Conservation of Ganges River Dolphin through the Involvement of Local Youths as Citizen Scientist in Koshi River, Eastern, Nepal

THIRD QUARTERLY REPORT
OCTOBER 2022

The Rufford Foundation
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Himalayan Nature (हिमाली प्रकृति)
Himalayan Conservation & Research Institute

QUARTERLY UPATES

ACTIVITIES COMPLETED

1. **Water Quality Assessment**
2. **Questionnaire Survey Data Analysis**
3. **School Awareness Program**
4. **Awareness Raising Material (Brochures and Posters)**
5. **Media Coverage**
6. **Future Plans**

Background

The river Dolphin conservation project is funded by The Rufford Foundation, implemented in Koshi Tappu Wildlife Reserve (KTWR) and bufferzone areas, particularly at the upstream of Koshi River. In the previous quarter, the inception meeting with the concerned key stakeholders, training to citizen scientists, community consultation and interaction, along with the socio-economic survey, water quality and threats assessment in the upper section of Koshi River was concluded. Meanwhile, in this quarter, the following activities have been completed.

1. Water Quality Assessment

Along with the threat and hotspot assessment in the upper section of Koshi River, a water quality assessment was simultaneously conducted in July 2022. A total of 31 water samplings were carried out in an interval of 1 km from Chatara to Koshi Barrage to assess eight different physio-chemical parameters of water. For the physio-chemical parameter, in situ determination was carried out using multi-meter test kits (WagTech) which include temperature, pH, Dissolved Oxygen (DO), conductivity and Total Dissolved Solid (TDS) while for the Nitrate, Phosphate and Ammonia 500 ml of water sample was collected from each sampling site at a depth of about 0.5 m.

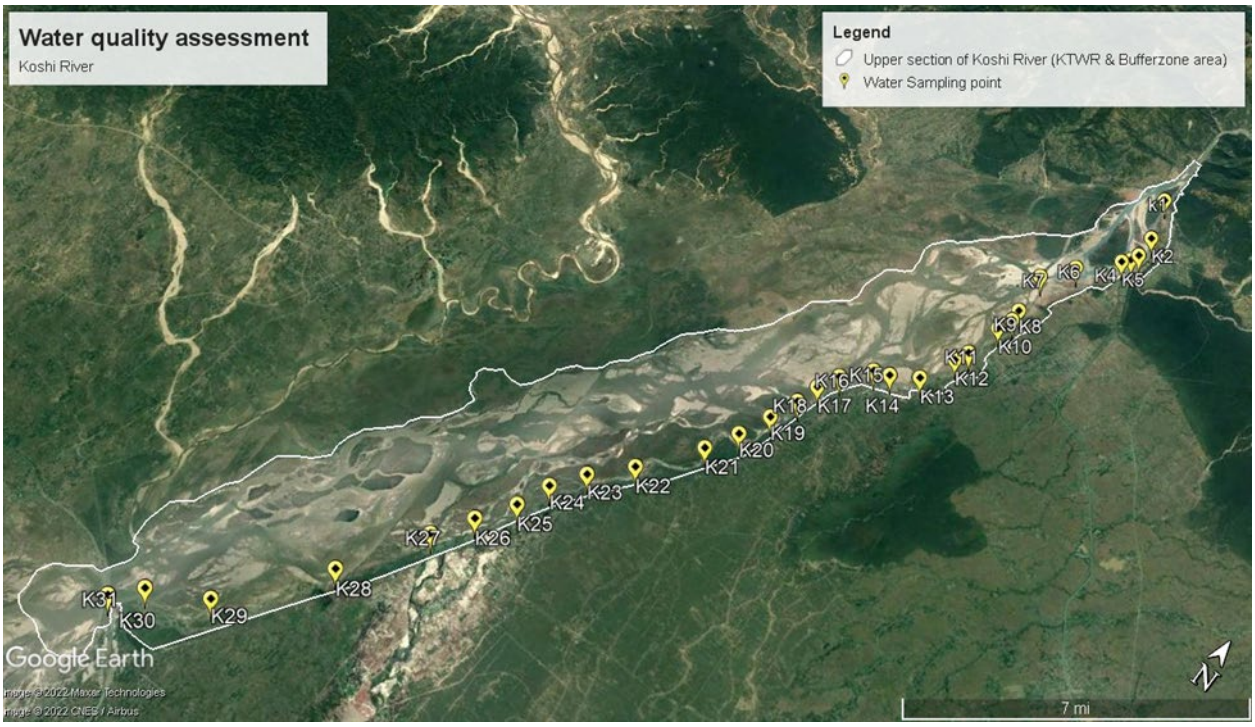

Figure 1: Location of physio-chemical parameter assessment in upper section of Koshi River

Picture 1: Water sampling carried out at different segments of Koshi River

Laboratory analysis
Water analysis was carried out in the laboratory of Central Department of Environmental Science (CDES). Nitrate and Phosphate analysis was carried out using the following methods:

a. Nitrate – Brucine Method
b. Phosphate – Stannous Chloride Method and
c. Ammonia– Photometer

Data Analysis
Data were analyzed using Microsoft Excel 2010 for simple calculation, graphs and plots.

Table 1: Physio-chemical parameter of different section of Koshi River (Chatara to Koshi Barrage)

Water Quality Assessment of Koshi River (River Dolphin) _2022									
S. N	Sampling Point	Temp (°C)	pH	Electrical Conductivity (µS)	TDS (ppm)	Dissolve Oxygen (mg/L)	Nitrate (mg/L)	Phosphate (mg/L)	Ammonia (mg/L)
1	K1	22	7.5	70	36	7.88	0.15	0.672	0.18
2	K2	21.6	8.2	90	45	7.59	1.31	0.791	0.15
3	K3	22.4	8.1	100	50	6.92	1.74	0.612	0.12
4	K4	23.8	7.6	105	53	6.74	2.31	0.256	0.1
5	K5	25.3	8.1	102	53	7.41	2.53	0.657	0.13
6	K6	25.6	8.3	114	56	7.85	2.11	0.671	0.16
7	K7	25.9	8.3	111	58	7.65	1.67	0.492	0.14
8	K8	24.8	7.9	108	53	7.18	1.72	0.911	0.14
9	K9	23.7	7.6	102	51	6.95	1.23	0.925	0.18
10	K10	24.8	7.3	108	53	6.97	1.39	0.792	0.18
11	K11	22.4	8.3	97	48	6.67	2.26	0.899	0.17
12	K12	22.7	7.8	98	48	7.12	2.59	0.570	0.14
13	K13	21.5	7.4	98	49	7.2	2.89	0.483	0.19
14	K14	21.9	7.3	99	47	6.78	2.56	0.479	0.21
15	K15	22.1	7.3	96	48	6.87	2.47	0.430	0.26
16	K16	21.5	7.4	95	47	6.69	2.98	0.488	0.17
17	K17	22.2	7.5	98	51	7.11	2.78	0.523	0.19
18	K18	22.3	7.5	103	57	7.18	2.22	0.573	0.22
19	K19	22.1	7.8	110	61	7.13	2.87	0.386	0.28
20	K20	21.7	7.1	115	62	7.21	1.99	0.825	0.29
21	K21	21.9	7.7	121	67	7.34	1.97	0.454	0.21
22	K22	21.8	8.1	120	66	6.97	2.21	0.334	0.23
23	K23	21.7	8.2	129	71	6.89	2.38	0.494	0.24
24	K24	22.1	7.9	117	62	6.79	2.86	0.465	0.25
25	K25	22.3	7.6	118	63	7.08	2.67	0.425	0.27
26	K26	22.1	7.4	121	64	7.1	2.78	0.446	0.24
27	K27	22.7	7.6	133	72	6.99	2.88	0.512	0.23
28	K28	22.1	7.1	132	73	6.58	2.71	0.545	0.21
29	K29	21.8	7	130	72	6.79	2.95	0.601	0.28
30	K30	22.3	7.2	129	69	6.66	2.59	0.612	0.24
31	K31	25.6	7.1	127	70	6.89	2.79	0.632	0.25

a. Temperature:

The water temperature of different sections of Koshi River varies from 21.5°C to 25.9°C. The highest water temperature was recorded at sampling point K7 while the lowest water temperature was recorded at sampling point K13. Generally, water temperature is greatly influenced by air temperature, the intensity of solar radiation, and the high concentration of Total dissolved solid. Water temperature was considered as a major controlling factor to some of the parameters like Dissolved Oxygen (DO), and metabolic activities of aquatic organisms.

