

## Large scale harvest of lizardfish juveniles along the Kerala coast

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Lizardfishes are one of the major demersal resources, which contribute 5.3% of the total marine landings of Kerala. They are locally known as “Aranameen” and are sold and consumed in fresh and dried condition in Kerala, and support a regular fishery. The lizardfish landings in commercial trawlers along Kerala during the period 2007-2016

was 1,05,848 tonnes (t), with an annual average catch of 10,858 t, which constituted 5.3% of the total marine landings of Kerala. The highest catch was noticed in 2015 (13,365 t) and lowest in the year 2007 (7,359 t). The catch rate of lizardfishes ranged from 1.8 kg h<sup>-1</sup> in 2007 to 3.4 kg h<sup>-1</sup> in 2015, with an annual average catch rate of 2.5 kg h<sup>-1</sup> during

2007-2016. The gear-wise landings of lizardfishes indicates that the major share was contributed by multiday trawlers (90%) followed by other mechanised fishing units, which include multiday trawlers vessels with trawl nets, hook and line, pair trawl units etc.

The lizardfish fishery was observed throughout the year, but peak landing was noticed during post-monsoon period from August to October, with highest landings in August, immediately after the monsoon season's mechanised fishing ban. The average annual species composition of lizardfishes landed in the state was *Saurida undosquamis* (43%), *Saurida tumbil* (52%) *Trachinocephalus myops* (4%) and *Saurida micropectoralis* (1%). *Saurida undosquamis*, or the brushtooth lizardfish, forms a major demersal fishery resource in all maritime regions of India except the northeast coast. The average annual landings of *S. undosquamis* during 2006-16 period was 4,140 tonnes, which formed 40.2% of total lizardfish landings of Kerala with highest volume recorded in 2012 (6316 t) and the lowest in 2007 (2434 t). They have good local demand in fresh condition and are sold at ₹ 50-80 per kg. During April - June, 2016, there were massive landings of juvenile lizardfishes (*Saurida undosquamis*) observed at Munambam Fisheries Harbour, which is one of the major trawl landing centres along the Kerala coast. The total landings of lizardfishes during the period by multiday trawl net units were 1533 tonnes (t) at Munambam Fisheries Harbour, which formed 11% of the total landings in the harbour during the period. The bulk

of the landings of lizardfishes during the period comprised of *Saurida undosquamis*. The quantity of undersized fishes was higher in the catch during the period. As the Minimum Legal Size (MLS) estimated for this species (10 cm TL) is less than the size at first maturity ( $L_m$  21.5 cm), estimates were made separately to quantify the juveniles i.e., the quantity below MLS and those of below  $L_m$ . The average monthly landing of fishes below size at first maturity during April-June period was estimated at 181 t and that below MLS was estimated at 57 t. Even though there were no landings of the species below MLS in April, 67% of the landings in the harbour comprised of individuals below the  $L_m$ . During May 2016, nearly 45% of the total *S. undosquamis* landed by mechanised trawlers in the Munambam Fisheries Harbour comprised of individuals below MLS and the rest comprised of fishes below  $L_m$ . In June, the juvenile component below the MLS was only 5%, but 19% of catch comprised of individuals below the  $L_m$ . Mean size of the fishes landed were 181, 116 and 222 mm in April, May and June respectively.

The under-sized/ juveniles of *S. undosquamis* were sold at the point of first sale for an average price of ₹ 30 per kg during the above period, while the adult/ marketable size of the species fetches ₹ 80 per kg at the point of first sale. These juvenile catch is utilised in fish meal industries of Karnataka. The economic loss due to the growth overfishing of *S. undosquamis* landed during the above period at Munambam Fisheries Harbour was estimated using the bio-economic model (Najmudeen *et al.*, 2016 *Book of Abstracts, International Congress on Post-harvest Technologies of Agricultural Produce for Sustainable Food and Nutritional Security* 379 p.) based on the population parameters such as growth rate, natural mortality and length weight parameters. The average monthly discounted loss due to growth overfishing of the species landed at Munambam Fisheries Harbour during April-June period was estimated at ₹ 35.36 million, had the species been left to attain the marketable size. It was one among the 58 species of marine finfish and shellfish species, whose MLS was estimated and

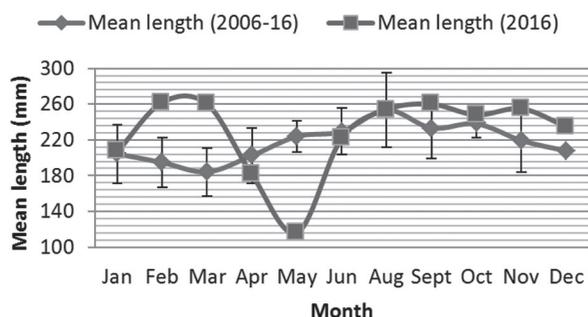


Fig. 1. Monthly mean size (Mean+SD) of *S. undosquamis* landed along Kerala coast during 2006-16 and in 2016.

recommended to Department of Fisheries (DoF), Government of Kerala for enforcement (Mohamed *et al.*, 2014. *Mar. Fish Infor. Serv. T& E Ser.*, 220:3-7). 14 species of finfish/shellfish were placed Vide notification No. G. O. (P) No. 40/15/F&PD in Kerala Gazette on 24<sup>th</sup> July 2015, but *S. undosquamis* was not included. However, in a second notification G.O.

(P) No. 11/2017/F&PD dated 17<sup>th</sup> May 2017, more species of finfish and shellfish including *S. undosquamis* were notified. Considering the estimated economic loss to the marine fisheries sector due to growth overfishing of this species, it is strongly recommended to strictly enforce the MLS regulations to sustain the stocks.