



Darwin Initiative Main: Annual Report

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

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Darwin Initiative Project Information

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Lead Partner	WWF-UK
Project partner(s)	WWF Nepal, Freed Kamaiya Women Development Forum (FKWDF), Sonaha Bikash Samaj (SBS), Dolphin Conservation Center (DCC), Small Mammals Conservation and Research Foundation (SMCRF)
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Project Leader name	Nicola [REDACTED] (WWF-UK); Rajesh [REDACTED] (WWF Nepal)
Project website/blog/social media	Project webpage
Report author(s) and date	WWF UK: Nicola [REDACTED], Catriona [REDACTED], Deborah [REDACTED] WWF Nepal: Rajesh [REDACTED], Aashish [REDACTED], Arati [REDACTED], Karma [REDACTED], Bivishika B [REDACTED], Shambhavi [REDACTED], Shobhana [REDACTED] SBS: Ratna KC; FKWDF: Jagadish [REDACTED]; SMCRF: Sanjan [REDACTED] and DCC: Bijaya [REDACTED] 29th April 2024

1. Project summary

The Lower Karnali Watershed, spanning 747 km² within Nepal's Terai Arc Landscape, boasts remarkable aquatic biodiversity, harbouring 136 fish species (*Annex 4.1.1*) and providing vital ecosystem services to local communities. Its diverse habitats, including rivers, riverine forests, floodplain grasslands, and oxbow lakes, support a plethora of species, including those listed on the IUCN Red List such as the critically endangered gharial crocodile, vulnerable mugger crocodile, endangered Gangetic river dolphin, and vulnerable smooth-coated otter. Recognizing its importance, the Government of Nepal has designated the western channel of the Karnali River as an ecological corridor, while the eastern channel is encompassed within the buffer zone of Bardia National Park.

Otter species serve as ecological indicators of healthy aquatic ecosystems and are protected under Nepal's amended Aquatic Animal Protection Act 2002. However, declining fish diversity and abundance due to overfishing ([Annex 4.1.2](#), [4.1.3](#), [4.1.4](#), [4.1.5](#), [4.1.6](#)) and habitat disturbance caused by intensive river aggregates extraction ([Annex 4.1.5](#), [4.1.6](#) and [4.1.7](#)) threaten the health of the river ecosystem and declining smooth-coated otter populations ([Annex 4.1.8](#)). Insufficient research on their distribution further impedes the development of an effective national otter conservation strategy ([Annex 4.1.9](#)).

Illegal and unsustainable fishing practices persist in the western channels of the Karnali River due to interconnected factors, including limited enforcement capacity for fisheries regulations and inadequate fisheries management procedures. Unregulated river aggregates extraction has rapidly increased in the western belt of the Karnali ([Annex 4.1.7](#)), with contractors neglecting environmental mitigation plans required by Initial Environmental Examination (IEE) reports. Weak compliance and monitoring mechanisms from local governments exacerbate the degradation of river systems and otter habitats, leading to the destruction of vegetation and fish spawning sites. This degradation has led to a decline in fish diversity and abundance, jeopardising the traditional livelihoods and food security of indigenous and marginalised Sonaha and Tharu communities. Sonaha are an indigenous group, not legally or formally recognised by the Nepalese Government and incorrectly categorised under the indigenous Tharu group. Since ancestral times, Sonaha have practised gold panning in the lower Karnali river, and fishing is their customary practice. While Sonaha rely on fishing for subsistence, Tharus primarily engage in commercial fishing, and both groups' livelihoods are at risk due to the declining fish population. However, they lack the necessary knowledge, tools, and techniques for sustainable fishing and need to diversify their incomes to reduce reliance on fishing and enhance financial resilience. Additionally, both groups have limited access to alternative livelihood options and are underrepresented in local decision-making bodies, further marginalising these communities and hindering their access to knowledge, services, and opportunities.

The decline in fish stocks and habitat destruction also directly impacts otters, gharials, mugger crocodiles, and dolphins, all reliant on fish as their primary food source and healthy rivers for survival.

Considering these challenges, this project aims to improve the livelihoods of marginalised river-dependent communities, promote sustainable fishing practices, and enhance the capacity of government stakeholders and civil society organisations in the Lower Karnali Watershed ([Annex 4.1.10](#)). The project will also facilitate the formation and mobilisation of community-based river stretch co-management groups to monitor the river regularly to mitigate threats to fish and smooth-coated otters in the Lower Karnali Watershed.

2. Project stakeholders/ partners

WWF Nepal has a strong partnership with the Department of National Parks and Wildlife Conservation (DNPWC) and Department of Forests and Soil Conservation (DoFSC) under the Ministry of Forests and Environment (MoFE). This collaboration is formalised through a Scope of cooperation agreement (SoC) renewed every five years, encompassing all conservation activities undertaken by WWF Nepal. To facilitate project implementation, WWF convened a Project Coordination Committee (PCC) co-chaired by Deputy Director Generals of DNPWC and DoFSC, with participation from section heads of both the departments, ensuring full government and comprehensive support for the project activities.

WWF Nepal has four project implementing partners selected for their expertise and local knowledge: Sonaha Bikash Samaj (SBS), Dolphin Conservation Center (DCC), Freed Kamaiya Women Development Forum (FKWDF) and Small Mammals Conservation and Research Foundation (SMCRF).

Establishing this formal collaboration commenced with an inception workshop held from June 28th to 30th, 2023, involving all four partners. This event served to finalise project implementation plans, the logframe, monitoring activities, and risk assessments, with participation from 16 male and 9 female attendees. Additionally, WWF UK and WWF Nepal jointly introduced project compliance requirements, an online reporting database system, Gender Equality and Social Inclusion (GESI) principles, environmental and social safeguards,

Free, Prior, and Informed Consent (FPIC) procedures, and branding guidelines to the partners.(Annex 4.2.1).

The official project launch event took place on June 30th, 2023, in Tikapur, Kailali, marking the formal start of the project with relevant stakeholders, civil society organisations (CSOs), local government representatives, government line agencies (Division Forest Office- Bardia, Division Forest Office-Pahalmanpur, Kailali and Bardia National Park), Nepal Federation of Indigenous Nationalities and local community representatives including project partners (Annex 4.2.2). It aimed to introduce the project to a wider group of stakeholders, gather feedback for adaptive management, and secure local support.

Furthermore Free, prior and informed content (FPIC) processes were conducted with indigenous communities within Geruwa rural municipality (2), Rajapur Municipality (3) and Tikapur Municipality (8) to obtain their consent for project activities. Concerns raised during these consultations, such as overfishing, challenges in controlling illegal activities, pesticide use, limited livelihood opportunities and youth unemployment, were addressed through collective consent and incorporated into the Indigenous People's Planning Framework (IPPF) (Annex 4.2.3).

In addition to the formal partnership, WWF Nepal collaborated closely with the Division Forest Office, Pahalmanpur. Inception meetings were organised with relevant local governments, including Tikapur Municipality, Janaki Rural Municipality, Lamkichuha Municipality, Rajapur Municipality, and Geruwa Rural Municipality, to secure approval for commencing project activities in their respective jurisdictions.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1: By 2026, river dependent communities and local governments demonstrate river stretch co-management covering at least 10 kms of the Karnali river and one fish sanctuary, enhancing sustainable fishing practices and inclusive decision making processes

1.1 Identify river stretch and adjoining hotspot areas (identified in Output 4) to be managed by community, while considering climate impacts.

A series of consultation meetings with the village chiefs, community forest user groups and ward chairpersons followed by twenty focus group discussions, six community consultations and sign-surveys were conducted to identify the priority river stretches and adjoining hotspots areas. Based on these consultation meetings and surveys, six hotspots were identified along the Karnali River, namely, 1. Tikuligadh, Bardia, 2. Rajipur, Bardia, 3. Tihuni, Bardia, 4. Chhedia, Bardia, 5. Phanta, Kailali and 6. Nuklipur, Kailali ([Annex 4.3.1](#)).

2. Support the formation and registration of 15 community river stretch management groups (CRSMGs) in the designated community managed river stretch in close coordination with the local government in three municipalities, ensuring equal representation of men and women, in close coordination with the local government and community forest users groups.

Illegal fishing and destructive extraction of sand and gravel are significant challenges in the lower Karnali watershed. In response, the formation of Community River Stretch Management Groups (CRSMGs) has been initiated. These groups, characterised by equitable representation from both the Sonaha and Tharu communities, with 68% female participation, aim to safeguard fish spawning sites and otter habitats while monitoring river-based activities. Following the identification of river stretches and adjacent hotspots, fifteen CRSMGs have been established, with 375 members. ([Annex 4.3.2a](#)). These groups have been registered with the respective ward offices of local governments ([Annex 4.3.2b](#)). Each group will cover approximately 1.5 kilometres of river stretch, with precise boundary delineations to be finalised during the formulation of the river stretch management plan.

1.3 Train 30 community members (2 from each CRSMG) on sustainable fishing practices and river monitoring through training and workshops to support the implementation of management plans.

A two-day training session was conducted on February 15-16, 2024, in Rajapur-3, Bardiya, targeting 45 members of the Community River Stretch Management Groups (CRSMGs). Each CRSMG was represented by three members, comprising 20 males and 25 females. The training focused on instilling sustainable fishing practices and effective river monitoring techniques. Participants were educated on the utilisation of traditional fishing gears and techniques, emphasising the importance of preserving fish sustainability, understanding breeding seasons, and adhering to appropriate fishing timings to minimise ecological impact. Additionally, attendees were trained to identify crucial indicators during river monitoring activities. The training session played a pivotal role in disseminating knowledge regarding local natural and cultural resources, underscoring their significance in sustainable resource management. Moreover, resource mapping exercises were conducted to enhance participants' understanding of resource dynamics and promote their effective stewardship ([Annex 4.3.3](#)).

1.4 Conduct fish diversity and abundance assessments with local community representatives from the CRSMGs along the designated river stretch

An assessment of fish diversity and abundance was carried out in the western channel of the Lower Karnali River in December 2023 and March 2024 to evaluate the prey base status crucial for the smooth-coated otter population in the lower Karnali region. The study documented a total of 18 fish species (6 families and 3 orders) ([Annex 4.3.4](#)).

1.6 Support CRSMGs to conduct regular monitoring (twice a month) of their designated managed river stretch to control illegal activities in the river with the local government, CFUG (Community Forest User Group) and law enforcement agencies.

To reduce illegal and destructive activities along the Karnali River, each CRSMG was tasked with jointly monitoring approximately 1 to 2.5 kilometres of river stretch in collaboration with local government entities, Community Forest User Groups (CFUGs), and law enforcement agencies. To facilitate effective monitoring, all CRSMGs were equipped with essential field gear, including binoculars, as well as emergency safety equipment such as torch lights and first aid kits. Furthermore, to ensure the safety and well-being of CRSMG members, accidental health insurance coverage was provided in accordance with government standards ([Annex 4.3.5a](#) and [4.3.5b](#)).

1.7 Support 15 CRSMGs to organise awareness raising programmes, install hoarding boards and develop IEC (digital) materials and implement youth-led campaigns related to sustainable fishing practices and Otter conservation to support the implementation of management plans and sustainable fishing guidelines.

