

GEARS AND CRAFTS USED IN SIDDHESHWAR RESERVOIR, HINGOLI DISTRICT, MAHARASHTRA, INDIA

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Abstract

The Siddheshwar reservoir is a medium sized reservoir of about 2574 ha area, constructed on Purna River at Rupur camp Tq.Aundha Nagnath, Dist, Hingoli and near village Siddheshwar Tq, Aundha Nagnath., Dist, Hingoli in 1968. Fish fauna of reservoirs in Marathwada region has received the attention of Valsangkar (1980), Desai (1980). However Sakhare (2002), Niture (2008) worked on Fishing methods employed in Yeldari reservoir of Marathwada region. The present study deals with the study of gears and crafts used for fishing in medium sized Siddheshwar reservoir of Hingoli district Maharashtra, for a period of 2 years, during 2011 and 2012. The important Indigenous gears used in this reservoir are Gill Net, Cast Net, Drag-Bag Net (Zorli Net), Hook and Line, etc. The crafts used are Thermocol rafts, and Air filled tubes for fishing.

Key Words- Fishing methods, Siddheshwar reservoir, Gears and crafts

INTRODUCTION

The Siddheshwar reservoir is a medium sized reservoir of about 2574 ha area, constructed on Purna River at Rupur camp Tq.Aundha Nagnath, Dist, Hingoli and near village Siddheshwar Tq, Aundha Nagnath, Dist, Hingoli in 1968. The reservoir lies in between north latitude 19°-0'-20" and East longitude 76°-45'-00". The reservoir is naturally situated in hilly region on both sides. Reservoir area is included in the survey of India toposheet map no 56A/10. It was the first ever-major region project in Marathwada region to initiate the process of economics development of Marathwada. Reservoirs and lakes contribute the inland fishery resource in term of production potential. Indian reservoirs has a rich variety of fish species, which supports to the commercial fisheries. The present study deals with the study of gears and crafts used for fishing in medium sized Siddheshwar reservoir of Hingoli district Maharashtra for a period of 2 years, during 2011 and 2012. The important Indigenous gears used in this reservoir are Gill Net, Cast Net, Drag-Bag Net (Zorli Net), Hook and Line, etc. The crafts used are rafts, and motor vehicle air filled tubes for fishing.

Material and Methods

The active fishermen population present in 13 villages around the Siddheshwar reservoir was 93 during study periods belongs to different caste and tribes. Fish landing centre and fishing activities were observed and studied for a period of 2 years, during 2011 and 2012 and information on methods of fishing in reservoir was collected. Beside this, interviews and questionnaires method was adopted to collect data on size of nets, its types and operation for fishermen involved in fishing. Information was also collected on different gears and crafts used in reservoir by photography.

RESULTS AND DISCUSSION

On Siddheshwar reservoir fishing is carried out throughout the year. Indian Major carp species and exotic carp species stocked in Siddheshwar reservoir and other local fishes were harvested by using various kinds of gears named by various traditional names. Gillnet, drag bag net, Hooks and line were used to catch the fishes. To operate the fishing nets the thermocol rafts of 1 to 2 person carrying capacity and motor vehicle air filled tubes for fishing.

The structure of different gears and crafts used in Siddheshwar reservoir is given below. -

GEARS

1) Gill Net:

In Siddheshwar reservoir the most commonly used net is gill net. Gill nets are passively operating nets and are generally classified as surface, mid water and bottom gillnets. These nets are allowed to drift along the wind or water current or the nets are set at particular depth by anchoring and are referred as drift gill net, set gill net, bottom gill net. It is called gill net because the fish gets entangled in to the mesh in the opercular region. The gill nets of various dimensions i.e. from 20 m to 100 m in length and 2 m to 4 m in height of mesh size varies from 1.4 cm to 20 cm were commonly used for fishing by the fishermen of Siddheshwar reservoir present in 13 villages presented around the periphery of reservoir. these gill nets were made up of synthetic fibers commonly called as Nylon net or Disco net. Every full time active fisherman has 10 to 30 kg nylon net. The quality of Nylon fiber used for the preparation of these types of net is very poor; therefore, the fishermen change their gill nets within 3 to 4 months due to tearing of nets. The gill net is made up of transparent synthetic fibers, which are commonly called as 'Nylon net' or 'Disco net'. Gill nets are with floats made up of thermocol pieces, soft pieces or plastic pieces fixed at regular intervals to upper line of the net where as stone pieces or metal pieces were used as sinkers, which are attached at regular intervals in lower line of the net.

