



Department  
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## Darwin Initiative Innovation: Final Report

To be completed with reference to the “Project Reporting Information Note”:  
(<https://www.darwininitiative.org.uk/resources/information-notes/>).

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

**Submission Deadline: no later than 3 months after agreed end date.**

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### Darwin Initiative Project Information

Project reference	DARNV008
Project title	Sound Of Safety: Testing Pingers for River Dolphins and Fishers
Country(ies)	India, Pakistan
Lead Organisation	WWF UK
Project partner(s)	WWF India, WWF Pakistan
Darwin Initiative grant value	£187,981
Start/end dates	01 April 2022 - 31 March 2024.
Project Leader's name	Leanne [REDACTED]
Project website/blog/social media	<p><b>Project Website:</b> <a href="#">Sound of Safety   WWF</a></p> <p><b>Blog/Social Media Posts:</b></p> <ol style="list-style-type: none"> <li>1) <a href="#">Tech secures food for fishers and dolphins- Darwin Newsletter Jan 24</a></li> <li>2) <a href="#">A Watershed Moment- Darwin Newsletter March 23</a></li> <li>3) <a href="#">Innovative Dolphin-Saving Devices Bring Hope for Remaining River Dolphins by WWF</a></li> <li>4) <a href="#">Why not PING someone the latest about our river dolphin conservation e...   TikTok</a></li> <li>5) <a href="#">Pinging True - WWF India</a></li> <li>6) <a href="#">International conference to tackle fisheries threats to river dolphins - Daily Pakistan</a></li> <li>7) <a href="#">Global Declaration for River Dolphins - RiverDolphins.org</a></li> <li>8) <a href="#">Saving the world's rarest freshwater dolphin - BBC Planet Earth</a></li> <li>9) <a href="#">Testing Pingers with Fishers of the Indus for a Safer World for the Endangered Bhulan - Natura- WWF-Pakistan</a></li> <li>10) <a href="#">Bhulan Dost Programme – a story of community stewardship to protect the endangered Indus Dolphin- Natura- WWF-Pakistan</a></li> <li>11) <a href="#">Action Magazine: Sound of Safety (page 6)</a></li> <li>12) <a href="#">Pingers and an Attempt to Save the Ganges River Dolphin   Roundglass Sustain</a></li> </ol>
Report author(s) and date	Leanne [REDACTED], Uzma [REDACTED], Hamera [REDACTED], Mohd [REDACTED], 28 June 2024.

## 1 Project Summary

In India and Pakistan, numerous Ganges and Indus River Dolphins die annually as bycatch<sup>1</sup>, further threatening these endangered species while also impacting income for local fishing communities through damaged nets and lost fish catch. The solution to this twin biodiversity and human development problem is called a pinger - an innovative acoustic device that is attached to fishing nets. Pingers emit an electronic sound underwater to alert river dolphins to the presence of nets, which helps keep them at a safe distance without displacing them from their natural foraging areas. We aimed to demonstrate that pingers can help prevent river dolphin bycatch, while potentially improving local fishers' income through reduced net repair costs and a decrease in lost fish catch. While pingers have previously been utilised successfully in the marine environment, in 2021, a small experiment by Yayasan Konservasi RASI- a local NGO in Indonesia- indicated that pingers could be effective for the Irrawaddy Dolphins in the Mahakam River, East Kalimantan. However, the response varies by dolphin species, meaning the sound output in decibels and frequency must be tested and adjusted for specific species and different river conditions, while also considering the potential effects of habituation. We developed a standardised methodology and tested this novel approach in West Bengal in India, and Sindh and Punjab province in Pakistan (Fig. 1). The innovative trials were also strengthened with WWF's inclusive community engagement model, which formed diverse groups of motivated citizen-scientists to help monitor and record the fish catch (weight), species composition, and net damage caused by dolphins.

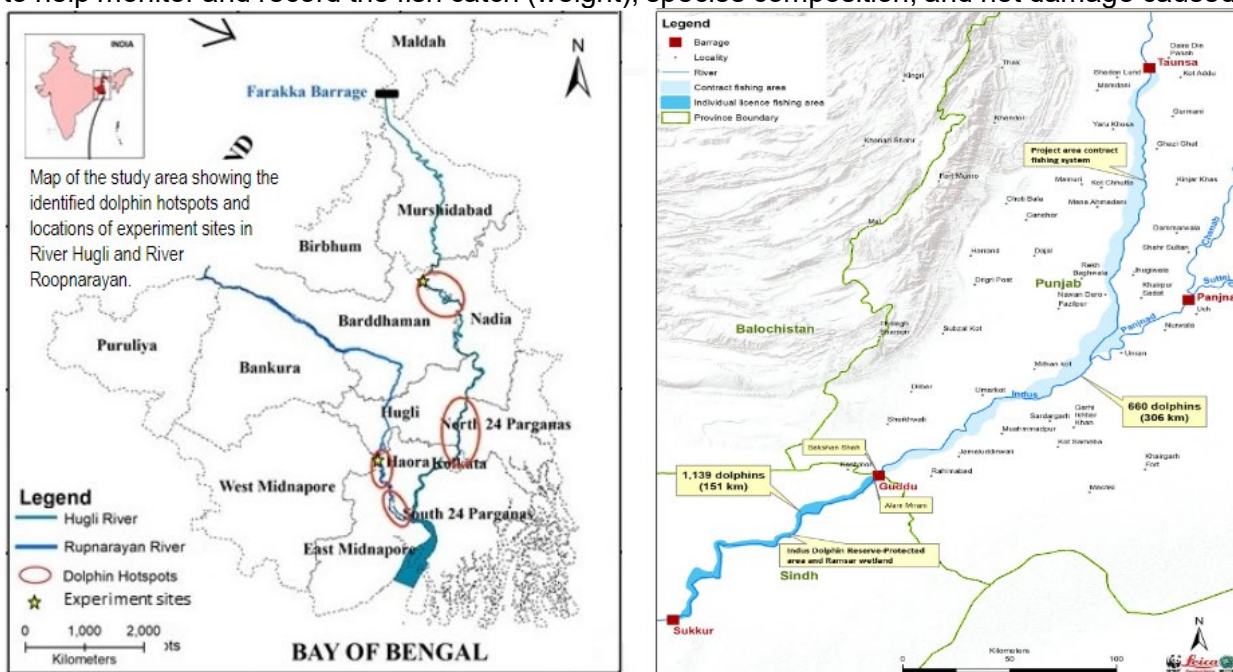


Fig. 1: Project sites in India (left) and Pakistan (right).

## 2 Project Partnerships

WWF UK, WWF Pakistan, and WWF India were all involved in the project planning and decision-making. A series of co-design workshops and meetings were held online throughout the proposal development stage, with several consultations and feedback sessions with WWF Wildlife and Freshwater Chief Advisors, knowledge partners from Wildlife Institute India, and technical associates from Chelonia and Fishtek Marine. Ongoing decision-making and adaptive management was maintained through regular monthly team meetings, and an annual technical webinar to share progress updates to project stakeholders.

WWF Pakistan and WWF India were the implementing partners on the project, with WWF UK supporting with project consolidation, donor reporting and communications. Representatives from all three organisations were involved in preparing this Final Report.

A particular strength of the partnership is WWF's convening power and extensive network, which enables access to influential local stakeholders and internationally renowned technical experts. A particular achievement of the partnership was leveraging these strengths to convene inclusive, multi-stakeholder participatory panel discussions and knowledge sharing sessions at international fora, to elevate the project learnings and ensure local voices receive equal weighting. Our session at [World Water Week in August](#)

<sup>1</sup> [Fisheries - River Dolphins](#)

[2023](#) featured testimonials from local fishers participating in the project, alongside local Government representatives, knowledge partner research institutes, industry experts and private sector actors discussing the amplifying role of collaboration and knowledge sharing. Similarly, our project was featured at the [Global River Dolphin Declaration in Bogota, Colombia in October 2023](#), which allowed project results and outcomes to be shared directly with Government representatives from all 14 river dolphin range states, and with a [global coalition of river dolphin organisations](#). Their interest in the project and continued engagement through GRDD channels will be pursued to support the broader scaling of pingers in relevant settings. Challenges and lessons from the project stemmed from inadequate resourcing to fully pursue these communications and advocacy opportunities which are critical to reach full impact potential. Extra personnel time was required to pursue additional match-funding opportunities to allow these advantageous opportunities, and discrete communications and advocacy budget lines will be included in future bids to maximise project reach.

WWF UK, WWF Pakistan, and WWF India, along with knowledge partners and technical associates are maintaining the relationship after project completion. The project team are exploring funding opportunities such as the Earthshot Prize and the Darwin Main (Round 31) scheme to expand and strengthen our approach for the next phase of implementation and scaling. We are liaising with other interested parties to harmonise methodologies and trial/scale pingers in other relevant regions, such as sharing knowledge with WWF Brazil and WWF Peru to support launching their own Darwin Innovation bid.

Local institutions and local communities have been directly involved in our project through targeted interventions and project sensitisation events, while wider project stakeholders including technical specialists and global river dolphin experts have been involved through annual technical webinars and panel discussions. Technical specialists Fishtek Marine and knowledge partners Yayasan Konservasi RASI and Wildlife Institute India collaborated on our [World Water Week event in August 2023](#), while the Director of Climate Change, Economy and Science from the British Embassy in Colombia was briefed on the project and participated in a [panel session at the Global River Dolphin Declaration in October 2023](#), discussing the role the UK Government can play in enabling other countries to meet their environmental ambitions. We also hosted a [final results dissemination webinar on 6th June 2024](#) which was open to any interested parties, and had attendees from the UK, India, Pakistan, Belgium, Uruguay, Canada and Peru.

### 3 Project Achievements

See Annex 5 for all related Means of Verification.

#### 3.1 Outputs

**Output 1:** Successful model of community engagement for river dolphin stewardship developed and applied

**Output 1.1:** 475 Mitras/Dost/Saheli are reporting monthly on river dolphin sightings using citizen-designed, standardized methods in Year 2 from a baseline of 55 people (disaggregated by country, gender, smartphone/paper reporting tool).