Forty-five Otter Champions (OCs) were carefully selected from among the 15 CRSMGs established along the Karnali River, with the aim of empowering youth to take the lead in community conservation efforts and ensure the long-term sustainability of the project. These OCs spearheaded communication and awareness campaigns tailored to address the specific threats faced by otter habitats in the Karnali River. During a workshop, they collaboratively developed a three-year awareness campaign plan ([Annex 4.3.6](#)), engaging in discussions regarding the various issues and potential solutions for otter conservation. As part of this initiative, the concept of a mascot named "Sakhi," meaning "friend" in English, was proposed to enhance the relatability of otters to local communities ([Annex 4.3.6.a](#)).

To further enhance the capacity of the OCs, specialised training sessions focusing on otter threats and identification were conducted with 29 OCs, utilising a "Train the Trainer" model. Subsequently, these OCs successfully organised 23 awareness-raising events, effectively reaching out to a total of 596 community members (200 males and 396 females). These events were predominantly conducted in schools, forest user groups, and community centres.

A public awareness event was held on World River Day at the Satti Karnali Community Forest area in Kailali district. The event aimed to educate communities about the importance of conserving otter habitats and the broader conservation of river ecosystems. The event attracted 47 participants from local communities, women's groups, the Subdivision Forest Office, Tikapur Municipality, and journalists ([Annex 4.3.6.b](#)).

Activities 1.8 and 1.9 are planned in the second and third years of the project.

1.10 Support for leadership/sustainable fishing training of CRSMG's members, particularly women

To cultivate leadership skills, improve decision-making abilities, and promote sustainable fishing practices, two two-day training events on leadership and sustainable fishing were organised from March 5th to 8th, 2024. These sessions saw participation of 50 CRSMG members, comprising 7-males and 43 females) from Guransh and Himnal CRSMGs ([Annex 4.3.7](#)).

Output 2: 200 Sonaha/Tharu households (at least 50% women as direct beneficiaries) living in and around the lower Karnali increase their annual income by 15% through market oriented vocational training to enhance their technical skills followed by material support for establishment of micro-enterprises.

2.1 Identify and prioritise most vulnerable households through vulnerability mapping and select beneficiaries.

A total of 225 vulnerable households ([Annex 4.3.8](#)) and beneficiaries from four Municipalities, namely Lamki Chuha, Tikapur, Rajapur and Gerwua, were shortlisted from the 375 members of the 15 CRSMGs (Activity 1.2). The selection process adhered to specific criteria agreed upon by project partners during the inception workshop. To qualify for the vocational training, beneficiaries had to meet the following criteria: must live within or near one of the identified hotspot areas where threats to otters are high; the household must have a high dependency on fishing for their income; be from a Sonaha/Tharu indigenous community (caste); members of social groups experiencing exclusion (due to poverty, disability or other factors measured through monthly income); have a strong commitment to be engaged in CRSMGs and be over 18 years old. These criteria were chosen to ensure that the training interventions reached those most in need and could have the most significant impact on the targeted communities.

2.2 Support Sonaha/Tharu community through on farm training.

Fish farming training: A 3-day training on fish farming was provided to 35 beneficiaries (26-Male, 9-Female) improving their technical skills and knowledge on fish pond construction, water and fingerling management and breed selection to achieve maximum productivity yields. The training also covered fish feed preparation using local resources, disease management and effective fish marketing strategies([Annex 4.3.9](#)).

Vegetable farming training: During December 1-2, 2023, 15 beneficiaries (14 female, 1 male) successfully enhanced their technical skills in both seasonal and off seasonal vegetable cultivation. The two-day training covered nursery management, site selection, plastic tunnel cultivation, wave vegetable cultivation, pest and disease management, use of organic fertilisers, composting and marketing techniques. The trained farmers reported preparing their land for the production of various vegetables like gourd, cucumber, tomato, chillies, beans showcasing the practical application of the knowledge gained ([Annex 4.3.10](#)).

Betel Leaf farming training: A one-day betel leaf farming orientation was organised for ten beneficiaries (4 female, 6 male) along with a visit to Karuna Nursery to learn about betel leaf cultivation and its types, growing methods, harvesting, pest control and preservation. Following the orientation, a demonstration on making *Paan* was provided by a local shopkeeper, motivating the participants to farm and run paan shops ([Annex 4.3.11](#)).

2.3 Support Sonaha/Tharu community through Off farm training.

12 Days Hospitality /Tea Shop, small restaurant opening: A 12-day training program on small restaurant business and hospitality was conducted in two sessions, encompassing both theoretical and practical skills. The training aimed to enhance food preparation, hospitality, and entrepreneurial skills among 11 beneficiaries, comprising 8 females and 3 males. The training focussed on the preparation of various snacks such as momo, samosa, chowmein, chicken, fish, and mutton items, as well as doughnuts and sweets. Participants were provided with hands-on experience and practical knowledge, equipping them with the necessary expertise to start and manage their own small enterprises in the hospitality sector. Following the training, participants expressed their eagerness and intention to establish their own small enterprises, ([Annex 4.3.12](#)).

Beads Jewellery/ handicraft making training: A 15-day training program focused on grass/fiber-based handicraft making was conducted, enhancing the skills of 18 participants, all of whom were females. The training aimed to improve their proficiency in crafting modern handicraft items using grass, including tea mats, bread baskets and pen holders. Participants received comprehensive guidance on various aspects of handicraft production, including material collection, marketing strategies, and the importance of proper packaging to maintain product quality. Additionally, they were briefed on the significance of packaging in enhancing product appeal and marketability. The training was facilitated by Deego Nepal, an online-based social enterprise, which not only provided expert instruction but also offered a buy-back guarantee ([Annex 4.3.13](#)).

2.4 Provide Input /material support (seeds, breeds, tools, seed money) to facilitate enterprise establishment

Input /material support was provided to skilled beneficiaries. Fifteen individuals trained in vegetable farming were equipped with essential supplies such as plastic tunnels and a variety of seeds. Additionally, eleven individuals (5 female, 6 male) were provided with ducklings to commence duck farming, which included both local breeds and Peking ducks. Furthermore, support was extended for the construction of two fishponds, each measuring 677.24 square metres, benefiting a total of fourteen individuals. (Activity 2.2.1). In addition to agricultural support, ten beneficiaries received assistance in acquiring betel leaf inputs (2.2.3), while eighteen individuals trained in handicraft making (activity 2.3.2) were provided with necessary materials. Furthermore, eleven participants who completed the 12-day training in tea shop and small restaurant operations (activity 2.3.1) received utensils ([Annex 4.3.14](#)).

Activity 2.7. Support market linkages to facilitate enterprise development through participation in trade fairs, promotion via online platforms, cooperative, business counselling, stakeholders and market actors' interaction.

A rapid market assessment was undertaken to gain insights into market demand, consumer preferences, and supply chains for selected enterprises including betel leaf, vegetables, and fish. The assessment revealed a strong market demand for Baikha and Common carp fish, as well as off-season pesticide-free vegetables. Additionally, betel leaf farming showed promising prospects based on the findings of the assessment. ([Annex 4.3.15](#)).

2.8 Support establishment/reformation of two - local community cooperatives (capacitate and support existing saving and credit groups to turn into cooperatives) for sustainable access to finance (collateral free loan for enterprise establishment, expansion and for saving product) and to ensure sustainability of project initiative.

Seed funding was allocated to three local community cooperatives, namely Deuthan Krishi, Sharad Saana Kishan, and Shree Bindeshwori, to facilitate the provision of loans for income generation and enterprise establishment among targeted beneficiaries in Rajapur Municipality and Geruwa Rural Municipality, Bardiya. Technical assistance was also provided to ensure the financial and operational viability of these cooperatives. This initiative is designed to empower members to pursue entrepreneurship opportunities and foster the continued development of existing enterprises ([Annex 4.3.16](#)).

Five financial literacy campaign events ([Annex 4.3.17](#)) were organised for a total of 184 community members, comprising 57 males and 127 females. These events aimed to enhance participants' understanding of the benefits of cooperative membership, as well as the opportunities available through seed funding support and loan acquisition. Furthermore, four policies were developed ([Annex 4.3.16.a](#)) to bolster the operational efficiency of the cooperatives. These policies, addressing areas such as human resources, share distribution, and money laundering, were effectively communicated and put into practice by board members and staff.

Output 3: Government officials (municipalities, division forest office, park authorities) have improved capacity to monitor and control river aggregates extraction and destructive fishing practices, in order to better protect fish spawning sites and otter habitats.

3.1 Provide training to government officials (including environment focal point/division forest office & park authorities) on otter and their prey base conservation, the consequences of destructive fishing practices and ensure standard processes of Initial Environmental Examination (IEE) are followed based on capacity gap assessment.

A capacity gap assessment was conducted involving local government bodies, government line agencies, and law enforcement agencies to identify priority areas for training and workshops. Based on this assessment, a capacity-building workshop on otter and prey base conservation was convened in Tikapur, Kailali on December 1st, 2023, targeting local governments and government line agencies. The workshop aimed to address the lack of awareness among government officials regarding otters and their prey base, as well as issues such as destructive fishing practices impacting otter habitats.

During the workshop, participants received information on various aspects of otter behaviour, ecology, relevant laws and regulations, and the challenges associated with otter conservation. Additionally, emphasis was placed on topics such as Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), and Environment Management Plan to address issues related to illegal sand and gravel mining in the Karnali River.

A total of 32 participants attended the training program, comprising 19 males and 13 females. Representatives from various organisations including Division Forest Offices, municipalities (Tikapur, Rajapur, Geruwa Rural, Lamki Chuha, Bhajani, Janaki Rural), and Bardia National Park were present to enhance their understanding of otter conservation and related environmental management practices ([Annex 4.3.18](#)).

3.3 Conduct training workshops on the Aquatic animal protection act for 45 law enforcement agency (Nepal Police) officials on illegal activities related to aquatic biodiversity based on capacity gap assessment.

A training workshop addressing the Aquatic Animal Protection Act (1960) was convened for officials from law enforcement agencies, specifically the Nepal Police and Armed Police Force, in Tikapur, Kailali on December 2nd, 2023. The lack of awareness regarding prevailing laws and regulations concerning the protection of aquatic animals within law enforcement agencies has been identified as a key obstacle to effective regulation in aquatic biodiversity conservation efforts. To address this challenge, participants received comprehensive information regarding existing laws and policies related to the conservation of aquatic biodiversity, with a specific focus on otters and their prey base. Additionally, a dedicated session on Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) was conducted to equip participants with the necessary tools to monitor and mitigate illegal activities such as sand and gravel mining along the Karnali River. Additionally, participants were also provided with a session on IEE and EIA to monitor the illegal sand and gravel mining along the Karnali river. A total of 36 participants, comprising 29 males and 7 females representing law enforcement agencies, actively engaged in the workshop ([Annex 4.3.19](#)), with a second round of training planned in year 2.

3.4 Support the Provincial Ministry of Industry, Tourism, Forests and Environment (MoITFE, Lumbini and Sudurpaschim province), Division Forest Office (Kailali and Bardia) and Bardia National Park to conduct regular river patrolling to monitor and control river aggregates extraction and destructive fishing practices.

On March 14th 2024, a boat was handed over to the local community by Division Forest Office Pahalmanpur, Kailali to support joint river monitoring along the river stretch to monitor and control the river based illegal and destructive activities([Annex 4.3.20](#)).

Output 4: Endorsed otter conservation action plan is adopted by all relevant stakeholders underpinned by robust scientific research and evidence-based approaches.

4.1 Prepare otter identification manual in Nepali language and a smooth-coated otter monitoring protocol for use by all relevant stakeholders.

