# Minimum Legal Size (MLS):

## A Tool for Fisheries Resources Management

Fisheries resources play a significant role in providing food security for the growing population in the world. But, the natural fish stocks are continuously declining due to the indiscrimination of fishing practices and increased fishing efforts which are the predominant causes for declining marine fish stocks. A considerable amount of juveniles are captured both intentionally and unintentionally which goes for fish meal plants. In multiday trawling, the by-catch proportion has gone up from 8% to 50-60%. Hence, Minimum Legal Size (MLS)-a fishery management tool is used one of the strategies to reduce the juvenile exploitation and to check growth overfishing.

There are more than 4. 47 lakh boats (inclusive of all motorised and mechanized and artisanal boats) (ReAlCRaft, 2023) and 376 deep sea fishing vessels (Department of Fisheries, GoI) operating in the country. Though, fish is a renewable resources, if the young ones are caught before they breed at least once, the fish stocks will be over by 2050. Apart from over fishing, pollution, global warming, destruction of breeding/feeding grounds, ocean acidification, plastic pollutions have challenged the fisheries management. Along with fishing ban period, quota system, mesh size regulations, MLS is one of the better management tools for fisheries resources management.

**Fig 1.** Cent percent by-catch from the multi-day trawler at Mangalore fish landing centre

Minimum legal size is a common regulation used in fisheries management to ensure the sustainable harvesting of fish populations. It is the minimum size at which a fish can be legally harvested, processed, or sold. The MLS is seen as a fisheries management tool with the ability to protect juvenile fish, maintain spawning stocks and control the sizes of fish caught before they attain the Size at First Maturity (SFM). In some cases, the MLS and SFM may be the same, but in many cases, the MLS is set higher than the SFM to allow fish to reproduce at least once before they are harvested. This helps to maintain healthy populations and sustainable fisheries in the long term.

This measure will help to protect the breeding stocks across the world. It will be able to improve the resilience and performance of resources for future sustainability. The MLS sets the smallest size at which a particular species can legally be retained if caught. MLS could be used to protect immature fish ensuring that enough fish survive to grow and spawn, control the numbers and sizes of fish landed, maximize marketing and economic benefits and promote the aesthetic values of fish. Implementing the MLS would increase the economic efficiency of the fishery besides affording protection to juveniles. Allowing the juveniles to grow in weight and length results in higher harvest biomass, and therefore, higher income to fishers.

Fisheries managers typically set MLS based on scientific data and population assessments, taking into account of factors such as the size and age of maturity of the species, the reproductive biology of the species such as fecundity, life span, resilience factor and the current status of fishery. MLS regulations can vary depending on the species of fish, location, fishing methods and fishing efforts in the region. Precisely, it can be a decision making tool for selective gears; but for non-selective gears, increase of cod end mesh size, changing from diamond mesh to square mesh cod end and illuminating few wider openings would enhance the purpose of implementing MLS regulations.

## Implementation in Indian states

**Kerala:** In India, Kerala is the first state to implement the concept of MLS under the Kerala Marine Fishing Regulation Act (KMFRA), 1980. With the aim of increasing the economic efficiency and sustainability of the marine fisheries sector, the Department of Fisheries (Government of Kerala) approached the Central Marine Fisheries Research Institute (CMFRI) to provide necessary guidance for a policy formulation. According to CMFRI, growth overfishing due to overexploitation of juvenile fishes was causing considerable economic loss besides serious damage to the fish stock in terms of long-term sustainability of the fish resources. The institute recommended implementation of MLS to control size of fish caught with the intention of protection of juvenile fish and maintaining spawning stocks.

The Rules made under The Kerala Marine Regulation Act 1980 initially introduced 14 species of fish under MLS with a fine of Rs 50,000 on violators in 2015. Another notification was passed in June 2017 adding 44 species of fish to the original list. Totally CMFRI recommended 58 fish and shellfish and also increased the fine to Rs 2.5 lakh for the fishing vessel which violates MLS. Though there are 9 maritime states and 2 union territories, only few states have imposed MLS regulations.

