

## Final Evaluation Report

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Your Details	
<b>Full Name</b>	Laba KC
<b>Project Title</b>	Conservation of Ganges River Dolphin through the involvement of local Youths as citizen scientist in Koshi River, Eastern, Nepal
<b>Application ID</b>	33200-1
<b>Date of this Report</b>	03/03/2023

**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To update the population status of river dolphin in Koshi river and mapping the hotspot habitat and their distribution range.				To map the hotspot and update the river dolphin population, the survey was conducted twice covering both the section of Koshi River, the upper section; from Chatara to Koshi barrage, and the lower section; from Koshi barrage to Gobargada. Based on the field survey, previous records, evidence, and consultation with local people, 13 sites were identified as the hotspots of the river dolphin. Meanwhile, a total of 22 (18 adult and four sub-adult) river dolphins were recorded in the Koshi River.
To involve local fishermen community and youth in monitoring and conservation of River Dolphins through citizen scientist program.				3 days of comprehensive training to 20 citizen scientists covered a wide array of activities. To encourage their participation in the project, two Dolphin Conservation Groups (DCGs) were formed. Enthusiastic engagement by DCGs in project activities was witnessed and even shared the learning with their counter peer and local people. Habitat monitoring was conducted bi-monthly for 9 months (n=18) by the capacitated citizen scientists at different sections of the river, focusing on the hotspot and prominent human disturbance areas.
Document potential threats and issues in river dolphin conservation at the local level.				For the threat assessment, apart from a questionnaire survey (n=105) with the river-dependent and fishing communities, community consultation (n=3), water quality assessment, and a boat-based survey (n=2) in both sections were conducted. During the process, many prevailing threats to the dolphin and aquatic ecosystem came to the surface. Recorded threats were

			illegal fishing with the use of gill nets, electrocution, and poison, habitat encroachment, barrage construction, washing and bathing, and mining. Considering the importance of water quality assessment to understand its suitability for aquatic organisms, the physio-chemical parameter was assessed.
To aware and sensitize local communities on conservation issue of river dolphin.			The conservation outreach programme was able to reach its target (students=1000, community people =200) and raise the profile of the river dolphin, familiarising them with its importance and encouraging to engage in its conservation. Pre- and post-effectiveness surveys of the programme were conducted that indicated the positive result in upscaling their knowledge and encourage to participate in dolphin conservation.
Publications			The manuscript preparation is underway, where the literature reviews, and data analysis are halfway through and shortly targeting to prepare the first draft of the manuscript.

**2. Describe the three most important outcomes of your project.**

**a). Capacitate citizen scientists and their engagement in project activities:**

Comprehensive training helped 20 citizen scientists to improve their knowledge, aptitude, hands-on experience and information regarding the aquatic ecosystem and river dolphin in particular, enhancing their ability to commence the research, handling equipment, data recording, etc., and utilise their learning in the project activities and whenever required. The participatory-based learning approach was able to draw positive changes beneficial to dolphin and aquatic ecosystem conservation in the long run. About 89.96% of the trainees expressed that the training was effective in terms of improving their knowledge and level of confidence, inspiring them to lead in the conservation field in the coming days. Their active participation in the project activities was commendable which was achieved through constant guidance, support, and motivation enabling them to achieve the intended goals of the project.

**b). Participatory-based conservation outreach program:** An array of activities was tailored through participatory approaches including IEC materials; posters, brochures, hoarding boards, and radio jingles; and broadcasts through Saptakoshi FM: 90 MHz four times a day for 9 months that reached over 1 million people as the radio station has an outreach to seven districts of eastern Nepal. 1000 students from

10 schools and 200 local people from four communities were reached through a conservation outreach programme. Positive feedback from them has been received where on average 72.22% of the students from 10 schools have improved their knowledge and level of confidence indicating the effectiveness of the programme, on the basis of pre- and post-effectiveness surveys. Meanwhile, in the community awareness programme, the average effectiveness of the programme in terms of improving the knowledge and information regarding the river dolphin from all four communities was recorded at 56.4% which was based on the pre- and post-effectiveness surveys.

Realising the fact that a large number of people depend on river resources to sustain their livelihood, the outreach programme was more relevant, fruitful, and expected to act responsibly towards conservation, leaving them with better information, and more importantly, inspiring them to participate in conservation initiation focusing to river dolphin.