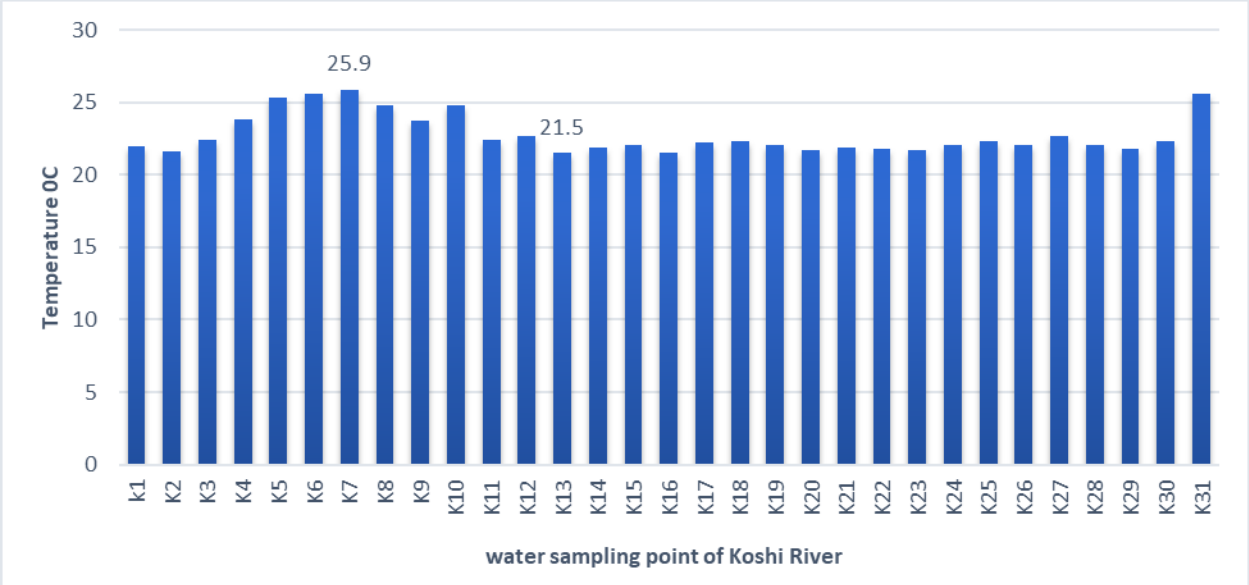

Figure 2: Temperature at different sampling points of Rivers

b. pH:

The pH value of different sampling points of Koshi River has been found in a range of 7 to 8.3. The highest pH value (8.3) was recorded in the sampling point K11 while the lowest value (7) was recorded in the sampling point K29. According to Nepal Water Quality Guidelines for Aquaculture, the pH value range between 6.7 to 8.4 is suitable for aquatic life to sustain. The maximum and minimum value of pH is associated with the phytoplankton maxima and low photosynthesis due to the formation of carbonic acid. Furthermore, changes in pH in different sampling points can be indicative of pollutants, photosynthesis of the respiration of algae feeding contaminants, anthropogenic activities, grazing of thousands of domestic animals at the shoreline of the Koshi River, agricultural runoff, waste disposal and so on. Since the water samples were assessed in the pre-monsoon season, waste disposal, and a point source of water contaminant were not witnessed, however these factors could not be completely neglected as the densely populated settlement areas lie right near the river and lack the proper waste disposal practices. These factors also largely influence the water quality of the Koshi River.

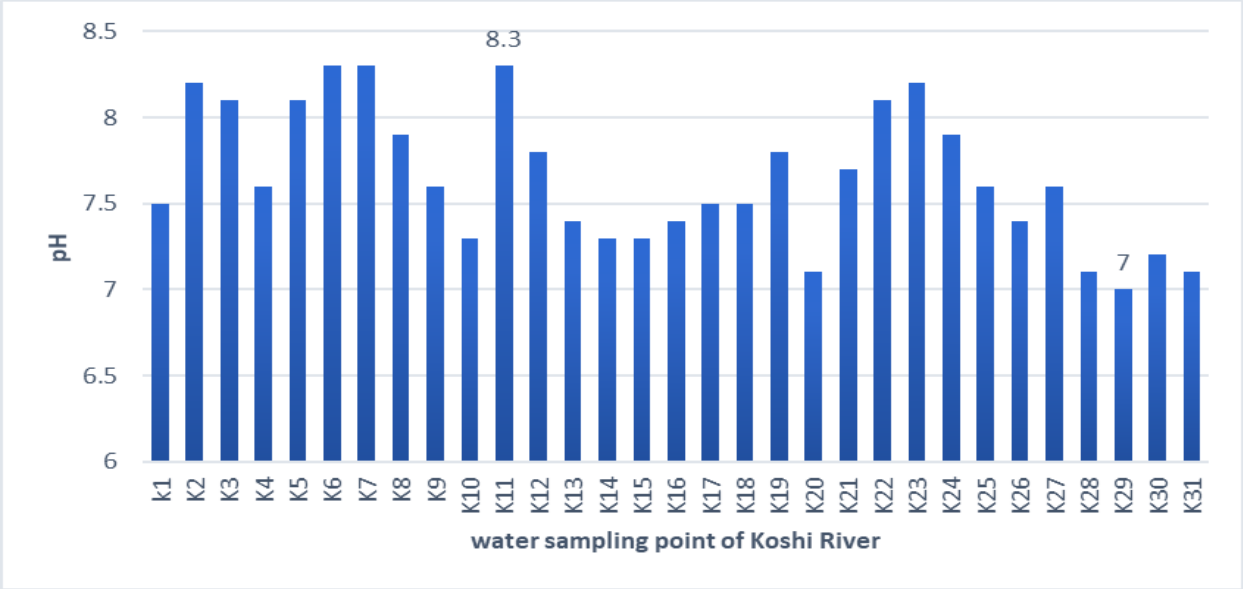

Figure 3: pH at different sampling points of Rivers

c. Electrical Conductivity (EC):

The Electrical Conductivity (EC) is the total concentration of soluble salts in the sample. In this study, the EC of water samples of Koshi River ranged from 70 µS to 133 µS. There are numerous factors that can influence the EC of water, the most important of which is the temperature of the water. Higher temperatures, in most cases, imply higher electrical conductivity. It is crucial to assess the electrical conductivity of the water because a change in water temperature of just one-degree Celsius will result in a 2-3% increase in electrical conductivity. The other factors that dictate the EC fluctuation include human and natural impacts. Evaporation and rain are examples of natural processes that have an impact on water's EC. Likewise, human impacts on the EC of water include agricultural runoff, road salt, and septic leachate.

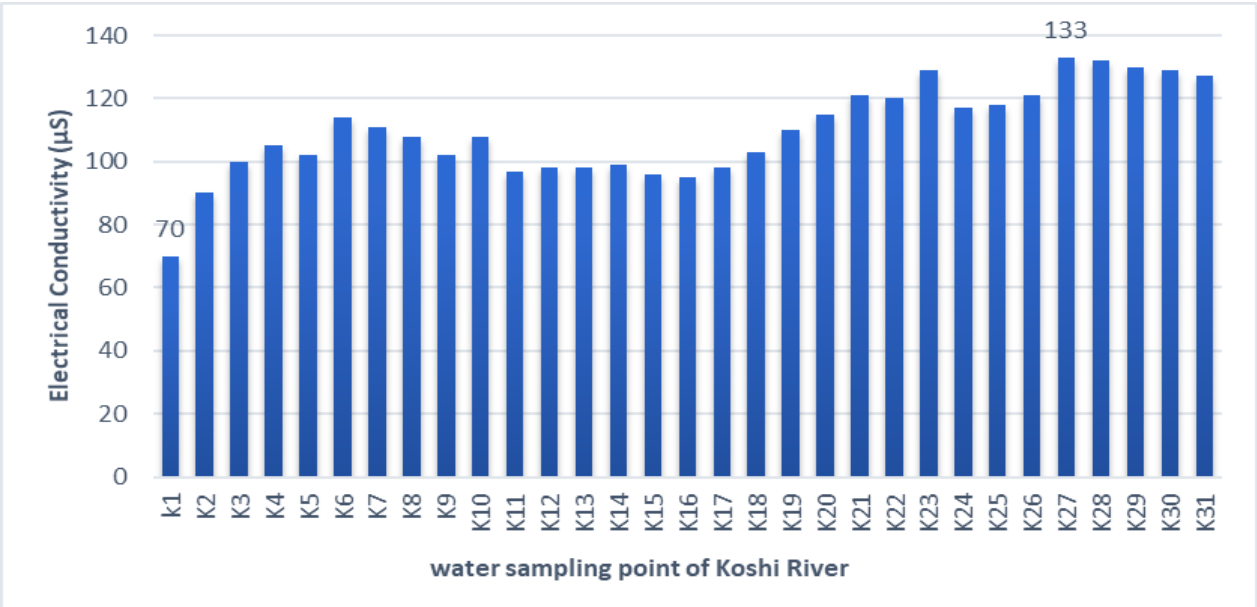

Figure 4: Electric conductivity at different sampling points of Rivers

d. Total Dissolved Solid (TDS):

The Total Dissolved Solid is the number of particles that are dissolved in water. Some dissolved solids come from the organic source while some come from agricultural runoff, fertilizers, and chemicals. The TDS has been found ranging from 36-73 ppm in different sampling points of Koshi River. As the optimal amount of TDS ranges from 100-20,000 mg/l in most of the rivers, the values of the samples remain under the optimal value. Meanwhile, for aquatic life, a value between 40 to 265 mg/l, is favorable for them to survive. High level of TDS reduces the water clarity and contributes to the decrease in photosynthesis and increased water temperature. Since the assessment was conducted in the pre-monsoon season and the monsoon was pre-active earlier, hence, the high value of TDS might be due to more sand particles and colloidal particles carried by the rainwater. TDS concentrations in natural waters often result from industrial effluent, changes to the water balance (by limiting inflow, by increased water use or increased precipitation), or by salt-water intrusion.

