुञ्जका प्रमुख संरक्षण अधिकृत श्री रामचन्द्र कंडेल को अध्यक्षतामा तपसिलको उपस्थितिमा नदि तटीय वास्थान तथा घडियाल संरक्षण सम्बन्धि प्रारम्भिक योजना तर्जुमा कार्यशाला गोष्ठी (Inception and Planning Workshop) सम्पन्न गरियो ।

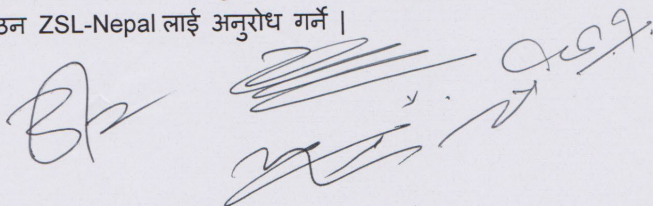
उपस्थिती

१. प्रमुख संरक्षण अधिकृत श्री रामचन्द्र कंडेल, चितवन राष्ट्रिय निकुञ्ज कार्यालय
२. संरक्षण अधिकृत श्री बेद बहादुर खड्का, चितवन राष्ट्रिय निकुञ्ज कार्यालय
३. संरक्षण अधिकृत श्री नुरेन्द्र अर्याल, चितवन राष्ट्रिय निकुञ्ज कार्यालय
४. संरक्षण अधिकृत श्री अभिनय पाठक, चितवन राष्ट्रिय निकुञ्ज कार्यालय
५. कार्यक्रम प्रबन्धक डा. भगवान राज दाहाल, ZSL Nepal Office
६. संरक्षण अधिकृत सन्तोष भट्टराई, राष्ट्रिय प्रकृति संरक्षण कोष
७. पशु स्वास्थ्य प्राविधिक श्री पुरुषोत्तम पाण्डे, चितवन राष्ट्रिय निकुञ्ज कार्यालय

निर्णय-१: नदि तटीय वास्थान तथा घडियाल संरक्षण कार्यक्रम संचालन गर्नका लागि मिति २०७३-३-६ गतेका दिन चितवन राष्ट्रिय निकुञ्ज कार्यालय, अमलटारी सेक्टरमा सरोकारवालाहरु विच भएको घडियाल संरक्षण अन्तरक्रिया तथा छलफल कार्यक्रमको परामर्शको आधारमा प्रारम्भिक रुपमा गिद्देनी, कुजौली, लौखानी, अमलटारि, भुताहा-सेरी, तमासपुर, बगवन, गोलाघाट- मेघौली, जगतपुर-शुक्र नगर, पटिहानी र सौराहा क्षेत्रहरुको पहिचान गरियो । पहिचान भएका स्थानहरुको स्थलगत अध्ययनगति अति सम्बेदनशील स्थानहरुमा संरक्षण तथा समुदाय लक्षित कार्यक्रम संचालन गर्ने निर्णय गरियो ।

निर्णय-२: अतिसंबेदशील स्थानहरुमा नदीमा आश्रित समुदाय लक्षित आय-आर्जन कार्यक्रम, सचेतना मुलक कार्यक्रम, अध्ययन-अनुसन्धान सम्बन्धि कार्यक्रम, गोही उद्दार तथा पुनर्स्थापना निर्देशिका, वासस्थान सुरक्षाका लागि सहभागितामुलक संरक्षण कार्यक्रम तयार गर्ने लगायतका कार्यक्रमहरु तर्जुमा गरि कार्यन्वयन गर्ने निर्णय गरियो ।

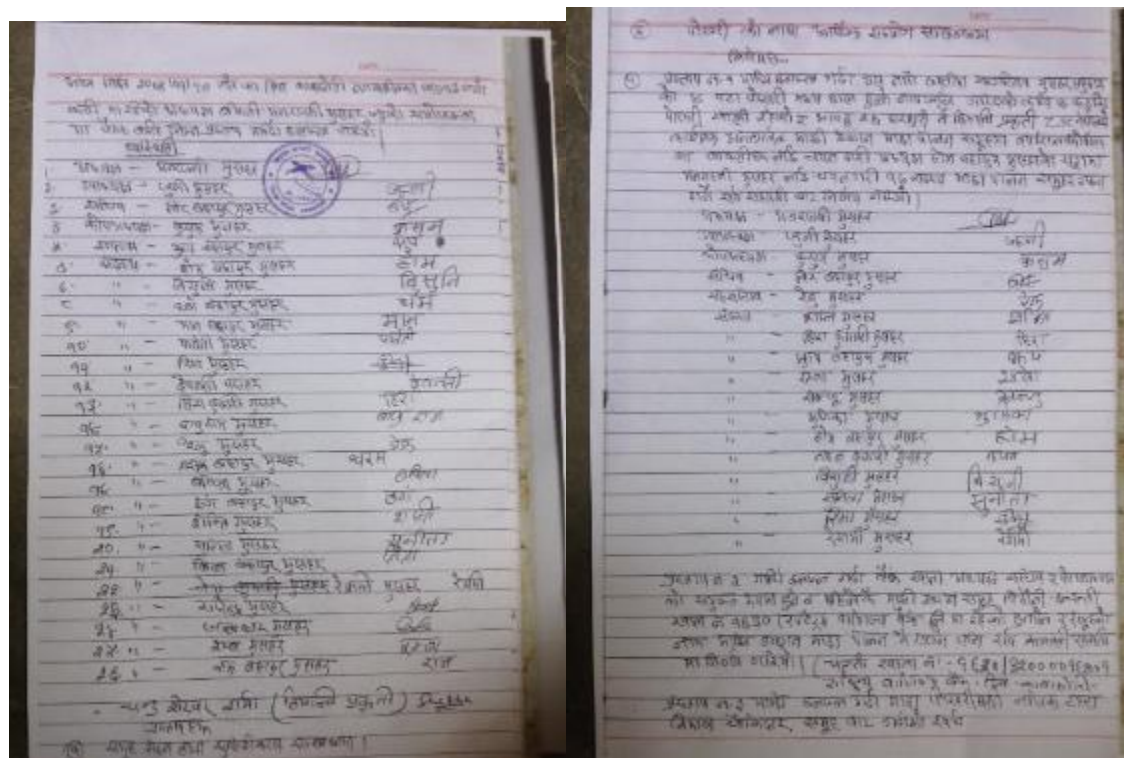
निर्णय-३: चितवन राष्ट्रिय निकुञ्जले स्थानीय तहमा राष्ट्रिय प्रकृति संरक्षण कोषको सहयोगमा कार्यक्रम संचालन गर्ने व्यवस्था मिलाउने, र जनचेतनामुलक, जीविकोपार्जन लगायत सहजीकरणका कार्यक्रम संचालन गर्न हिमाली प्रकृतिलाई सहभागी गराउने । उल्लेखित कार्यक्रम संचालन गर्न आवश्यक प्रक्रियाका लागि राष्ट्रिय निकुञ्ज तथा वन्यजन्तु संरक्षण विभागलाई अनुरोध गर्ने, र आर्थिक तथा प्राविधिक सहयोग उपलब्ध गराउन ZSL-Nepal लाई अनुरोध गर्ने ।