**Actual Result:** 344 enrolled, 194 regularly reporting.

In Pakistan, 232 Bhulan Dosts (friends) were enrolled during the project and trained on dolphin sightings, threats, and habitat conditions over 4 training workshops and with the aid of paper-based monitoring tools. Out of the 232 Bhulan Dosts enrolled, 165 (113 males and 52 females) have been regularly sharing data, resulting in 1300 records of dolphin sightings, 1500 records of repeated and recurring threats, and the rescue and release of 6 Indus River Dolphins. This recording was made on paper tools for data recording and reporting. These paper tools included easy to follow illustrations to report mortality of dolphins and threats. In India, 112 *Prokriti Bondhus* (Friends of Nature) were enrolled during the project, and trained on dolphin sightings, threats, and habitat conditions over 4 training workshops and with the aid of a paper-based tools. Of the 112 enrolled (96 male and 16 female), 29 individuals have been regularly sharing data. Although 724 citizens (354 India & 370 Pakistan) attended project inception and awareness sessions, we did not achieve the target retention for citizen scientists reporting consistently every month. Citizens cited that they were busy with personal matters but were keen to resume sharing observations, therefore the project teams are actively exploring ways to strengthen the benefits for consistent community engagement. Similarly, the shift of project site from Uttar Pradesh to West Bengal in India meant that we were operating in a completely new area and unable to leverage the existing community relationships we have in other states.

**Output 1.2:** 70% of enrolled Mitras/Dost/Saheli interested in continuing their citizen science activities at the end of Year 2 (disaggregated by country, gender).

**Actual Result:** 54% (188 of 344) of enrolled citizen scientists interested in continuing.

In Pakistan, over 71% (165 of the 232 enrolled citizens; 113 men and 52 women) of Bhulan Dost have been consistently collecting and sharing dolphin sightings, threats, and habitat data, and have indicated their continued interest to do so. In India the majority of the 121 villagers who attended a Fishers Union knowledge sharing workshop showed interest in the conservation of river dolphins, and 21% (23 of 112) directly expressed their interest in continuing citizen science activities, especially if provided with a mobile app to support data collection. Considering the citizen science participation is voluntary and this is the first WWF project that these West Bengal communities have engaged with, it is encouraging that a core group of community members are interested in maintaining participation. Similarly, the project team are exploring ways to digitise the citizen science data collection through a mobile application and strengthen the benefits of active participation.

**Output 1.3:** Knowledge and awareness on river dolphins and harmful fishing practices in the project communities increases by 90% by March 2024 from the baseline (disaggregated by country, gender).

**Actual Result:** Achieved.

In both countries, the project's contribution towards enhancing fishers' awareness and knowledge about unsustainable fishing practices has been significant. In Pakistan, a total of 174 community awareness sessions, pinger usage workshops, and feedback sessions were arranged throughout the project's duration, leading to increased awareness among 95% of the community members. The sessions not only focused on fishers across all project sites but also engaged fisheries contractors, students, government stakeholders, and others. These sessions reached nearly 3,000 community members on various occasions and during different project events. The Bhulan Dost/Saheli exchange programme further engaged over 50 fishers from Sindh and Punjab, providing valuable interactions and opportunities for cross-learning about sustainable fishing practices, the use of traditional knowledge for sustainable fishing methods, and pinger use. In India, the field teams organised over 103 community engagement events including awareness camps, door to door meetings, school presentations, individual consultations with fish contractors, salesmen, and fishers, and stakeholder knowledge exchanges, reaching over 2,141 community members. Given the project sites in West Bengal were a new operational area for WWF, we can confidently say that knowledge and awareness on river dolphins and harmful fishing practices has increased in project communities by >90%.

**Output 2:** Effectiveness of pingers as a technology tested with fishers in Pakistan and India.

**Output 2.1:** Dolphins are staying at least 20 meters away from fixed fishing nets with active pingers during the Year 2 trial period (disaggregated by country, experiment and control groups)

**Actual Result:** Achieved. Dolphins staying >20m away from fishing nets with active pingers.

In Pakistan, the trial results indicated that pingers were effective in keeping river dolphins 20-40m away from pingered nets. Behavioural observations indicated that dolphins did not feed in the 0-20m zone when the pinger was active, although they fed in the 0-10m zone when the pinger was inactive (controlled days). Acoustic data from the F-PODs revealed a decrease in feeding clicks and socializing activity when the pingers were active compared to when they were inactive. There was no evidence of increased aggressive behaviour when the pingers were on, and Indus River Dolphins did not avoid the feeding site but returned when the pingers were off on controlled days. In India, the presence of dolphins within 20m of a pingered net decreased significantly (by 21.56% and 68.70% in River Hugli and River Roopnarayan respectively), indicating that pingers are effective at keeping dolphins >20m away from the pingered nets.

**Output 2.2:** Dolphins are leaving the area (approximately 2 kilometres) when loud pingers are active during drag-fixed fishing net activities during the Year 2 trial period compared to the control group (disaggregated by country, experiment and control groups).

**Actual Result:** Achieved.

In Pakistan, fishers typically use two types of fishing nets: Fixed Gillnets and Drag Gillnets. We tested banana pingers on the fixed nets and Anti-Depredation Pingers (Loud Pingers) to clear the fishing area of

the dolphins. The loud pingers were attached to a rope and submerged 20 cm underwater for 4-5 minutes before dragging the net. Data from both years revealed a similar impact on the dolphins that when the loud pingers were used, the dolphins moved >1.5 km away from the area. As per the methodology, loud pingers were not deployed in India as the practice of employing drag nets across rivers is uncommon in River Hugli and River Roopnarayan.

**Output 2.3:** Dolphins are staying 20 meters away from cycling pingers during the Year 2 trial period (disaggregated by country)

**Actual Result:** Achieved.

In Pakistan, a habituation study was carried out in Punjab, with a total of 280 days of observation and 14,000 visual observations made at each experimental and control site. The first year, which included a 195-day study, revealed promising results: the pingers deterred dolphins and kept them away at a distance of over 100 meters. In the second year, an 85-day study showed the highest surfacing of dolphins at a distance of 20-40 meters, indicating that the pingers continued to deter dolphins, keeping them away at a distance of 20 to more than 100 meters. In India, it was recommended to employ simple banana pingers rather than cycling pingers as part of the tailored methodology. To explore dolphin habituation, the India field team applied and removed pingers from a fishing net set on a 10-day cycle. It was found that when pingers were used, the dolphin's acoustic behaviour changed, but they returned to their regular behaviour as soon as the pingers were removed.

**Output 2.4:** Fish catch type and/or size mix changes to more premium fish by 10% for fishers in the pinger sites by the end of Year 2 compared to the control group (disaggregated by country, experiment and control groups) focus groups on knowledge and awareness.

**Actual Result:** Partially achieved- achieved in Pakistan, and 5% increase in India.

In Pakistan, over the 8 months of trials (4 months per year), 16 fish species were caught in the nets when the pingers were on, and only 7 species were caught when the pingers were off. During the first month (January 2023) of the initial year of the experiment, no significant difference in the quantity of fish caught was observed; however, differences in species composition were noted when the pingers were activated and deactivated. Significant variations in both the quantity and species composition of catches were recorded in the subsequent months of the first experiment. In the second year of the experiment, significant differences in fish catch and species composition were observed between days when the pingers were on and off. Predominantly, commercially important fish species were caught when the pingers were on compared to when they were off. A total of 687 kg of fish were caught when the pingers were active, compared to 395.7 kg when inactive. The catch of some notable commercially valuable species doubled, such as *Cirrhinus reba* (Sunni) and *Eutropiichthys vacha* (Jhalli) which is considered very valuable and sold at 700 PKR/kg, and *Clupisoma garua* (Dhouno) sold at 800 PKR/kg, with a few individuals of *Gibelion catla* (Thaili/Thaila) and *Labeo rohita* (Dhambra/Rahu) only caught when the pinger was inactive. It was observed that catches of certain carnivorous fish species increased or were only caught while the pingers were on. This could be attributed to the absence of the larger predator, the Indus River Dolphin, due to the presence of the pingers, encouraging other carnivorous fish to approach the nets, which was beneficial for the fishermen. As fishermen are compensated by weight and the price per kilogram depends on the species and size, the changes in species composition also increased both the weight and price of the catch. Consequently, the group of fishermen involved in the study earned additional income due to the variation in species composition when the pingers were activated.

In India, a total of 36 species of fish were captured in the experiment during the period of the pinger experiment in River Hugli and River Roopnarayan. In the River Hugli, 21 species of fish were recorded when pingers were off, of which 14 species were also recorded when pingers were on. In the River Roopnarayan, 21 fish species were recorded, 17 species were recorded when pingers were off and 15 species when pingers were on. The quantity of fish caught (weight-wise) in both the pingered and non-pingered stages was relatively similar, as is the catch's market value. In the River Hugli, we observed a 5.3% increase in catch weight and a 5% rise in catch market price. In the River Roopnarayan, catch weight increased by 4.8% and catch market price increased by 11.5% after using pingers on the experimental net. Considering only a few fish were caught in the experimental net, the actual economic benefit from these increases is not significant, however there were incidences of dolphins damaging the nets when pingers were not active which translates into saving of the repair cost or net replacement costs. Given the wide

variation in fish catch results across the project sites, the project team recommend further study with greater input from fisheries specialists to understand the influencing factors behind these variations and the potential wider implications of pingers influencing fish catch and composition.

**Output 2.5:** Fishing net damage due to river dolphins in the pinger sites is reduced to zero by the end of Year 2 (disaggregated by country, experiment and control groups)

**Actual Result:** Partially achieved.

In Pakistan, neither of the experiment sites encountered net damage due to dolphin entanglement or fish catch loss when the pingers were on or off. This indicated that the dolphins avoided coming near the pingered nets. However, a group of fishers who were fishing 3 to 4 km downstream of the experiment location reported that their nets were damaged 7 times due to dolphin entanglement and also reported a dolphin mortality due to net entanglement where pingers were not installed.

In India, no experimental nets were damaged in the River Hugli, however there were 4 incidents of net damage to non-trial nets within a 2km radius of the experimental set-up, indicating that the dolphins were actively avoiding the pingered nets. In the River Roopnarayan, 22 incidents of net damage were reported during the 70 day trial, however it was noted that this occurred in a very narrow (<100m wide) stretch of river, and it is likely the river dolphins had no room to manoeuvre around the nets while moving upstream or downstream of the experimental area. Along with deploying pingers as a solution to tackle gillnet entanglements and establish coexistence between dolphins and fishers, the team feels that 'dolphin-friendly' sustainable fishing practices need to be developed, gathered and promoted. These practices need to consider the geomorphology of the immediate riverine habitat (river width, depth, flow rate, traffic etc). Similarly, a more comprehensive study is required to determine the threshold number of pingers that can be deployed in a river stretch without impacting dolphins' behaviour or driving them away from the suitable and preferred habitat. This is extremely critical as river dolphins have a linear habitat and its available varies between wet and dry seasons.