**Karnataka:** With a view of protecting the fisheries resources by conserving the juvenile population, the Department of Fisheries, Karnataka notified Minimum Legal Size (MLS) to catch 19 species of fish under the Karnataka Marine Fishing (Regulation) Act, 1986 Section 3, Sub-Section 2.

**Table 1. MLS for different fish species in Karnataka state**

| # | Fish Species | Name of the fish in English | Name of the fish in Kannada | MLS (Cm) |
|---|---|---|---|---|
| 1. | *Sardinella longiceps* | Sardine | Bhutaayi | 10.0 TL |
| 2. | *Rostrelliger kanagurta* | Mackerel | Bangude | 14.0 TL |
| 3. | *Trichiurus lepturus* | Ribbon fish | Pambol | 46.0 TL |
| 4. | *Scomberomorus commersoni* | Seer fish/King Fish | Anjal | 50.0 FL |
| 5. | *Stolephorus* | Anchovies | Kolletaru | 7.0 TL |
| 6. | *Parastomateus niger* | Black Pomfret | Kappu Manji | 17.0 TL |
| 7. | *Euthynnus affinus* | Tuna | Kedar | 31.0 FL |
| 8. | *Sillago siama* | Lady fish | Kane | 11.3 TL |
| 9. | *Escualosa thoracata* | Anchovies | Bolenjir | 8.9 TL |
| 10. | *Nemipterus japanicus* | Pink Perch | Madmal | 12.0 TL |
| 11. | *Priocanthus hamrur* | Bulls Eye | Disco | 17.0 TL |
| 12. | *Lactrius lactarius* | Lactarius | Ade Meenu | 10.0 TL |
| 13. | *Cynoglassus marcostomus* | Flat fish | Nangu | 9.0 TL |
| 14. | *Pampus argentinus* | White pomfret | Bili Manji | 13.0 TL |
| 15. | *Epinephelus diacanthus* | Reef Cod | Muru menu | 18.0 TL |
| 16. | *Johnius spp* | Croaker | Kalluru | 15.0 TL |
| 17. | *Otolithes spp* | Croaker | Koddai | 17.0 TL |
| 18. | *Uroleuthis photololigo davauceli* | Squid | Kolu Bondas | 8.0 DML |
| 19. | *Sepia pharaonic* | Cuttle fish | Kappe Bondas | 11.0 DML |

**TL**: Total Length; **FL**: Fork Length; **DML**: Dorsal Mantle Length

** Consider the catch as violation if the 50% of the catch sample is composed of fishes at or below the MLS*

**Tamil Nadu:** There is no notification regarding Minimum Legal Size (MLS) as per TNMFRA, 1983 or has been notified in this regard, but CMFRI has proposed MLS for 113 species of commercially important fishes.

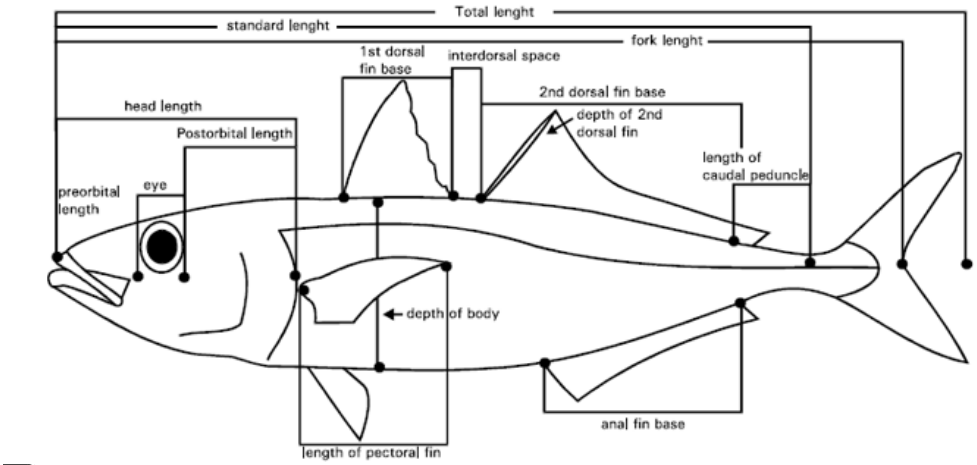
**West Bengal:** There are no general guidelines or order passed regarding MLS. But, officially catching of Hilsa below 23cm is prohibited.

