

Sea safety programmes for small-scale and commercial fishermen in Sri Lanka*

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Marine fisheries is socially and economically significant around the entire 1 770 km coastline of Sri Lanka. The Exclusive Economic Zone of the country extends to 517 000 km², of which some 2 800 km² form the continental shelf. The marine area from the shore to the edge of the continental shelf is the coastal sub-sector. Annual sustainable yields from the coastal sub-sector have been estimated at 250 000 metric tonnes (mt) (170 000 mt of pelagic species and 80 000 mt of demersal species).

Some 610 species of coastal fish have been reported in Sri Lanka. The more common species caught are *Sardinella sp.*, *Amyblygaster sp.*, *Rastrelliger sp.*, *Auxis thazard*, *Anchova commersoni* and *Hirundichthys coromandelensis*. Most of these species live near the surface of the water. These small pelagics account for about 40 percent of the coastal fish production. Species such as *Lethrinus sp.*, *Trichurus sp.*, *Caranx sp.*, species of skates and rays, *Cynoglossus sp.* and *Jojnius* and *Tolithus sp.* live at the bottom of the coastal region (demersal). Many species of fish live between the surface and the bottom.

Some 90 species of oceanic pelagic varieties of fish have been reported to live in Sri Lankan offshore and deep sea waters. *Katsuwonus*

pelamis and *Thunnus albacares* dominate the large pelagic catches. These are migratory fish species and are therefore classified as stocks shared with other countries. Moreover, some 60 species of sharks and about 215 demersal fin and shellfish species have been reported in oceanic waters around Sri Lanka. The commercially important larger species are *L. lentjan*, *L. nebulosis* and *Lutjanus sp.*, *Pristipomoids sp.* and *Epinephelus sp.*

Production trends.

Total fish production in 2004 increased marginally by 0.5 percent over the previous year (Table 1). Marine fish production accounted for nearly 90 percent of the total fish catch, of which the coastal fish catch was 60 percent. The actual coastal fish production in 2004 was 154 470 mt, and actual offshore production 98 720 mt.

Generally, some 285 000 tonnes of fish are landed annually; 90 percent of it is consumed locally, the

remaining 10 percent is exported. The export of fish and fishery products in 2004 was 13 680 mt, valued at Rs. 9 435 million (US \$ 94.3 million), while imports of fish products (mostly dried and canned supplies) amounted to 67 284 mt at a cost of Rs. 5 944 million (US \$ 59.4 million).

Fishing activities take place around the entire coast of the country. Landings prior to the tsunami were made at 12 fishery harbours, several large and small anchorages and as many as 700 village-level landing sites.

Marine fish production has recorded a ten-fold increase since 1950, thanks to various development programmes carried out by the government. Marine sector fish production data is collected and analysed on the basis of 15 fisheries districts. Figure 1 summarises details by district.

Safety and health of fishers receive inadequate attention



This article is based on the presentation made by Mr G Piyasena in the Third International Conference on Fishing Industry Safety and Health, Mahabalipuram, 1-4 February 2006.

Profile of the artisanal, small-scale, commercial fishing sectors and the fishing fleet.

The marine fishing fleet consists mainly of small to medium size craft, owned and operated by private individuals. The total fishing fleet in 2004 consisted of 31 663 boats (Table 2) and diverse types of traditional and large-scale fishing crafts. The broader categorisation of fishing crafts is as follows:

Type of craft	Length
Non-motorized traditional craft	up to 21 feet
Motorized traditional craft	up to 45 feet
FRP day boats with OBM	17 - 23 feet
3½-ton day boats	28 - 32 feet
Offshore multi-day boats	34 - 60 feet
Beach seine craft	up to 30 feet

Prior to the tsunami, most traditional fishermen landed their fish catch at the estimated 700 village-level landing sites at beaches. Some landed in river creeks (estimated at 150). Multi-day boats and some of the day boats used the 12 fishery harbours, most of which were established in the 1970s. Major landing sites are located in the districts most affected by the tsunami.

Fish landed at fishery harbours, anchorages and fish landing centres is either transported to major urban centres such as Colombo, Kandy or Galle or sold locally. Fish retailing is done through municipal fish markets in urban centres, through private sector fish stalls and fish retailing outlets, or through motorcycle and bicycle vendors. Over the last few years, fish sections in supermarkets have become very popular among urban consumers.

Colombo has the main wholesale fish market in the island, St. John’s Fish Market. Fish received is either sold to retailers, institutional buyers, caterers or consumers, and redirected to various parts of the island.