**Output 3.** Recommendations for decision makers on whether pingers can be scaled up in the Ganges and Indus River systems developed.

**Output 3.1:** 100% of participating villages say they feel engaged in the development of pinger/fisheries recommendations for their respective governments by March 2024 (disaggregated by country)

**Actual Result:** Achieved.

In Pakistan, a detailed assessment conducted during February-March 2024 engaged over 200 fishers from the communities involved in pinger experiments. The assessment indicated that 100% of fisher communities participated in the trials and provided recommendations for future use/scaling of pingers. In India, the pinger trials were conducted in 2 villages, Naliyapur (River Hugli) and Harishpur (River Roopnarayan). The local people were engaged at every level of the Pinger study, with participants from the local riparian community being trained for equipment handling and data recording. They helped the field team in setting up the equipment for experiment and data collection-particularly with fish-catch data during the pinger efficiency testing experiments in the River Hugli and River Roopnarayan. Additionally, the Fisher Society of Naliyapur also passed a meeting resolution to support Dolphin research and conservation activities in their stretch of River.

**Output 3.2:** Awareness of pinger technology among relevant fishing contract holders increases to 90% by the end of Year 2 from an expected baseline of 0% (disaggregated by country)

**Actual Result:** Achieved.

In Pakistan, the project successfully enhanced knowledge and awareness of pinger technology within the target communities. The Bhulan Dost were also trained in pinger and F-POD deployment and data collection. The endline Survey conducted in March 2024 revealed the involved fisher group in the pinger experiment increased their knowledge about the pinger technology by more than 90%. The fishers are very clear about the pingers and they are interested in using the pingers in the future while doing fishing. In Sindh, 94.1% of the fisherman community wants to contribute some money if the organization/department provides pingers and are willing to provide co-financing support of about 10 to 20% towards the cost of pingers.

In India, an awareness campaign focused on fish markets in Katwa (Purba Bardhaman) and Raghupur (Purba Bardhaman) along the Hugli River and Geokhali (Purba Medinipur) along the Roopnarayan River. A total of 6 fishing contractors, around 250 fish salesmen, and 22 fishers were contacted in these marketplaces to inform them about the pinger as an innovative approach to reduce fish catch depredation and net damage by dolphins. They were also informed of the significance of Ganges River dolphin conservation and the connection between Dolphin conservation and the health of the ecosystem as a whole in order to maintain a healthy fish population.

**Output 3.3:** At least 2 recommendations reports developed with relevant Government Departments that take into account citizen and fishing contract holder input by March 2024 (disaggregated by country)

**Actual Result:** Achieved.

In Pakistan, regular updates have been shared with key government departments, including the Fisheries and Wildlife Departments of Punjab and Sindh, to seek their input on the methodologies, scope, and future scale of pinger use. A results-sharing workshop was arranged in March for key government stakeholders, with senior representatives from the Sindh and Punjab Wildlife and Fisheries Departments in Lahore. The session aimed to share the results of the eight-month-long pinger trials, discuss potential sites for replication and scale-out, and consider the inclusion of pingers in fisheries legislation. Key recommendations included scaling out and scaling up pinger trials in additional dolphin habitats in the Indus River in Pakistan and incorporating pinger use into fishing contracts. Furthermore, the national commitment to pinger use is reflected in the Global River Dolphin Declaration signed by the Government of Pakistan.

In India, regular updates and reports have been developed with input from local citizens and fishers, and with consistent collaboration with the office of the Principal Chief Conservator Forest & Chief Wildlife Warden, Forest Directorate, and Government of West Bengal. The interim pinger results were also shared and submitted to the office of the Additional Director General of Forests, Government of India.

Both countries have demonstrated the efficacy of pingers, and both recommendation reports suggest that before a larger-scale deployment of pingers is recommended, it is necessary to determine the safe threshold of pinger density in a wider variety of riverine settings. Similarly, a further comprehensive study of the impact of pingers on the fish catch in different fishing practices should be undertaken. Pingers are considered an interim solution to avoid further bycatch while broader sustainable fisheries measures are established. There is a need to integrate pingers alongside holistic policy solutions and promotion of other dolphin-friendly sustainable fisheries practices which honour the traditional fishing knowledge and heritage of local communities and provide complementary sustainable livelihood opportunities that secure income and food security needs. This approach is supported by both sets of Government stakeholders and the project team are currently developing a Darwin Main proposal to incorporate these recommendations into the next phase of the pingers experimental design.

### 3.2 Outcome

**Outcome:** The socio-economic and biodiversity effects of pinger use is tested in the Ganges and Indus River systems, providing recommendations for future fisheries practices.

**Outcome 0.1:** Dolphin mortality numbers due to bycatch decrease to zero in Year 2 from the baseline in pinger trial sites, determining if pingers have a positive biodiversity effect.

**Actual Result:** Achieved.

In both Pakistan and India, zero river dolphin mortality due to bycatch was recorded from the experiment sites during the trial period. Six river dolphins were actively rescued during the project, and we are aware of at least 3 river dolphin deaths due to bycatch outside of the trial sites.

**Outcome 0.2:** The average monthly household net income increases 10% in Year 2 from the baseline (to be set) for fishers using pingers, determining if pingers have a positive socio-economic effect.

**Actual Result:** Partially achieved.

In Pakistan, the pinger use in the Sindh site led towards an increase in the catch of fish as well as enhancement of the diversity of the fish caught in the pingered sites, when compared to the non-pingered sites. As fishermen are compensated by weight and the price per kilogram depends on the species and size, the changes in species composition also increased both the weight and price of the catch. Consequently, the group of fishermen involved in the study earned additional income due to the variation in species composition when the pingers were activated. The average increase in income for fishers was ~40% at the pingered site (average catch value was 64,085 PKR on pinger-off days and 168,430 PKR on pinger on-days). In India, there was a modest positive difference in fish catch size between the pingered and non-pingered phases of the experiment, but not enough to translate as an economic benefit in terms of fish catch. However, given that pingers were proven effective at keeping dolphins away from fishing nets, it is likely that catch depredation and net damage caused by dolphins will be significantly reduced after pinger application, which would be beneficial to fishers. On reflection, given the explorative nature of the study, our chosen indicator should have been demonstrating an increasing trend without being tied to an untested target, and this will be considered as part of the next phase of the study. Also, given the broad variation in results between the two countries, further study is needed to explore the potential influencing factors behind the variation in fish catch results.

**Outcome 0.3:** Key government decision makers are aware of the lessons learned and recommendations on the socio-economic and biodiversity effectiveness of integrating pingers in fisheries management by March 2024.

**Actual Result:** Achieved.

In Pakistan, over 10 meetings for sharing regular updates were hosted with key government departments, including the Sindh and Punjab Fisheries and Wildlife Departments, to seek their input on the methodologies, scope, and future scale of pinger use. A results-sharing workshop was arranged in March for key government stakeholders, including Director General Wildlife, Director Fisheries and other senior representatives from the Sindh and Punjab Wildlife and Fisheries Departments in Lahore. The session aimed to share the results of the eight-month-long pinger trials, discuss potential sites for replication and scale-out, and consider the inclusion of pingers in fisheries legislation. Key recommendations included the scaling up of pinger trials in additional dolphin habitats in the Indus River in Pakistan and incorporating pinger use into fishing contracts. Furthermore, the national commitment to pinger use is reflected in the Global River Dolphin Declaration signed by the Government of Pakistan.

In India, the West Bengal Forest Department and Wildlife Institute of India (Gov of India) were regularly updated on the progress of the project. Mr Debal Ray, Chief Wildlife Warden ( Forest Directorate, West Bengal), and Prof. Qamar Qureshi (Scientist) and Dr Vishnupriya Kolipakam (Scientist) from WII were panelists in a session on the vital role of diverse stakeholders in accelerating positive change through innovative conservation tools at World Water Week-2023 on 20<sup>th</sup> August. They discussed the possibility of upscaling, and eventually mainstreaming pingers as a solution to reduce bycatch across the Hugli and Rupnarayan rivers.

Recommendation reports were shared with all relevant Government stakeholders, and discussed with them on a results sharing webinar hosted online 6th June 2024. Consultations with these Government stakeholders are currently ongoing to support the development of a Darwin Main proposal.

### 3.3 Monitoring of assumptions

Outcome and Output level assumptions and risks were monitored as part of the ongoing project M&E and re-evaluated during the bi-annual reporting process, where the project team convened to assess progress relevant to the project logframe and timeline. Similarly, new risks and issues were added to the risk register as and when they arose and were revisited for status updates during the recurring monthly team meetings.

**Output 1, Assumption 1:** Community members, especially women and fishers, are willing and able to participate in the app design phase and monitoring over the life of the project period using the app or paper-based tools.

**Changes:** Due to time constraints, the project team opted to prioritise paper-based tools. Community members were available to participate in designing these tools, however consistent, ongoing monitoring was a challenge due to the voluntary nature of the project. Some younger community members have suggested



that a data collection app would be beneficial, therefore this is being considered for the next phase of the project, along with other strategies to strengthen the benefits for project engagement.

We also conducted an assessment to understand the practicalities of introducing a smartphone app for data collection and it appears that fishers do not take smartphones to the river because they fear that they may get wet/damaged and leave them at home.

**Output 2, Assumption 4:** F-PODS and cycling pingers are not stolen or damaged.

**Changes:** A cycling pinger was lost in Pakistan due to extreme flooding, however a replacement was secured at no additional cost thanks to match funding contribution from our technical partner, Fishtek Marine.

### 3.4 Impact

**Impact:** Pingers are supporting the long-term coexistence of healthy river dolphin populations and thriving riverine communities in the Ganges and Indus River systems.