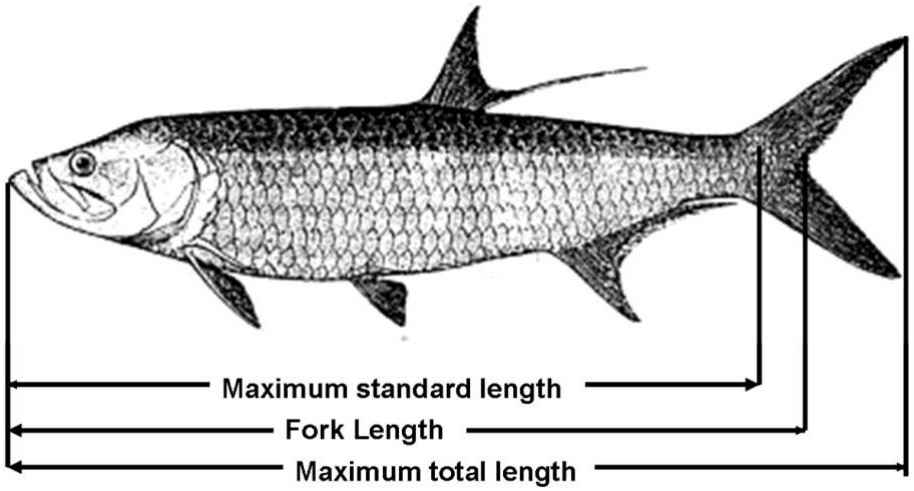
**Goa:** As per the GO No. No. DF/ENF/NOTI-IMPL-MLS/2020-21/5042 dated 7/1/2020, minimum legal size for 20 species is declared in order to avoid juvenile fishing in the state under Clause (c) of sub-section (1) of Section 4 of Goa, Daman and Diu Marine Fishing Regulation Act, 1980.

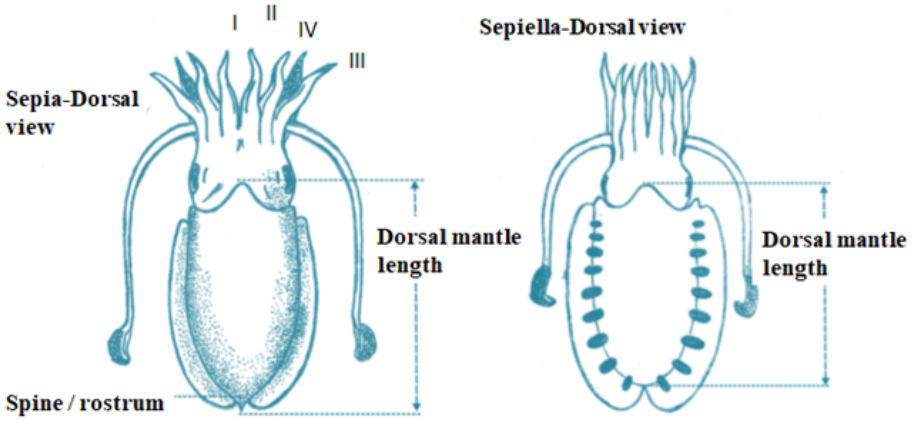
For determining the violations of MLS, the DOF is advised to take a random species-wise subsample of the catch (about 25-50 numbers), take appropriate

measurements, and consider the catch as a violation if more than 50% of the catch sample is composed of fishes at or below the prescribed MLS. Inspections may preferably be carried out at sea or in the landing centre using an unsorted sample. Through there are different morphometric measurements, only total length (TL), Fork Length (FL) for the fishes which have long caudal fins and for cephalopods dorsal mantle length (DML) are considered.