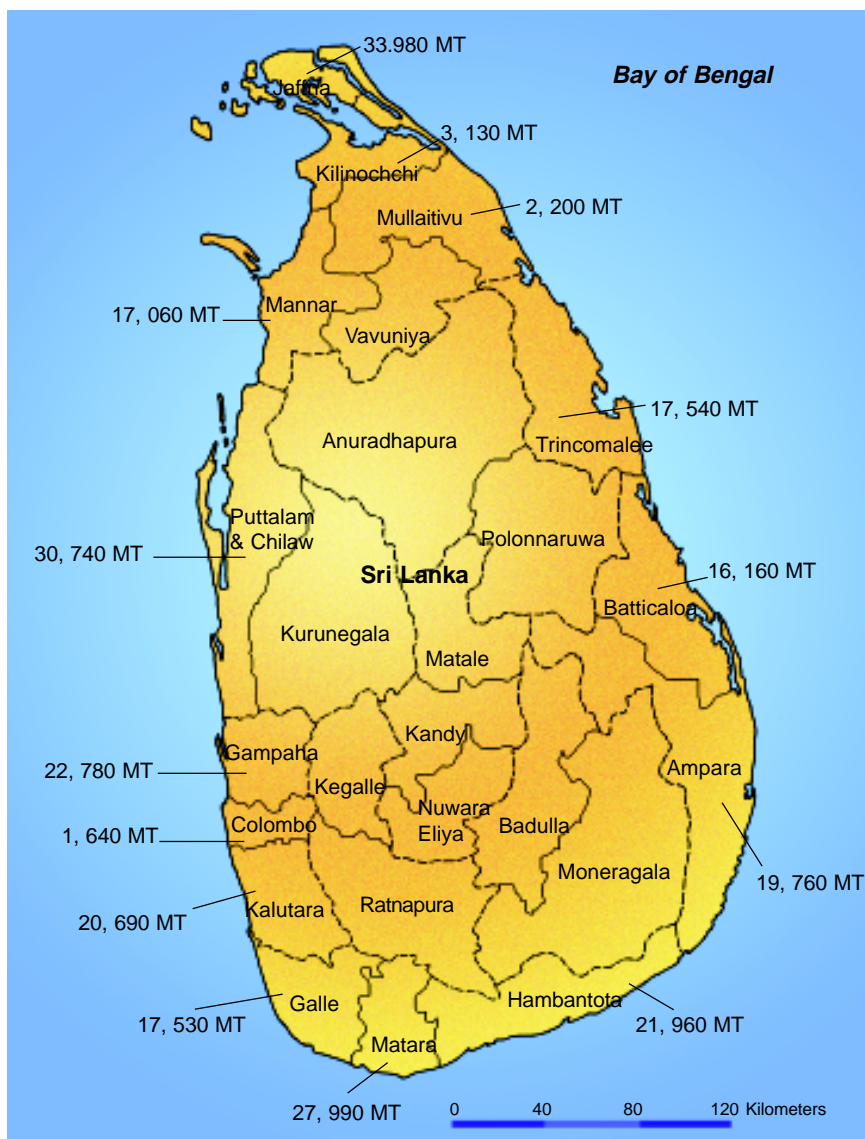


Figure 1: District-wise marine fish landings in Sri Lanka

Marine fisheries supports several associated industries and activities such as:

- manufacture of boats, nets and gear;
- fish processing, value addition, transport and marketing;

- production of ice; and
- curing / drying of fish.

Impact of the tsunami on the fishing fleet.

The Sri Lankan coast was heavily impacted by the tsunami of

Table 1: Annual fish production in Sri Lanka (in metric tonnes)

Year	Marine Fish Catch		Total Marine Catch	Inland and Aquaculture	Total Fish Catch
	Coastal	Offshore			
1950	-	-	25 124	-	25 124
1980	165 264	2 148	167 412	20 266	187 678
1985	140 270	2 400	142 670	32 740	175 410
1990	134 130	11 670	145 800	38 190	183 990
1995	157 500	60 000	217 500	18 250	235 750
2000	175 280	84 400	259 680	36 700	296 380
2001	167 530	87 360	254 890	29 870	284 760
2002	176 250	98 510	274 760	28 130	302 890
2003	163 850	90 830	254 680	30 280	284 960
2004	154 470	98 720	253 190	33 180	286 370

December 26 2004. Table 3 shows the damage caused by the tsunami and the status of recovery of the fishing fleet as at the end of December 2005.

Traditional fishing has been done inshore using simple canoes with outriggers. Despite development efforts spanning over 50 years, this type of boat still makes up nearly half of the fleet. Some 2 percent of fishing boats are canoes powered by outboard motors; a further 3 percent are beach seine craft without motors. Large motorised 'day boats' were introduced in the mid-1950s and consist of two types of crafts: 17-23 ft flat-bottomed fiberglass reinforced plastic boats (FRP) with outboard motors (37%) and 3.5 ton/28 ft FRP motorised boats (5%). In the 1980s, 59 ft motorised multi-day boats were introduced (5%).