In both India and Pakistan, there are encouraging trends for populations of Ganges and Indus River dolphins, of which this project is contributing within the project operational areas. WWF Pakistan lead Dr Uzma Khan was featured on BBC Planet Earth 3, speaking about the remarkable 20-year effort to bend the curve on Indus River dolphin populations, resulting in populations almost doubling between 2001 and today. She also got the opportunity to speak at the World Species Congress and talked about using pingers as one of the conservation strategies to build coexistence between dolphins and fishers. Similarly, the citizen science network established by this project contributed to the timely reporting and subsequent rescue and release of 6 river dolphins in Sindh province- a significant contribution for the world's most endangered river dolphin. Our project is also generating compelling evidence that pingers can help reduce repair costs, and in some scenarios, increase fish catch and therefore income, but the variability requires further study. Ensuring that pingers also deliver human development and wellbeing co-benefits has been a strength of the project, with local communities involved in the project design and decision-making. This has created the enabling environment for us to explore scaling the project and further strengthening the poverty reduction elements to move toward long-term coexistence of healthy river dolphin populations and thriving riverine communities in the Ganges and Indus River Systems.

## 4 Contribution to Darwin Initiative Programme Objectives

Please see Section 13 and Annex 3.

DI-C01- Number of best practice guides developed with relevant Government Departments that take into account citizen and fishing contract holder input: 2 reports developed and shared with relevant Government Departments with guidance on feasibility of pingers and recommendations for next steps, including further study before wider scale deployment.

DI-B05- Number of people with increased participation in river dolphin citizen science groups/Governance: 724 citizens attending various citizen science and Governance Group meetings, with 344 enrolling as active members.

### 4.1 Project support to the Conventions, Treaties or Agreements

The Indus River dolphin is listed as a species of special concern in NBSAP led by the Ministry of Climate Change, Federal Government of Pakistan. There are numerous targets that directly relate to the project and the project is contributed to them for example Target 2: includes low-cost tools and methods for valuation of biodiversity that provide economic value and recognise social and cultural values. It supports targets of sustainable harvest of fish stock to minimize impact on threatened species and vulnerable habitats. Considering that fishing practices is one of the most pressing threats to river dolphins globally, WWF-Pakistan organised a meeting of the Asian region which was attended by over 60 participants. During three days in October 2022, government representatives, cetacean experts and fishery experts from all 8 Asian river dolphin countries gathered, some joining virtually, with the objective to discuss how to best tackle this threat; reducing river cetacean mortality and seeking more sustainable fishery practices for people and nature. All participants agreed to the 'Islamabad Recommendations': develop together a fishery-focused river dolphin Conservation Management Plan under the International Whaling Commission for Asia, improve legislation and fisheries database and enhance community participation in co management. At least 5 governments

actively participated in this development: Bangladesh, Cambodia, Indonesia, Nepal & Pakistan. This is an important step ahead which was inaugurated by the focal point of conventions & treaties in Pakistan from the Ministry of Climate Change.

Declaration: WWF-Pakistan hosts international conference to tackle fisheries threats to river dolphins in Asia (dailypakistan.com.pk)

The Ministry of Climate Change, Government of Pakistan representative Mr Samar Khan joined the WWF side event at the Ramsar COP in Geneva in November 2022 and shared the successes of the Indus River dolphin conservation. He also highlighted the lead role that Pakistan played in bringing together the Asian region for the collaboration to address the threats from fishing. Mr Khan also highlighted the new developments of field trials of pingers as an innovative development for the conservation of Indus River dolphin. The Government of Pakistan is fully onboard and committed at the UN Water Conference, Government of Pakistan presented the Water Recharge project which aims to establish connectivity and restore Indus River floodplain while addressing the threats at the systemic level. As a follow up of the Islamabad workshop the Government of Khyber Pakhtunkhwa has developed a proposal for the Ministry of Climate Change to support the designation of the Indus River dolphin habitat in the province as the UNESCO Man & Biosphere Reserve. This fits in with the CBD 30x30 target of translating into 30% rivers and wetlands as protected, restored by 2030.

Additionally, the project was featured at the [Global River Dolphin Declaration](#) held in Bogota, Colombia in October 2023, and generated much interest from Government representatives from river dolphin range states which utilise gillnet fishing. Governments from both India and Pakistan were signatories to the declaration which received media coverage of over 1 billion views. This project aligns with the GRDD priorities to: halt and reverse the decline of all river dolphin populations; create a network of protected river habitats and increase river dolphin site-management effectiveness; strengthen engagement with Local Communities and Indigenous Peoples; engage development partners, financial institutions, civil society organisations and private sector actors to mobilise capacity and resources to support River Dolphin Action Plans, feeding into Kunming-Montreal Global Biodiversity Framework.

There are also several synergies with key international development frameworks, such as:

**Sustainable Development Goals** (1 No Poverty, 2 Food Security, 6 Clean Water and Sanitation, 8 Decent Work and Economic Growth, 9 Industry, Innovation, and Infrastructure, 11 Sustainable Cities and Communities, 12 Responsible Consumption and Production, 14 Life Below Water, 15 Life on Land, 16 Peace, Justice and Strong Institutions, 17 Partnerships for the Goals).

**Convention on Biological Diversity:** India was amongst the first members to legislate and implement the Convention on Biological Diversity (CBD) domestically, the parent convention of the Global Biodiversity Framework (GBF) and its 30x30 target. India is a signatory of the global 30x30 goal, the programme aligns with the goal to reverse nature loss by the year 2030, including targets: 1) Plan and Manage all Areas to Reduce Biodiversity Loss; 4) Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts; 10) Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry; 20) Strengthen Capacity-Building, Technology Transfer, and Scientific Cooperation for Biodiversity; 22) Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all; 23) Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action.

**Convention on the Conservation of Migratory Species of Wild Animals:** During the CMS Conference of Parties (COP13) in India in February 2020, the Indian government presented a [Concerted Action for the Ganges River Dolphin](#), which was endorsed by the Conference.

**International Whaling Commission:** Project knowledge partner Dr Robert Enever from Fishtek Marine is a member of the [REDACTED], and the project team have discussed developing a Conservation Management Plan for the Ganges River dolphin to be led by the Government of India as they are a member of the International Whaling Commission. IWC is supportive of the approach which in future can help in building collaboration between the Ganges River dolphin range states, namely India, Bangladesh and Nepal and incorporates learnings from the pingers project.

## 4.2 Project support for multidimensional poverty reduction

This project contributed to a reduction in poverty and improved human development and wellbeing by improving the coexistence between local fishing communities and river dolphins. This project demonstrated that by attaching pingers to fishing nets, river dolphins stay >20m away from fishing nets, avoiding accidental death by bycatch for the river dolphins and reducing costly net repairs and time lost fishing for fishers, indirectly benefiting the household income of fishing communities in both India and Pakistan. Additionally, in Pakistan the project demonstrated a significant increase in fish catch (395.7kg while pingers off, to 687kg while pingers on) and species composition. More commercially viable fish were caught while fishers were using pingers, such as *Cirrhinus reba* (Sunni) and *Eutropiichthys vacha* (Jhalli) which are considered very valuable and sold for 700 PKR/kg, and *Clupisoma garua* (Dhoungno) sold for 800 PKR/kg. As fishermen are compensated by weight and the price per kilogram depends on the species and size, the changes in species composition also increased both the weight and price of the catch. Consequently, the group of fishermen involved in the study earned additional income due to the variation in species composition when the pingers were activated. In India, a 5.3% increase in catch weight was observed along with a 5% rise in market price in the River Hugli site, while in the River Roopnarayan, the catch weight increased by 4.8% and the catch market price increased by 11.5% while using pingers. This demonstrates a strong case for the project delivering for both biodiversity and poverty reduction benefits, however given the wide variation in fish catch results across the project sites, we recommend further study to better understand the influencing factors behind the variation and build the case for pingers delivering co-benefits for food security.

## 4.3 Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board <sup>2</sup> .	50%
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 <sup>3</sup> .	33%

GESI Scale	Description	Put X where you think your project is on the scale
<b>Not yet sensitive</b>	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
<b>Sensitive</b>	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.	X
<b>Empowering</b>	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	
<b>Transformative</b>	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

<sup>2</sup> A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

<sup>3</sup> Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

To engage both genders equally, we have chosen specific places and times for the community meetings to ensure diverse attendance and accessibility. While acknowledging that fishing is largely restricted to men in these communities, we have designed the programme to ensure that women participate through the citizen science network, and also benefit by freeing up time required to mend fishing nets. We have chosen female project team members to help us actively mobilize more women to participate in the programme, we reach out to women and girls outside of the fishing communities, and in engagement surveys, we strive for a 50% gender balance. We recognise the significant influencing opportunities that women have within their households, which is why active participation of women in our citizen science programme is so valuable. By encouraging conservation principles and actions for intrinsic and cultural heritage values at home and in schools, and simultaneously demonstrating tangible economic co-benefits that improve the fishers' households, we feel that this model benefits the broad spectrum of the community. However, we endeavour to improve our gender equality and social inclusion strategies, therefore we are exploring ways to develop more tangible benefits for the women participating in our programmes and include wellbeing assessments to gauge the level of benefits being realised for women and girls. For the next phase of proposal development, we are exploring complementary sustainable livelihood opportunities for women, to improve food security for households, improve climate resilience of communities, and reduce the pressure and reliance on the river basins which are under increasing threat from the impacts of climate change.

#### **4.4 Transfer of knowledge**

Knowledge transfer has been a core strength of the project, with local communities, conservation practitioners, and policymakers engaged and informed at all stages of delivery- at local, national, and international scale. Numerous project sensitization and outreach activities have been carried out to promote the project amongst the local communities, and numerous blogs, articles and social media posts have been drafted to generate support and interest from the public (Page 1). A technical webinar was hosted to launch the project in July 2021, the project was featured at [World Water Week](#) in Stockholm in August 2023 and the [Global River Dolphin Declaration in Bogota, Colombia in October 2023](#) -which allowed project results and outcomes to be shared directly with Government representatives from all 14 river dolphin range states, along with the [global coalition of river dolphin organisations](#). Pingers were also featured by Dr Uzma Khan when she was invited to speak at the World Species Congress in May 2024. We also hosted a [final results dissemination webinar on 6th June 2024](#) which was open to any interested parties and had attendees from the UK, India, Pakistan, Belgium, Uruguay, Canada. From this, we've been contacted by the British Divers Marine Life Rescue organisation who are sharing our project materials with the Port Authority of London to explore the feasibility of using pingers to avoid whale and dolphin bycatch in the Thames. Additionally, we are leveraging the WWF network to support other offices- WWF Brazil and WWF Peru- to develop their own pinger trials, aligning methodologies and sharing learnings to reach maximum impact.

