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Implements and Practices of Fishing in Kathekhola, Baglung, Nepal

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Abstract

Fishing is the practise of catching fishes from different water resources. The main objective of this work was to list out the different tools and technique that are practiced in capture fishing in Kathekhola, Baglung, Nepal. The study was conducted during October 2021 to April.2022. The study assessed the fishing methods adopted by the fisherman in the study area by the purposive sampling and direct observations method adopted. Information was collected from 53 fishermen in the study area by the purposive sampling and direct observations method adopted in the area Kathekhola by regular field visit. The study identified that fisherman used hooks, cast net, gill net, fishing by hands, blocking and diverting water, umbrella fishing, Kure Thunne, use of plant extract as a traditional or conventional methods for fish catching. In addition, fisherman used insecticides and current for fishing. Electrofishing and insecticides are illegal fishing which were uncommon the study area. The livelihood of 20% fisherman depends on fishing. This study explored the various tools and techniques used to catch fish from the water bodies at Kathekhola, Baglung, Nepal. It is concluded from the study that the concerned body, administration, stakeholders would take necessary actions, strategy for use of convention fishing tools in Kathekhola.

Keywords: Conventional method, fishing implements, fishing technique

Introduction

Nepal is rich in water resources having 6000 small and large rivers (DoFD 2014). These rivers inhabit large number of aquatic fauna including fishes. About 7,31,500 hector area of Nepal is related to fisheries sector which includes river, lakes, streams, paddy fields, reservoirs and village ponds (Shrestha 1999). Nepal is rich in fish biodiversity and homeland of 230 native fish species (Rajbanshi 2012). These fishes are captured by using conventional and unconventional implements (Gurung 2003). Traditional fishing and fisher folk Traditional fishing is carried out by different methods using cast net, gill net, loop, line and hook and basket. Some unconventional fishing has emerged in recent years using explosives, electricity, and poison (Gurung 2003). In Nepal, different communities like Tharu, Majhi, Malaha, Dunuwar, Kewat, Bote, Musahar, Mukhiya, Darai, Kumal, Dangar, Jalari and others bound with fishing activity for sustaining life. They mostly apply traditional fishing method using cast net, gill net, loop, line and hook and basket. Bote/Majhi of Midland hills and plains catch Mahseer (*Tor tor*), Katle (*Acrossocheilus hexagonolepis*) by using cast net (Mali 2008). Muser, Kumale of Terai and Hills capture Jalkapoor (*Pseudeutropius*), Snow trout (*Schizothorax*) by using Gill net, drift net, cast and traps (Paso). Dharahi who lives in Terai and hills use nets and traps, hookline to capture Tenger (*Mystus tengara*). Chepang/Tamang community use Bow and arrow, spear, cast net to catch fish like *Puntius, Garra, Xenentodon*. Magar/Gurung who lives in the Midland hills capture Snow trout (*Schizothorax*), Katle (*Acrossocheilus hexagonolepis*) by using fish snaring, trapping, lift nets, cover pots, scoop net etc (Shrestha 1999).

Tharus have been using different types of net traps like the hoop net (helka), small square net with handle (tapi), casting net (jal) for fishing (Khatri 2010). The casting nets depending upon their sizes are called khauki jal, feki jal, and mahjal. Some people of Tharus capture fishes by using hooks. Earthworms used to be the regular bait as they easily attract fishes like garai and chenga (*Chana gachua*). The common and easiest method of fishing by Tharu community is by hand in muddy water. Children and

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women search for fish in paddy fields and ditches as the water level lowers. During the rainy season, when the fields are full with water, dhasha, chachh, and koniya are fixed between two adjacent fields. The traps are woven out of bamboo culms or sunn stalks (*Crotolaria juncea*). The fishes get trapped in them while swimming along the current of water. Dhasha and Chachh are rectangular, envelope-like in shape and can be folded when not in use, while Koniya is a conical trap. Khauki jal is a small square shaped net tied to two bamboo straps and it is easy to handle in ponds, ditches, and rivers with low water level. A rectangular basket like trap called Dharya with several openings is also used by Tharus (Khatri 2010). Fishermen from the Narayani and Sapta Koshi rivers preferred to use cast nets, whereas fishermen from the Karnali River primarily used gillnets (Paudel et. al., 2016). Fisherman of Salyan, Mid-western region practice conventional and non-conventional fishing appliances in Sharada River and its tributaries (K.C. 2015). The current study explored the fishing implements and practice from Kathekhola area of Baglung.

