

COMAD | MDS 007



“Suchithwa Sagaram” - an initiative towards a garbage free sea bed by Government of Kerala

Krishnan B. T. V¹, V. Kripa²

¹Superintending Engineer, Harbour Engineering Department South Circle, Kamaleswaram, Manacaud P. O., Thiruvananthapuram-695009, Project Coordinator, sesc.hed@kerala.gov.in, krishnanbtv@gmail.com

²ICAR, Central Marine Fisheries Research Institute, Kochi, vasantkripa@gmail.com

Introduction

The project concept “Shuchitwa Sagaram”, was evolved in a discussion held by the Hon. Minister for Fisheries Smt. J. Mercykutty Amma with the Kerala Fishing Boat Owners Association. The proposal was to collect the plastic and other garbage from the sea bed with the cooperation of the fishing boat operators take it to harbours, sort, wash and crush it in the shredding units installed in harbours and make it ready for recycling. Fishing boat operators at Neendakara harbor came forward to take the responsibility of collecting the garbage from sea take it to the land without any cost.

The Hon. Minister for Fisheries Smt. J, Mercykutty Amma was the sole inspiration of the project. Under her patronage a team of dedicated Govt. officials from Harbour engineering Department, Fisheries Department, NETFISH (MPEDA), State Shuchitwa Mission, Society for Assistance to Fishermen (SAF), etc were mobilized and the project Shuchitwa Sagaram was launched as a multi-disciplinary project.

First formal meeting to discuss about the project implementation was held on 27-07-2017 chaired by the Hon. Minister. It was decided to establish a plastic shredding unit in Neendakara Fishing Harbour, with the funding of Shuchitwa Mission, Initiate collection from boats etc. Net Fish MPEDA had assured to supply 2000 bags for collecting plastic from the sea. As scheduled in the first meeting, the collection of plastic from boats started on 05-08-2017. The women workers of SAF started processing of collected plastic from 07-08-2017 onwards. The shredding unit was installed within a record time of Four months as scheduled, and the project was inaugurated on 20-11-2017

Description of solid waste

The garbage collected from sea contains non-degradable wastes such as plastic carry bags, pet bottles, cement bags, pieces of wire ropes, tyres, fiber glass products, clothes, pieces of fishing nets etc. The land based waste collected from coastal areas also comprised of non-degradable plastics like plastic carry bags, pet bottles, fishing accessories like nets,



നീണ്ടകരയിൽ ശുചീത്വസാഹചര്യം പദ്ധതിയുടെ ഭാഗമായി സ്ഥാപിച്ച പ്ലാസ്റ്റിക് ഡ്രൈയിംഗ് യൂണിറ്റിന്റെ പ്രവർത്തനം വീക്ഷിക്കുന്ന മുനിസിപ്പാലിറ്റി സോ. ടി.എം. അതാൻ ഐസക്യൂം. ടി.എം. അതാൻ ഐസക്യൂം.



നീണ്ടകരയിൽ ശുചീത്വസാഹചര്യം പദ്ധതിയുടെ ഭാഗമായി സ്ഥാപിച്ച പ്ലാസ്റ്റിക് ഡ്രൈയിംഗ് യൂണിറ്റിൽ സാഫ്റ്റ് വനിതകളോടൊപ്പം മുനിസിപ്പാലിറ്റി സോ. ടി.എം. അതാൻ ഐസക്യൂം. ടി.എം. അതാൻ ഐസക്യൂം.



ബോട്ടുകൾ കടലിൽ നിന്ന് ട്രാപ് ചെയ്ത കോലുന്ന അലൈവ് കാലിന്യങ്ങളടങ്ങിയ കാലിബോട്ടുകൾ തൊഴിലാളികളിൽ നിന്നും മുനി ടി.എം. അതാൻ ഐസക്യൂം.



ബോട്ടുകൾ കടലിൽ നിന്ന് ട്രാപ് ചെയ്ത കോലുന്ന അലൈവ് കാലിന്യങ്ങളടങ്ങിയ കാലിബോട്ടുകൾ തൊഴിലാളികളിൽ നിന്നും മുനി ടി.എം. അതാൻ ഐസക്യൂം.



floats, buckets etc., pieces of wire ropes, tyres, waste cloths, foot wears cement bags, etc. sometimes parts of artificial reefs deployed by some local fishermen containing nets, bottles, twigs coconut husk etc were also trapped in the trawl nets and brought to harbour.