## Morphometric measurements of fish

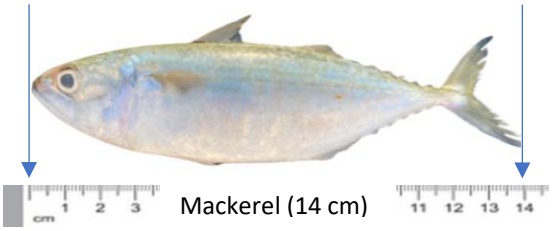


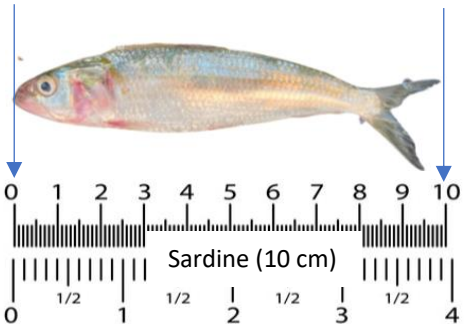




**Dorsal view of cuttlefish – Sepia / Sepiella**

# Fishes with **MLS regulation** in Karnataka

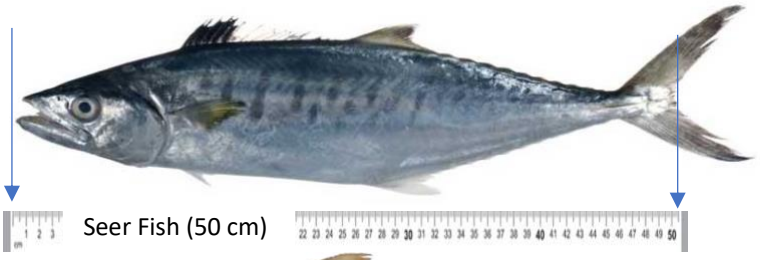


Mackerel (14 cm)

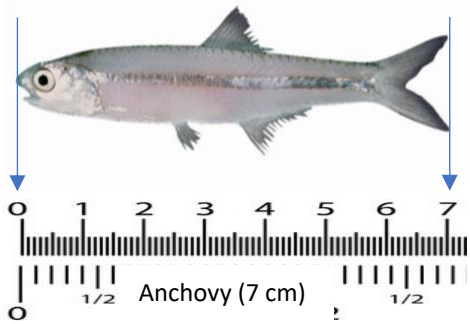


Sardine (10 cm)

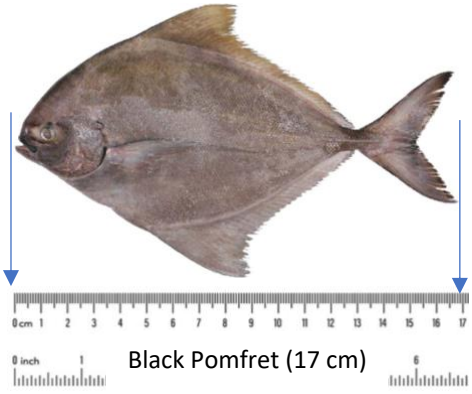
Ribbon Fish (46 cm)



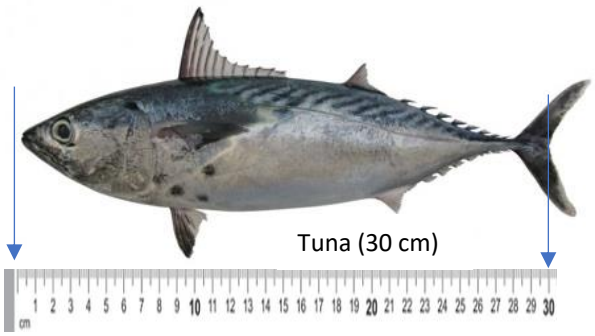
Seer Fish (50 cm)