#### **4.5 Capacity building**

WWF Pakistan lead Dr Uzma Khan was featured on [BBC Planet Earth 3](#), speaking about the remarkable 20-year effort to bend the curve on Indus River Dolphin populations, resulting in populations almost doubling between 2001 and today. She was also invited to speak at the World Species Congress in May 2024, and spoke about using pingers as one of the conservation strategies to build coexistence between dolphins and fishers. Similarly, Hamera Aisha (Senior Manager of Wildlife Conservation at WWF Pakistan) has been featured on WWF Pakistan [Instagram](#) and [Facebook](#) channels, increasing the visibility of women in conservation.

### **5 Monitoring and evaluation**

Both WWF IN and WWF PK have dedicated M&E officers who meet once a month online with country leads, WWF UK lead and River Dolphin Rivers Initiative Lead to review progress relative to the log frame and timeline and discuss adaptive management as required. Dedicated M&E folders were set up in a shared Google Drive to collect Means of Verification to evidence progress against outputs, and shared documents are used to ensure close collaboration and input from each organisation. Agendas, summary and action points are collated and shared after each monthly call, action points are followed up via email and general project progress is tracked on a Trello board.

The M&E system was practical and helpful in providing useful progress updates and feedback to partners and stakeholders, however given that the cross country collaboration (India- Pakistan- UK) happened almost exclusively online, differences in processes and data interpretation has led to some slight variation in outputs, resulting in additional work to harmonise results. This has been captured in the lessons learned section, and

future proposals will include an in-person initiation workshop to ensure better harmonisation of approaches and standardisation of templates and processes where possible.

Given the relatively small budget and short delivery time, an evaluation of the project was not included, however if the project team are successful in their application for a Darwin Main (Round 31), a full project evaluation will be included which will encompass the Innovation project.

## **6 Lessons learnt**

1. Due to unexpected delays in obtaining permissions, we had to move the India project site from Uttar Pradesh to West Bengal and establish all new local relationships. To prevent this inconvenience in the future, we will ensure more time is dedicated to ensuring the relevant Forest Department is integrated into the project development phase. This will ensure that their interests are included in the proposal, making it easier to obtain permissions.
2. The pingers have been shown effective in keeping dolphins away from fishing nets, lowering the risk of bycatch and fish catch/net damage. Pingers are active acoustic devices, thus scientific standards for their widespread usage in rivers must be developed to avoid increasing noise to existing noisy river-systems. While the use of pingers in river fisheries may be significant, it is only one piece of the puzzle in addressing the Dolphin-Fisheries conflict. There is a need to incorporate pingers alongside holistic policy solutions and promotion of other dolphin-friendly sustainable fisheries methods, therefore we are recommending pingers as part of an integrated approach for the next phase of delivery.
3. Longer inception phase and ensuring the project is adequately resourced regarding staff capacity. With the intention to ensure value-for-money and operate with lean staff costs, we relied on match-funding for much of our core team, leveraging the synergies with one of our corporate funded partnerships in India. However, when the project site shifted due to lack of government permissions, those synergies were lost, and it became apparent that we should have costed more of our direct staff time to the project. Similarly, having a longer inception phase could have helped offset implementation delays, while adequately costing staff time for final reporting and dissemination would have provided a more accurate reflection of actual project costs.
4. Including more budget for outreach activities and cross-country collaboration. There has been great interest in the project and opportunities to showcase at conferences and other global stages were identified, but only some opportunities could be pursued when match-funding was available. Similarly, cross-country collaboration relied solely on virtual meetings, and methodological inconsistencies or differences in data interpretation could have been avoided with the inclusion of an in-person workshop.
5. Including multiple outputs and sub-outputs in the logframe have increased the administrative tasks of collating MoVs, therefore the team will combine and streamline related outputs to improve efficiency in the next phase. Similarly, as the innovation grant was testing the hypothesis that pingers are effective, for our indicators it may have been prudent to demonstrate change rather than set specific untested targets. For example, Outcome Indicator 0.2: 10% increase in net household income for fishers- although this target was exceeded in Pakistan, as we only demonstrated a 5% increase in India, the target was not explicitly met despite demonstrating positive change. Based on these learnings, the project team will interrogate the suitability and feasibility of the targets and indicators before the next phase of the project.

## **7 Actions taken in response to Annual Report reviews**

Feedback was discussed with the wider team and we responded to all queries raised by the reviewer after the Year 1 annual report. The majority of the comments related to the Means of Verification. We annexed a selection of MoV but all the documents were available through a Google Drive link provided, however the reviewer did not request access to the drive. As such, we are annexing all the core MoV documents with this report.

The reviewer also queried the authenticity of responses to the baseline fisher questionnaires, raising the issue that fishers may be motivated to under-report dolphin bycatch due to perceived risk of increased scrutiny by conservation authorities. While the team acknowledged that underreporting of river dolphin bycatch is likely, given the lack of historical baseline data or official dolphin bycatch statistics, the survey is still valuable for identifying potential bycatch hotspots. Additionally, the field teams have built trust with the

communities, are transparent about the purpose and use of the interviews, allow anonymous reporting and only conduct interviews with consenting individuals.

The reviewer also queried the motivation for fishers and community members to carry out field data collection without being recompensed, and how these activities contributed to their labour or fit in with their other tasks. The fishers are motivated due to the potential for reduced net repair costs and/or increased fish catch, while the citizen science participants are predominantly individuals who are spending their time/conducting their activities alongside the river anyway. As well as fishers, this also includes women mending nets, collecting water and/or washing clothes, who have been motivated to provide ad-hoc observations through project engagement and sensitization activities. We have also noted that communities are motivated by an intrinsic value to protect river dolphins, as they are considered sacred animals which feature prominently in the cultural heritage of these riverine communities. The project team intends to explore this element further in the next phase of the project, through an enhanced beliefs and values component of the community engagement work.

## **8 Sustainability and legacy**

Numerous project sensitization and outreach activities have been carried out to promote the project amongst the local communities, while local government officials have frequently been engaged and updated to ensure interest in the project. Mr Debal Ray (Chief Wildlife Warden of the Forest Directorate of West Bengal) and Prof. Qamar Qureshi and Dr Vishnupriya Kolipakam (Wildlife Institute India, Gov of India) accepted the invitation to participate in our World Water Week panel where they supported further scaling of the project and discussed the enabling conditions required to embed pingers in fisheries policy. Additionally, the government representative for Pakistan included the use of pingers in their national commitment at the Global River Dolphin Declaration, and many river dolphin range state Governments expressed their interest in trialling pingers. Following recommendations from the project teams, community and government stakeholders are interested in continuing the pingers trials and expanding the scale of the interventions with an aim of incorporating pingers into a broader set of river dolphin-friendly, sustainable fisheries policies.

Despite the project formally ending at the end of March 2024, the fishers and citizen scientists engaged in the project and continuing to provide ad-hoc updates and observations to the project team. All WWF staff members have been reassigned to other projects and we have requested the transfer of assets purchased under the project to move from DEFRA to WWF India, where they will be utilised by other projects or re-used for the continuation of the pingers project, pending the success of our Darwin Main proposal.

Relatedly, we aim to ensure the innovative use of pingers is mainstreamed into business as usual and will continue to deliver benefits by building the evidence base for their effective use at a wider scale through a Darwin Main proposal (Round 31). As pingers are active acoustic devices, we must first establish the upper limit or threshold of the number of pingers that can be deployed within specific stretches of river, without significantly altering river dolphin acoustic behaviour or adding to any existing noise pollution. Similarly, we need to better understand the effects from different river typologies, and interrogate the potential influencing factors behind variation in fish catches with fisheries experts. Once this is safely established, we will work with fishing communities and policy makers to embed pingers alongside a suite of river dolphin-friendly sustainable fishing practices and policies in India and Pakistan. Similarly, we will share our learnings with the wider river-dolphin community- with river dolphin range state Governments through the Global River Dolphin Declaration, and with the expert scientific community through the [Global Coalition for River Dolphin Conservation](#). This will increase our knowledge exchange and help to harmonise scientific methodologies to maximise the scaling potential of pingers to other countries. To date, the project team have been contacted by many organisations interested in trialling pingers, from Brazil, Peru, Bolivia and even the UK - with the British Divers Marine Life Rescue organisation reaching out to WWF UK to explore the feasibility of using pingers to stop whales and dolphins from getting stranded in the Thames.

## 9 Darwin Initiative identity

In line with BCF guidelines, project communications always feature the BCF/Darwin logo, including project communication and sensitization materials, presentations, conferences/events and online blogs and articles (Page 1). While our project was recognised as a distinct project with a clear identity, it contributed to the wider strategic objectives of WWF-UK's Thriving Habitats & Species Goal, sitting within the Species Initiative alongside our other global river dolphin work. To launch and wrap up the project, we hosted technical webinars on 07 July 2022 and 06 June 2024 respectively, with speakers from the WWF network, Wildlife Institute of India, and Chelonia Ltd. Both webinars featured an overview of the Darwin Initiative scheme and logo, expanding the reach of the Darwin Initiative identity with communities and government stakeholders in India, Pakistan and beyond. Similarly, the Darwin Initiative was publicised globally at our events at World Water Week (Aug 2022) and the Global River Dolphin Declaration (Oct 2023). The project was also featured in several Darwin Initiative newsletters, and we have frequently linked back to the [Darwin Initiative account on LinkedIn](#).

## 10 Risk Management

3 risks have been added to the risk register in the final 12 months of the project, with mitigating actions outlined below.

1: Security Concerns. In Pakistan, the persisting unrest along the Indus River in the Sindh section has given rise to security concerns, primarily due to ongoing tribal conflicts. This situation poses a continuing challenge, particularly as the government is currently engaged in an operation against tribes harbouring criminals. This may potentially disrupt the ongoing trials or necessitate a relocation of the project site.

Mitigating Action: This will be a persistent risk as now there is government led operation against tribes that are giving refuge to criminals which may disrupt the trials or the project location may be changed. We will accept the possibility of the ongoing situation but stringently monitor the risks, ensuring project team and community member safety is the priority. In response, an in-house strategy has been devised to prioritise the safety of our field team. This includes providing them with robust logistical support and strengthening coordination with partner communities and wildlife departments, ensuring the smooth execution of our work.