Fishing operation by Gill Net:

The gill nets are generally set in the evening at between 4 to 7 pm in the reservoir. Every fisherman arranges 5 to 15 kg gill net or 1 to 5 gill nets of different mesh size according to the length at different places.

On the next day morning at between 6 to 9 am fishermen check the nets by using thermocol raft and collect the fish catch. (by fortune the fishermen got the fishes trapped in gill net where as some time the fishermen not get the fish catch.) Once again, the gill nets kept arranged in water and at evening, the nets were checked for fish. If at evening the fishermen got the fishes in their gill nets, such fishes were kept trapped in mosquito net trap bag in the water for overnight or mostly such fish catch is carried to home for consumption. The gill nets were purchased from either Hingoli market or from Nanded market at cost Rs 400 to 500 per Kg. As gill nets always remained in water, the nets are damaged in 4 to 5 months.

2) Drag-bag net (Zorli or Wadap)

The large sized drag-bag nets of variable dimensions made up of mosquito net were used in fishing operation by the fishermen of village Bhuskwadi, Dudchuna and Jod Pimpri. The 'Wadap' or 'Zorli' nets were purchased from Nanded market and cost varies from Rs 25,000 to 35,000. The Zorli net operations were observed from March to June of every year in Siddheshwar reservoir by the fishermen of above said villages. The Drag bag net used in Siddheshwar reservoir are commonly called as 'Wadap' or 'Zorli'. These are generally large sized nets of variable dimensions and mesh sizes, as per requirements i.e. water level in the reservoir, availability of budget and man power etc. In this type of net two lateral flanks of net are connected to the central large elongated quadrangular bag, which tapers towards the end. The lateral flanks of the net are rectangular in shape and made up of from 3 to 10 pieces of mosquito net, each piece of the net is 2-6 m. in height and 3-7 m. in width. The good quality plastic float are fixed to the upper line of flanks of the net while the stone pieces or iron pieces are fixed to lower line of the flanks of the net. There is no use of floats and sinkers to the central bag of this net.

Operation of the Drag-bag net (Zorli, Wadap)

To operate the drag bag net there was variation in the requirement of fishermen number, depending on the variation on the size of the Drag-bag net. 4 fishermen are required to operate these nets.

The terminal of both flanks of the net are either fixed to iron anchor on the coast of reservoir or held in the hands of a fishermen group on the coast of reservoir, rest of the part of the net is lodged on the combined 3 - 4 jointed thermocol rafts. 2 to 5 fishermen carry the net away from the coast of reservoir and release the net in the water with the help of bamboo sticks. The net is released in semicircular manner so that another flank of the net is carried to the coast of the reservoir. The distance between the terminal points of flanks of the net on coast of the reservoir after encircling the water body varies from 30 to 100 feet. Finally both the terminal ropes of net flanks are dragged by two separate groups of the fishermen or one end remains fixed to the anchor and other terminal rope of flank is dragged.

When the net flanks are dragged towards the coast line of reservoir then the fish and prawns are directed towards central bag of the net. The lower lines of flanks and the lower portion of the mouth of central bag

remain at the bottom of reservoir due to presence of weight. The catch enters and gets trapped in to the central bag which is removed on the coast of reservoir.

3) Hooks and Line: -

This type of fishing gear used to catch the predatory fish species from the reservoir. This equipment contains a long nylon wire or rope of 100 to 150 feet length having knots at 1 to 1.5 feet distance all along the rope. In between two knots, a nylon wire of 3 to 4 feet length is loosely fixed so as to move this wire in between two knots. At the free terminal of the wires rounded, metallic hard hooks are fixed. To each hook freshly caught small sized weed fish species like the one *Chela sp*, *Puntius ticto*, *Amblypharyngodon mola*, *Ambassis sp*. etc are fixed as bait to attract the predatory fishes.

To the main long rope or line, the plastic or thermocol floats are fixed and at few intervals the weights in the form of stone pieces are also fixed to the main line. Depending upon the depth of water there is variation in the weight fixed to the line. It was found that only weed fish species were used as bait but any other type of bait like insects, cockroaches, grubs, earthworms, Cattle beef, cattle liver were not in use for this purpose. About 60 to 100 hooks are fixed to a single line.