Methods

The data was collected by interview and questionnaire method. A list of open ended questionnaire was made. Photos are taken by simple mobile camera. Regular visit had taken to observe their fishing technique and the photos of implements was taken in different place of Kathekhola by using Mobile camera. The study area visited four times during the study period for data collection. The fisherman was identified in the basis of interview whether they are part time or full time fisherman in those localities.

Study Area

Baglung lies on the geographical coordinates of 28° 16' 0" North, 83° 36' 0" East. Baglung district occupies diversified water bodies in various forms, such as ponds, lakes, small rivers etc. The current study was carried out in "Kathekhola" Baglung. It has small volume of water in winter season and flows with large volume of water in rainy season. It finally joins Kaligandki River in the Maldhunda area. The Kathekhola flows from west to east of Baglung district.

Fig. 1 *Map Showing the Study Area*

Results

Altogether 15 different types of fishing implements were found in Kathekhola. These tools were nets, basket (Dhadiya), hook and line, diverting water bodies, Kurre Thunne, fishingng by bare hands, using umbrella, using pot, hammering, plant poison, electric current, blast or dynamite and chemicals. The finding of the research is listed in the Table 1.

Table 1: *List of Different Types Fish Implements, Their Characteristics and Application to Capture Fish by Fisherman in Kathekhola.*

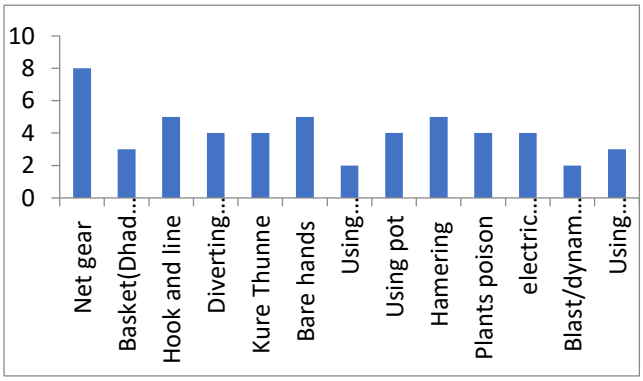
S.N.	Types of implements	Local name	Characteristics	Use
1.	Cast net	JAAL	Nylon thread, mesh size 15-25mm, iron and other materials attached at the end to sink in water	Capture medium to large fishes
2.	Cast net	Bhurelijaal	Mesh size 5-15mm	Capture juvenile to small fishes
3.	Gill net	Kandejaal	Rectangular in shape, small sinkers on lower side, net flows along the direction of water current	Capture medium sized fishes
4.	Basket	Dhadiya	Made up of reed(Nigala), bamboo, basket-like, small mouth opening, used by fixing in small water diverting canal	Catch small fishes
5.	Hook and line	Balchi Khelne	Consists of hooks, hook tied on tip of nylon threads on long rods of bamboo, hooks are baited with earthworm	Catch small to medium-sized fish
6.	Diverting water bodies	Duwali Thunne	Diverting whole water into channel by making dam, a trap is made in front of channel	Catch small fishes
7.	Blocking stones with bushes and grasses	Kure Thunne	Bushes and grasses mass are used to block water from all sides leaving an opening to oneside	Catches fishes sheltered under stones
8.	Poison from plants		Poison extracted from plant derivatives like roots of plants, leaves, and barks	Used to kill small to medium sized fishes in pool area
9.	Umbrella fishing		Inverted umbrella dip into water	Catches small fishes
10.	Hammering		Hammer strike to large stones and fish paralyzed due to vibration	Small sized fish caught
11.	Using thali(Pot)		Mouth of thali covered with cloth leaving a small opening and immersed in water	Small sized fishes caught
12.	Fishing with bare hands		Bare hands are used to catch fish	Moderate size fishes are captured
13;	Fishing by using electricity		Electricity passed into river water through wires	All sized fishes are killed and captured
14.	Blast or dynamite		Use of explosive in large volume of water	Killed all sized fishes
15.	Pesticides		Use of aldrin, metacids, DDT which are used in pest control	Killed all sized fishes