In the project area, residents commonly classify two types of otters: aquatic inhabitants (referred to as "Pani Ont" in Nepali) and those that dwell in trees and on the ground (known as "Pakhe Ont" in Nepali). There is often confusion among community members, who may

mistake other mammals that frequent water sources, such as streams and rivers, and consume fish, for otters. To address this misunderstanding and facilitate accurate identification and monitoring, an otter identification manual and monitoring protocol were developed in Nepali. This resource provides detailed information on distinguishing otters from other mammals, along with various methods for monitoring them. The protocol outlines the necessary equipment, identification of indirect signs such as holt, spraints, and footprints, as well as field monitoring techniques including transect walks, sign surveys, and camera trapping. Additionally, it offers guidance on data formats and the collection of monitoring data to ensure comprehensive monitoring efforts. ([Annex 4.3.21](#)).

4.2 Train 20 local community members on otter identification and monitoring protocols drafted by WWF

On February 13th, 2024, a one-day training workshop was conducted in Rajapur, Bardia, aimed at enhancing the capacity of 29 local community members (15 females, 14 males) representing 15 CRSMGs in otter identification and monitoring techniques. The workshop featured interactive sessions focusing on identification techniques, demonstrations of field survey equipment, and practical exercises in conducting transect surveys, sign surveys, and camera trap surveys. Participants learned about establishing transects, operating GPS devices, installing and removing camera traps, identifying indirect signs along transects, and collecting data using printed data formats. This comprehensive training equipped attendees with the necessary skills and knowledge to effectively monitor smooth-coated otters in their respective areas ([Annex 4.3.22](#)).

4.3 Conduct sign surveys and camera traps (at hotspot sites) for Otter occupancy along the potential habitat (rivers, wetlands and riparian zones) by otter experts mobilising trained CRSMGs members

During mid-October, a comprehensive survey was conducted to assess otter occupancy in the lower Karnali River. The main channel of the river was systematically divided into 58 grids, each covering an area of 1 square kilometre. These grids were alternately numbered along the east and west banks of the river. Within each grid, a 1-kilometre transect was established along the dyke, further divided into sub-transects of 500 metres each. Surveyors utilised a rubber boat (raft) for conducting surveys in the river, while transects along the banks were covered on foot. The sign survey was carried out over a period of 12 days in October 2023.

For the camera trap survey, potential otter habitats identified during the sign survey were targeted within the respective grids. A total of 16 camera traps were deployed across 11 locations and operated throughout October 2023. Cameras were positioned approximately 1 metre from the water surface and 1 foot above the ground. Local resource persons from the CRSMGs, familiar with otter habitats, were actively involved in monitoring the deployed cameras. The survey revealed an estimated otter sign occupancy of 24% across the 58-square-kilometre lower Karnali region ([Annex 4.3.23](#)).

4.4 Engage university graduates to conduct and publish research on Otter ecology- food habit and habitat use

One university graduate was engaged in research on Distribution and Dietary Behaviour of the Smooth-coated Otter in the Karnali River, Nepal. This study aimed to investigate the distribution, habitat utilisation, and dietary composition of Otter. Field surveys were conducted from January to February 2024, establishing temporary sampling plots along a 39-kilometre river stretch. Occupancy signs, including footprints, spraints, and holts were recorded, and habitat characteristics were measured. A total of 82 occupancy signs were documented, with a higher presence in the Bardia district (75%) compared to the Kailali district (42.1%). The distribution of the Smooth-coated Otter showed a clumped pattern, with evidence suggesting avoidance of areas with high human disturbance. Generalised Linear Model analysis indicated that river velocity significantly influenced the species' presence, with a negative correlation observed. Dietary analysis of 32 spraints indicated a predominant fish-based diet (96.88% frequency of occurrence), with the consumption of *Tor putitora* and *Labeo dero* as the primary fish species. Crabs (18.75%) and birds, identified as the Ruddy Shelduck (3.125%), were also detected in the diet. Alarmingly, gill nets were found in 15 out of 32 spraints, suggesting potential threats from fishing activities. This study highlights the importance of maintaining

suitable habitat conditions, minimising disturbances, and promoting sustainable fishing practices for the effective conservation of the Smooth-coated Otter in Nepal ([Annex 4.3.24](#)).

4.5 Conduct threat assessment of otters using absolute threat rank system to inform the development of strategies for the species and its habitat protection.

A threat assessment of otters was conducted utilising the Absolute Threat Ranking method. Six community consultations were organised, four in Bardia District and two in Kailali District, within the project area. These consultations delved into community perceptions and knowledge concerning smooth-coated otters, their habitats, fish availability, and the threats they face. Field probing was conducted where deemed appropriate and necessary. Based on the insights gathered from these consultations and direct observations, six primary threats were identified: i) Illegal and destructive fishing, ii) Irrigation intakes, dams and barrage construction, iii) Water pollution due to excessive use of chemical fertilisers and pesticides in farmland, iv) unmanaged river aggregates extraction and v) natural and climatic hazards such as floods, landslides and erosion and vi) Destruction of riparian forests and habitat. These threats were recognized as impacting smooth-coated otters, their prey, and their habitats within the proposed area. ([Annex 4.3.25](#)).

4.6 Draft smooth-coated otter conservation action plan of Nepal

The Department of National Parks and Wildlife Conservation approved the the formulation of the Otter Conservation Action Plan Nepal, facilitating multi-stakeholder consultation meetings. A total of 13 sites were selected for community consultations in collaboration with Himalayan Otter Network members.

In the first year, eight consultation meetings were convened in March 2024, one in each of the following districts: Doti, Dailekh, Baglung, Rasuwa, Pyuthan, Manang, Rukum West, and Taplejung. These meetings engaged 135 participants (96 male and 39 female). The lower female participation stemmed from their minimal involvement in fishing activities in mid-hill regions, limiting their encounters with otters and their knowledge about the species. During these sessions, discussions centred on the prevalence of otters, identified threats to the species, its fish prey, and habitat, along with proposed conservation action points. The remaining consultation meetings are scheduled for the second year of the project ([Annex 4.3.26](#)).

3.2 Progress towards project Outputs

Output 1: River dependent communities and local governments demonstrate river stretch co-management covering at least 10 kms of the Karnali river and one fish sanctuary, enhancing sustainable fishing practices and inclusive decision-making processes.

Under Output 1, which focuses on river stretch co-management, 15 community river stretch management groups (CRSMGs) were established and officially registered at the respective ward offices of local governments, comprising a total of 375 members, including 84 Sonaha and 291 Tharu individuals, with a gender breakdown of 120 male and 255 female members (Indicator O 1.1). In the second and third years of the project, support will be provided to prepare at least 10 management plans, integrating sustainable fishery guidelines informed by baseline assessments of fish abundance and occupancy (Activities 1.4 and 4.3) (Indicator O 1.2).

Following the formation of the 15 CRSMGs, a Knowledge, Attitude and Practice (KAP) survey on sustainable fishing practices was conducted with 149 respondents. The results showed 32% (18% female, 56% male), 65% (79% female, 42% male) and 3% (3% female, 2% male) of the respondents had “good knowledge”, “fair knowledge” and “poor knowledge”, respectively. Similarly, attitudes and practices were assessed, with 42% (34% female, 56% male), 56% (64% female, 42% male) 2% (2% female, 2% male); and 26% (11.7% female, 50.9% male); 69% (81.9% female, 45.5% male) and 5% (6.4% female, 3.6% male) of the respondents were positive “to great extent”, “to some extent” and “not at all”, respectively.

To support regular river monitoring, the 15 CRSMGs were equipped with field gear, and accidental insurance was provided to 75 group members (Indicator O 1.4). In Year 1, a total of 120 monitoring events were conducted. Additionally, a two-day training session on sustainable

fishing practices was conducted for 45 CRSMG members, aimed at facilitating the adoption of sustainable fishing practices (Indicators O 1.3 and O 1.4).

The identification of fish hotspots and potential fish sanctuaries through fish diversity and abundance assessments (Activity 1.4) will guide the designation of a fish sanctuary in the second and third years of the project (Indicator O 1.5).

Output 2: Diversifying, culturally appropriate livelihood options: By 2026, 200 Sonaha/Tharu households (at least 50% women as direct beneficiaries) living in and around the lower Karnali increase their annual income by 15% through market oriented vocational training to enhance their technical skills followed by material support for establishment of micro-enterprises.

During Year 1, a wellbeing survey of Sonaha/Tharu households was conducted to establish baseline indicators. The survey revealed that the average annual income per household (out of 149 surveyed) was 124,489NPR (£750) (Indicator O 2.1).

At the start of Year 1, 300 households from six hotspot areas were identified as river-dependent marginalised communities, consisting of 209 women and 91 men. From these households, 225 were selected as priority individuals for livelihood improvement intervention support (Activity 2.1). The selection process was based on vulnerable household mapping and criteria approved by the community.

In Year 1, 100 individuals (57 female) received various skill development training and input support for both farm and off-farm livelihoods, enabling them to establish enterprises and become entrepreneurs (Activities 2.2, 2.3, 2.4; Indicators O 2.2). Notably, 59 beneficiaries launched micro-enterprises specialising in ventures such as vegetable farming, handicraft production, tea shops, and duck rearing. These enterprises have begun generating income ranging from £55 to £165 within a month (Activities 2.2, 2.3, and 2.4; Indicators O 2.1 and O 2.5).

Three community-owned and led cooperatives were reformed with seed money provided by the project (Activity 2.8). These cooperatives are intended to provide loan lending support to the target beneficiaries (share members). Additionally, cooperative policies were established, including requirements for legal documentation to mitigate legal liability and risks and support the achievement of cooperative goals (Indicators O 2.3 and O 2.5).

Cooperative literacy awareness campaigns were conducted to educate the targeted community about financial management, the benefits of becoming a share member, raise awareness about the availability of seed funding, and provide insights into the loan mobilisation process. Significant progress towards loan mobilisation for setting up enterprises is evident, with one beneficiary securing a £180 loan to establish a tea shop post-training, indicating more beneficiaries securing loans in the upcoming days, fostering further enterprise establishment (Indicator O 2.4).

Output 3: Institutional capacity building: By 2026, government officials (municipalities, division forest office, park authorities) have improved capacity to monitor and control river aggregates extraction and destructive fishing practices, in order to better protect fish spawning sites and otter habitats.

A training session covering otter and prey base conservation, sustainable fishing practices, and Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) processes was provided to 32 government officials (19 Male, 13 Female) (Activity 3.1). This training enhanced their understanding of otter habitat and prey species, the impacts of uncontrolled aggregates extraction, and destructive fishing practices on fish stocks, as well as standard processes for Initial Environmental Examination. The pre and post-test surveys revealed a notable increase in participants' knowledge by 23.8%, with the average pre-test score at 3.62 and post-test score at 6 (Activity 3.1; Indicator O 3.1).

In Year 2 and 3, the project aims to support local governments in developing standard protocols and monitoring mechanisms for river aggregates mining (Indicator O 3.2). The number of reported cases related to destructive fishing and unsustainable aggregate extraction in Year 1 totalled 230 (Indicator O 3.3).

Training on Aquatic Animal Protection Act and other relevant laws and policies on aquatic biodiversity conservation was provided to 36 law enforcement agencies officials (29-Male,7-Female) to strengthen their capacity to monitor and control unsustainable river aggregates extraction and illegal and destructive fishing practices (*Activity 3.3; Indicator O 3.4*). The training has increased knowledge of officials by 43.7% (average pre-test score was 1.58 and post-test score was 5.08).