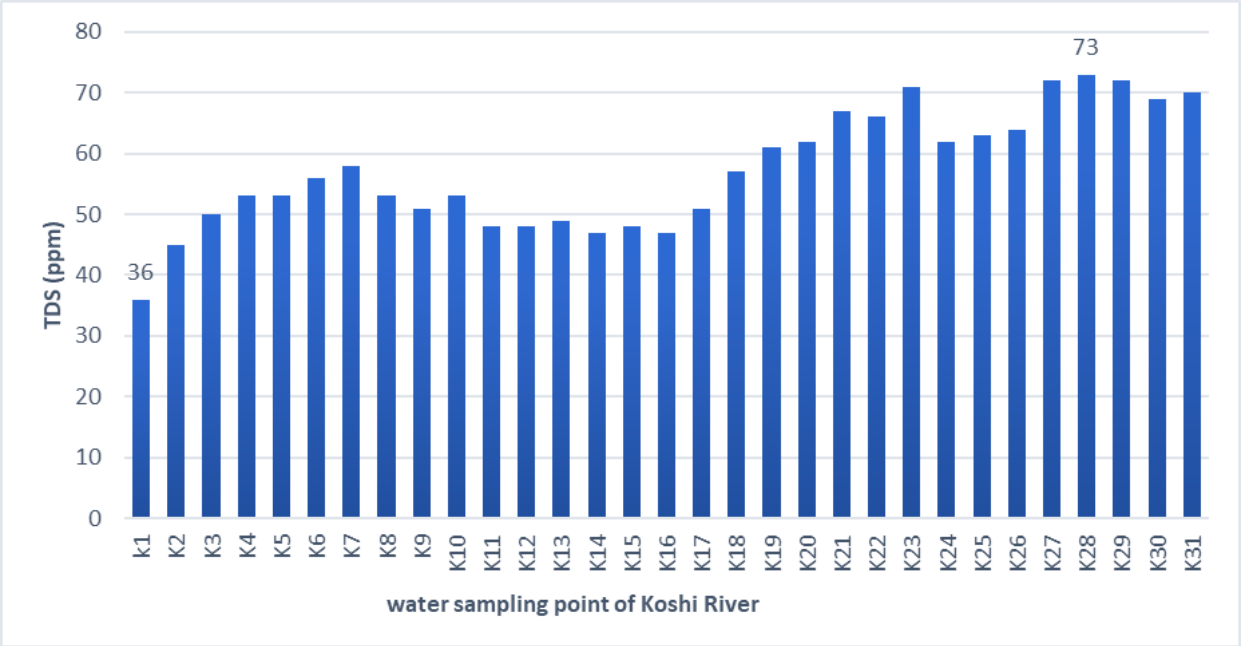

Figure 5: TDS at different sampling points of rivers

e. Dissolved Oxygen:

The value of Dissolved Oxygen (DO) has been found ranging between 6.58 to 7.88 mg/l, where the highest value was recorded in K1 (7.88 mg/l), nearby Chatara section while the lowest value was recorded in K28 (6.58 mg/l), near to Kusaha section. The water from the sampling points are found to be suitable for aquatic life, as the optimum value of DO according to Nepal water quality standard for aquaculture is 6-9 mg/l for cold water species and 5-8 mg/l for intermediate to warm water species. The highest and lowest value of DO is determined by several factors; high temperature, and higher microbial demand of oxygen for the decomposition of suspended organic matter decrease the value of DO while low temperature tends to increase the value of DO.

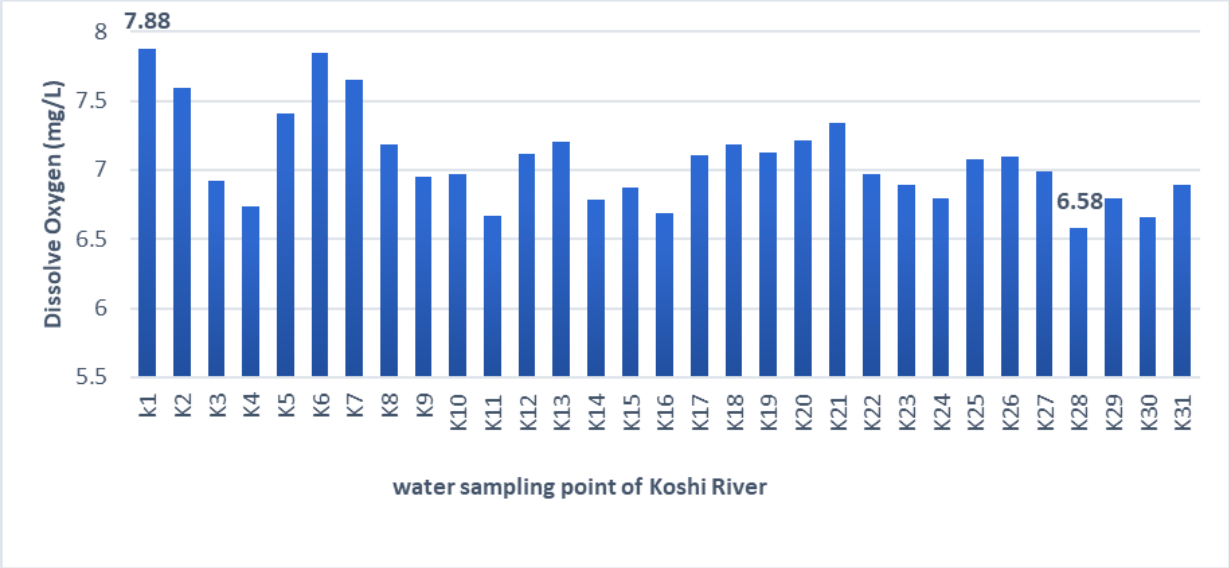

Figure 6: Dissolved Oxygen at different sampling points of Rivers

f. Nitrate and Phosphate:

The value of Nitrate ranged between 0.15 to 2.79 mg/l, where the low value was recorded at point K1 and the high value was recorded at sampling point K29. Nitrate in study areas might occur as a result of agricultural runoff of nitrogen-based nutrients and sewage effluent, and manure seeping into the water course overfeed the aquatic systems. Though present in lower concentrations, nitrate is one of the most important nutrients limiting the growths of autotrophs and also the biological productivity of the system. However, excess concentration of nitrate has a long-chain effect on the river and aquatic ecosystems. This enrichment can promote a growth explosion of algae and phytoplankton, manifest as unsightly, often offensive-smelling scum or 'algal blooms' on the water surface, altering the ecological balance of an aquatic ecosystem. Some blooms, known as harmful algal blooms, also secrete toxins, making water sources unsafe, poisoning fish and the bird and mammals that feed off them, and creating 'dead zones' where no life can survive.

The sampling points with maximum Nitrate may be due to agricultural runoff and high level of organic pollution. However, Santosh and Singh (2007) described the favorable range of nitrate is 0.1 mg/l to 4 mg/l in fish culture water, which shows that the water from the river are suitable for aquaculture.

The phosphate values of the Koshi River ranged from 0.256 to 0.925 mg/l. According to Nepal Water Quality Standard, the phosphate for aquaculture in water should be less than 0.5mg/l, illustrating a favorable concentration of phosphate for aquatic life. Phosphate is an essential nutrient for a living organism and exists in water bodies both in dissolved and particulate forms. It enters into the water from human and animal waste particularly at the Koshi river thousands of domestic animals freely graze at the shoreline depositing their solid and liquid waste, laundries, phosphate-rich rocks, chemicals, and fertilizers, surface run-off and bank erosion. High phosphate content causes increased algal growth, often may enhance the growth of photosynthetic aquatic microphytes or macrophytes in nuisance quantities.

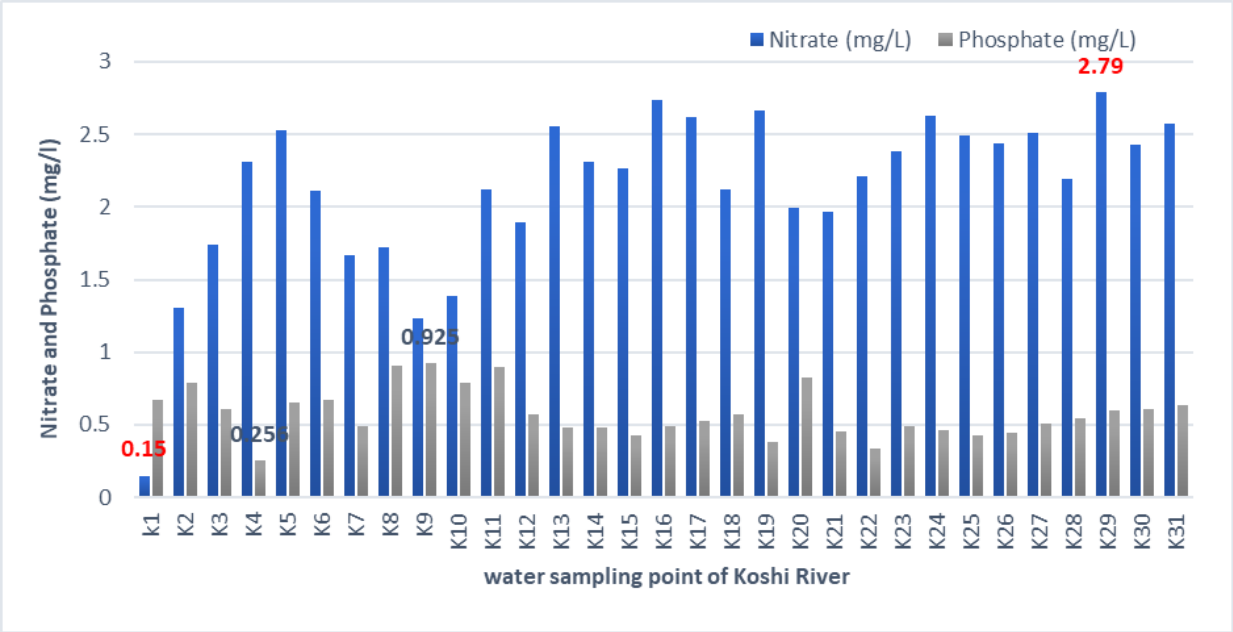

Figure 7: Nitrate and Phosphate at different sampling points of Rivers

g. Ammonia:

The value of ammonia ranges from 0.1 to 0.29 mg/l where the maximum value of ammonia was recorded in the lower section of the river as compared to the upper section. This might be due to a high number of human settlements, chemical and agricultural runoff, as well as the discharge of pollutants directly into rivers. Ammonia generally arises from aerobic or anaerobic decomposition of nitrogenous organic matter, natural or wastewater.

