

## River stone sinkers of Saurashtra coast: A report after quarter century

Prajith K. K.\*, Ejaz Parmar Rahim and Anand Narayanan D.

Veraval Research Centre of ICAR- CIFT, Veraval-65

\*prajithkk@gmail.com

Cost of the fishing gears plays an important role to make fishing activity economic. Fishermen throughout the world, understandably unwilling to wait for the slow process of science to provide a solution, have 'taken matters into their own hands', experimenting on their own with various techniques (Jefferson and Curry, 1996, Prajith et al., 2014). Use of river stones as gillnet sinkers is a traditional approach by the fishermen of Saurashtra coast of Gujarat, India, to reduce the gear fabrication cost. This small-scale business is mainly pertaining to Gir Somnath district of the state, especially in Veraval and nearby locations. From this region, use of river stones as gillnet sinkers was first reported by Manoharadoss et al in 1996. This investigation reports the changes happened to this small-scale sector in the past 25 years.

### Collection and transportation of stones

By employing daily workers, stones are directly collected from the nearby rivers. The collection is mainly done from Megal, Saraswathi, Gadu, Sapri and Hiran rivers, near to Veraval and Somnath city. Nearly 2000-2500 stones are collected per day. The daily wage for collecting stone is 350 INR. After collection, stones are transported to the workplace with the help of local transportation systems *Chakkada* (Rickshaw) with a transportation cost of Rs. 600/- per trip. Some family have their own vehicle for transportation.

### Sorting and categorization of stone

Once the stones reach in the workplace, they are sorted into various categories according to the size and weight (Table.1). Large stones are usually used in the bottom set gillnet, whereas comparatively small size stones are used in other nets. Besides gillnet, these stones are also used in the artisanal long line fishery, locally known as *Vaaga*.

After sorting a 10 mm holes is made to the side of the stone with the help of electric drilling machine. The cost of the drilling machine is around 5000-6000 INR. The major maintenance required for the machine is periodical replacement of needle and the motor belt (once in six month). Both cost 100-150 INR.



Close view of drilled river stones sinkers of various size

Table : 1 Details of stones used in various gillnets

| SL No | Name of the net                    | Species targeted       | Approximate weight of the stone |
|-------|------------------------------------|------------------------|---------------------------------|
| 1     | Bottom set gillnet                 | Lobster, shrimp        | 1-2kg                           |
| 2     | Large mesh gill net<br>(Jada jaal) | Tuna, seer fish, Shark | 750g                            |
| 3     | Pomfret gillnet Dhakara            | Pomfret                | 100-250g                        |
| 4     | Small mesh gillnet                 | Small pelagics         | 100g                            |





*River stone sinker moulding unit of Bhidia, Veraval, Gujarat*

Twenty five years ago, fishermen from the nearby villages were only procuring these stones from Kajli village (Manoharadoss et al., 1996). Presently this small scale business spread to other parts of GirSomnath district (Bhidia, Kindarva, Kanek) and fishermen from Jakhau to Bhavnagar are using these stones in their nets. To reduce the transportation cost, stones are transported with the help of fishing boat and also by vehicle returning to the respective locations. Fishing net shops of the respective locations keeps their contacts with the river stone collection units, and supplies them to the required fishermen. The price of a single stone is in the range of 1-1.3 INR irrespective of the size. The daily income for a person

engaged in this work is 300 INR. Comparative details of expenditure and earning are given in Table.2. In Bhidia, near Veraval, a family belongs to *Vankar* (traditionally engaged in hand loom weaving) community is engaged in this work. They do this business from August-April and in the rest of the months engaged in other business.

### **Cement sinkers used in other part of Gujarat**

Besides rivers stones, the use of several other materials like metals (lead), natural stones, cement disc etc as sinker have been observed. At Rupen Bandar, Dwarka, a group of nomadic family engaged in fabrication of cement sinkers used in gillnets. Long back, the family is migrated from nearby Maharashtra state and settled in Rupen Bandar. Cement sinkers of various size and weight are fabricated for all type of gillnets. Small sinkers are used in the drifting/surface set gillnets. whereas bigger once are used in large meshed or bottom set gillnet. On bag of cement is mixed with 15 mortar pan (cement mixing vessel) of sand and nearly 400-500 sinkers are fabricated per day. PVC pipes cut into suitable size are used as mould. Sinkers are sold for 2-3 INR/piece based on the size and weight.

*Table: 2 Comparison of expenditure and earning of 1996 and 2021*

| Sl. No. | Item                                                   | *Cost (INR) 1996 | Cost (INR) 2021 |
|---------|--------------------------------------------------------|------------------|-----------------|
| 1       | Transportation charges of stones from river to village | 60-70            | 600             |
| 2       | Cost of electric drilling machine                      | 3000             | 5000-6000       |
| 3       | Selling price of 100 stones (All size group)           | 20               | 100             |
| 4       | Average income per day                                 | 30-50/family     | 300/person      |

(\*Manoharadoss et al., 1996)





*Various stages of fabrication of cement sinkers*

**Reference:**

*Jefferson and Curry, 1996. Acoustic methods of reducing or eliminating marine mammal-fishery interactions: do they work? Ocean & Coastal Management, Volume 31, Issue 1, Pages 41-70.*

*Manoharadoss, R.S.; Pravin, P.; Paradva, J.B, 1996. River stones as gill net sinkers, Fishing chimes, March, Page 24.*

*Prajith, K.K., P.H. Dhiju Das, and Leela Edwin. 2014 "Dolphin Wall Net (DWN) – An innovative management measure devised by ring seine fishermen of Kerala-India to reducing or eliminating marine mammal–fishery interactions", Ocean & Coastal Management 102:1–6.*