Output 4: Enabling conditions to scale and safeguard otters: By 2026, endorsed otter conservation action plan is adopted by all relevant stakeholders underpinned by robust scientific research and evidence-based approaches.

Through community consultations using the Absolute Threat Ranking System and field visits, six threats were identified in the project site (Indicator O 4.1). Sign surveys and camera traps conducted with community involvement estimated the otter sign occupancy at 24.13% (Indicator O 4.1). Additionally, fish diversity and abundance assessments revealed a mean abundance of 5.54 in December and 8.3 in February, along with a fish diversity index of 1.67 in December and 1.78 in February in the lower Karnali region (Indicator O 4.1).

Following approval from the Department of National Parks and Wildlife Conservation (DNPWC) for the preparation of the Otter Conservation Action Plan of Nepal, community consultations were held at eight sites involving 135 individuals (29% female) to understand issues, challenges, and action points (Activity 4.6). Remaining consultations will occur in Year 2, followed by the drafting of the Otter Conservation Action Plan of Nepal (Indicator O 4.2). The draft plan will undergo review by otter experts and DNPWC and Department of Forestry and Soil Conservation (DoFSC) officials. The final action plan will be prepared after incorporating feedback from the reviewers (Activity 4.7; Indicator O 4.3).

Additionally, a university graduate received support for research on otter distribution and dietary behaviour (Activity 4.4). Similar research support will continue in Year 2, with manuscripts prepared for submission to peer-reviewed journals for publication (Indicator O 4.4).

3.3 Progress towards the project Outcome

Outcome: Improved river management and enhanced wellbeing of 200 river dependent households through diversified livelihoods, result in increased fish abundance and otter occupancy in the Lower Karnali Watershed.

During year 1 of the project, we have made good progress on establishing relevant ecological and socio-economic baselines to monitor the project's outcome. We are still on track to achieve the project's outcome and have provided specific updates on the outcome indicators below:

Outcome Indicators

Human wellbeing

O.1 By 2026, 200 river dependent households in 15 pilot sites report an improvement in wellbeing in relation to an increase in income levels by 15% due to livelihood interventions financial resilience due to diversification of income sources increased participation and influence over river governance and fisheries management decisions (in comparison to the year 1 baseline)

Baseline: Income: Average annual income per household = 124,489 NPR (██████████)

Average number of different income sources per household=2.5

Participation and Influence: Due to a flaw in the design and timing of the questionnaires relating to these questions, we will need to review this baseline in year 2 and update for historic perceptions of participation and influence prior to engagement in project activities.

Year 1 progress: Baseline collected and will be repeated in year 2 and 3 of the project. Data is displayed on a Solstice dashboard:

[https://share.solstice.world/v3/dashboard link/6be12673a60649f5b9ab182ba0764d2e?share=566cd7ae81f34943b1a124508c4f1e59](https://share.solstice.world/v3/dashboard_link/6be12673a60649f5b9ab182ba0764d2e?share=566cd7ae81f34943b1a124508c4f1e59)

Improved river management

O.2 By 2026, 15 Community River-Stretch Management Groups (covering at least 10 km and one fish sanctuary) are implementing and measuring the effectiveness of sustainable river management plans.

Baseline: No Community River-Stretch Management Groups, management plans or fish sanctuaries within the project site (2024)

Year 1 progress: 15 Community River-Stretch Management Groups formed and registered. The groups were trained and have started monitoring the river stretch. Two potential sites to establish a fish sanctuary were also identified.

Increased otter occupancy

O.3 By 2026, 5% increase in Otter occupancy in river stretch covered by CRSMGs compared to the baseline [current understanding is 21% occupancy over a stretch of 8 km in western channel of Karnali river - Kathariya 2022; and 44% occupancy over a stretch of 12 km in eastern channel of Karnali/Geruwa river - Thapa 2019].

Baseline: Otter occupancy estimated at 24.13% (2024) (*Annex 4.3.23*)

Year 1 progress: The baseline has been updated after conducting the Otter occupancy survey. The change will be measured by the end of year 3.

Reduction in threats/drivers to otters

O.4 By end 2026, identified priority threats/drivers (declining prey, unregulated aggregates extraction, illegal and unsustainable fishing) to otters and other freshwater species are each reduced by 10% (compared to year 1 baselines).

Baseline: The threat score for illegal and destructive fishing and unregulated river aggregates extraction is 2.20 and 2.22, respectively. The overall threat score for all the identified threats is 2.34 (*Annex 4.3.25*).

Year 1 progress: The baseline has been updated after conducting the threat assessment. The change will be measured by the end of year 3.

Increased fish diversity and abundance

O.5 By end 2026, fish abundance within the river stretch covered by CRSMGs will be increased by 10% (in comparison with the year 1 baseline).

Baseline: Mean abundance: 5.54 (December) and 8.3 (February) (*Annex 4.3.4*)

Year 1 progress: The baseline has been updated after conducting the fish diversity and abundance assessment. The change will be measured by the end of year 3.

3.4 Monitoring of assumptions

Outcome Assumptions

Assumption 1: River dependent communities around the Lower Karnali Watershed perceive potential for more resilient and equitable benefits from river stretch co-management models, increasing likelihood of involvement.

Comments: It still holds true.

Assumption 2: The introduction of community stretch co-management and sustainable fishery practices are sufficient for the fishery and/or key fish species to partially recover in the time period, or at all.

Comments: It still holds true.

Assumption 3: Reduction of threats/drivers leads to an increase in otter occupancy; otter populations can increase and disperse within the lifetime of this project.

Comments: It still holds true.

Assumption 4: Conservation interventions will occur quickly enough for fish populations to react within the lifetime of the project, resulting in positive changes in fish abundance - while visible changes in fish stocks will take longer than the project to materialise.

Comments: It still holds true.

Output 1 Assumptions

Assumption 5: The government continues to allow the registration of community groups and does not make any legislative changes impacting on the registration.

Comments: All the 15 CRSMGs were registered at the ward office of respective municipalities.

Assumption 6: Communities and local governments can reach a consensus and agreement on river co-management plans.

Comments: The assumption holds true, both the communities and local authorities have been supportive.

Assumption 7: Community groups formed for co-management of river stretches are significantly inclusive and capable of delivering the results.

Comments: The assumption is valid. All the CRSMGs formed are inclusive and capacity building of these groups is ongoing but the capability of delivering results depends on local dynamics and stakeholder engagement.

Assumption 8: Increased knowledge and understanding among CRSMGs members will encourage them to adopt more sustainable fishing practices.

Comments: It still holds true but the deep-rooted culture of fishing and the role fishing plays as a source of income may not change.

Assumption 9: CRSMG members are continuously willing and able to monitor rivers.

Comments: The assumption is still valid and the continued support from stakeholders has played a crucial role.

Assumption 10: Government is supportive and committed to declaring Nepal's first fish sanctuary.

Comments: It is still valid. Government has been very supportive so far and a close collaboration will be required in year 2.

Output 2 Assumptions

Assumption 11: 70% HHs provided with skill-based training are successful in running their enterprise and earn sufficient income to sustain their livelihood.

Comments: The assumption is still true. Out of 100 beneficiaries in year 1, 59% of the beneficiaries have already started engaging in income generating activities while remaining 41% are in preparation. However, regular follow up and monitoring will be required in the coming two years.

Assumption 12: The governance of the cooperatives is effective, and they are capable of using the seed money wisely.

Comments: The assumption is still true. The cooperatives have been meticulously screened to ensure their effectiveness, and relevant policies has been updated to strengthen their governance.

Assumption 13: Selection of a range of livelihood activities based on local partners' experience in market development in the area, potential opportunities, resources available and product/service marketability means that viable livelihoods can be derived from on- and off-farm activities and enterprises.

Comments: It still holds true.

Output 3 Assumptions

Assumption 14: Government prioritises protocol developed for river aggregates extraction for implementation.

Comments: It still holds true. A close coordination with the government will be required in Year 2.

Assumption 15: Protocols are adopted by local governments once endorsed.

Comments: The assumption is valid as the local politics and existing policies will also have an influence.

Assumption 16: Government officials have sufficient capacity to enforce fishing/illegal extraction regulations.

Comments: The assumption is still valid.

Assumption 17: Monitoring activities do not pose any risks to CRSMGs members and their family members.

Comments: The assumption is still valid. Accidental insurance and field equipment has been provided to CRSMGs members.

Output 4 Assumptions

Assumption 18: All the relevant stakeholders from government and community continue to be supportive of developing the Otter conservation action plan.

Comments: The assumption is still valid. The DNPWC has provided approval to initiate the plan preparation process.

Assumption 19: All relevant stakeholders (federal, provincial and local governments, conservation organisations, and local communities) commit to implementing the action plan and support the necessary actions beyond the lifetime of the project.

Comments: The assumption still holds true.

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

Intended impact: As outlined in our original application, the project's intended impact is: The ecological integrity of the Lower Karnali Watershed is safeguarded to sustain freshwater biodiversity, smooth coated otter populations and improve the resilience of local livelihoods.

Poverty reduction impacts: In the long-term, the project aims to positively impact on human wellbeing by active engagement of indigenous women and men in co-management of river stretches, which will continue to further enhance community stewardship of river resources. Livelihood diversification of Sonaha and Tharu communities will reduce their dependence on river resources, and diversify and enhance their incomes, enhancing their wellbeing. Year 1 progress has laid the foundations by forming and registering 15 CRSMGs covering 25 kms of river stretch compared to the target of 10 CRSMGs covering 10 km of river stretch in original application form (*Annex 4.3.2*). Similarly, considering the 100 households of livelihood beneficiaries already covered in year 1, the target of 200 households may be exceeded by the end of the project period. Therefore, the first year has laid a good foundation to achieve the intended impact and beyond.

Biodiversity impacts: The enhanced community stewardship of river resources enabled by the co-management of river stretches, alongside institutional capacity building to better protect fish spawning sites and otter habitats will reduce the threats to otters and fish in the river over the longer term. Year 1 has laid a good foundation to achieve the intended biodiversity impacts by forming and registering 15 CRSMGs (as above); training 32 government officials (19 Male, 13 Female) on otter and prey base conservation, and sustainable fishing practices; strengthening the capacity of 36 law enforcement agencies officials (29-Male,7-Female) to monitor and control unsustainable river aggregates extraction and illegal and destructive fishing practices.

At this stage, it is too early to report evidence of contributing towards these impacts. Evaluation against biodiversity and poverty reduction baselines set in year 1 will be conducted at the project's conclusion.

4. Project support to the Conventions, Treaties or Agreements

Although the Nepal National Biodiversity Strategy and Action Plan (NBSAP) (2016-2020) has expired, it prioritised the declaration and management of at least 3 suitable wetlands as fish sanctuaries. Under activities 1.1 and 1.4, the project has identified hotspots and potential fish sanctuaries, which will proceed to stakeholder consultations followed by the preparation of fish sanctuary management plans and sanctuary declarations in years 2 and 3.

Following approval and support from the Department of National Parks and Wildlife Conservation (DNPWC) and the Department of Forests and Soil Conservation (DoFSC) for community consultations (*Annex 4.4.1*) to initiate the process of preparing the Otter Conservation Action Plan, eight consultation meetings were conducted in year 1, with continued activities planned for year 2 (*Activity 4.6*). This activity contributes to the NBSAP's

aim of developing in-situ and ex-situ conservation plans for at least 10 threatened aquatic species.