Operation of hooks and line-

Usually old fishermen or children are involved to use the hooks and line for fishing. All the hooks were baited with freshly caught (not dry) weed fishes. One terminal of main line is fixed at the shore of reservoir to a large stone or anchor or a shrub and entire line with baited hooks is carried in a bamboo basket and fishermen use thermocol rafts to carry the line and release the line and hooks into the reservoir water away from coast of the reservoir. Usually the line is released in a straight line or some times in a random direction in the reservoir water.

The predatory fish like *wallago attu*, *Heteropneustes fossilis*, *Mystus seenghala*, *Mystus blaker* usually attracted towards the baited fish, they engulf the bait along with hook and get trapped or hooked. The operation of line and hooks gear depends on availability of weed fishes used as bait. Hence, there is no fixed time to release the hooks and line but after its release the entire hook and system was removed after every 2 to 3 hours, to check the trapped fishes, and again the hooks and line was released in the same direction or at different direction. The line and hooks are checked for increase in weight regularly. The efficiency of this gear depends on population of predatory fishes. This is an effective method for the eradication of predatory fishes from the reservoir too.

The use of hooks and line gear was found occasionally when the weed fishes were found abundantly in the Zorli or Wadap net operation

CRAFTS

1) Thermocol raft-

The crafts used in Siddheshwar reservoir are locally called as 'Nav' or 'Hodi'. It is made up of from thermocol sheet of 7 × 2.5 feet long with 6 to 8 inches thickness. The Nav is prepared by using single continued sheet of thermocol or two thermocol pieces of size 3.5 × 2.5 feet each covered or packed tightly by mosquito net.

The cost of each crafts is about Rs 450 to 500 in Hingoli or Nanded market. The fishermen have to purchase the crafts individually. During 2011 to 2012 study duration, almost all crafts used were of these types. As this crafts were not suitable to carry large sized heavy nets like Zorli or Wadap. Hence, 3 to 4 thermocol rafts were connected to each other laterally to form large sized platform.

The thermocol rafts is navigated by single fishermen with the help of hand flipper made of single bamboo stick of 5 feet length with plastics flippers fitted at both the end of bamboo. To drive this boat with the help of flipper need a good balance technique and practice. This craft found to carry 5 to 10 kg stone pieces to tie with the nets as sinkers, it also carry a net of 4-5 kg weight. The catch obtained in gill net is collected in a nylon bag or mosquito net bag. This type of bag is tied to the raft from posterior side and the bag containing catch of 30-40 kg can be carried by dragging the bag in water, but not carried on the raft platform. It is single fisherman carrying raft. After fishing, the rafts are sun-dried on the coast of reservoir

2) Air filled rubber tubes;

Craft other than thermocol raft used in Siddheshwar reservoir is motor vehicle air filled rubber tubes. Usually those fishermen who are expert in swimming use this type of low cost craft .

Devi (1997) mentioned use of traditional catamaran with thermocol and coracle from Ibrahimbagh and Shathamraj reservoirs of Hyderabad.

Ahirrao and Mane (2000) mentioned indigenous crafts and Ratnagiri type of boats from rivers and reservoirs of Parbhani district.

In Yeldari reservoir of Maharashtra primitive type of crafts are used, which is a platform of 6×3 feet size with a depth of 5 to 8 inches. It is constructed from the thermocol and covered by a plasting covering (Sakhare, 2007) similar type of craft is used in Kalamnuri reservoir.

The available information confirms that in Indian reservoirs gill-nets are the common gears (Khan *et.al.*1991; Ahirrao and Mane, 2000; Sakhare, 2002,2003, 2007, Niture 2008). Gill nets in almost all Indian reservoirs require improvements in respect of design and other parameters like mesh-size and twine size in order to increase its efficiency.

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View of Sluice gates of Siddheshwar Reservoir, Roopur Camp Tq. Aundha (N), Dist. Hingoli



Study of net spreading process with fishermen of Shrirampur Village at Siddheshwar Reservoir



View of Siddheshwar Reservoir from Embankment



Fisher Community of Village Shrirampur, Siddheshwar Reservoir

PLATE-7