2. General elections are scheduled to be held in Pakistan less than 90 days after the dissolution of the National Assembly, which was prematurely dissolved on 10 August 2023, however the elections will be delayed until February 2024 at the latest, as announced by the Election Commission of Pakistan (ECP). We are mindful that uncertainty around the election could impact the project- we will continue to monitor the situation.

Mitigating actions: We will accept the possibility of the ongoing situation and will continue to monitor any potential project interference, taking action to reschedule community events as needed.

3. General elections were announced in India for 6 weeks for 19 April. Although this is outside the implementation date range, we are mindful that uncertainty around the election could impact the project, especially with final Gov engagements with recommendations and participation in webinars- will continue to monitor the situation and record results dissemination webinar so it can be watched post elections.

Mitigating actions: We will accept the possibility of the ongoing situation and will continue to monitor any potential project interference, and have taken the action to move our results dissemination webinar from late August to early June (post election results), ensuring wider availability of Government officials.

## 11 Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes Pakistan: [REDACTED] India: [REDACTED]
Has the focal point attended any formal training in the last 12 months?	Yes. All WWF staff attend annual refresher training on ESSF and safeguarding.
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 100% Planned: 100%
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	No.
Please describe any community sensitisation that has taken place over the lifetime of the project; include topics covered and number of participants.	Please see Output 1 and supporting MoV.
Have there been any concerns around Health, Safety and Security of your staff over the lifetime of the project? If yes, please outline how this was resolved.	Yes. Field staff were instructed not to attempt to retrieve equipment lost during flooding; replacement equipment was sourced when a retrieval was deemed too risky.

## 12 Finance and administration

Please note that the expenditure is indicative, we will confirm by email once it has been verified (29/06/24)

### 12.1 Project expenditure

Project spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total actual Darwin Initiative Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Consultancy costs	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Overhead Costs	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Travel and subsistence	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Operating Costs	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Capital items (see below)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Others (see below)	[REDACTED]	[REDACTED]	[REDACTED]	This includes end of project audit costs which had not originally been budgeted for in error. As communicated to Niras in March 2024, costs for the audit would be included if savings made. Audit costs now included are [REDACTED]. Costs related to the SIWI conference incurred were as per budget [REDACTED].
<b>TOTAL</b>	<b>£92,336.00</b>	<b>£92,226.00</b>	<b>0%</b>	[REDACTED]



<b>Staff employed (Name and position)</b>	<b>Cost (£)</b>
Leanne [REDACTED] - Senior Programme Officer - WWF UK	[REDACTED]
Debs [REDACTED] - Grants Specialist - WWF UK	
Helen [REDACTED] - Programme Finance Analyst - WWF UK	
Dr. Uzma [REDACTED], Project Implementation Lead - WWF Pakistan	
Hamera [REDACTED] Project Manager - WWF Pakistan	
Talha [REDACTED] Finance & Admin support - WWF Pakistan	
Muhammad [REDACTED] - Research and Conservation Officer - WWF Pakistan	
Mohd. [REDACTED] -Associate Coordinator - WWF India	
Field Researchers - [REDACTED] Roy, Ankita [REDACTED], Uttam [REDACTED]	
Suresh [REDACTED] - Director Rivers Wetlands and Water Policy -WWF India	
Devanand M R - Hydrologist - WWF India	
Arjit [REDACTED] - Lead Water Security planning and Hydrology - WWF India	
Yogita [REDACTED] - Associate Coordinator - WWF India	
<b>TOTAL</b>	

<b>Capital items – description</b>	<b>Capital items – cost (£)</b>
Laptop- HP PROBOOK 440 G9 Ci5-1235U, and laptop connector for WWF Pakistan	[REDACTED]
<b>TOTAL</b>	[REDACTED]

<b>Other items – description</b>	<b>Other items – cost (£)</b>
Conferences, learning and dissemination costs - Fee for hosting On-site & Online Session for SoS P at the SIWI conference  End of project audit	[REDACTED]
<b>TOTAL</b>	<b>£8,036.45</b>

## 12.2 Additional funds or in-kind contributions secured

Matched funding leveraged by the partners to deliver the project	Total (£)
Year 1 - 2022/2023	
Year 2 - 2023/2024	
Sources WWF UK for River Dolphins Initiative Lead (consultancy costs); and Project Lead (staff costs). WWF Pakistan for staff costs and equipment/consumables from Chelonia (operating costs). WWF India for staff costs.	
<b>TOTAL</b>	<b>£62,314.54</b>

Total additional finance mobilised for new activities occurring outside of the project, building evidence, best practices and the project	Total (£)
<b>TOTAL</b>	<b>£0</b>

## 12.3 Value for Money

The key principles of the Value for Money (VfM) approach in WWF are based on the 4-Es: economy, efficiency, effectiveness, and equity. VfM involves weighting the costs and benefits of different choices and selecting the option that archives the best balance across these principles. Opportunity cost and alternatives for funding are considered, including what other actors might do if WWF and Darwin did not support the program.

We believe the project was good value for money, as the majority of the project outputs were achieved and delivered within the budget envelope, but also delivered significant communications and outreach opportunities by leveraging the WWF network. The project demonstrated the benefits of public and private partnerships, with match funding from our corporate partnerships attracting the initial Darwin investment, and efficiencies from the corporate match-funding being leveraged to elevate the project onto international platforms such as World Water Week, the Global River Dolphin Declaration, and the World Species Congress. We appreciated the flexibility provided by the Darwin Initiative that facilitated budget change requests, which allowed for us to reallocate budget efficiencies to take advantage of these opportunities. Similarly, the majority of the project communications (articles, blog posts, social media, print media etc) were not costed to the project, but delivered by in-house teams at WWF UK, WWF India, and WWF Pakistan, greatly benefiting the outreach and impact of the project. Additionally, our strong relationships are evident in the VfM achieved by the project, as technical partners and equipment providers Fishtek Marine and Chelonia provided many bulk-buying efficiencies and provided replacement equipment free of charge, when equipment was lost in the Pakistan floods.

## 13 Other comments on progress not covered elsewhere

The project team were asked to adapt our indicators to align with the Darwin Standard Indicators where possible- this was done for the Year 1 report. The Standard indicators have now changed before the submission of the Year 2 (final) report, therefore we have been unable to re-adapt our indicators for Annex 3.

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

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

File Type (Image / Video / Graphic)	File Name or File Location	Caption, country and credit	Online accounts to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
Video	<a href="#">Sound of Safety: Testing Pingers for river dolphins and fishers (youtube.com)</a>	Sound of Safety, India & Pakistan, WWF	@WWFUK	Yes

## Annex 1 Report of progress and achievements against final project logframe for the life of the project

Project summary	Progress and achievements
<p><b>Impact</b></p> <p>Pingers are supporting the long-term coexistence of healthy river dolphin populations and thriving riverine communities in the Ganges and Indus River systems</p>	<p>The project has demonstrated encouraging initial results that Pingers may support the long-term coexistence of healthy river dolphin populations and thriving riverine communities in the Ganges and Indus River systems, if deployed as part of holistic river-dolphin friendly practices and policies.</p>
<p><b>Outcome</b></p> <p>The socio-economic and biodiversity effects of pinger use is tested in the Ganges and Indus River systems, providing recommendations for future fisheries practices</p>	<p><b>Achieved.</b></p>
<p>Outcome indicator 0.1 Dolphin mortality numbers due to bycatch decrease to zero in Year 2 from the baseline in pinger trial sites, determining if pingers have a positive biodiversity effect</p>	<p><b>Achieved.</b></p> <p>Zero river dolphin mortality due to bycatch during the trials.</p> <p><b>Evidence in section 3.2 and Annex 5:</b></p> <p>India_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf</p> <p>Pakistan_Pingers Result Sharing Workshop.pdf</p> <p>Pingers_Results&amp;RecommendationsWebinar_06June24</p>
<p>Outcome indicator 0.2 The average monthly household net income increases 10% in Year 2 from the baseline for fishers using pingers, determining if pingers have a positive socio-economic effect</p>	<p><b>Partially achieved.</b></p> <p>An increase in fish catch and decrease in net repairs was demonstrated in both countries. While this increase correlates with fishers receiving a positive socio-economic effect, we could not access the household income data needed to verify this correlation. The project team are reviewing the suitability and feasibility of chosen targets for the next phase of the project.</p> <p><b>Evidence in section 3.2 and Annex 5:</b></p> <p>India_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf</p> <p>Pakistan_Report on pinger effectiveness_Year1</p>

	Pingers_Results&RecommendationsWebinar_06June24
Outcome indicator 0.3 Key government decision makers are aware of the lessons learned and recommendations on the socio-economic and biodiversity effectiveness of integrating pingers in fisheries management by March 2024	<p><b>Achieved.</b></p> <p><b>Evidence in section 3.2 and Annex 5:</b></p> <p>Pakistan_ Pingers Result Sharing Workshop.pdf</p> <p>India_Knowledge sharing workshop-WWF-BP-WBFD.pdf</p>
<b>Output 1.</b> Successful model of community engagement for river dolphin stewardship developed and applied	
Output indicator 1.1: 475 Mitras/Dost/Saheli are reporting monthly on river dolphin sightings using citizen-designed, standardized methods in Year 2 from a baseline of 55 people (disaggregated by country, gender, smartphone/paper reporting tool)	<p><b>Partially achieved.</b></p> <p>344 enrolled, 194 regularly reporting.</p> <p>Disaggregated: Paper reporting tools only.</p> <p>Pakistan: 232 enrolled, 165 regularly reporting (113 male, 52 female).</p> <p>India: 112 enrolled (96 male, 16 female), 29 regularly reporting.</p> <p><b>Evidence in section 3.1 and Annex 5:</b></p> <p>India_SOSPinger-Monthly reports.pdf</p> <p>India_Dolphin Monitoring by Prokriti Bondhus_monthly data_analysis.xlsx</p> <p>Pakistan_Bhulan Dost Programme – engaging fisher community in Indus River Dolphin Conservation and Monitoring Report Final.pdf</p> <p>Pakistan_Monthly Bhulan Dost/Shaeli Data (Sindh).xlsx</p>
Output indicator 1.2: 70% of enrolled Mitras/Dost/Saheli interested in continuing their citizen science activities at the end of Year 2 (disaggregated by country, gender)	<p><b>Partially achieved.</b></p> <p>54% (188 of 344) of enrolled citizen scientists interested in continuing.</p> <p>Disaggregated:</p> <p>Pakistan: 71% (165 of the 232 enrolled citizens; 113 men and 52 women).</p> <p>India: 21% (23 of 112 attendees of Fisher union; 23 men and 0 women).</p> <p><b>Evidence in section 3.1 and Annex 5:</b></p> <p>India_Meeting resolution_Fisher Society</p> <p>Pakistan_Bhulan Dost Feedback session report.pdf</p>