The project directly contributes to the Kunming-Montreal Global Biodiversity Framework. The formation of Community River Stretch Management Groups (CRSMGs), their capacity building, and mobilisation for regular river monitoring (Activities 1.1, 1.2, 1.3, 1.6, 1.7, 3.1, 3.3, and 3.4) support the maintenance or enhancement of the integrity and resilience of lower Karnali River ecosystems (Goal A of the framework) and promote sustainable fishing practices that ensure the sustainable use and management of biodiversity (Goal B of the framework). Specifically, the project supports the framework's 2030 action targets: 1, 2, 3, 4, 5, 9, 22, and 23.

In terms of the Terai Arc Landscape Strategy and Action Plan (2015-2025), the project directly supports its implementation. Formation of CRSMGs, their capacity building, mobilisation for regular river monitoring (Activities 1.1, 1.2, 1.3, and 1.6) contributes to engaging local communities as river stewards to conserve rivers and floodplains (Strategy 1.3) and conserving riparian areas, especially along the Karnali corridor (Strategy 2.2). Similarly, capacity building of right holders and duty bearers on sustainable fishing practices (Activity 3.1 and 3.3) and mobilisation of CRSMGs members on river monitoring (Activity 1.6) and river patrolling support to duty bearers (Activity 3.4) contributes to promoting sustainable fisheries and livelihood interventions for river-dependent communities (Activity 2.2, 2.3, 2.4 and 2.8) and green enterprises (Strategy 3.1 of an action plan).

The project also contributes to the Sustainable Development Goals (SDGs). Activities 2.2, 2.3, 2.4, and 2.8 contribute to Goal 1 (No Poverty) and Goal 8 (Decent Work and Economic Growth) by implementing livelihood interventions and supporting the establishment of microenterprises to diversify incomes of river-dependent people. Engaging more than 50% women members in CRSMGs, selecting more than 50% women as direct beneficiaries from livelihood interventions, and capacity building in leadership skills development contribute to Goal 5 (Gender Equality). Additionally, activities 1.1, 1.2, 1.3, 1.6, and 1.7 contribute to Goal 6 (Clean Water and Sanitation) and Goal 15 (Life on Land) by empowering local people as stewards of freshwater ecosystems and reducing pressure on fish and ensuring other habitats.

Finally, the project's activities align with the National Adaptation Plan's (2021-2050) objectives of securing river- and forests-based watershed resources and managing and restoring ecological connectivity. Activities 1.2, 1.3, and 1.6 directly contribute to these objectives by forming CRSMGs, capacity building, and regular river monitoring to oversee illegal and destructive activities in the river.

5. Project support for multidimensional poverty reduction

During this first year, the project has supported 100 individuals, consisting of 58 women and 42 men from the Sonaha and Tharu communities to enhance their skills and knowledge through a comprehensive array of on-farm and off-farm training activities. Support has included training sessions, on-site visits, and continuous guidance from technical experts on areas such as vegetable cultivation, betel leaf farming, fish breeding, tea shop and small restaurant management, and grass-based handicraft production. Additionally, these individuals have received crucial support to establish micro-enterprises in their respective fields. 59 of the trained participants have launched micro-enterprises, specialising in ventures like vegetable farming, tea shops, handicraft production, and duck rearing. The early results are promising, with these enterprises already yielding income within a remarkably short period of 15-30 days. On average, earnings range from £ 55 (NPR 9,248) to £ 165 (NPR 27,376). Noteworthy is the case of a small tea shop owner, who, having undergone training, successfully secured a £180 (NPR 30,000) loan to kick start her business, showcasing tangible progress towards poverty alleviation and economic empowerment within the targeted communities.

Furthermore, to facilitate affordable finance access for the targeted communities, three community-led cooperatives have been strengthened with initial capital and policy development support. This strategic approach, aimed at mobilising seed money for loans at subsidised interest rates to its share members (targeted communities), is instrumental in ensuring the sustainability of the micro-enterprises and income-generating activities (IGAs). Moreover, the cooperative policies will streamline the loan disbursement process and mitigate potential risks, thereby further augmenting the prospects of success for the enterprises of the share members.

6. Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board	Project Board consisting of representatives from WWF-UK and WWF Nepal, who steer and monitor the project. 13 (M: 4 and F: 9); 69% women
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women	Partner organisations: WWF Nepal: 33% (SMT comprises of 2-Female, 4 Male) SBS: 44%(5-Male,4-Female) FKWDF: 100% (7-Female) DCC: 42% (3-Female,4-Male) SMCRF: 42%(3-Female,4-Male)

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	X
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Based on the initial design and project implementation, the project has been classified as empowering, based on the following context:

All four project partners have demonstrated a strong understanding of Gender Equality and Social Inclusion (GESI) mainstreaming targets, ensuring comprehensive data disaggregation, community mobilisation, recognition, and inclusion of local and indigenous knowledge in the design of the project interventions, and training in local languages. Furthermore, efforts have been made to ensure equitable representation of female and male community members in project activities as well as equitable benefit sharing.

Sonaha Bikas Samaj (SBS) conducted Free, Prior, and Informed Consent (FPIC) sessions in collaboration with IP-leaders to obtain collective consent from the Tharu and Sonaha communities. Focus group discussions were held to select members for the Community River Stretch Management Groups (CRSMGs), with a focus on indigenous status, local community membership, river dependency, social marginalisation, and willingness to engage. Equitable representation from all Indigenous Peoples (IP) groups was ensured, including the engagement of Badghar-Tharu community leaders and vulnerable and marginalised groups, with a particular emphasis on women's participation due to men's seasonal migration for work. CRSMG groups were formally recognized and registered with local ward offices to foster local ownership. Trainings conducted by experts were delivered in Nepali and local languages to ensure inclusivity.

Free Kamaiya Women Development Forum (FKWDF) selected 300 households based on comprehensive criteria including proximity to hotspots, commitment to conservation, age, livelihood dependence on fishing, landholding, monthly income levels (less than £120), and indigenous status. 109 female and 91 male members are engaged in various livelihood activities, based on group discussions to ensure alignment with actual needs. Access to markets and finance was facilitated to support livelihood upliftment through existing cooperatives.

Dolphin Conservation Center (DCC) facilitated training on otter and prey-based conservation and Initial Environmental Examination (IEE) standards, ensuring equitable participation of duty bearers, with efforts made to invite and engage female participants (13 female/19 men). Workshops on the Aquatic Animal Protection Act (2017) for law enforcement agencies saw participation from both female (7) and male (29) officials, with ongoing efforts to ensure equitable representation in the future, acknowledging that there are more men than women working in law enforcement agencies in Nepal.

Small Mammals Conservation and Research Foundation (SMCRF) published the otter identification manual and monitoring protocols in Nepali, incorporating local knowledge of otter habitats and ensuring the participation of community members (80 males and 140 females from the Sonaha and Tharu communities) in assessment, planning, and training activities. Local resource persons were mobilised to monitor and safeguard camera traps, further promoting inclusivity and empowerment.

7. Monitoring and evaluation

During the project's inception workshop, WWF-UK and WWF-Nepal facilitated a session on Monitoring and Evaluation (M&E) for all project partners (Annex 4.2.1). Through collaborative discussions, the project log frame was refined, incorporating input from partners on indicators, Means of Verification (MoVs), and assumptions. This session provided guidance on developing a robust M&E plan, engaging partners in interactive exercises to finalise baselines, targets, data sources, MoVs, and roles and responsibilities for reporting. Partners were also familiarised with WWF Nepal's online database system, and received training on entering activity disaggregated data. This system will be used to track progress against the output indicators and monitor progress towards the project outcome.

In addition, to ensure project targets are on track, WWF-Nepal hosts bi-weekly meetings with partners, fostering open communication and addressing any challenges or opportunities encountered. A joint project review meeting convened on December 8th, 2023, offered partners a platform to share progress, lessons learned, and discuss adaptive management strategies. WWF-Nepal continues to provide refresher sessions and technical support on M&E requirements and database management as needed, reinforcing partners' capacity in these areas.

8. Lessons learnt

Several lessons learnt during the first year of the project have informed adaptive management. For example:

The implementation of project activities was delayed due to the process of obtaining approval from the federal government (DoFSC) and local governments, as well as the grant agreement process with local implementing partners. Despite these challenges, close monitoring of partners enabled timely delivery of financial and technical deliverables, ensuring progress despite the delayed start of the project.

Regular meetings with partners were essential for successful project implementation. WWF Nepal's project field staff held weekly virtual meetings and monthly in-person meetings with partners, while the project lead conducted bi-weekly virtual meetings. Additionally, six-monthly in-person meetings were held with partners, fostering ownership and accountability for efficient project delivery.

The monitoring visits conducted by partners at various times disrupted the daily activities of local communities and beneficiaries. Going forward, it is essential to synchronise monitoring visits among project partners to minimise disruptions and optimise resources.

Delivering training courses in a simple and easily understandable manner increased the likelihood of acceptance and success among participants.

In the original project design, the budget allocation for the otter occupancy survey did not account for multiple braided channels of the river and numerous islets, leading to limited coverage. Furthermore, the survey could only be conducted once, so seasonal effects were not recorded. Adjustments will be made for the endline survey in year 3 to address these limitations.

The installation of camera traps was hindered by theft, resulting in data loss. Increasing the mobilisation of local resource persons to safeguard cameras and ensure daily data transfer is essential to prevent data loss in the future.

Multiple rounds of information collection with the local communities led to respondent fatigue. Synchronising data collection efforts among project partners will help avoid multiple engagements with the same individuals.

Although the literature suggested a high number of fish species in the Karnali River, our fish abundance assessment revealed limited diversity and abundance, with many dead fish observed during field assessments. Anthropogenic activities upstream of the project site, such as poisoning, may have influenced these findings, highlighting the need to consider external factors in river conservation efforts.

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

Not applicable

10. Risk Management

During the first year of project implementation, the notion of banning fishing and river aggregate extraction in the lower Karnali region was prevalent among the communities. This led to confusion and reluctance among some community members to participate in the project, particularly among those whose livelihoods depended on fishing and gold panning. It was perceived that the project aimed to curtail these activities without addressing the illegal and destructive methods associated with them. To address this concern and ensure equitable participation, focus group discussions were conducted at 20 sites covering river stretches in both districts of the lower Karnali region. Quarterly and monthly community dialogues were also organised, with representation from relevant stakeholders such as community members and local governments. Additionally, awareness-raising events were held until March 31st, 2024.

During the initial phase of CRSMG formation, there were concerns about the safety of CRSMG members during river monitoring activities. To mitigate this risk, CRSMG members were provided with field gear for their safety in accordance with WWF's ESSF framework. Furthermore, accidental insurance was provided for CRSMG members ([Annex 4.3.5b](#)).

Theft of two camera traps installed for otter occupancy monitoring posed a significant challenge to data collection efforts. However, this issue was addressed to some extent through coordination with village chiefs and local law enforcement agencies.

11. Sustainability and legacy

The project plays a crucial role in maintaining the ecological integrity of Karnali River, and contributes to the Government of Nepal's biological corridor approach outlined in the Terai Arc Landscape Strategy and Action Plan (2015 -2025). Local government authorities, project partners, and community-based organisations have been actively engaged since the design phase to ensure strong collaboration and ownership of the project, and have shown a strong interest.

During years two and three, we aim to create an enabling environment for sustainability and scale-up of project impacts, laying the groundwork for our exit strategy. We will engage partners to encourage public-private sector participation in business development for long-term economic viability and will focus on using the baseline data to support the design and implementation of co-management plans for the river stretch; the establishment of at least one

fish sanctuary and enhancing stakeholder capacity to combat illegal fishing and extraction, and bolster fish populations and smooth-coated otter occupancy.