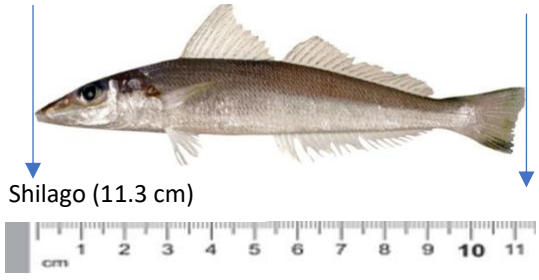
Anchovy (7 cm)



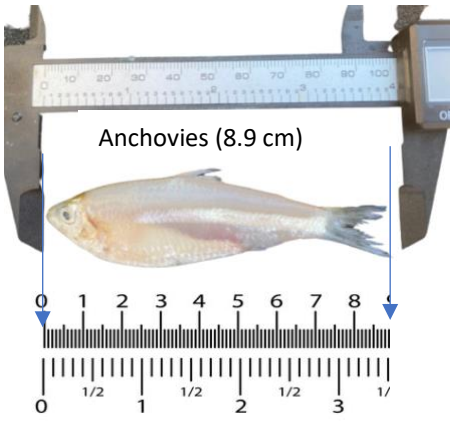
Black Pomfret (17 cm)



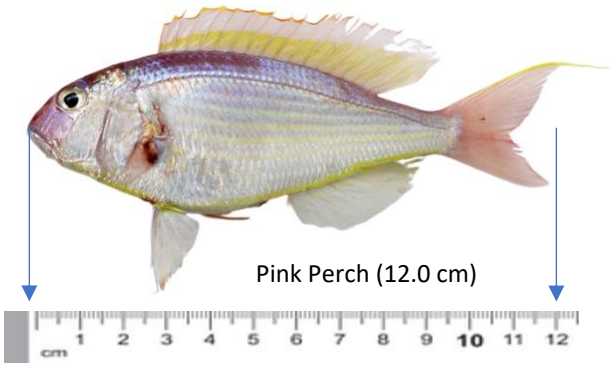
Tuna (30 cm)



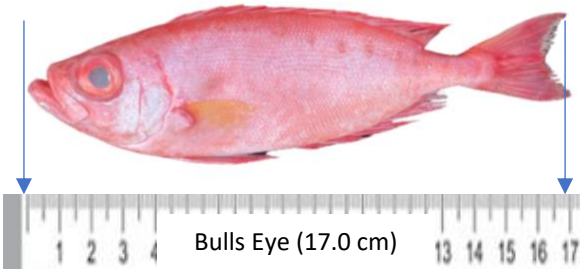
Shilago (11.3 cm)



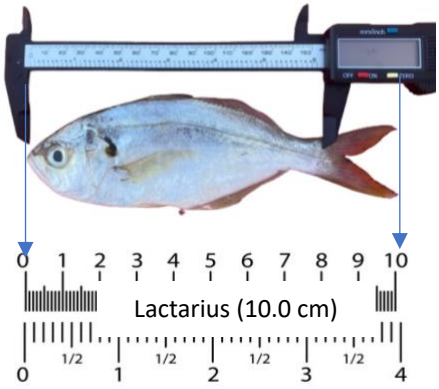
Anchovies (8.9 cm)



Pink Perch (12.0 cm)

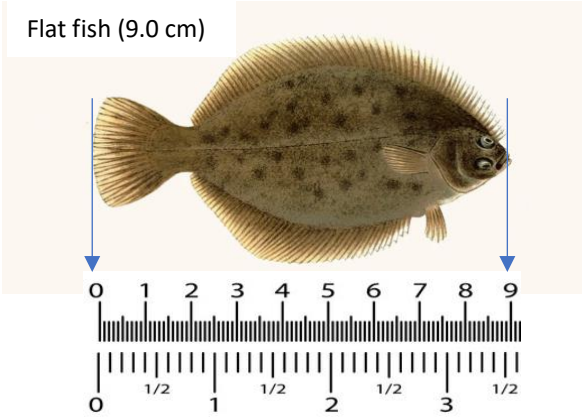


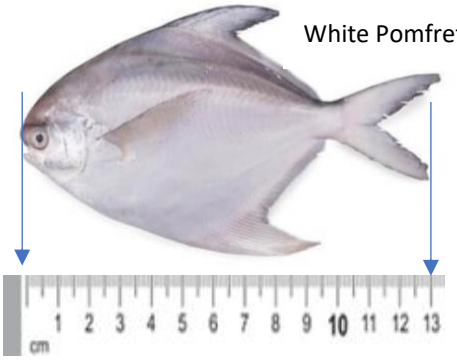
Bulls Eye (17.0 cm)



