

Agarala: A traditional fishing boat of Karnataka

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Agarala boat or coracle is a traditional fishing boat used for estuarine and riverine fishing in Karnataka. These traditional boats ensure sustainable fishing using eco-friendly fishing methods. The main fish species caught in these crafts are *Sillago sihama*, *Sphyræna obtusata*, *Mugil cephalus*, *Aries aries*, *Gerres filamentosus*, *Lutjanus argentimaculatus*, *Leiognathus splendens*, *Cynoglossus macrostomus*, *Psettodes erumei*, *Platycephalus indicus*, *Etroplus suratensis*, *Anodontostoma chacunda*, *Portunus pelagicus*, *P.sanguinolentus*, *Scylla serrata*, *Thryssa mystax*, and *Opisthopterus tardoore*. Fishing with *agarala* in the estuarine waters is largely at subsistence level and is carried out by a minor section of the fishermen community. The following paper documents and reports for the first time, the use of such unique fishing boats, in the Dakshina Kannada district, Karnataka. The main objective of the study was to explore the nature of crafts, the unique design of the crafts used and types of fishes caught. Fishing in *agarala* provides a good source of income to the fishermen using these simple, traditional environment friendly and cost effective crafts which make sustainable use of the scarce fishery resources.

Keywords: Coracles, *Agarala*, Nets

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Coracles or *Agarala* boats as they are locally called are traditional boats which were once exclusively used for water transport in swiftly flowing rivers. Their use dates back to the Vijayanagar Empire during 1520 A.D. Coracles are primitive, light in weight, bowl shaped boats with a frame of woven grasses, reeds, or saplings covered with hides². Over the years, these circular crafts were constructed by interwoven strips of bamboo. The bottom of these round boats that were once covered with animal hides has been replaced with a coating of tar. These boats which were once used to transport people are now being used for fishing in the estuaries and backwaters.

Evolution of craft and gear in fishery is a result of experience gained over a long period of time. The design of a craft is typical to the region where it is used and is tailored to the hydrographical features of the water body as well as the fishery resources targeted^{3&4}. The use of such simple traditional non-motorised crafts by local fishermen is cost effective, environment friendly and to a large extent ensures sustainable use of the scarce fishery resources^{1,5&6}. Though these boats are in vogue for

many years, no systematic attempt has been made so far to study the suitability of such boats for sustainable fishing in estuarine waters. Against this background, it was felt necessary to conduct a study on the use of such fishing boats and to document their unique design features.

Methodology

Of the three coastal districts of Karnataka, Dakshina Kannada was selected for the study, since the *Agarala* were found to operate mainly in the Gurupur and Netravathi estuaries of the district. Fifteen fishermen along the Gurupur estuary and 15 fishermen along the Netravathi estuary operating *Agarala* were selected randomly. The Prior Informed Consent was taken from the fishermen (Shri TN Ravi, aged 31 yrs, Shri Kumar, aged 40 yrs, Shri Sharat, aged 20 yrs, Shri Ashok, aged 20yrs, Shri Ravi, aged 18 yrs and Shri Fakhira, aged 40 yrs) of Bestharu community, Mugeru village, Kadabari village, Thandhollia village, along Netravathi river and Dambellivillage, Adyar village along Gurupura river, Dakshina Kannada whose names are mentioned herewith for their co-operation and rapport for documenting the information pertaining to

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Agarala boats. The exploratory case study design was used. Farmer Participatory Approach which is a systematic semi-structured approach that uses a combination of methods to assess and understand a community's situation or a particular problem with the participation of the local people was used for documenting the details of the boat and fishing operations undertaken. Besides, focused group discussion which is a research strategy that involves intensive discussion and interviewing of small groups of people on a given issue was also applied. Group interactions of the fishermen who use *Agarala*, was carried out for easy documentation and arriving at meaningful triangulation. Semi-structured interview was administered on the group for the documentation of this ITK.

Results and discussion

The *Agarala* units are operated at Kuloor and Dambel along Gurupur estuary and Kannur, Bolar and Jappinamogaru along Netravathi estuary. Major species caught in the monofilament gill nets operated in coracle boats, are Indian sand whiting, mullets, cat fishes, silver bellies, pearl spot and crabs (Figs 1-7). The traditional fishermen who operate these boats hail from Nidagatta village, Kadur taluk of Chikmagalur district of Karnataka. These fishermen have migrated from Maharashtra 25 yrs ago, and speak *Marathi*

language and are distributed along different regions of Karnataka. Along Dakshina Kannada district they are found to stay in Gurupur and Netravathi river banks in makeshift dwellings made up of tarpaulin tents supported by wooden poles (Fig. 1). During monsoon season, they live in small rented houses along the river banks. During festival occasions such as *Dussehra* and *Ugadi*, they visit their native towns.