To ensure the sustainability of the Fish Sanctuary post-project, WWF Nepal will collaborate with the Natural Water Fisheries Promotion and Conservation Centre and Fisheries Development Centre. This project will serve as a model for scaling up inclusive and sustainable fisheries management practices nationwide. Lessons learned will be widely disseminated among municipalities, and endorsement and adoption of the Otter Conservation Action Plan will pave the way for future conservation efforts and budget allocations.

12. Darwin Initiative identity

This project represents the first of its kind in Nepal, focussing on otter conservation and livelihood improvement for river- dependent communities, making the funding from the Darwin Initiative widely recognised and appreciated by a diverse range of stakeholders. Coverage of the project launch event (Annex 4.2.2) and subsequent project activities (Annex 4.11.1) in various newspapers further emphasised the UK Government’s contribution under the Darwin Initiative. We also highlighted the launch event on our WWF Nepal website: <https://www.wwfnepal.org/?380118/Strengthening-Communities-livelihood-and-stewardship-to-protect-otters-in-Karnali-project-launched>.

The Darwin initiative logo has been displayed alongside those of the Government of Nepal, WWF and partners logos, in accordance with BCF’s branding guidelines, when promoting all project activities. For example, on posters (Annex 4.3.6.a1 - 4.3.6.a4).

Additionally, the project has initiated a Flickr account to share activities and expand reach, (<https://www.flickr.com/photos/200372897@N04/albums/>) and has created a UK webpage ([Otters in the Karnali | WWF](#)) thereby enhancing effectiveness and visibility.

13. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been reported in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes (Bivishika [REDACTED] - WWF Nepal’s ESSF and GESI specialist was engaged in the project but has left the organisation since 6th April 2024), Doma [REDACTED] (Senior Program Officer- Inclusive Conservation) has taken on this responsibility [REDACTED] supported by WWF-UK’s safeguarding lead Clare [REDACTED]
Has the focal point attended any formal training in the last 12 months?	No. Doma has only recently joined the organisation, she will receive training in the next 12 months
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 97% [26] Planned:3 % [1]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	
WWF-Nepal’s MoU with the National Foundation for Development of Indigenous Nationalities, focusing on collaboration to uplift Indigenous community voices by promoting a rights-based approach to conservation, had led to the development and launch of the National FPIC Implementation Guidelines 2023 for biodiversity conservation, which are being disseminated and applied within this project. Cross-learning and joint capacity building has been conducted with several national and international organisations and has covered topics that include inclusive conservation, child welfare and FPIC	

Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.

No new activities are planned

Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants.

WWF-Nepal has continued to provide orientation to partner organisations on ESSF compliance measures such as establishing grievance mechanisms and adhering to WWF's social policies (i.e., policy statement on human rights, Indigenous Peoples policy and gender policy). In addition, new requirements have been issued for all local partners to strengthen their own internal grievance processes. Organisations receiving funding from WWF Nepal must now place complaint boxes in their offices and establish committees to review complaints as a condition of WWF funding. In the past, WWF's grievance mechanism relied more heavily on informal and verbal communications whereas now we have a more systematic process to receive feedback and complaints from community members.

Have there been any concerns around Health, Safety and Security of your project over the past year? If yes, please outline how this was resolved.

The safety of CRSMG members during river monitoring was rightly discussed right from the beginning of project design to the group's formation stage. To address this risk, we equipped CRSMG members with necessary field equipment and provided them with an accidental insurance coverage. This measure was implemented to ensure their safety and well-being during field activities ([Annex 4.3.5b](#)).

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2023 – 31 March 2024)

Project spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total Darwin Costs (£) DRAFT	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
TOTAL	161,390	161,390	0%	

A budget revision was submitted and approved in March 2024

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)			WWF UK, WWF Canada and WWF US
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

15. Other comments on progress not covered elsewhere.

No further comments

Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024

Project summary	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
<p>Impact: The ecological integrity of the Lower Karnali Watershed is safeguarded to sustain freshwater biodiversity, smooth coated otter populations and improve the resilience of local livelihoods.</p>	<p>Baseline data has been collected, impact will be determined by the end of the project upon comparison of the data and results. Evaluation will be done at the end of the project.</p>	
<p>Outcome: By 2026, improved river management and enhanced wellbeing of 200 river dependent households through diversified livelihoods, result in increased fish abundance and otter occupancy in the Lower Karnali Watershed.</p>		
<p>Outcome indicator 0.1. By 2026, 200 river dependent households in 15 pilot sites report an improvement in wellbeing in relation to: an increase in income levels by 15% due to livelihood interventions financial resilience due to diversification of income sources increased participation and influence over river governance and fisheries management decisions (in comparison to the year 1 baseline)</p>	<p>Wellbeing survey conducted and baseline updated. Average annual income per household = 124,489 NPR (£750) (141,015NPR female, 96,245 male) Average number of different income sources per household=2.5 Data as per Solstice dashboard: https://share.solstice.world/v3/dashboard_link/6be12673a60649f5b9ab182ba0764d2e?share=566cd7ae81f34943b1a124508c4f1e59 Participation and influence= Very high (not as expected), which we are trying to revisit in year 2</p>	<p>We will review the baseline on Participation and Influence in year 2 and update for historic perceptions of participation and influence prior to engagement in project activities.</p>
<p>Outcome indicator 0.2. By 2026, 15 Community River-Stretch Management Groups (covering at least 10 km and one fish sanctuary) are implementing and measuring the effectiveness of sustainable river management plans.</p>	<p>15 Community River-Stretch Management Groups have started monitoring their respective river stretches. During year 1, a total of 120 monitoring events were conducted covering around 28.2 KM.</p>	<p>River monitoring will continue in year 2.</p>
<p>Outcome indicator 0.3. By 2026, 5% increase in Otter occupancy in river stretch covered by CRSMGs compared to the baseline [current understanding is 21% occupancy over a stretch of 8 km in western channel of Karnali river - Kathariya 2022; and 44% occupancy over a stretch of 12 km in eastern channel of Karnali/Geruwa river - Thapa 2019].</p>	<p>Sign surveys and camera traps carried out with involvement of community members estimated the otter sign occupancy of 24.13%.</p>	<p>The findings of the assessment will be useful in the preparation of the National otter conservation action plan. The endline will be done by the end of the year 3.</p>

Outcome indicator 0.4. By end 2026, identified priority threats/drivers (declining prey, unregulated aggregates extraction, illegal and unsustainable fishing) to otters and other freshwater species are each reduced by 10% (compared to year 1 baselines).	Threat assessment using absolute threat rank system conducted and baseline updated. The threat ranking was 2.20 for illegal and destructive fishing and 2.22 for unregulated aggregates extraction. The overall threat ranking for all the identified threats is 2.34.	The findings of the assessment will support the preparation of sustainable river stretch management plans and National otter conservation action plan.
Outcome indicator 0.5 By end 2026, fish abundance within the river stretch covered by CRSMGs will be increased by 10% (in comparison with the year 1 baseline).	Fish abundance and diversity assessment conducted and baseline established. Fish diversity and abundance assessment showed fish mean abundance of 5.54 in December and 8.3 in February and fish diversity index of 1.67 in December and 1.78 in February in lower Karnali region.	The fish hotspots and potential fish sanctuary identified by the fish diversity and abundance assessment (Activity 1.4) will help in moving forward towards designation of fish sanctuary in year 2 and 3.
Output 1. By 2026, river dependent communities and local governments demonstrate river stretch co-management covering at least 10 kms of the Karnali river and one fish sanctuary, enhancing sustainable fishing practices and inclusive decision-making processes.		
Output indicator 1.1. Formal arrangements with 15 community groups (consisting of approximately 25 individuals) for co-management of river stretch in place by year 2 (from a baseline of 0), with equal representation of men and women involved in decision-making, ownership and financing (baseline 2022: no formal arrangements in place)	Based on the identification of the river stretches and adjoining hotspots, fifteen community river stretch management groups (consisting of 25 individuals) were formed and registered in respective ward offices of local governments (<i>Annex 4.3.2a and 4.3.2b</i>). 2 events of training on leadership and sustainable fishing were conducted with active participation of 50 CRSMG members from two CRSMGs.	Leadership training planned for remaining CRSMGs.
Output indicator 1.2. 15 sustainable river stretch management plans incorporating sustainable fishery guidelines, informed by the fish abundance and otter occupancy baseline assessments, finalised by CRSMGs and local governments by year 3 (baseline 2022: no management plans in place)	Not yet done.	The project will support the preparation of a management plan for these fifteen rivers stretches in Year 2 and 3.
Output indicator 1.3. By 2025, 50 % CRSMGs members have adopted sustainable fishing practices to support implementation of management plans and sustainable fishing guidance in comparison with the year 1 baseline with year 3 endline (disaggregated by gender) Practices: 26% (11.7% female, 50.9% male); 69% (81.9% female, 45.5% male) and 5% (6.4% female, 3.6% male) of the respondents practised sustainable fishing practices “to great extent”, “to some extent” and “not at all”, respectively. Data as per Solstice dashboard: https://share.solstice.world/v3/dashboard_link/6be12673a60649f5	45 CRSMG members (20-Male, 25-Female) trained on sustainable fishing practices and river monitoring. 23 community-based awareness events on Otter conservation were conducted by Otter champions from 15 CRSMGs.	The support will be continued for group management and implement sustainable fishing practices.

b9ab182ba0764d2e?share=566cd7ae81f34943b1a124508c4f1e59		
<p>Output indicator 1.4. Each community group conducts monitoring of their respective river stretch twice a month for 3 years (except during July-Sept- i.e., monsoon season) (baseline 2022: no monitoring being conducted)</p>	<p>The fifteen CRSMGs were insured and supported with field gears to conduct river monitoring (<i>Annex 4.3.5b</i>).</p>	<p>Continued monitoring to control the illegal activities.</p>
<p>Output indicator 1.5. By 2026, Nepal's first Fish Sanctuary designated with its management plan</p>	<p>Fish diversity and abundance assessment was conducted in western channel of Lower Karnali River to identify the threats and challenges to the fish population along with the proposal of a site for the fish sanctuary in consultation with the local community.</p>	<p>Community consultation will be done along with meeting with fish expert, provincial ministry and local government to identify the potential fish sanctuary site.</p>
<p>Output 2. By 2026, 200 Sonaha/Tharu households (at least 50% women as direct participants) living in and around the lower Karnali increase their annual income by 15% through market oriented vocational training to enhance their technical skills followed by material support for establishment of micro-enterprises.</p>		
<p>Output indicator 2.1. Increase in annual income of 200 Sonaha/Tharu households by 15% due to livelihoods focused interventions by the end of Year 3 (disaggregated by gender and disability status) (baseline to be collected at project outset)</p>	<p>Baseline 2023 = Annual Average Income per person 124,489 NPR (ranging from low 5,000 to high 770,000)</p> <p>Female: Annual Average Income per person 141,015NPR (ranging from low 5,000 to high 720,000)</p> <p>Male: Annual Average Income per person 96,245NPR (ranging from low 6,000 to high 770,000)</p> <p>With disability in HH: Annual Average Income Per Person 141,583NPR (ranging from low 20,000 to high 555,000)</p> <p>With no disability in HH: Annual Average Income Per Person 122,992NPR (ranging from low 5,000 to high 770,000)</p> <p>Data as per Solstice dashboard: https://share.solstice.world/v3/dashboard_link/6be12673a60649f5b9ab182ba0764d2e?share=566cd7ae81f34943b1a124508c4f1e59</p>	<p>125 beneficiaries will be provided with market orientated vocational training</p>
<p>Output indicator 2.2. By end of year 2, 100 women have enhanced their skills in On-farm (e.g. Fish/shrimp farming, fruit & vegetable farming, betel leaf farming, livestock rearing) or Off-farm (e.g. catering/hospitality, traditional fishing gears, traditional handicrafts, tailoring, mechanics) activities to diversify and increase household incomes (baseline to be collected at project outset)community savings and credit groups; membership disaggregated by gender)</p>	<p>58 women received skill development training on On-farm (vegetable farming, betel leaf farming, fish farming) and Off-farm (small restaurant business and hospitality, grass/ fibre based handicraft making) activities.</p>	<p>42 will be provided with various skill development training and input support</p>