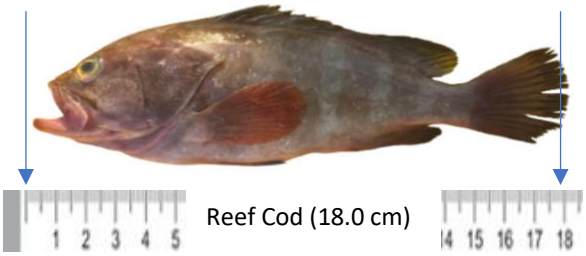
Lactarius (10.0 cm)

Flat fish (9.0 cm)

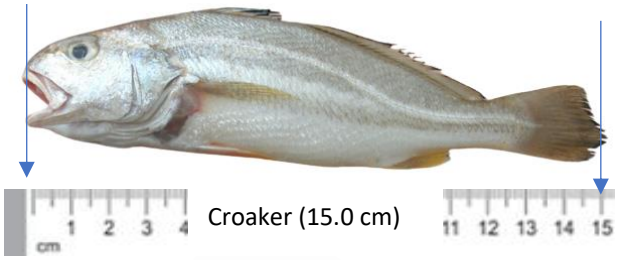




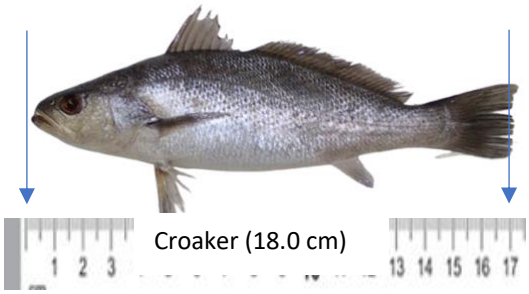
White Pomfret (13.0 cm)



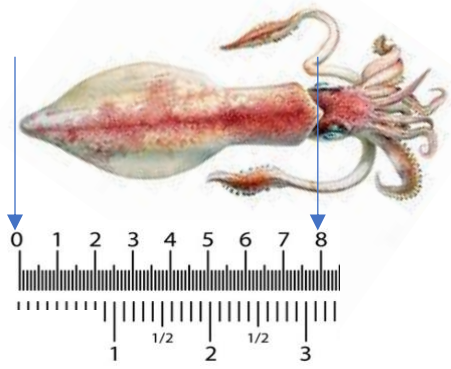
Reef Cod (18.0 cm)



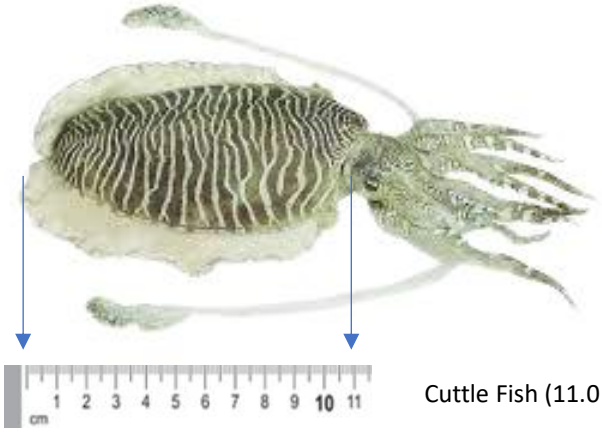
Croaker (15.0 cm)



Croaker (18.0 cm)



Squid (8.0 cm)



Cuttle Fish (11.0 cm)

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