How was it done?

Collection: A major role is played by the Boat Owners Association by voluntarily participating in the process of collection of plastics from the sea bed. The collection of plastics is done by trawlers, along with their fishing operations. The plastic wastes trapped in the trawl nets are collected in the bags supplied by NETFISH.

Sorting, washing and drying: These bags are collected at the fishing harbor wharf at

Shakthikulangara, the southern bank of Neendakara Estuary, by the Shuchitwa Sagaram workers and taken for sorting washing and drying. The Washed and dried plastics are then stored in an old building available in the harbor. 15 women workers are regularly working in the project for sorting cleaning and drying. To ease their efforts HED has designed a washing and drying unit and the fabrication of the same is under way. Once the washing and drying machine is installed the number of workers will be reduced to nine.

Shredding: The shredding unit is located at the Neendakara side, the northern bank of the estuary. There are two machines one shredding machine and one bailing press. These are also operated by the women workers. Six women are working in the unit in two shifts. The daily out turn is around 200 kg at present. This can be raised to 300 to 350 kg per day if there is an un interrupted supply of raw material.

Transportation: The material is transported within the harbor by using local means whereas collecting and conveying plastic wastes from land side to shredding unit is the responsibility of local bodies.

The shredded plastics are proposed to be used for the road works undertaken by the Harbour Engineering Department. For other wastes like fishing nets pet bottles etc., tender has been invited from dealers of scrap materials to take away the wastes at competitive prices.

The Impact

The project was commissioned on 20-11-2017 only. It could collect only a Nano fraction of the garbage from the sea bed. But we believe that whatever little quantity we could collect, the message that is conveyed by this project to the rest of the world is more important and, in that aspect, this is one of the most successful project.

Adoption of this method by others

From the experience of the Shuchitwa Sagaram project, we realize that the initiatives for waste management will be successful only if there is a coordinated effort of various disciplines. There are many success stories and failures in waste management projects. Before stepping in to any such venture we should do a critical analysis of success and failure of similar projects. We are receiving a number of enquiries from various corners to know more about this project. It is not known whether this has been adopted anywhere else.

Economic aspects

The land and building for the project were provided by Harbour Engineering Department. An old canteen building left unused was altered suitably to accommodate the shredding unit, raw material store, product store etc. A total amount of nearly 5.00 Lakhs was spent towards this from HED funds. The Shuchitwa Mission has sanctioned an amount

of Rs. 14.70 Lakhs for the supply and installation of the shredding unit. They have also allotted Rs. 5.00 Lakhs towards the operational expenses of the project. Wages for the women workers were met from the Harbour Engineering Department's allocation for operation and management of Fishing Harbours.

Now the project operations are streamlined and we are trying to make the operation and maintenance sustainable. The wages are proposed to be productivity linked in order to have a maximum out turn from the workers. It is expected that about 350Kg plastics can be shredded every day. The average selling price expected is Rs. 20/- per kg. Hence an income of Rs. 7000.00 per day is expected from the project. If there are 15 workers Rs.400 each can be shared among them and Rs. 1000/- can be kept aside every day towards the power charges, maintenance etc. Additional fund requirement is planned to be met by sponsor ship as well as by space marketing for advertisement purpose. However, a viability gap funding will be required to meet the wages during the monsoon when it will be difficult to collect, wash and dry the plastics.

Conclusion - Future plan of work or any other aspect

Based on the success of the Neendakara project, the activities of Shuchitwa Sagaram will be extended to other harbours in the state also. In the inaugural address of the Shuchitwa Sagaram project, the Hon. Minister for Finance Sri. Thomas Isaac has extended his full support for the project and suggested to extend the project to the back waters of the state also. It is quite sure that this project will be adopted as a model for the whole state for the management of plastic wastes protection of water bodies and conservation of the aquatic environment. This project was successfully implemented with the participation of the fishermen of Neendakara and surroundings. It is worthwhile to note that this success story has come out from a society who are educationally backward, economically weak and living in primitive environment. The Shuchitwa Sagaram team extremely grateful to the fishermen of Neendakara for the success of the project. It is not the technology alone but the deep involvement and sincere efforts of all the concerned agencies and departments has led to the success of this project. Such a coordinated effort for waste management is implemented for the first time in Kerala.