	Pakistan_Assessing Pinger Effectiveness A Bycatch End-line Survey and Community Perception Study.pdf
Output indicator 1.3: Knowledge and awareness on river dolphins and harmful fishing practices in the project communities increases by 90% by March 2024 from the baseline (to be set) (disaggregated by country, gender)	<p><b>Achieved.</b></p> <p>Pakistan: 95% increase.</p> <p>India: &gt;90% increase.</p> <p><b>Evidence in section 3.1 and Annex 5:</b></p> <p>India_Meetings and discuss pinger trials with stakeholders.pdf</p> <p>India_List_Awareness meetings and trainings.xlsx</p> <p>Pakistan_Bhulan Dost Feedback session report.pdf</p> <p>Pakistan_Sindh_CommunityFeedBackSessions.xlsx</p> <p>Pakistan_Assessing Pinger Effectiveness A Bycatch End-line Survey and Community Perception Study</p>
<b>Output 2.</b> Effectiveness of pingers as a technology tested with fishers in Pakistan and India	
Output indicator 2.1: Dolphins are staying at least 20 meters away from fixed fishing nets with active pingers during the Year 2 trial period (disaggregated by country, experiment and control groups).	<p><b>Achieved.</b></p> <p><b>Evidence in section 3.1 and Annex 5:</b></p> <p>India_SOSPinger-Monthly reports.pdf</p> <p>India_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf</p> <p>India_Methodology&amp;InterimResults_Aug2023.pdf</p> <p>Pakistan_PingersMethodologyOct22.docx</p> <p>Pakistan_PingersEffectiveness_InterimReport_Aug2023</p>
Output indicator 2.2: Dolphins are leaving the area (approximately 2 kilometres) when loud pingers are active during drag-fixed fishing net activities during the Year 2 trial period compared to the control group (disaggregated by country, experiment and control groups)	<p><b>Achieved</b> in Pakistan, not tested in India as per methodology.</p> <p><b>Evidence in section 3.1 and Annex 5:</b></p> <p>Pakistan_PingersEffectiveness_InterimReport_Aug2023</p> <p>Pakistan_Pingers&amp;F-POD_TrainingReports.pdf</p>

<p>Output indicator 2.3: Dolphins are staying 20 meters away from cycling pingers during the Year 2 trial period (disaggregated by country)</p>	<p><b>Achieved</b> in Pakistan, not tested in India as per methodology.  <b>Evidence in section 3.1 and Annex 5:</b>  Pakistan_Study report on Habituation of Indus River Dolphins with Pingers.docx</p>
<p>Output indicator 2.4: Fish catch type and/or size mix changes to more premium fish by 10% for fishers in the pinger sites by the end of Year 2 compared to the control group (disaggregated by country, experiment and control groups) focus groups on knowledge and awareness</p>	<p><b>Achieved</b> in Pakistan, 5% increase demonstrated in India.  <b>Evidence in section 3.1 and Annex 5:</b>  India_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf  Pakistan_PingersEffectiveness_InterimReport_Aug2023</p>
<p>Output indicator 2.5: Fishing net damage due to river dolphins in the pinger sites is reduced to zero by the end of Year 2 (disaggregated by country, experiment and control groups)</p>	<p><b>Achieved</b> in Pakistan, partially achieved* in India.  *Net damage occurred, but nets were deployed in narrow stretch where dolphins could not avoid. Highlighted need for dolphin-friendly fishing practices along with pinger use.  <b>Evidence in section 3.1 and Annex 5:</b>  India_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf  India_SOSPinger-Monthly reports.pdf  Pakistan_PingersEffectiveness_InterimReport_Aug2023</p>
<p><b>Output 3.</b> Recommendations for decision makers on whether pingers can be scaled up in the Ganges and Indus River systems developed.</p>	
<p>Output indicator 1.3: 100% of participating villages say they feel engaged in the development of pinger/fisheries recommendations for their respective governments by March 2024 (disaggregated by country)</p>	<p><b>Achieved.</b>  <b>Evidence in section 3.1 and Annex 5:</b>  India_Meeting resolution_Fisher Society  Pakistan_Assessing Pinger Effectiveness A Bycatch End-line Survey and Community Perception Study  Pakistan_CommunityTrainingReport_March24.docx  Pakistan_Report on Fisher Community Engagement Sessions.pdf</p>



<p>Output indicator 3.2: Awareness of pinger technology among relevant fishing contract holders increases to 90% by the end of Year 2 from an expected baseline of 0% (disaggregated by country)</p>	<p><b>Achieved.</b>  <b>Evidence in section 3.1 and Annex 5:</b>  India_Dolphin survey_awareness programme_Hooghly_March and April 2023.pdf  India_Meeting resolution_Fisher Society  Pakistan_Report on Knowledge and Awareness Enhancement of River Dolphins and Harmful Fishing Practices.pdf  Pakistan_Baseline survey of Indus River dolphin interactions with fisheries and its socioeconomic impacts on local communities.pdf  Pakistan_Assessing Pinger Effectiveness A Bycatch End-line Survey and Community Perception Study.pdf</p>
<p>Output indicator 3.3: At least 2 recommendations reports developed with relevant Government Departments that take into account citizen and fishing contract holder input by March 2024 (disaggregated by country)</p>	<p><b>Achieved.</b>  <b>Evidence in section 3.1 and Annex 5:</b>  India_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf  India_Knowledge sharing workshop-WWF-BP-WBFD.pdf  Pakistan_Pingers Result Sharing Workshop.pdf  Pingers_Results&amp;RecommendationsWebinar_06June24</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><b>Impact:</b> Pingers are supporting the long-term coexistence of healthy river dolphin populations and thriving riverine communities in the Ganges and Indus River systems</p>			
<p><b>Outcome</b> The socio-economic and biodiversity effects of pinger use is tested in the Ganges and Indus River systems, providing recommendations for future fisheries practices</p>	<p>0.1 Dolphin mortality numbers due to bycatch decrease to zero in Year 2 from the baseline in pinger trial sites, determining if pingers have a positive biodiversity effect</p> <p>0.2 The average monthly household net income increases 10% in Year 2 from the baseline for fishers using pingers, determining if pingers have a positive socio-economic effect</p> <p>0.3 Key government decision makers are aware of the lessons learned and recommendations on the socio-economic and biodiversity effectiveness of integrating pingers in fisheries management by March 2024</p>	<p>0.1 Recommendations Reports, including reported mortality numbers from project monitoring records</p> <p>0.2 Recommendations Reports, including net income analysis based on project monitoring records and household surveys</p> <p>0.3 Acknowledgement of the Recommendations Reports by respective Government Departments/Ministries of the Government of India and Government of Pakistan during country-specific learning exchanges</p>	<p>Fishers and communities in the experiment sites trust the programme team, are willing and able to participate in their respective roles</p> <ul style="list-style-type: none"> <li>-Dolphins do not permanently leave the river stretch during the project period</li> <li>-Dolphins do not get habituated to the pingers over time</li> <li>-There is no major disruption to conducting two trial periods, such COVID-19 restrictions, devastating flooding events, or an extended monsoon period -</li> <li>Fishers provide truthful reporting on lost nets due to dolphins, dolphin mortality numbers due to bycatch, and lost/gained income -</li> <li>The rates paid for fish catch are stable and/or easily reportable to compare changes in income between fishers using pingers and fishers not using pingers in the same area</li> </ul>