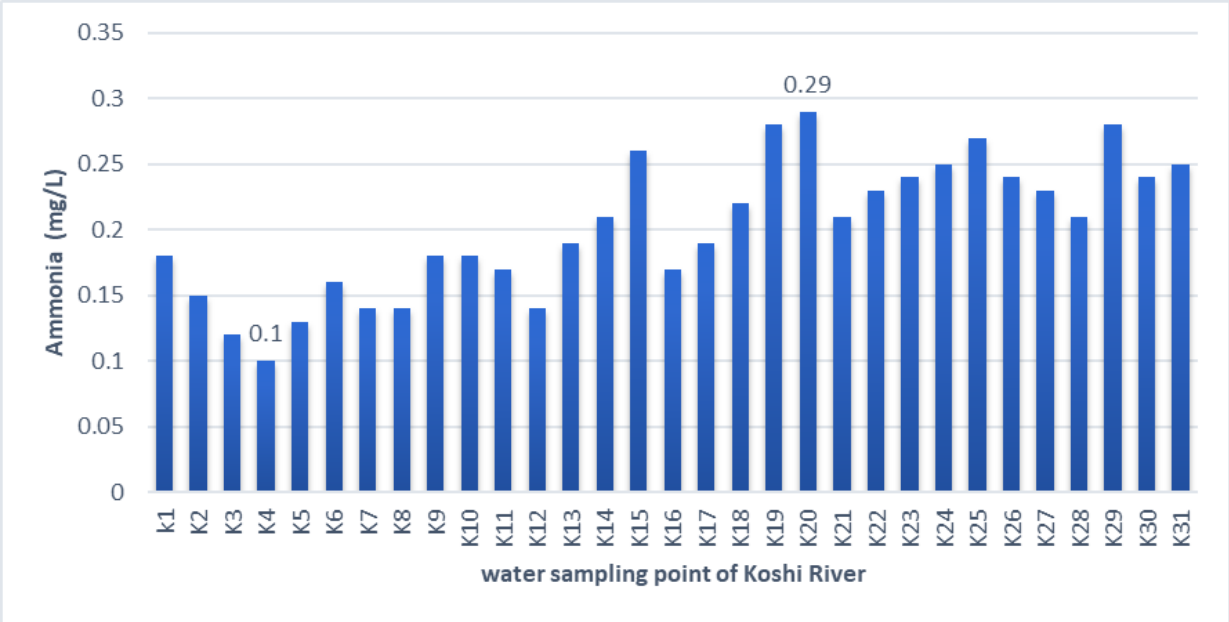

Figure 8: Ammonia at different sampling points of Rivers

Apart from the above-mentioned parameters, several other factors that influence the physio-chemical parameter of water quality was witnessed. Anthropogenic factors such as illegal encroachment, temporary houses built near the shoreline of the river, sand dredging, and

wood collection, extensive fishing using poison and electrocution, and more importantly grazing of cattle near the shoreline might have influence the physio-chemical parameters of the water.

Picture 2: Encroachment of Koshi River, temporary houses built near to the shoreline of river

Picture 3: Illegal Fishing activities in the core area of KTWR, major threats for aquatic organisms and to River Dolphin

Picture 4: Anthropogenic activities; sand dredging and wood collection tend to have negative impacts on the physio-chemical parameter of water

Picture 5: Extensive grazing of domestic animals at the bufferzone areas of KTWR, shoreline of the Koshi River

Picture 6: Analyzing the water parameter (Nitrate, Phosphate and Ammonia) in lab using different instruments

2. Questionnaire Survey Data Analysis

A total of 105 households from 15 different fish-dependent communities residing across the Koshi river were surveyed. The main aim of the questionnaire survey was to assess their existing knowledge of River Dolphin, issues, challenges, and opportunities for conservation. This information was helpful for the project staff to design the awareness program and identify the priority community to conduct the awareness program. The survey also intended to assess the level of dependency of communities on river resources, especially Koshi in order to sustain their livelihood and how their dependency has impacted the aquatic ecosystem and particularly, dolphins and its conservation. The survey included questions that broadly cover relevant components particularly, general information on households, their socio-economic status, fishing intensity, and their perspectives regarding dolphin conservation.

Picture 7: PI and Citizen Scientist carried out a questionnaire survey in the shoreline community of Koshi River

General Information:

During the questionnaire survey, the majority (99%) were male and only 1% were female while the respondent's age ranges from 19 to 77 years old. The survey could not include more females because the female priority was to look after the household chores and are mostly hesitant to participate in the survey. Adding to this, fishing in such a big river is considered a high-risk job as well as exist numerous constraints. Hence, males are mostly engaged in fishing activities.

Out of the 105 respondents, 48% belonged to Janajati, 48% belonged to Dalit and 4% belonged to the Muslim community. The majority of respondents (54%) were illiterate, while 22% had primary-level education, 12% were literate, 11% had secondary-level education and only 1 % had higher secondary-level education.

Socio-economic:
The major occupation of 84% of respondents was fishing, while that of 15% was agriculture and only 1% of respondents depended on other activities. In regard to the monthly income, 80% of respondents have a monthly income of NRS. 6000-15000/month, that of 8% is NRS. 15000-30000/month and 12% have less than NRS 6000/month. Meanwhile, the average monthly expenditure of the respondents was NPR. 10,484.85.

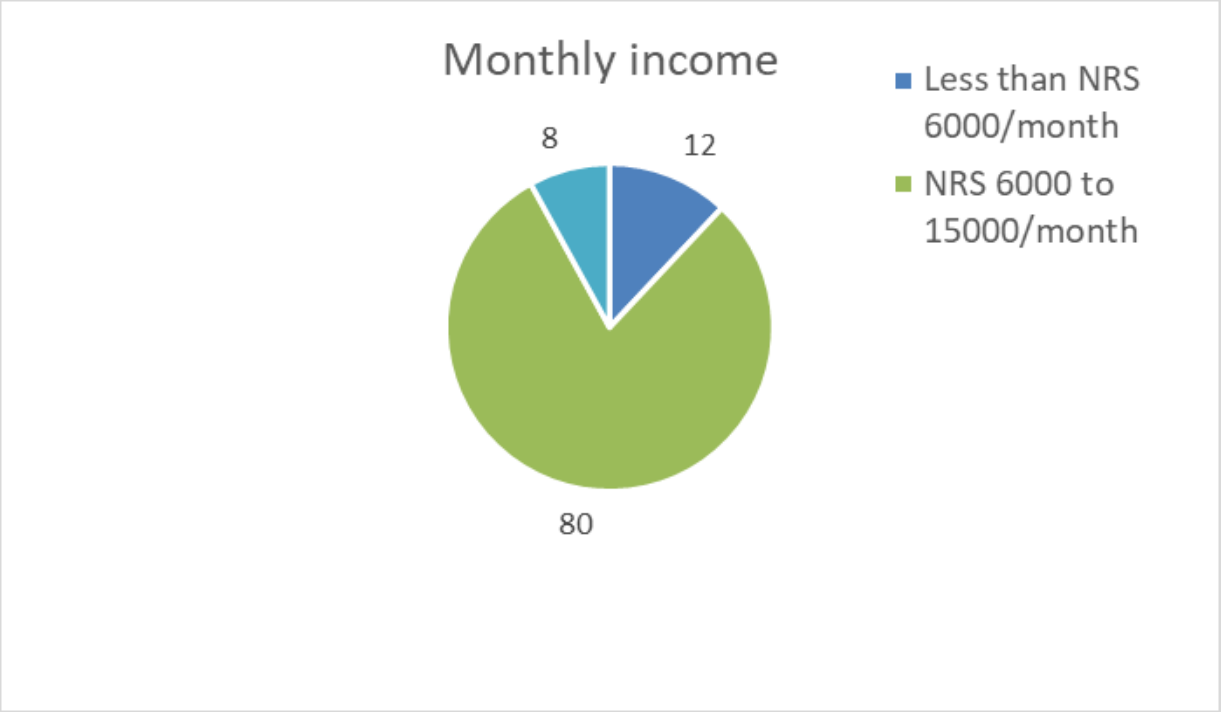

Figure 9: Monthly income of respondents

Fishing Intensity:
About 95% of the respondents depend on fishing activities in order to sustain their livelihood while 5% of respondents engage in other activities besides fishing. Koshi Tappu Wildlife Reserve (KTWR), the governing body of the Nepal government, issue fishing license to those individuals primarily recognized from river-dependent communities on annual basis. Individuals were allowed for fishing for 9 months from October to June, besides monsoon season. 62% of the respondent prefer to fish in the upper section of the Koshi River, 25% preferred the lower section and 13% of respondents in both sections. 70% of the respondents have friend as a companion for fishing, 13% go alone and 17% go with family members for fishing.