The Dolphin Day celebration was utilised as a platform to disseminate the importance of dolphins to the students through a drawing competition. An intra-school drawing competition was organised where more than 500 students participated and portrayed the drawing on the theme of river dolphin and aquatic ecosystem conservation. The three best pictures from each school were awarded as encouragement.

**c). Update population, threats and hotspot assessment:**

The river dolphin survey following the boat-based survey was conducted in both sections using the capacitated citizen scientists during pre- and post-monsoon season. The upper section covers the area of Chatara to Koshi barrage, and the lower section covers the barrage to Gobargada. The major water channel was followed to identify the hotspot sites before the survey to avoid the miss count. A total of 22 (18 adults and four sub-adult) river dolphins were recorded during the survey; from the lower section while in the upper section, despite the meticulous survey, we were unable to record their presence. The biggest constraint for their movement is the Koshi barrage itself, as the massive infrastructure right in the middle of the river has fragmented their habitat and even the existing fish ladders are not functioning, escalating this problem.

As per the questionnaire survey, the number of river dolphins has decreased as compared to the previous, resulting from overfishing, use of electrocution and fish poisoning, habitat destruction and deterioration in water quality. To validate this, a threat assessment covering all the stretches of the Koshi River was conducted. During the survey, threats like illegal fishing, habitat encroachment, infrastructure development, mining, and anthropogenic activities have been observed.

As the dolphin prefers deep pools, meandering, and confluence areas, due consideration during the survey was given to such areas. A total of 13 such sites from Koshi River have been identified as a hotspot for river dolphin. The site has been identified based on the field survey, previous records, and local people consultation.

**3. Explain any unforeseen difficulties that arose during the project and how these were tackled.**

In the initial phase of the project, Covid-19 and the restrictive lockdown delayed the scheduled project activities. In such a havoc time, it was difficult to travel for the team members at the project site and implement the activities. Fortunately, frequent communication has been made and updated with the developing situation with the foundation and they were very supportive. Meanwhile, on the project site, the field personnel and the targeted group's representative were kept under the radar and updated regarding the progress. Even after the upliftment of the lockdown, the risk of Covid-19 was still at its peak, and even challenging for the team to engage a huge number of people for the programme. However, a work plan was developed and meticulously followed to avoid any chances of such prevailing incidents. The arrangement of masks, hand wash and sanitiser were made along with the protocol developed by the Nepal Government was followed ensuring the safety of the participants.

Apart from this, the prolonged monsoon and flooding in the Koshi River have had a partial impact on the project, where the high-water level had added risk to the survey team conducting population surveys and threat assessments. Adding to this, Koshi Tappu Wildlife Reserve (KTWR) has also restricted any activities in the Koshi River due to safety concerns. Hence, these activities have been rescheduled.

**4. Describe the involvement of local communities and how they have benefited from the project.**

The project has been conceptualised to engage local people and communities and utilise their knowledge and expertise whenever required. The citizen scientist programme was introduced with the objective to capacitate local people from the communities to enhance their knowledge, and skills and bring them together at the forefront for river dolphin conservation and ensure their involvement in the project.

Locals from river-dependent and fishing communities were priorities, especially women to ensure the GESI representation. We were successful in this call, as most of them have utilised their learning and skill in the habitat monitoring, and conservation outreach programme, especially in the school and community awareness programme which was quite commendable and expected to continue in the coming days. Since local people are familiarised with the existing situation, gathering information, using their expertise, and knowledge, especially in the threat, hotspot, and population survey guided the team in the right way, makes the work easier than expected. All of them were very impressed with the project work as they themselves have acquired in-depth information through their engagement in this project and have expected to bring a positive change in the perception of local people.

**5. Are there any plans to continue this work?**

The experience and learning from this project, are planned to use in other river dolphin conservation projects, particularly in the Narayani and Karnali River, the

other waterway where river dolphin has been recorded, with an objective to conserve them in their natural habitat, raise the profile of dolphins. In comparison to many other flagship species, the river dolphin has been less prioritised in conservation by the government and non-governmental organisations.

The upcoming project and its activities will be tailored array of activities aligning with the River Dolphin Conservation Action Plan (2021-2025) developed by the Nepal Government. Not limiting the upcoming work only to the conservation outreach, threats, and hotspot assessment, the avenue needs to change covering the wide spectrum and variables that are crucial for their survival that enables to draw meaningful work benefitting in the conservation of dolphins in long run.