<p><b>Output 1.</b> Successful model of community engagement for river dolphin stewardship developed and applied</p>	<p>1.1 475 Mitras/Dost/Saheli are reporting monthly on river dolphin sightings using citizen-designed, standardized methods in Year 2 from a baseline of 55 people (disaggregated by country, gender, smartphone/paper reporting tool)</p> <p>1.2 70% of enrolled Mitras/Dost/Saheli interested in continuing their citizen science activities at the end of Year 2 (disaggregated by country, gender)</p> <p>1.3 Knowledge and awareness on river dolphins and harmful fishing practices in the project communities increases by 90% by March 2024 from the baseline (to be set) (disaggregated by country, gender)</p>	<p>1.1.1 Monthly analysis reports of App records from participants, collected directly by WWF's database and/or downloaded monthly by field teams</p> <p>1.1.2 Monthly analysis reports of paper-based records from participants, collected monthly by field teams</p> <p>1.2 Annual Questionnaire/Interview Feedback</p> <p>1.3 Household survey/village focus groups on knowledge and awareness</p>	<p>-Community members, especially women and fishers, are willing and able to participate in the app design phase and monitoring over the life of the project period using the app or paper-based tools</p> <p>-Community members surveyed and participating in citizen science have a varied range of knowledge on river dolphins and fishing practices at the start of the project</p> <p>- Communities feel safe to express their negative and positive feelings about the project</p>
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<p><b>Output 2.</b> Effectiveness of pingers as a technology tested with fishers in Pakistan and India</p>	<p>2.1: Dolphins are staying at least 20 meters away from fixed fishing nets with active pingers during the Year 2 trial period (disaggregated by country, experiment and control groups)</p> <p>2.2 Dolphins are leaving the area (approximately 2 kilometres) when loud pingers are active during drag-fixed fishing net activities during the Year 2 trial period compared to the control group (disaggregated by country, experiment and control groups)</p> <p>2.3 Dolphins are staying 20 meters away from cycling pingers during the Year 2 trial period (disaggregated by country)</p> <p>2.4 Fish catch type and/or size mix changes to more premium fish by 10% for fishers in the pinger sites by the end of Year 2 compared to the control group (disaggregated by country, experiment and control groups) focus groups on knowledge and awareness</p> <p>2.5 Fishing net damage due to river dolphins in the pinger sites is reduced to zero by the end of Year 2 (disaggregated by country, experiment and control groups)</p>	<p>2.1 Monthly analysis reports from field team daily observation logs, and daily logs / weekly interviews with fishers</p> <p>2.2 Monthly analysis reports from field team daily observation logs, and daily logs / weekly interviews with fishers</p> <p>2.3 Monthly analysis reports from F-POD data</p> <p>2.4 Monthly analysis reports from daily logs and weekly</p> <p>2.5 Monthly analysis reports from daily logs and weekly interviews with fishers</p>	<p>See Outcome Assumptions and:</p> <ul style="list-style-type: none"> <li>- Buoys are at the right distance from the pingers and are not damaged, destroyed or stolen</li> <li>- Fishers are correctly applying and using pingers</li> <li>- Fishers without pingers are willing to participate and stay at least 1000 meters away from fishers with pingers</li> <li>- F-PODS and cycling pingers are not stolen or damaged</li> <li>- Fishers follow legal regulations (e.g. not fishing during the night/ not using illegal gear)</li> </ul>
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<p><b>Output 3.</b> Recommendations for decision makers on whether pingers can be scaled up in the Ganges and Indus River systems developed</p>	<p>3.1 100% of participating villages say they feel engaged in the development of pinger/fisheries recommendations for their respective governments by March 2024 (disaggregated by country)</p> <p>3.2 Awareness of pinger technology among relevant fishing contract holders increases to 90% by the end of Year 2 from an expected baseline of 0% (disaggregated by country)</p> <p>3.3 At least 2 recommendations reports developed with relevant Government Departments that take into account citizen and fishing contract holder input by March 2024 (disaggregated by country)</p>	<p>3.1 Anonymous feedback questionnaire from participants</p> <p>3.2 Survey on knowledge and awareness at baseline and end line</p>	<p>Government departments participate in the project and are willing to discuss the results and next steps</p> <p>- Fishing contract holders from the project sites are willing to participate</p>
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<p><b>Activities</b></p>
<p>Activity 1.1: Field teams raise awareness on the project with communities in India/Pakistan, building trust and confirming fisher and community Mitras/Dost/Saheli (“Friends of the River Dolphins”) participants.</p>
<p>Activity 1.2: Field teams collect data on river dolphin bycatch numbers, dolphin-related costs incurred by fishers, fish catch mix, and community knowledge on dolphins/sustainable fishing practices.</p>
<p>Activity 1.3: Field teams hold design workshops with participants on monitoring tools for river dolphin sightings, possibly including a Smartphone App, and fisher logs for pinger trials.</p>
<p>Activity 1.4: Field teams develop citizen science/engagement tools by adapting Mitras tools (India) and developing new tools for Dost/Saheli (Pakistan) where the citizen science approach is new.</p>
<p>Activity 1.5: Field teams train Mitras/Dost/Saheli/fishers on the App-based and paper-based reporting tools. Refresher training in Y2.</p>
<p>Activity 1.6: Mitras/Dost/Saheli/fishers report river dolphin sightings over the two trial periods. Field teams collect real-time App data and monthly paper-based data.</p>
<p>Activity 1.7:7 Field teams collect feedback and provide supportive supervision to Mitras/Dost/Saheli/fishers monthly, review the approach and adapt from their feedback at the start of Y2.</p>

Activity 2.1: Country teams obtain government permits, order equipment. Pinger types decided based on fishing methods, dolphin behaviour, background noise level, and might be adapted in Y2.
Activity 2.2. Regional Lead and country teams develop detailed experimental designs for 4-month trials in two dry seasons, with external experts and fishers from experiment/control groups.
Activity 2.3 External experts train field teams on F-POD and pinger use, data collection and analysis. Internal trainings on observation tools, supportive supervision techniques for fishers/ <i>Mitras/Dost/Saheli</i> .
Activity 2.4 Field teams train experiment/control group fishers on pinger application and additional monitoring, including fish catch composition and fishing net damage. Refresher training in Y2.
Activity 2.5 Fishers test pingers on fixed nets being used during 4-months of dry season. Control group will be at least 1000 meters away in same site.
Activity 2.6 Fishers test loud pingers on alternate days of drag/fixed net use during 4-months of dry season, observing if dolphins stay 1-2 kilometres away.
Activity 2.7 Field teams test cycling pingers over 8-12 months/year, monitored by F-PODS, to test river dolphin habituation.
Activity 2.8 Fishers from experiment and control groups report on river dolphin sightings and income-related data over the two trial periods.
Activity 2.9 Field teams collect data and discuss observations and logs with fishers weekly, including river dolphin mortality events.
Activity 2.10 Field teams conduct independent observations and collect F-POD data every two weeks.
Activity 2.11 Country teams collate and analyse data monthly, compares across sites in each country every two months during the trial periods.
Activity 2.12 Country teams gather feedback and facilitate knowledge exchange between fishers/ <i>Mitras/Dost/Saheli</i> from different sites per country to reflect on challenges and make improvements.
Activity 2.13 After Y1 trial, project team assesses the data and feedback and adapt pinger methods/type of pingers and monitoring tools as needed.
Activity 2.14 After Y2 trial, project team assesses socio-economic and biodiversity effectiveness of pingers, incorporating community feedback. Develop lessons and insights that feed into country recommendations.
Activity 3.1: Country teams hold quarterly meetings with relevant government departments for awareness, buy-in, and ownership over the results and next steps.
Activity 3.2 Country and field teams engage fishers/ <i>Mitras/Dost/Saheli</i> and wider community in sharing of results and development of their prioritized fisheries recommendations.
Activity 3.3 Country teams engage fishing contract holders that employ the fishers, raising awareness on pingers as part of contracting arrangements and receiving feedback on next steps.

Activity 3.4 Country teams develop final recommendations with relevant government departments, national experts, and international experts.

Activity 3.5 Country teams share with relevant ministries and institutions in each country, tailoring discussions to different department / ministry / institutional policies.

Activity 3.6 Regional Lead and country teams jointly begin developing a scientific article from the project results in the two countries.

Activity 3.7 Regional Lead organizes joint virtual learning session with colleagues and stakeholders from Pakistan, India, and other regional partners - such as in Bangladesh and Nepal.

## Annex 3 Standard Indicators

**Table 1 Project Standard Indicators**

Note: Please see section 13.

DI Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Total achieved	Total planned
DI-C01	3.3 At least 2 recommendations reports developed with relevant Government Departments that take into account citizen and fishing contract holder input by March 2024 (disaggregated by country)	Number of best practice guides developed with relevant Government Departments that take into account citizen and fishing contract holder input	Number	0	2	2	2
DI-B05	475 Mitras/Dost/Saheli are reporting monthly on river dolphin sightings using citizen-designed, standardized methods in Year 2 from a baseline of 55 people.	Number of people with increased participation in river dolphin citizen science groups	Number			344	475
DI-B05	100% of participating villages say they feel engaged in the development of pinger/fisheries recommendations for their respective governments by March 2024	Number of people with increased participation in Governance	People				194



**Table 2      Publications**

<b>Title</b>	<b>Type</b> (e.g. journals, manual, CDs)	<b>Detail</b> (authors, year)	<b>Gender of Lead Author</b>	<b>Nationality of Lead Author</b>	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. weblink or publisher if not available online)
n/a						

## **Annex 5 Supplementary material (optional but encouraged as evidence of project achievement)**

### **Annex 5: Core Means of Verification**

Documents referenced in Annex 1 and available at each WeTransfer link.

#### **Outcome:** [REDACTED]

India\_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf

India\_Knowledge sharing workshop-WWF-BP-WBFD.pdf

Pakistan\_Report on pinger effectiveness\_Year1

Pakistan\_Pingers Result Sharing Workshop.pdf

Pingers\_Results&RecommendationsWebinar\_06June24.pptx

#### **Output 1:** [REDACTED]

India\_SOSPinger-Monthly reports.pdf

India\_Dolphin Monitoring by Prokriti Bondhus\_monthly data\_analysis.xlsx

India\_Meeting resolution\_Fisher Society.pdf

India\_List\_Awareness meetings and trainings.xlsx

India\_Meetings and discuss pinger trials with stakeholders.pdf

Pakistan\_Bhulan Dost Programme – engaging fisher community in Indus River Dolphin Conservation and Monitoring Report Final.pdf

Pakistan\_Assessing Pinger Effectiveness A Bycatch End-line Survey and Community Perception Study

Pakistan\_Monthly Bhulan Dost/Shaeli Data (Sindh).xlsx

Pakistan\_Bhulan Dost Feedback session report.pdf

Pakistan\_Sindh\_CommunityFeedBackSessions.xlsx

Pakistan\_MonthlyProgressReports

#### **Output 2:** [REDACTED]

India\_SOSPinger-Monthly reports.pdf

India\_Report on the pinger effectiveness and their impact on dolphins and fisheries.pdf

India\_Methodology&InterimResults\_Aug2023.pdf

Pakistan\_PingersMethodologyOct22

Pakistan\_PingersEffectiveness\_InterimReport\_Aug2023

Pakistan\_Pingers&F-POD\_TrainingReports.pdf

Pakistan\_Study report on Habituation of Indus River Dolphins with Pingers.docx

**Output 3:**

Pakistan\_CommunityTrainingReport\_March24.docx

Pakistan\_Assessing Pinger Effectiveness A Bycatch End-line Survey and Community Perception Study

Pakistan\_Baseline survey of Indus River dolphin interactions with fisheries and its socioeconomic impacts on local communities

Pakistan\_Report on Fisher Community Engagement Sessions

Pakistan\_Report on Knowledge and Awareness Enhancement of River Dolphins and Harmful Fishing Practices

India\_Meeting resolution\_Fisher Society.pdf

India\_Dolphin survey\_awareness programme\_Hooghly\_March and April 2023.pdf

India\_Knowledge sharing workshop-WWF-BP-WBFD.pdf

**Other:**

Pakistan\_Islamabad river dolphin and fisheries Conference Oct2022.pdf

Pakistan\_SensitizationMaterials\_Pakistan.png

Section5\_M&E\_TrelloBoard

Section5\_RecurringTeamMeeting\_Agenda&Minutes

Pakistan\_BhulanDhost\_SuccessStories.pdf

WWFUK\_InternalSharepoint\_StoryHubPage

WWFUK\_ProjectInitiationWebinar\_07\_07\_22.pdf

Pingers\_GlobalRiverDolphinDeclaration\_Oct23

## Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	X
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	X
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line. All supporting material should be submitted in a way that can be accessed and downloaded as one complete package.	X
If you are submitting photos for publicity purposes, <b>do these meet the outlined requirements (see section 14)?</b>	
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	X
Have you involved your partners in preparation of the report and named the main contributors?	X
Have you completed the Project Expenditure table fully?	X
Do not include claim forms or other communications with this report.	