Annex 4.6 Meeting minutes of stakeholders meeting organised in Chitwan National Park to identify the key locations to establish CBAPUs.

S. N	Name	Designation
1	Provided throughout	Chief Conservation Officer, CNP
2		Head of protection unit, CNP
3		Office In charge, NTNC-BCC
4		Conservation Officer, NTNC-BCC
5		Conservation Officer, CNP
6		Conservation Officer, CNP
7		Conservation Officer, CNP
8		TAL-PABZ
9		TAL-PABZ
10		TAL-PABZ
12		CNP

Annex 4.7 Meeting minutes to community meetings to identify the suitable area for the establishment of community managed fish ponds.





Form No: 1

गोही अनुगमन

मिति: _____ गणकको नाम: _____

नदीको नाम _____ नदीको खण्ड _____

शुरु GPS: Wpt: _____ N _____ E _____ शुरु समय: _____ मौसम: _____

अन्त्य GPS: Wpt: _____ N _____ E _____ अन्त्य समय: _____ मौसम: _____

क्र. सं.	समय	मील म	प्रजाति	संख्या	देखेको स्थान	GPS	उमेर समूह (Age groups)					नदीको बहाव (River flow)	Activity (के गर्दै छ?)	Substratum		
							वयस्क (>300cm)			अर्ध वयस्क (100-300cm)	Juvv rtle (50-100cm)				बच्चा (Yearling (<50cm))	उमिर बाह्र महिनेको
							भाले	पोषी	झ./पो. नुतिरको							
						N: E:										
						N: E:										

Habitat Substratum: Sandy bank (SB), Grassy Bank (GB), Muddy Bank (MB), Boulders/Gravel Bank (BB), Water (W), Others - ~~specify~~ (O)

Activity: Basking (B), Fishing (F), Swimming (S)

River Flow: Fast flowing (FF), Slow flowing (SF), Stagnant (ST)

Insect sign (उम्र चर्केको/पसेको (T), टिसा (SC) वा गुँठ (फलनदेको वा प्याल) (N)

Form No: 2

गोहीको वासस्थान अनुगमन

मिति: _____ गणकको नाम: _____

नदीको नाम _____ नदीको खण्ड _____

शुरु GPS: Wpt: _____ N _____ E _____ शुरु समय: _____

अन्त्य GPS: Wpt: _____ N _____ E _____ अन्त्य समय: _____

क्र. सं.	समय	मील म	प्रजाति	संख्या	देखेको स्थान	GPS	Anthropogenic Parameters						Habitat parameters			अन्य		
							रुपाना घुटे/नुसलेको वीरको संख्या	बग/बगु (No.)	हुन/हिउटी, बागुका टिकेको (No.)	पुस/पुसको उपरको गुण (No.)	नदीको चलाउ (V/M)	Fishing		नदीको को वीरको (m)	नदीको को (No.)		बगुको घुटे	नदीको को (No.)
												घण्टा *	संख्या					
						N: E:												
						N: E:												

List of Photographs attached separately with report (All photos are owned by ZSL and were taken during project implementation)

Photo 1. Surveyors during the Gharial Monitoring Survey.

Photo 2. Photographs of participants receiving training on gharial monitoring and river patrolling.

Photo 3. Photograph of the Visitor Platform renovated in GCBC by project support.

Photo 4. Photograph of equipment handover to GCBC, CNP.

Photo 5. Participants of aquaculture training photo.

Photo 6. Photograph of GCBC in CNP.

Photo 7. Social surveyor collection data on field through socio economic survey.

List of Supplementary Materials.

1. River ecosystem monitoring report: Assessment of fish diversity and water quality
2. Gharial Monitoring Guideline
3. River monitoring guideline for Narayani and Rapti Rivers
4. Socio Economic Report
5. Report on Understanding the local's knowledge on gharial in Chitwan National Park
6. By law of 5 women led fish pond management committees
7. Five fish-pond agreements

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	X
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	
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.	X
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.	
Have you involved your partners in preparation of the report and named the main contributors	X
Have you completed the Project Expenditure table fully?	X
Do not include claim forms or other communications with this report.	