As per the data, 83% of the respondents go for fishing daily in the Koshi River, 8% go for fishing in alternate day, 8% go once a week and 1% sometime for fishing. The data shows the

high intensity of fishing activities in the river which could be one of the major factors for decline in prey species for river dolphin responsible for decrease in dolphin population.

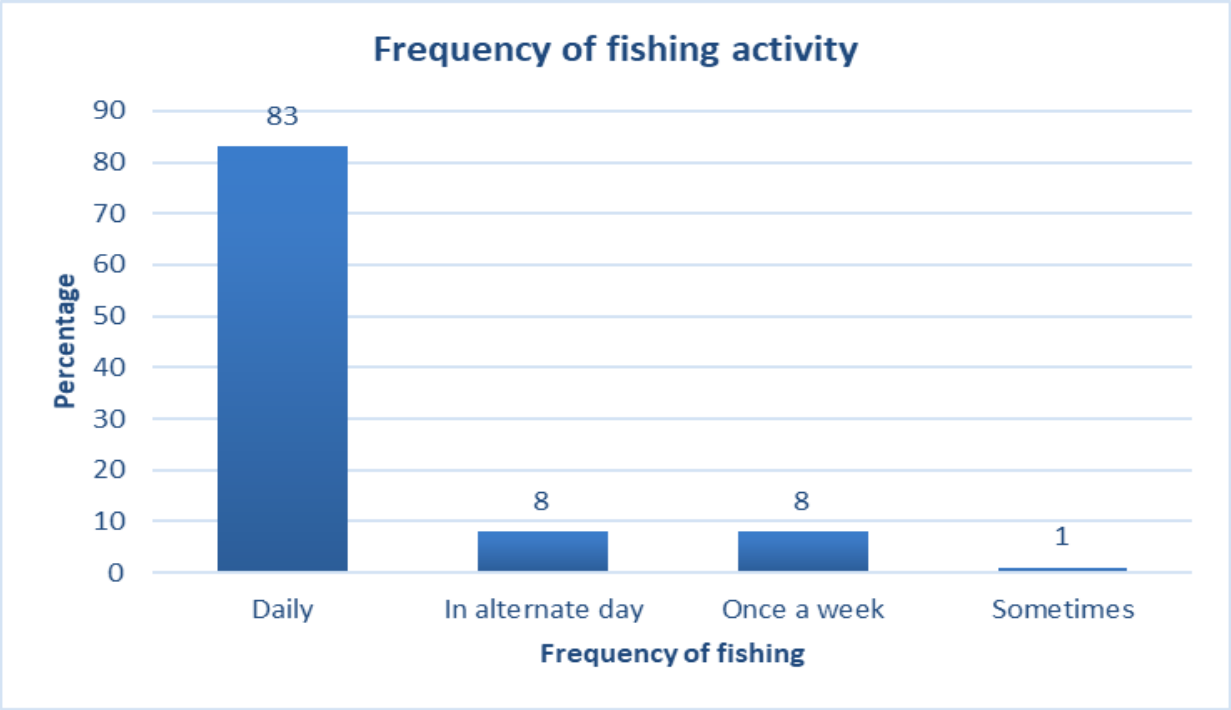

Figure 10: Frequency of fishing activity by the respondents

In regard to the duration of fishing, the timing was broadly categorized into three categories i.e., <3 hours, 3-5 hours, and >5 hours in the summer and winter seasons. As per the data, around 25% of respondents in the summer season and 5% of respondents in the winter season spend <3 hours daily for fishing, 47% and 82% of respondents spend 3-5 hours and 28% and 13% of respondents spend >5 hours daily in summer and winter seasons respectively for fishing.

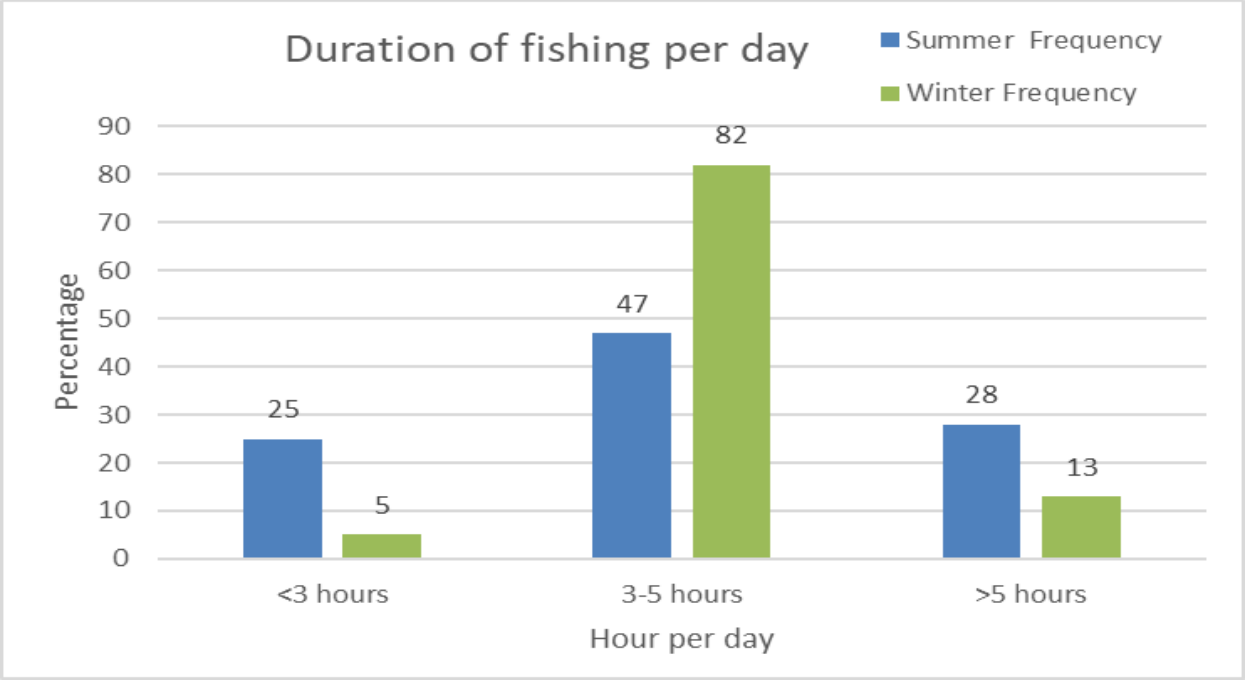

Figure 11: Duration of fishing by respondents per day

In regard to the preference season for fishing, 51% of the respondent prefer low water season for fishing, 29% summer, 11% high turbidity and 9% breeding time for fishing. The common fish species that existed in the Koshi River are Jalkapur, Sidhre, Mungri, Soli, Pothi, Kathi, Buhari, Sahar, Bam rhou.

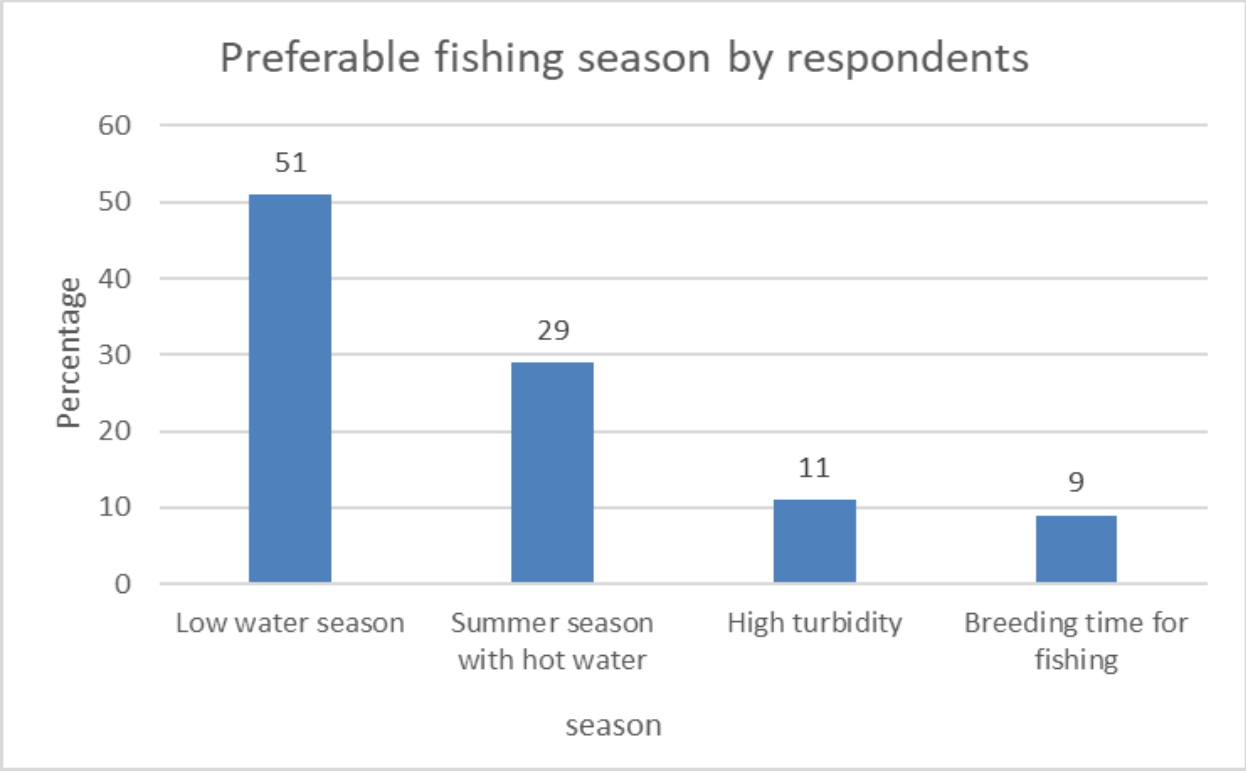

Figure 12: Preferable fishing season by respondents

As the majority of respondents' major occupation and source of income is fishing, 90% of the respondents catch fish for commercial purposes, 6% for household consumption and 4% for both causes. About 49% of the respondents sell the captured fish in the local market called Hat Bazaar, 45% through personal contact and only 6% sell fish through a local vendor.