Table 2 indicates trends in the development of the country's marine fishing fleet during the last five years.

76 percent of the total fishing fleet was affected by the tsunami. But 94 percent of the damaged fleet was either repaired or replaced within a year of the tsunami (by December 2005).

Sea safety issues

Sri Lankan fishers, both small-scale and commercial, have learned through long years of experience to

Table 2: Marine fishing fleet in Sri Lanka (2000 - 2004)

Boat type	2000	2001	2002	2003	2004
Offshore multi-day boats	1430	1572	1614	1530	1581
3 1/2 ton day boats (28 ft)	1470	993	1029	1486	1493
6-7m FRP boats (17-21 ft)	8690	8744	9033	11020	11559
Motorized traditional crafts	1404	639	776	618	674
Non-motorized traditional crafts	15109	15000	15600	15040	15260
Beach seine crafts	900	900	900	953	1096
Total	29003	27848	28952	30647	31663

fish almost round the year facing a number of major sea current systems and monsoons – northeast (November-January) and southwest (May-August). Fortunately, only a few lives and vessels are lost due to these sea conditions.

However, the number of multi-day boats drifting in the open sea due to engine failure, navigational difficulties, rudder damage and fuel shortage remains high. Boat manufacturers have improved the construction of boats in terms of construction materials, the size and shape of the hull and deck layout, but the attention paid to internationally accepted safety standards and construction norms is inadequate. Necessary action is therefore being taken to introduce new legal provisions concerning the safety of fishing vessels, to ensure required fishing facilities, equipment and health, and fair working and living conditions.

The following are the main factors behind accidents in small-scale fisheries in Sri Lanka:

- Inadequate knowledge of safety measures
- Lack of safety equipment
- Inadequate maintenance of crafts
- Engine failures
- Unfavourable weather conditions
- Insufficient fuel capacity
- Construction defects

Multi-day boats generally encounter the following problems:

- Drifting to foreign seas
- Inadequacies concerning seaworthiness of boats
- Inadequate knowledge on navigational equipment & reading navigational charts
- Engine failure
- Insufficient communication & naval equipment
- Lack of awareness of legal requirements on distant fishing cruises
- Unfavourable weather conditions

The major issue at present is the increasing number of incidents of drifting of multi-day boats at sea. Not enough care is taken to ensure the seaworthiness of multi-day boats. Some of them are recovered by air and sea surveillance or rescued by larger ocean-going vessels sailing through the same area or by coast guard vessels of neighbouring countries. Several cases of loss of life are reported when a boat is detected at sea and rescued or found after drifting to other states. It is imperative to ensure that the design of the craft is appropriate for the voyages and the sea conditions.





Traditional canoes dominate the coastal waters

Table 3: Fishing fleet recovery status (end December 2005)

Boat Type	2004 fleet	Damaged	Destroyed	Repaired	Replaced
Multi-day	1581	676	187	780	0
One day	1493	783	276	904	29
FRP boats	11559	3211	4480	4258	4321
Traditional crafts	15934	2435	11158	3479	8636

There are nearly 30 boatyards in Sri Lanka, of which 14 are capable of constructing multi-day boats. Other boat yards produce FRP day boats and traditional crafts. Existing regulations are inadequate to control construction quality and ensure the safety of the boat and crew.

International guidelines and safety standards laid down by various agreements and protocols such as

the 1993 Torremolinos Protocol, the 2005 FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels and the FAO/ILO/IMO Voluntary Guidelines for the Design, Construction and Equipment of Small Fishing Vessels, etc. have not been incorporated into local legislation so far. However, the Ministry of Fisheries and Aquatic Resources has taken action to introduce new regulations under the

Multi-day boats at the anchorage



Fisheries and Aquatic Resources Act in collaboration with the FAO and the Government of Italy.

Recommendations

In order to ensure that the sea safety standards are incorporated in the construction of boats and safety of crew, the following steps have to be taken.

- Strengthen the law and introduce international safety standards in boat construction in line with FAO/ILO/IMO Voluntary Guidelines both for small fishing vessels and commercial fishing vessels.
- Tighten legal provisions concerning the safety of fishing vessel crews in line with FAO/ILO/IMO guidelines to ensure the compulsory use of sufficient communication & navigation equipment.
- Raise awareness among multi-day fishers about:
 - Legal requirements concerning sea cruises.
 - Operating equipment & reading charts.
 - FAO/ILO/IMO Code of Safety for Fishermen & Vessels.
 - Strengthen surveillance and rescue operations.
- Improve and regularise weather forecasts so that fishers are better aware of them and can regularly receive them.

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