Output indicator 2.3. By end of year 2, at least 2 local community cooperatives established (baseline 2022: no multi-purpose cooperatives exist with Sonaha/Tharu members, will be built on existing community savings and credit groups; membership disaggregated by gender)	Three community-owned and led cooperatives were reformed with seed money provided by the project. Additionally, cooperative policies developed and effectively disseminated and implemented by board members and staff.	Capacity building of the cooperative staff will continue
Output indicator 2.4. By end of year 2, at least 100 share members have increased access to cooperatives and secured loans (disaggregated by gender)	Five financial literacy campaign events were organized for the 184 community members (57-Male, 127-Female). One beneficiary securing a £ 180 loan to establish a tea shop post training, indicating more beneficiaries securing loan in the upcoming days fostering further enterprise establishment	Cooperative Literacy campaign will continue, and skilled beneficiaries will secure loan to establish, expand their enterprises.
Output indicator 2.5. By end of year 3, 20 micro-enterprises established by the targeted HHs (disaggregated by gender and disability status of entrepreneurs)	Skills and inputs/material support provided to initiate micro-enterprises such as (Vegetable farming, duck farming, fish farming, betel leaf farming, handicraft making, tea shop and small restaurant).	Valuable insights, opportunities and risks identified through the rapid market assessment will be instrumental in effective planning for year 2, entrepreneurship development training, registration and other business development services will be provided.
Output 3. By 2026, government officials (municipalities, division forest office, park authorities) have improved capacity to monitor and control river aggregates extraction and destructive fishing practices, in order to better protect fish spawning sites and otter habitats		
Output indicator 3.1. Increased knowledge and understanding of 48 government officials on the impacts of uncontrolled aggregates extraction and destructive fishing practices on fish stocks, Otter habitat and prey, and on standard processes of Initial Environmental Examination	32 government officials (Male-19, Female-13) were on otter and prey base species conservation, destructive fishing, and Initial Environmental Examination (IEE). Pre-test and post-test surveys were done before and after the training respectively. Out of 10, the average pre-test score was 3.62 whereas the average post-test score was 6 showing an increase in knowledge and understanding by 23.8%.	Continue training to further strengthen the capacity and knowledge of the government officials
Output indicator 3.2. Standard protocol and monitoring mechanism of river aggregates extraction developed and endorsed by local government to regulate unsustainable aggregates extraction in high conservation value areas (including otter habitats and fish spawning sites) (Baseline 2022: No protocols or mechanisms exist)	No protocols or mechanisms yet	

<p>Output indicator 3.3. Number of cases reported with regards to destructive fishing and unsustainable aggregate extraction decreased by 50 % in the river stretch covered by CRSMGs by the end of year 3 (in comparison to year 1 baseline) (Baseline: 230 cases reported from 120 monitoring events during Dec 2023-March 2024).</p>	<p>No. of cases reported in Year 1 is 230.</p>	<p>The cases reported will be tracked regularly.</p>
<p>Output indicator 3.4. 45 law enforcement agency (Nepal Police) officials have increased understanding on how to tackle illegal activities related to the Aquatic animal protection act (2017).</p>	<p>36 (Male- 29, Female-7) law enforcement agency officials (Nepal Police and Armed Police Force) oriented on Aquatic Animal Protection Act (2017). Pre-test and post-test surveys were done before and after the training respectively. Out of 8, the average pre-test score was 1.58 whereas the average post-test score was 5.08 showing an increase in knowledge and understanding by 43.7%.</p>	<p>Continued training to further strengthen the capacity and knowledge of the law enforcement agency</p>
<p>Output 4. By 2026, endorsed national otter conservation action plan is adopted by all relevant stakeholders (federal, provincial and local governments, conservation organisations, and local communities) underpinned by robust scientific research and evidence-based approaches.</p>		
<p>Output indicator 4.1. Baseline study on otter occupancy, prey species diversity and abundance and threat assessment completed by the end of Year 1</p>	<p>Sign surveys and camera traps carried out with involvement of community members estimated the otter sign occupancy of 24.13%</p> <p>Fish diversity and abundance assessment showed fish mean abundance of 5.54 in December and 8.3 in February and fish diversity index of 1.67 in December and 1.78 in February in lower Karnali region.</p>	<p>The change will be measured by the end of year 3.</p>
<p>Output indicator 4.2. By year 3, Otter Conservation Action Plan incorporating smooth-coated otter conservation needs is prepared in consultation with all relevant stakeholders, ensuring active participation of marginalised river dependent communities</p>	<p>After approval from DNPWC for the preparation of the Otter Conservation Action Plan of Nepal, community consultations were conducted at eight sites to understand the issues, challenges and action points to address them with the participation of 135 individuals (29% female).</p>	<p>The remaining consultation meetings will be conducted in year 2 which will be followed by drafting of the Otter Conservation Action Plan of Nepal.</p> <p>The draft action plan will be shared with otter experts and DNPWC and DoFSC officials for their review. The final action plan will be prepared after incorporating the comments from the reviewers.</p>

<p>Output indicator 4.3. By year 3, Otter Conservation Action plan formally endorsed by relevant stakeholders and published</p>	<p>Not yet done.</p>	<p>The endorsement process will be initiated after the finalisation of Otter Conservation Action Plan</p>
<p>Output indicator 4.4. By end Year 3, at least one research article submitted to a peer-reviewed journal</p>	<p>One university graduate was supported for the research on otters distribution and diet behaviour.</p>	<p>Similar research support will be continued in year 2. Manuscripts will be prepared based on this research which will be submitted to peer-reviewed journals for publication.</p>

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

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>Impact: The ecological integrity of the Lower Karnali Watershed is safeguarded to sustain freshwater biodiversity, smooth coated otter populations and improve the resilience of local livelihoods.</p>			
<p>Outcome: By 2026, improved river management and enhanced wellbeing of 200 river dependent households through diversified livelihoods, result in increased fish abundance and otter occupancy in the Lower Karnali Watershed.</p>	<p><u>Human wellbeing</u></p> <p>O.1 By 2026, 200 river dependent households in 15 pilot sites report an improvement in wellbeing in relation to: an increase in income levels by 15% due to livelihood interventions financial resilience due to diversification of income sources increased participation and influence over river governance and fisheries management decisions (in comparison to the year 1 baseline)</p> <p><u>Improved river management</u></p> <p>O.2 By 2026, 15 Community River-Stretch Management Groups (covering at least 10 km and one fish sanctuary) are implementing and measuring the effectiveness of sustainable river management plans.</p> <p><u>Increased otter occupancy</u></p> <p>O.3 By 2026, 5% increase in Otter occupancy in river stretch covered by CRSMGs compared to the baseline [current understanding is 21% occupancy over a stretch of 8 km in western channel of Karnali river - Kathariya 2022; and 44% occupancy over a stretch of 12 km in eastern channel of Karnali/Geruwa river - Thapa 2019].</p> <p><u>Reduction in threats/drivers to otters</u></p> <p>O.4 By end 2026, identified priority threats/drivers (declining prey, unregulated aggregates extraction, illegal and unsustainable fishing) to otters and other freshwater species</p>	<p>O.1 Baseline and endline reports on GESI Assessment Report (Year1 and Year3), Baseline and endline community surveys to cover: income, diversification of income sources, participation and influence (year 1 & Year 3)</p> <p>O.2 Group registration certificate and 6 Monthly reports collected from CRSMGs</p> <p>O.3 Otter occupancy survey Report (Year 1 and Year 3)</p> <p>O.4 a. Threat Assessment Report (Year 1 and Year 3)</p> <p>O.4 b. CRSMG reports on incidents of unsustainable</p>	<p>River dependent communities around the Lower Karnali Watershed perceive potential for more resilient and equitable benefits from river stretch co-management models, increasing likelihood of involvement.</p> <p>The introduction of community stretch co-management and sustainable fishery practices are sufficient for the fishery and/or key fish species to partially recover in the time period, or at all.</p> <p>Reduction of threats/drivers leads to an increase in otter occupancy; otter populations can increase and disperse within the lifetime of this project.</p> <p>Conservation interventions will occur quickly enough for fish populations to react within the lifetime of the project, resulting in positive changes in fish abundance - while visible changes in fish stocks will take longer than the project to materialise.</p>

	<p>are each reduced by 10% (compared to year 1 baselines).</p> <p><u>Increased fish diversity and abundance</u></p> <p>O.5 By end 2026, fish abundance within the river stretch covered by CRSMGs will be increased by 10% (in comparison with the year 1 baseline).</p>	<p>fishing and aggregates extraction (see Output 3.3)</p> <p>O.5 Fish survey reports (Year 1 and Year 3)</p>	
<p>Output 1: By 2026, river dependent communities and local governments demonstrate river stretch co-management covering at least 10 kms of the Karnali river and one fish sanctuary, enhancing sustainable fishing practices and inclusive decision making processes.</p>	<p>1.1 Formal arrangements with 15 10 community groups (consisting of approximately 25 individuals) for co-management of river stretch in place by year 2 (from a baseline of 0), with equal representation of men and women involved in decision-making, ownership and financing (baseline 2022: no formal arrangements in place)</p> <p>1.2 15 sustainable river stretch management plans incorporating sustainable fishery guidelines, informed by the fish abundance and other occupancy baseline assessments, finalised by CRSMGs and local governments by year 3 (baseline 2022: no management plans in place)</p> <p>1.3 By 2025, 50 % CRSMGs members have adopted sustainable fishing practices to support implementation of management plans and sustainable fishing guidance in comparison with the year 1 baseline with year 3 endline (disaggregated by gender)</p> <p>1.4 Each community group conducts monitoring of their respective river stretch twice a month for 3 years (except during July-Sept- i.e., monsoon season) (baseline 2022: no monitoring being conducted)</p> <p>1.5 By 2026, Nepal's first Fish Sanctuary designated with its management plan</p>	<p>1.1 Municipalities' Meeting Minutes and Group registration certificate</p> <p>1.2 Community River Stretch Management Groups (CRSMG) reports; River Stretch Management Plan</p> <p>1.3.a KAP Assessment Report (included in baseline and endline)</p> <p>1.3.b Periodic monitoring report (incorporating anecdotal data, digital photos) by lead and implementing partners</p> <p>1.4 Field Monitoring Reports by CRSMGs</p> <p>1.5 Local government's official records of fish sanctuary designation</p>	<p>The government continues to allow the registration of community groups and does not make any legislative changes impacting on the registration.</p> <p>Communities and local governments can reach a consensus and agreement on river co-management plans</p> <p>Community groups formed for co-management of river stretches are significantly inclusive and capable of delivering the results.</p> <p>Increased knowledge and understanding among CRSMGs members will encourage them to adopt more sustainable fishing practices</p> <p>CRSMG members are continuously willing and able to monitor river</p> <p>Government is supportive and committed of declaring Nepal's first fish sanctuary</p>
<p>Output 2: By 2026, 200 Sonaha/Tharu households (at least 50% women as direct beneficiaries) living in and around the lower</p>	<p>2.1 Increase in annual income of 200 Sonaha/Tharu households by 15% due to livelihoods focused interventions by the end of Year 3 (disaggregated by gender and disability status) (baseline to be collected at project outset)</p>	<p>2.1 Income survey (as part of baseline and endline community survey) Year 1 & Year 3</p>	<p>70% HHs provided with skill-based training are successful in running their enterprise and earn sufficient income to sustain their livelihood.</p> <p>The governance of the cooperatives is effective and they are capable of using the seed money wisely</p>