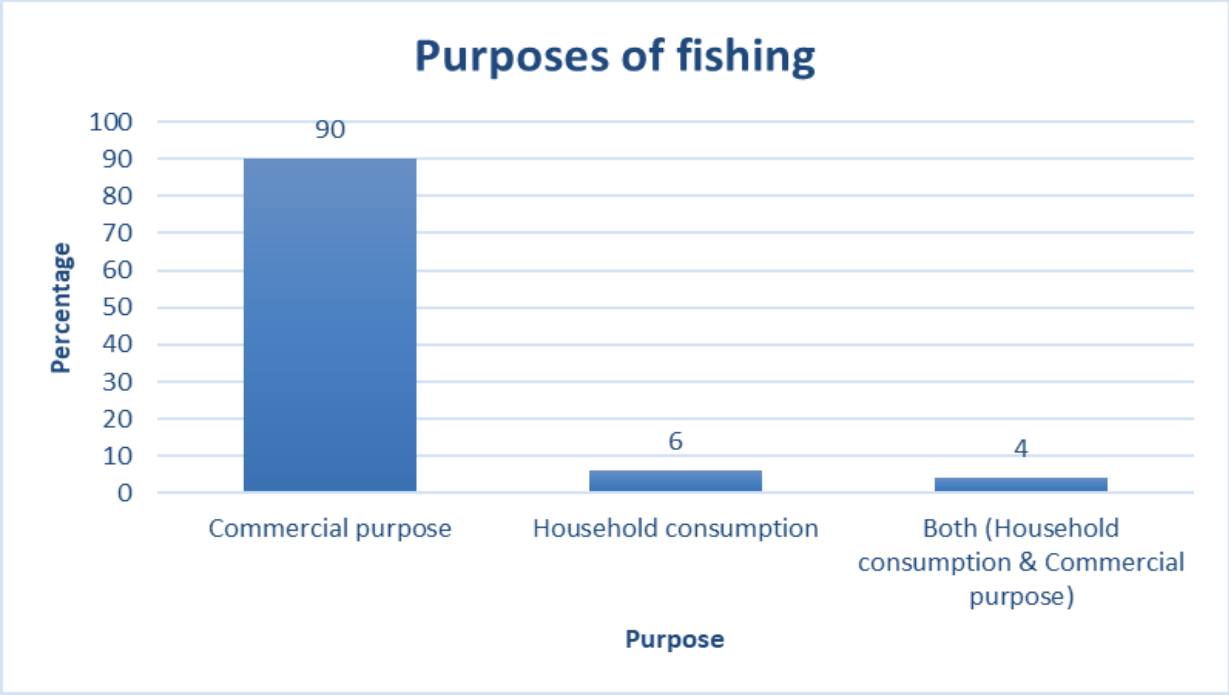

Figure 13: Purposes of fishing

In regard to the fishing gear, the majority of the respondents (82%) used Phekuwa Jaal, 9% Pakhure Jaal, 2% Fishing Rod, 1% Maha Jaal and 6% Khoki Jaal for fishing. As the Phekuwa and Pakhure Jaal are convenient to use as well as can be manufactured locally or by themselves, so can be cost-effective and easy to maintain after being damaged, on the other hand, the KTWR prohibits to use other types of field gears such as gill net, fishing line, electrocution and poisoning of fish. Despite the prohibition, such cases have been recorded and people have been practicing those methods under the radar of KTWR and other governing bodies. In light of the old or non-functioning field gear, 85% of the respondent remake the old, damaged piece and reused them as long as possible, 12% burn them and 3% abandon them in rivers or shorelines.

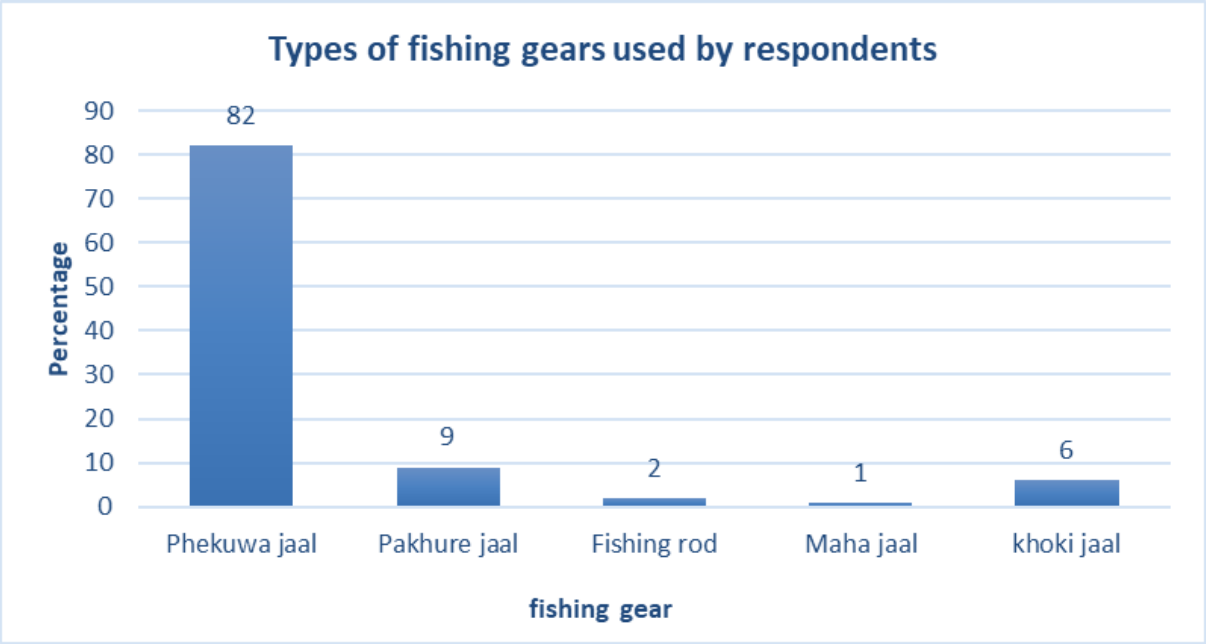

Figure 14: Types of fishing gears used


Picture 8: Homemade fishing gear used for fishing (left) and fishermen using Phekuwa Jaal for fishing in Koshi River (Right)

As compared to the 5-year time period, about 74% of the respondents have reported their dependency on the Koshi River has increased over time to support them as the family members have increased so does their dependency, 15% have reported a decrease from the previous and 11% have reported no change on their dependency. As the family numbers increase so do their expenses and only fishing occupation would not be able to cover all their family's expenses, resulting few of them have shown dissatisfaction and have changed their occupation as well.

Dolphin conservation; issue, challenges and opportunities

As per the respondent data, 81% believed the number of River Dolphins has decreased, 2% reported an increase and 15% lack information in this regard. 59% of the respondent's believed overfishing is the major factor to decline the number of dolphins, 35% of respondent believed habitat destruction, 5% deterioration in water quality and 1%

entrapment in fishing net. Despite, majority of the respondents engage in fishing activities, they themselves believed, overfishing along with increased in fishing intensity, use of electrocution and fish poisoning have largely affected the dolphin population as they feed on small fish.

Adding to this, 81% of them think that Dolphins are under threats, 15 % responded that they are unaware and only 4% think that Dolphins are not under threat. The response shows that majority of them know that overfishing has negative impacts on dolphin population and are under threats but still they opted for fishing because they lack other alternative sources of income and fishing have been their major occupation from generations. It is difficult for them to shift to other occupations without any additional support from Government.

