

Gleaning seagrass meadows of Gulf of Mannar for ornamental seashells and its ecological impacts

Seagrass meadows harbour plenty of molluscan shells and Mandapam in the Gulf of Mannar is well known site for seashell collection. Ornamental shells like milky white *Tellina angulata*, Paper shell (*Arca* sp. and *Cardium* sp.) are collected from several locations in the local seagrass meadows. In the earlier days, seashells were collected from the surf zones and beach sand by sieving sand using hand-made circular sieves and was used as food (shellfish meat), construction (shell lime) and also for making shell ornaments. Shell collection through wooden dredge is deployed presently. A triangular-wooden dredge fitted on a 3 m long wooden pole and a net bag of 5 mm mesh size at the bottom called *Mutharipan kacha* by locals is operated manually during low tides. By moving the dredge perpendicular to the coast over a seagrass meadow, from shallow depths to the shore, shells and other

organisms encountered are collected. Using this dredge one person can mow up to 0.8 km within two hours, and 5-7% of catch can be seagrass shoots. Recently there has been a shift to use of motorized metal dredge as the quantity of shells collected through the manually-operated wooden dredge is very low while the demand for ornamental shells are ever increasing. Though the shape and function of this dredge is similar to the wooden dredge, the base made of hard metal bar (approximately 8 kg), is operated on motorized canoes from either sides. This gear can cover a distance of one km in 10- 15 minutes resulting in higher damage to seagrass meadows by uprooting the grass and often damaging the substratum. Meiobenthic sedentary organisms, eggs and larvae of commercially important marine resources are also found damaged and displaced

from the seagrass beds through this destructive operation for a paltry income of ₹140 per kg of shells (Figs. 1-2).

This undesirable gear is popular among the fishers who are unaware of the significance of seagrass meadows and their ecosystem services. Instead of employing dredges and other gears for shell collection, reef gleaning without disturbing the seagrass ecosystem may be encouraged. The State Department of Fisheries should check the indiscriminate use of these gears and also create awareness among the fishers on the importance of existence of seagrass meadows in general and the harmful effects of current ornamental shell mining methods.

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Fig. 1 Metal dredges used for ornamental shell fishing



Fig. 2. Shells sorted from the catch