Source : Field Survey, 2080

Fig. 2: *Photos of Fishing Implements*

Scoop net implement Dhadhiya Thali fishing Fishing by using electric current

Fig. 3: *Showing The Number of People Using Conventional and Non-Conventional Method of Fishing Implements*



The above data shows that people use different techniques and implements to catch fish in Kathekhola. Most of tools are found to be homemade as they prepared from locally available material. A total of 53 people were noted and it is found that 83% people use conventional fishing implements whereas 17% people found fishing with non-conventional implements like fishing by electricity, chemicals or by blast. In the field observation, 37 people observed as regular fisherman in Kathekhola who regularly capture fish and sold in market for their livelihood. 44 number of people recorded which found using different kinds of tools to catch fish. It had been observed that in the river that the fisherman using net implements was the number 8, basket implements (Dhadiya) was 3, hook and line 5, diverting water bodies 4, Kure thunne 4. Similarly, Fisherman using umbrella was 2, fishing by using pot was recorded 4. The number of people using plant poison and plant derivative was 4. The number of fisherman using hammering technique was 5 and catching fish by bare hands was 5 in number.

Discussion

Kathekhola is small, perennial river of Baglung district, which has rich fish resources along with other aquatic life forms like aquatic insects, crabs, earthworm etc. The average depth of river is 4 meter and the extensive algae were grown over the rocks and stones forming slippery bottom and often dangerous for fisherman. Basket implements which are prepared from reed (Nigala), bamboo are used to collect fish commonly known as Dhadiya. People use hammering technique to catch the Asala (*Schizothorax*) fish. This fish cannot tolerate high intensity of sound or noise. At the time of striking, Asala fish loses balance due to damage of their internal ear. A huge mass of injured fish float in water and are captured easily. Hook and line is another method used by local fisherman in this river. This method is also known as Balchhi Khelne. The other common tools are cast net, gill net, scoop net, mosquito net which are used in this river to catch fish regularly. Locally available plants poison and their derivatives are used to capture fishes in some places. These plants are *Sapium insignes*, *Bassica butyracea*, *Euphorbis royleana*, *Agave americana*, *Madhuca indica*. The derivatives of these plants contain harmful poison, chemical substances which can easily kill the fish when mix in water.

The Illegal fishing practice also is in practice in Kathekhola. The use of various harmful industrial chemicals, mostly plant pesticides is used for fishing. It is an illegal and unwise practice that gives rise to mass destruction of fish species and other important zooplanktons and phytoplankton. The electric fishing had been done by using electric current supplying currents by joining batteries with wires. It is increasing day by day creating threat to the fish resources in this river. The use of high voltage current implements creates adverse effects in juvenile and small fishes.

Fisherman in Kathekhola use different techniques and tools for different seasons to capture fish. The blocking and diverting of water, hammering methods are practiced when the water volume is less. Umbrella fishing is also in practice to collect small sized fishes like *Nemacheilus*, *Shistura*. Some people capture fish by umbrella for recreational purpose when water level is low in river. Practice of non-conventional fishing method is killing the large number of juvenile fish and laid direct impact on the fish resources and its habitat. The wipe out of these

juvenile create an adverse effect for declining of fish resources.

Conclusion

From the present study, various tools and technique have explored which are used for fishing in Kathekhola. The common tools of fishing gear found in the Kathekhola are cast net, scoop net, hook & line, gill net. These tools lie in the conventional fishing tools. The conventional tools mostly made from locally available material. Part time fisherman capture fishes for their recreational purpose whereas full time fishing done for their livelihood. Some non-conventional tools also reported from that area which is very harmful for fish resources. They mostly use electric current, chemicals and kill large fish population inhabiting in the water bodies. So, these activities should be banned in that area from the local government. It is necessary to create awareness program in riverine area where fisherman routinely capture fish for the sustainable use of fish resources and also the use of implements and technique.

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Conflict of Interest: No conflict of interest

Declaration

This manuscript of research report is prepared by first author. The second author collects the information and data from the study site under the supervision of first author. The whole work of this manuscript had reviewed by third author.

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