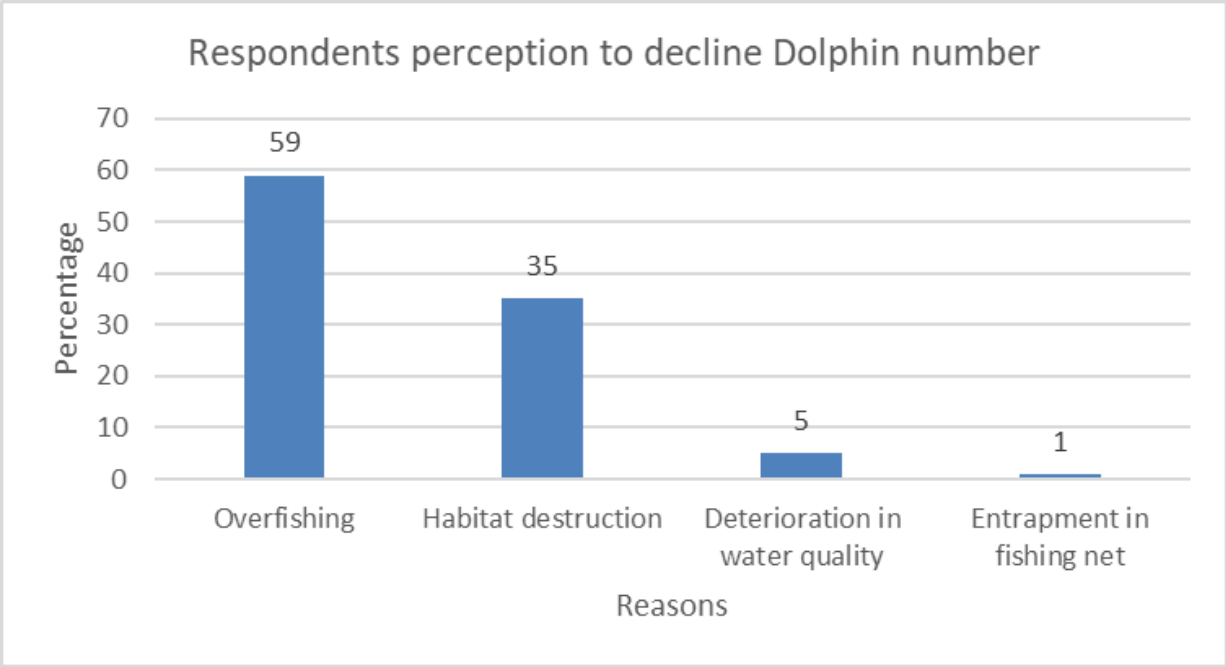

Figure 15: Respondents perception in decline of Dolphin population

Nepal Government has listed River Dolphin as a protected species under DNPWC Act 1973. Anyone engaging; directly or indirectly in any sort of illegal activity including killing, trading, or even harming dolphins will be liable for punishment as per the existing law. 64% of the respondents were unaware of the provision of punishment to those engaging in any illegal activities. Although, 36% of the respondents were aware of the fact that River Dolphin is a protected animal by Nepal Government, however, they lack detailed information regarding the punishment including imprisonment and fine.

Despite living and making a life out of Koshi River for generations, around 77% of the respondent lack knowledge and information regarding the ecological and environmental importance of the River Dolphin while 17% have understood the importance of dolphins. Although majority of the respondent's lack the knowledge and information regarding the importance of dolphins, still, 78% of them support for their conservation as dolphins have been related to their culture. The river-dependent communities symbolized dolphins as a god of fortune and protector and worship it and avoid killing or harming this species.

In light of the conservation of River Dolphin, 57% of the respondent believed that dolphin is extremely rare hence need to be protected while 32% suggest dolphin are found in few waterways, 6% suggest protected mammals of Nepal, 3% suggest maintaining healthy aquatic ecosystem and 2% suggest other reason.

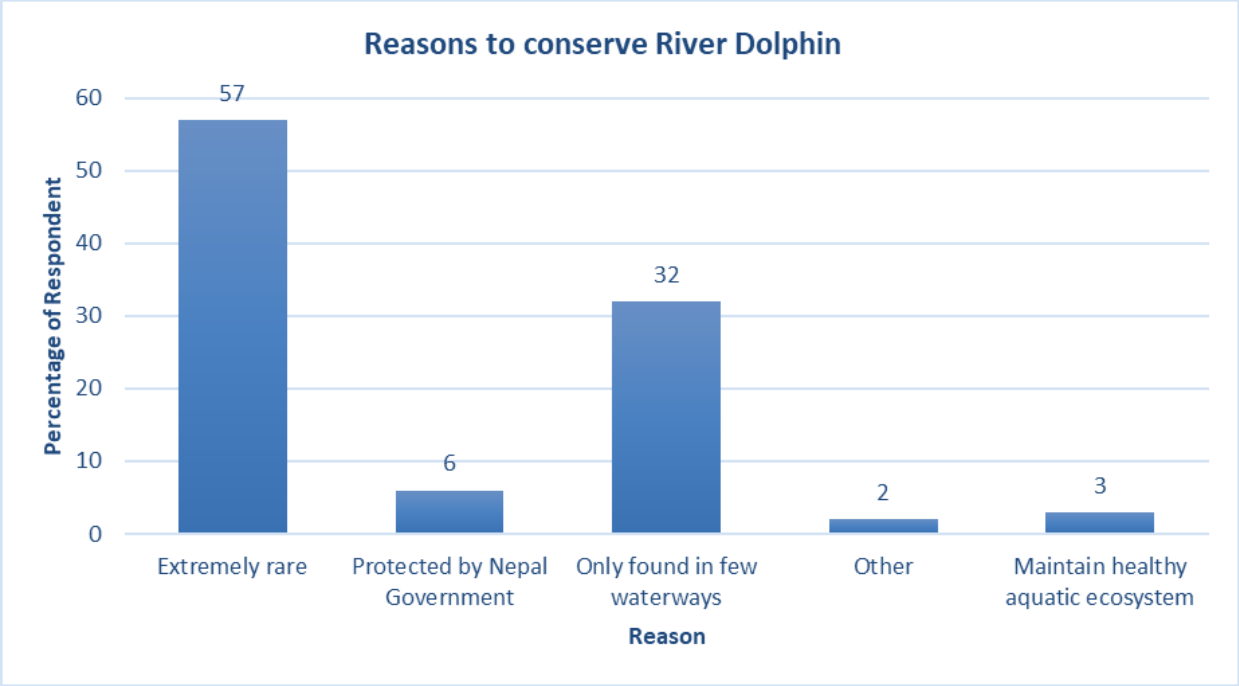

Figure 16: Respondents perception on reasons to conserve River Dolphin

There are multifaceted factors that possess challenges to conserve River Dolphins in the Koshi River. Some are liable to have lesser impacts while some are prominent. As per the respondent, 40% of them believed overfishing, 25% believed Habitat destruction, 23% agreed lack of awareness, 5% responded human disturbances, 4% responded poor conservation strategy and 3% agreed that dolphin not being prioritized are the reasons for challenged in Dolphin conservation.

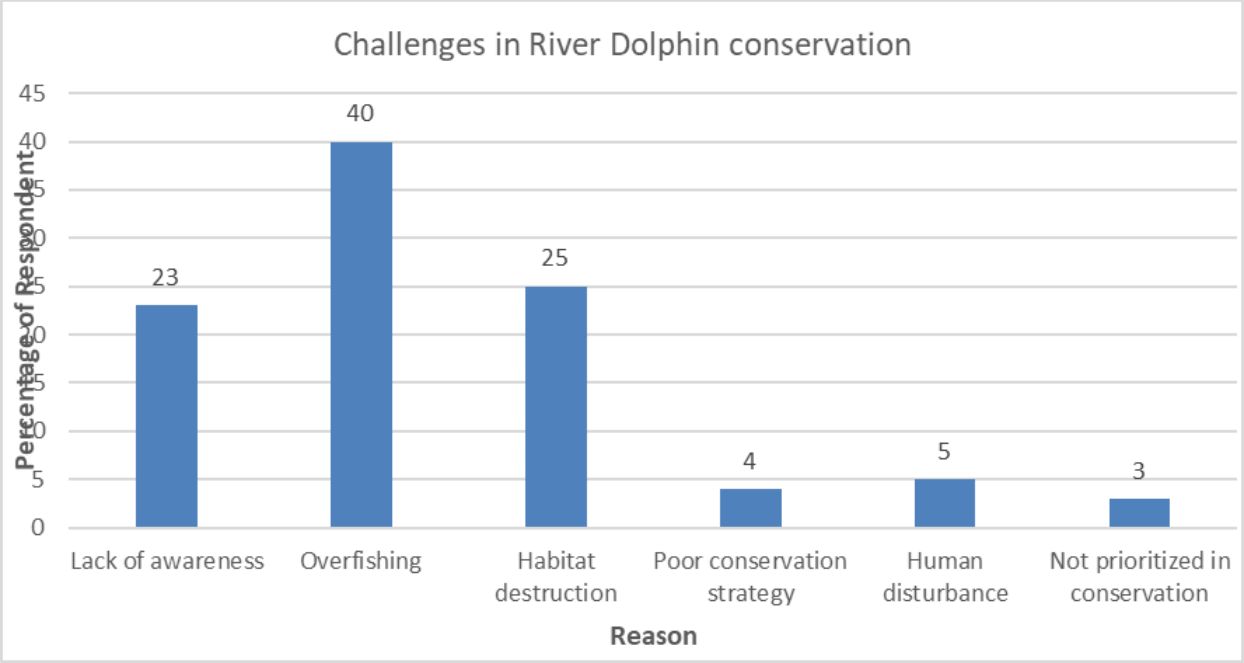

Figure 17: Challenges in River Dolphin Conservation

Since, the major occupation of most of the respondents is fishing and are largely dependent on fishing to sustain their livelihood, they do not have an alternative source of income. The data shows that 60% of the respondents suggesting alternative income source to sustain their livelihood could be one of the major activities that can aid in the conservation of River Dolphins. Similarly, 25% suggest mass awareness, 5% suggest implementation of existing law and 10% suggest prevention of habitat destruction as major conservation activity for River Dolphin.