The basket shaped *Agarala* unit (Fig. 2) is made of bamboo strips, usually of 6-7 feet diameter (Fig. 7) bottom of which is covered with thick woven plastic bags (approximately 10 - 12 bags stitched together). The boat is made water proof by applying a thin layer of coal tar on the plastic bags (Fig. 3). Since the bamboo strips (Fig. 4) are not locally available, these fishermen procure ready made boats from Bhadravathi town of Shimoga district where some traditional fishermen from Tamil Nadu fabricate this type of boat. The ready built boats are transported by bus. On reaching the destination, the exterior of the boats are covered with woven plastic bags and coated with tar. The total cost of a boat is close to Rs. 2500. The gear used by these crafts are monofilament gill nets of mesh size 3.5-5.5 cm and each boat has 3-5 sets of nets. Each net panel measures around 12 feet in length and 3.5 feet in depth. The net panels are joined as per the fishing requirement. (Fig. 5) The area of operation of the net is about 1 -2 Km



Figs 1-6—(1) The *Agarala* Fishermen's makeshift dwellings; (2)—A view of the *Agarala*; (3) Outside view of *Agarala* which is having a coating of tar; (4) Inside view of *Agarala*, the bottom of which has woven bamboo strips; (5) Monofilament gill nets used in *Agarala* and (6) High value fishes such as Sillago, Barracudas, shrimps and crabs caught in *Agarala*

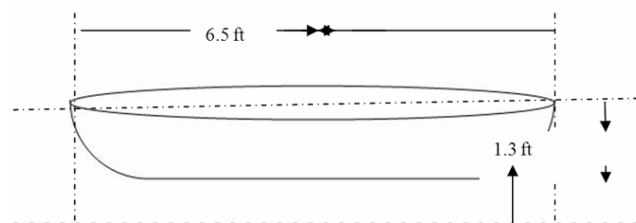


Fig. 7—Dimensions of the *Agarala* fishing boat

along the shore at a depth of 3 - 8 feet. The total cost of net is Rs. 3000.

Since fishing using *Agarala* are in estuaries, which is relatively calm, the fishing is carried round the year including monsoon months. The favorable condition for fishing is during high tide in string or neap tides. Though they operate the boats throughout the year, the peak season is January to April, during which, they get good catch (about 20 to 30 kg per day) of sand whittings fetching up to Rs. 400 per Kg. Typical catch composition of species caught by *Agarala* crafts is presented below.

Catch composition

The main fish species caught in these crafts are *Sillago sihama*, *Sphyraena obtusata*, *Mugil cephalus*, *Aries aries*, *Gerres filamentosus*, *Lutjanus argentimaculatus*, *Leiognathus splendens*, *Cynoglossus macrostomus*, *Psettodes erumei*, *Platycephalus indicus*, *Etroplus suratensis*, *Anodontostoma chacunda*, *Portunus pelagicus*, *P.sanguinolentus*, *Scylla serrata*, *Thryssa mystax*, and *Opisthopterus tardoore*. (Fig. 6)

Fishing with *Agarala* crafts in the estuarine waters is largely at subsistence level and is carried out by a minor section of the fishermen community.

Usually they set out for fishing in the morning between 5.30 - 7.30 hrs, and they return before 9 hrs, and if weather and tide conditions are favourable, they again operate between 14.00 - 15.30 hrs. Catch is brought to the Mangalore Fisheries harbour and the selling is done through agents by auctioning. If, the quantity is very less, than the evening catch is sold in the local market. If weather conditions are favourable, fishing is done throughout the month. During the peak months, these fishermen earn an income of Rs. 1000/-per day. During the other months, the fish catch will vary between 4 to 10 kg and the income also reduces to Rs. 200 to 500/ per day.

It was observed during the course of the survey that, at Kuloor 12 Nos were operating, at Dambel

20 Nos, at Bolar 5 Nos and at Kannur (Adyar) 20 Nos were found to operate.

Conclusion

The above study throws light on the primitive bowl shaped boat which has proved to be a time tested method of sustainable fishing, nevertheless targeting fishery resources of commercial importance. In many areas of the world the economics and politics associated with the introduction of new fishing technology has frequently led to a decline in fish stocks and the impoverishment of traditional subsistence fishermen. Studies of traditional fishing rights and investigations of ways of encouraging more effective use of existing fishing skills and technology are vital to sound fisheries development. Recognition of the importance of subsistence fisheries is long overdue. These practices are not anthropological curiosities, but vital village industries whose economic condition is yet to be assessed. Though the advent of modern technology in craft and gear has changed the face of Indian fisheries, the use of traditional crafts and gears is still continued by the respective fishermen community by virtue of its low cost sustainability and its suitability to the rivers or water bodies and the resources targeted.

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