<p>Karnali increase their annual income by 15% through market oriented vocational training to enhance their technical skills followed by material support for establishment of micro-enterprises.</p>	<p>2.2 By end of year 2, 100 women have enhanced their skills in On-farm (e.g. Fish/shrimp farming, fruit & vegetable farming, betel leaf farming, livestock rearing) or Off-farm (e.g. catering/hospitality, traditional fishing gears, traditional handicrafts, tailoring, mechanics) activities to diversify and increase household incomes (baseline to be collected at project outset)</p> <p>2.3 By end of year 2, at least 2 local community cooperatives established (baseline 2022: no multi-purpose cooperatives exist with Sonaha/Tharu members, will be built on existing community savings and credit groups; membership disaggregated by gender)</p> <p>2.4 By end of year 2, at least 100 share members have increased access to cooperatives and secured loans (disaggregated by gender)</p> <p>2.5 By end of year 3, 20 micro-enterprises established by the targeted HHs (disaggregated by gender and disability status of entrepreneurs)</p>	<p>2.2 Training completion report</p> <p>2.3 Periodic Progress Report prepared by participating cooperatives and Technical Project Report</p> <p>2.4 Periodic Progress Report prepared by participating cooperatives (that includes loan disbursements for share members)</p> <p>2.5 Project monitoring and technical progress reports</p>	<p>Selection of a range of livelihood activities based on local partners' experience in market development in the area, potential opportunities, resources available and product/service marketability means that viable livelihoods can be derived from on- and off-farm activities and enterprises.</p>
<p>Output 3: By 2026, government officials (municipalities, division forest office, park authorities) have improved capacity to monitor and control river aggregates extraction and destructive fishing practices, in order to better protect fish spawning sites and otter habitats.</p>	<p>3.1 Increased knowledge and understanding of 48 government officials on the impacts of uncontrolled aggregates extraction and destructive fishing practices on fish stocks, Otter habitat and prey, and on standard processes of Initial Environmental Examination</p> <p>3.2 Standard protocol and monitoring mechanism of river aggregates extraction developed and endorsed by local government to regulate unsustainable aggregates extraction in high conservation value areas (including otter habitats and fish spawning sites) (Baseline 2022: No protocols or mechanisms exist)</p> <p>3.3 Number of cases reported with regards to destructive fishing and unsustainable aggregate extraction decreased by 50 % in the river stretch</p>	<p>3.1 Pre- and Post-training assessments</p> <p>3.2 Local government endorsed protocol</p> <p>3.3 Field Monitoring Reports by CRSMGs</p>	<p>Government prioritises protocol developed for river aggregates extraction for implementation.</p> <p>Protocols are adopted by local governments once endorsed.</p> <p>Government officials have sufficient capacity to enforce fishing/illegal extraction regulations.</p> <p>Monitoring activities do not pose any risks to CRSMGs members and their family members.</p>

	<p>covered by CRSMGs by the end of year 3 (in comparison to year 1 baseline)</p> <p>3.4 45 law enforcement agency (Nepal Police) officials have increased understanding on how to tackle illegal activities related to the Aquatic animal protection act (2017).</p>	<p>3.4 Pre- and post training assessments</p>	
<p>Output 4: By 2026, endorsed national otter conservation action plan is adopted by all relevant stakeholders underpinned by robust scientific research and evidence based approaches.</p>	<p>4.1 Baseline study on otter occupancy, prey species diversity and abundance and threat assessment completed by the end of Year 1</p> <p>4.2 By year 3, Otter Conservation Action Plan incorporating smooth-coated otter conservation needs is prepared in consultation with all relevant stakeholders, ensuring active participation of marginalised river dependent communities</p> <p>4.3 By year 3, Otter Conservation Action plan formally endorsed by relevant stakeholders and published</p> <p>4.4 By end Year 3, at least one research article submitted to a peer-reviewed journal</p>	<p>4.1 Otter Occupancy survey report; Fish diversity and abundance assessment reports</p> <p>4.2 Consultation documents; minutes of meetings</p> <p>4.3 Published plan</p> <p>4.4 Journal article</p>	<p>All the relevant stakeholders from government and community continue to be supportive of developing the Otter conservation action plan.</p> <p>All relevant stakeholders (federal, provincial and local governments, conservation organisations, and local communities) commit to implementing the action plan, and support the necessary actions beyond the lifetime of the project.</p>

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

River stretch co-management

Output 1. By 2026, river dependent communities and local governments demonstrate river stretch co-management covering at least 10 kms of the Karnali river and one fish sanctuary, enhancing sustainable fishing practices and inclusive decision making processes.

Activity 1.1. Identify river stretch and adjoining hotspot areas (identified in Output 4) to be managed by the community, while considering climate impacts.

Activity 1.2. Support the formation and registration of 15 community river stretch management groups (CRSMGs) ensuring equal representation of men and women, in coordination with the local government

Activity 1.3. Train 30 community members (2 from each CRSMG) on sustainable fishing practices and river monitoring to support the implementation of river management plans.

Activity 1.4. Conduct fish diversity and abundance assessments with local community representatives from the CRGMGs along the designated river stretch

Activity 1.5. Draft 15 river stretch management plans incorporating sustainable fishing guidelines in coordination with local government and community groups and submit to local governments for approval/endorsement.

Activity 1.6. Support CRSMGs to conduct regular monitoring of their designated river stretch to control illegal activities in the river with the local government and law enforcement agencies.

Activity 1.7. Support 15 CRSMGs to organise awareness raising programmes, install hoarding boards and develop IEC materials and implement youth-led campaigns related to sustainable fishing practices and Otter conservation

Activity 1.8. Based on hotspots identified in Output 4, conduct feasibility assessments and stakeholder consultations with CRSMGs on the potential of establishing a fish sanctuary

Activity 1.9 Develop a fish sanctuary management plan for the agreed site; and create a management committee and submit the plan for approval to the local government.

Activity 1.10 Support for leadership/sustainable fishing training of CRSMG members

Activity 1.11 Support a multi-stakeholder learning exchange visit to socialise key stakeholders (CRSMGs, partners and government stakeholders) on community based fishery management

Diversifying, culturally appropriate livelihood options

Output 2. By 2026, 200 Sonaha/Tharu households (at least 50% women as direct beneficiaries) living in and around the lower Karnali increase their annual income by 15% through market oriented vocational training to enhance their technical skills followed by material support for establishment of micro-enterprises.

Activity 2.1. Identify and prioritise most vulnerable households through vulnerability mapping and select beneficiaries.

Activity 2.2. Support Sonaha/Tharu community through On farm trainings (fish/shrimp farming -45, seasonal and off seasonal vegetable, fruits farming-30, betel leaf farming-10, livestock /poultry rearing-15).

Activity 2.3. Support Sonaha/Tharu community through Off farm trainings (small restaurant opening -10, traditional fishing gears, jewellery making, handicraft making -20, tailoring -15, repair mechanics (motorcycle, AC, mobile, auto rickshaw)- 15).

Activity 2.4. Provide input /material support (seeds, breeds, tools, seed money) to facilitate enterprise establishment

Activity 2.5. Support Sonaha/Tharu community through Skill development trainings (Long term certified course for employment creation (electric auto rickshaw/ car vehicle driving, masonry, plastering training *etc.- 40).

Activity 2.6. Training on product development diversification, packaging and labelling to add value to the existing products especially for betel leaf and fish products.

Activity 2.7. Support market linkages to facilitate enterprise development through participation in trade fairs, promotion via online platforms, cooperative, business counselling, stakeholders and market actors interaction.

Activity 2.8. Support the establishment/reformation of two local community cooperatives for sustainable access to finance and to ensure sustainability of project initiative.

Institutional capacity building

Output 3. By 2026, government officials (municipalities, division forest office, park authorities) have improved capacity to monitor and control river aggregates extraction and destructive fishing practices, in order to better protect fish spawning sites and otter habitats.

Activity 3.1. Provide training to government officials on otter and their prey base conservation, the consequences of destructive fishing practices and ensure standard processes of Initial Environmental Examination (IEE) are followed.

Activity 3.2. Develop a standard protocol and monitoring mechanism to regulate river aggregates extraction in Otter hotspot areas identified in Output 4 and advocate for endorsement by the local government.

Activity 3.3. Conduct training workshops on the Aquatic Animal Protection Act (2017) for 45 law enforcement agency (Nepal Police) officials on illegal activities related to aquatic biodiversity.

Activity 3.4. Support the Division Forest Office (Kailali and Bardia) and Bardia National Park to conduct regular river patrolling to control river aggregates extraction and destructive fishing practices.

Enabling conditions to scale and safeguard otters

Output 4. By 2026, endorsed otter conservation action plan is adopted by all relevant stakeholders underpinned by robust scientific research and evidence based approaches.

Activity 4.1 Prepare otter identification manual in Nepali language and a smooth-coated otter monitoring protocol for use by all relevant stakeholders.

Activity 4.2. Train 20 local community members on otter identification and monitoring protocols drafted by WWF.

Activity 4.3. Conduct sign surveys and camera traps (at hotspot sites) for Otter occupancy along the potential habitat (rivers, wetlands and riparian zones) by otter experts mobilising trained CRSMGs members.

Activity 4.4. Engage 4 university graduates to conduct and publish research on Otter ecology- food habit and habitat use.

Activity 4.5. Conduct threat assessment of otters using absolute threat rank system to inform the development of strategies for the species and its habitat protection.

Activity 4.6. Draft National Otter Conservation Action Plan of Nepal.

Activity 4.7. Engage Otter experts and DNPWC and DoFSC officials in reviewing draft plan, finalise plan as per DNPWC standard format and get government's endorsement of the Conservation action plan.

Annex 3 Table 1 Project Standard Indicators

DI Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DI-C02	Number of new conservation or species stock assessments published.	Assessment	Type of assessment	1-Otter Occupancy survey, 1-Fish diversity assessment and 3-Threat assessment			3	6
DI-B07	Number of people participating in community-based management groups and/or Payment for Ecosystem Service schemes.	People	Gender	375 (120-Male, 255-Female)			375	375
DI-B02	Number of new/improved species management plans available and endorsed	Plan	Species	0			0	2
DI-D16	Number of households reporting improved livelihoods	HHs	None	24			0	200
DI-A10	Proportion sustainable livelihood enterprise established that are functioning at project end (at least a year after establishment)	Enterprise	None	0				20
DI-B12	Number of policies developed or formally contributed to by projects and being implemented by appropriate authorities.	Policy	None	0			0	6
DI-A01	Number of people from key national and local stakeholders completing structured and relevant training.	People	Gender	32 Male-19, Female-13			32	45
DI-C18	Number of papers published in peer reviewed journals.	Number	None	0			0	1