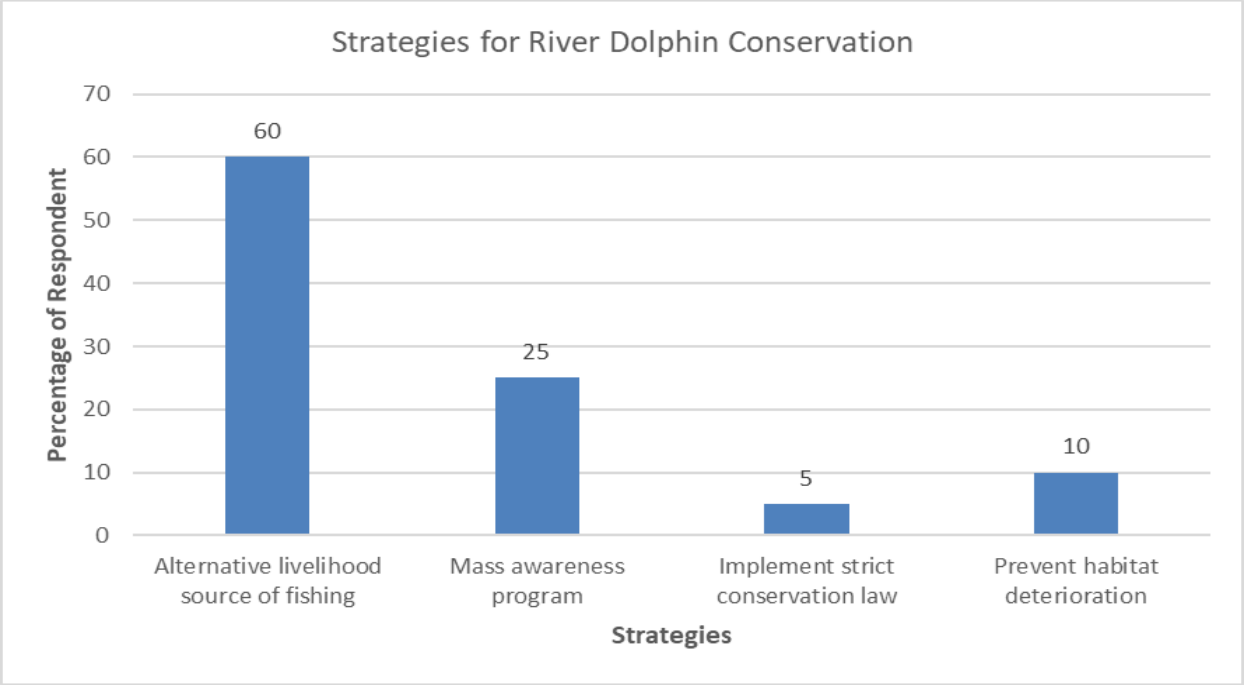

Figure 18: Strategies to conserve River Dolphin

3. School Awareness Program

For the conservation outreach program, besides the school awareness program, other activities included a community awareness program, development of a radio jingle, installation of hoarding boards were identified to disseminate the conservation message among the targeted audiences.

With the aim of sensitizing children and youths about the River Dolphin, its ecological and environmental importance as well as the role of youth in its conservation, the project intended to conduct an awareness program to 10 schools at the buffer zone of KTWR. Earlier, through field assessment 10 schools were identified for the scheduled school awareness program namely, Shree Aardasha Secondary, Kaushika Secondary School, Shree Mahendra Secondary, Saraswoti Secondary, Prakash Secondary, Mohona Secondary, Janata Secondary, Vagawati, and Jaladevi Secondary school expecting to reach 1000 students through the program.

In regard to the school awareness program, the program was completed in Shree Mahendra Higher Secondary, Jabdi, Sunsari district, and Shree Aardarsha Higher secondary school, Kanchanrup, Saptari district from grades 8,9, and 10, reaching a total of 200 students. Due to months long festive vacation, remaining schools will be reached in another quarter after reopening of the schools.

Picture 9: School awareness program conducted by the citizen scientist at Shree Mahendra Secondary School, Jabdi, Sunsari district

The basic approach of the project targeting students in this quest was sensitizing kids from a very early age towards the conservation of biodiversity, making them realize their roles could help them to develop a sense of awareness and imprint its importance in long run. The awareness program was conducted in participatory-based approaches and based on different activities such that the students could clearly understand the disseminated information.

To reach out all the students and ensure the maximum number of participants understand the contents, the presentation was kept simple and delivered in the Nepali language. Adding to this, videos related to River Dolphin along with pictorial data were presented to the students in between the presentations, while brochures and posters were also distributed

such that the students can grasp the information presented through data and pictorial form easily that remain in their memory for a longer term. The IEC materials included general information of River Dolphins, their ecological importance, conservation challenges, threats, and measures from an individual, local, and at the national level.

In the awareness program, active participation from the students were witnessed indicating their anticipation to learn, engage and importantly vocal up their queries on the presented topic. Moving forward, we took this opportunity not to limit only to sharing information regarding the dolphin and its conservation, issue and challenges but also make them understand and knowledgeable to get influence and motivate to actively participate in dolphin and biodiversity conservation in coming days.

Pre and Post program survey was conducted with the students to access the knowledge and confidence of students on dolphin conservation and the impact of the awareness program on them. Four citizen scientists capacitated by the project were mobilized as trainers for the school awareness program. The project looks forward to utilizing their skills and learning in the upcoming events as well.

Picture 10: School awareness program conducted by the citizen scientist at Shree Aardarsha Secondary School, Kanchanrup, Saptari district

4. Awareness-raising materials

To target a wide range of the public 1000 posters and brochures were developed in the Nepali language. Both the conservation outreach raising materials will be distributed to the communities, schools, key stakeholders, KTWR, NTNC, Community Forest and Bufferzone office, and other Community-Based Organizations (CBOs) working in biodiversity conservation sectors. These materials include detailed information about River Dolphin, ecological importance, threats, and challenges, along with the roles and responsibilities of concerned stakeholders for their conservation.

Similarly, jingles on Dolphin conservation have been continuously broadcasted on Saptakoshi FM (the popular FM station in eastern Nepal) since June month and will continue till December 2022. The jingle has an outreach to 7 districts of eastern Nepal, hence targeting to reach the maximum audience reaching up to 1 million audiences.

5. Media Coverage

Two events of the project; citizen scientist training and school awareness program have been featured in the local printing media, Blast Times Newspaper. The article highlighted the objective of the project as well as insightful information regarding the instigated activities. Such media coverage helped to disseminate the information to a wider audience including local people and concerned authorities about these causes and motivate them to initiate the conservation activities from their level. Apart from the project conservation outreach program, such activity helps to underpin the importance of dolphin conservation at the local as well as regional level. With this belief, we will continue to collaborate with other online publications to feature the project works in the coming days.

ब्लास्ट टाइम्स

हिमाली डल्फिन बचाउ तालिम र सचेतना

वराहक्षेत्र (ब्लाष्ट)
सङ्कटापन्न जीव डल्फिन बचाउन हिमाली प्रकृति संस्थाले सचेतना कार्यक्रमको सुरुवात गरेको छ।

रुफोर्ड फाउन्डेसनको सहयोगमा संस्थाले सामुदायिक वनलाई संरक्षणको तालिम दिएको छ। सचेतना कार्यक्रम अन्तर्गत वराहक्षेत्र नगरपालिका-९ प्रकाशपुरको सप्तकोसी सामुदायिक वनलाई तालिम दिएको छ भने ७ नं. वडाको तिवीगाछीस्थित महेन्द्र माविका ६० जना विद्यार्थीलाई डल्फिनको महत्त्व, संरक्षणको उपाय र चोरी शिकार गर्नेलाई कानूनी दण्ड जरिवानाको प्रावधानलगायत विषयमा छलफल गरिएको संस्थाको कार्यक्रम अधिकृत लव केसीले बताए।

संस्थाले विश्वमा ६ प्रजातिका करिब ३ हजारको सङ्ख्यामा डल्फिन रहेको र नेपालको कोसी, नारायणी र कर्णाली नदीमा डल्फिन रहेको उल्लेख गरेको छ। कोसी नदीमा कति डल्फिन छन् भन्ने विषयमा अनुसन्धान भइरहेको बताइएको छ।

नदीको तटीयक्षेत्रमा मानवीय अतिक्रमण, अवैध बालुवा-गिट्टी सङ्कलन र अत्यधिक दोहनले सोस अथवा सुसुजस्ता स्थानीय नामले चिनिने डल्फिन लोप हुने खतरा बढेकोले संरक्षणमा ध्यान दिनु आवश्यक भएको र उपायहरू अवलम्बनमा ढिलो गर्न नहुने केसीले बताए। सचेतनाको कार्यक्रम नगरपालिकाको ११ वटै विद्यालयमा गरिने संस्थाका विमल तिमल्सिनाले बताए।

Figure 19: Blast online portal feature the citizen scientist training activity of the project

6. Future plans

Following activities will commence in the next quarter:

1. Preparation of threats and hotspot map.
2. Conduct community awareness programs.
3. Installation of the information board.
4. Threat assessment and population survey in the lower section of Koshi barrage