River-dependent and fishing communities are recognized as the prominent factor that can change the conservation dimension of river dolphin as they and their actions largely depend on the existence of dolphins. Based on the consultation, and discussion with the fishing communities from this project, it was understood that, if provided any opportunities they are willing to shift their existing fishing occupation to an alternate one.

In the future, due consideration will be given to support alternate income generation activities besides fishing and other aquatic resources and sustaining their livelihood, the remedial measures. Unless and until, if we don't address the raised issue, it would be very difficult to conserve them in their natural habitat and we will also work in this direction.

#### **6. How do you plan to share the results of your work with others?**

While implementing the project activities, a synopsis was made available periodically through the website of the organisation and online portal as well as a few local online news portals have also featured the project activities. In the coming days, along with the activity report, we will also look up to share the data of the project and information for the needed one, to outreach to border audiences of different fraternities.

The final report of the project will be published and shared with the respective governmental institution and made accessible to our organisation's website. Adding to this, the finding of the project will be published through the journal/article in a national or international peer-reviewed journal. At this moment, we are in the preliminary phase of the write-up.

#### **7. Looking ahead, what do you feel are the important next steps?**

From this project, it was understood that the majority of river-dependent communities depending on river resources to sustain their livelihood are positive to stand from their position for the river dolphin conservation. To further motivate and ensure their support, alternate livelihood programmes must be introduced, as they are willing to shift their occupation to alternate one, which could be one major step that could aid in dolphin conservation in the long run. The coming work must be focused on this context, allowing them to be economically independent and

resilient and more important bring a behavioral change with a positive aptitude toward river dolphin conservation.

Along with this, the mass awareness programme focusing to schools and river-dependent communities must be continued as a remainder to upscaling the knowledge and making realise their roles and responsibilities toward conservation.

**8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

The logo of The Rufford Foundation was made available in each material and content designed or produced for the project. For the citizen scientist programme, we have arranged field gear where the logo of the foundation was incorporated. Apart from this, under the conservation outreach programme, different IEC materials have been designed and developed; brochures (n=1000), posters (n=1000), radio jingles, and information boards (n=2). Even in the interaction, discussion programme, and training, the logo in the presentation was made visible, highlighting more about the foundation to outreach the name to more places and people, directly promoting the foundation name. Aligning with the concept of no use of plastic flexes, for each programme, we have prepared the handwritten banner on cotton and completely avoided the use of flexes.

**9. Provide a full list of all the members of your team and their role in the project.**

**Mr. Laba KC**, the principal investigator has led the project from its conceptualization to the completion of the scheduled activities, logistic management for the team members during the fieldwork, coordination, and communication with all the project team members including local resource person, citizen scientist and all those individuals having their inputs to the project as well as data collection, analysis, and final report preparation.

**Mr. Prabin Shrestha** led the fieldwork including consultation meetings, training, discussion with the local community and interaction program, field arrangement for the threats and population survey in both; the upper and lower sections of Koshi River. Provided technical assistance to the team, surfing materials and writing up in the development of IEC materials; brochures, posters, and radio jingles, regularly monitor the broadcasting of the jingles and review the prepared reports of the project and provide corrective comments and suggestions.

**Mr. Kul Bahadur Thapa** led the questionnaire survey including framing the question for the survey, assisting and guiding citizen scientists with the KOBO tools, develop materials and contents for the citizen scientist training, school, and community awareness program besides IEC materials, and assisting to handle equipment; GPS, data recording, monocular and binocular, digital camera etc. and provided guidance for them in habitat monitoring.

## **10. Any other comments?**

It was a learning experience for the whole team members to carry out the conservation project, to one of the vulnerable species that have been less prioritised in Nepal despite their importance to the aquatic ecosystem and able to raise the profile among the local people prior to the river-dependent communities. We are highly obliged and pay utmost gratitude to The Rufford Foundation for the financial support in carrying out this project and are generous for the project extension as per our request. Nevertheless, with a handful of challenges, Covid-19 restrictions, prevailing monsoon, and flooding, we have completed the project and are able to meet the outcome of the project. The door has always been open for similar support in the coming days.