

# The Grouper fishery of Andhra Pradesh, Bay of Bengal coast of India during 2017-2023

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Groupers belonging to the Perciformes/Serranoidei are one of the world's most commercially important marine finfish resources, distributed mainly in tropical and subtropical waters. Groupers form the essential component of the "Live Reef Food Fish Trade" for which many species were significantly overfished (Kam *et al.*, 2024). Globally, there are 537 available species and 176 valid species of groupers (Fricke *et al.*, 2024). In India, there are at least 95 species of groupers, with 39 species from the genus *Epinephelus* (Akhilesh *et al.*, 2021). India has a minor but valuable groupers/rockcods fishery forming 1.95% of total marine landings of the country in 2023 with 69099 tonnes as indicated by the National Marine Fishery Resources Data Centre (NMFDC) of the ICAR-Central Marine Fisheries Research Institute (CMFRI-FRAEED, 2023). The estimated annual grouper landings have been sharply increasing, from the range of 12,000 to 25,000 tonnes per annum from 1995–2010 (decadal average of approximately 13,000 tonnes from 1991–2000 vs. approximately 20,000 t from

2001–2010) up to nearly 40,000 tonnes from 2011–2019 and 50,388 tonnes 2020–2023 (<http://eprints.cmfri.org.in/>). Andhra Pradesh contributed 1.2% to the total groupers landed in India during 2023. During 2017–2023, Andhra Pradesh had an average annual grouper landing of 588.0 with the landings showing an increasing trend across these years (Fig. 1).

Among the various coastal districts of Andhra Pradesh, the highest landings of groupers were seen in Kakinada, Konaseema and Visakhapatnam. Among the various fishing harbours in the state, Kakinada Fisheries Harbour accounting for 43% of the total landings was a major fishing hub for groupers in the region. Visakhapatnam

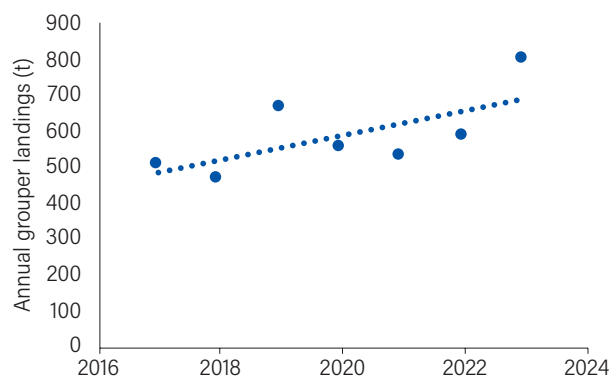


Fig.1. Annual (2017-2023) landings of Groupers in Andhra Pradesh

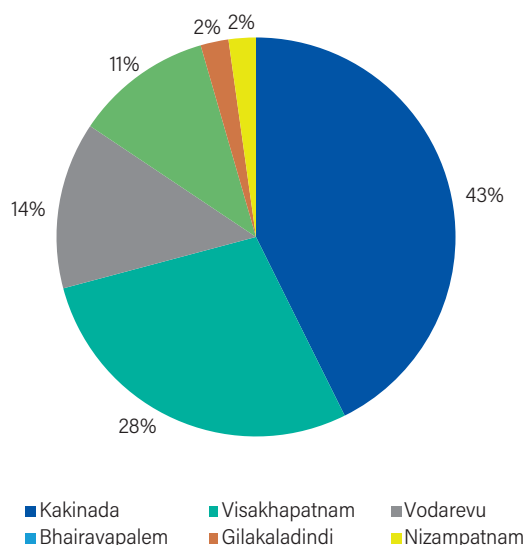


Fig. 2. Landings of groupers in different Fisheries Harbours in Andhra Pradesh



*Epinephelus radiatus* landed at Visakhapatnam Fisheries Harbour

followed with 28% and Bhairavapalem, with 14% of the grouper landings (Fig. 2).

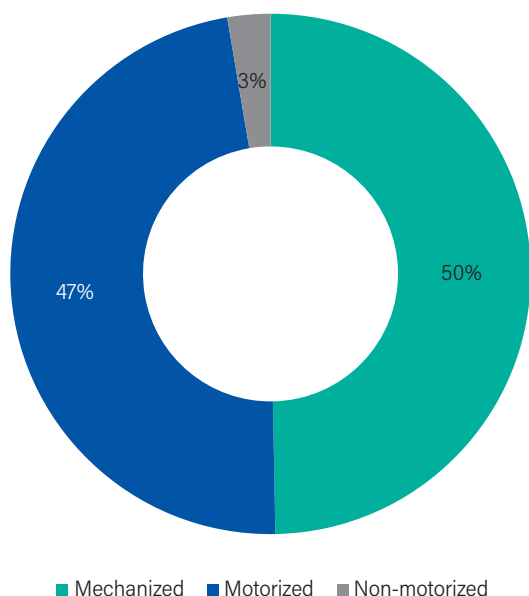


Fig. 3. Sector-wise contribution to grouper landings of Andhra Pradesh (2017-2023)

The main contribution to grouper landings in Andhra Pradesh came from the mechanized sector (50%) and the lowest was from the non-motorized sector (Fig. 3). Among the fishing gears, trawls were the largest contributors to grouper landings in Andhra Pradesh, followed by hooks and lines, gillnets and artisanal gears (Fig. 4). However, the average catch rate was quite low at 0.09 kg/hr (range: 0.05-0.12 kg/hr). The highest average catch rate was seen in hooks and lines at 2.61 kg/unit (range: 0.54-7.25 kg/unit) followed by gillnets at 0.19 kg/unit (range: 0.01-0.59 kg/unit). The average catch rate in artisanal fishing gears was 0.07 kg/unit (range: 0.02-0.2 kg/unit). Trawls, hooks and lines and gillnets (Fig. 5) showed an increasing trend in landings and catch rates of groupers during the study period.

The species composition of groupers was studied from Visakhapatnam Fishing Harbour regularly and biological studies of selected species were also undertaken. During 2023 the major grouper species landed included *Epinephelus coioides*, *E. latifasciatus*, *E. areolatus*, *E. epistictus*, *E. radiatus*, *E. malabaricus*, *Cephalopholis formosa* and *C. sonnerati*. *E. coioides* was the dominant species landed forming 76.3%



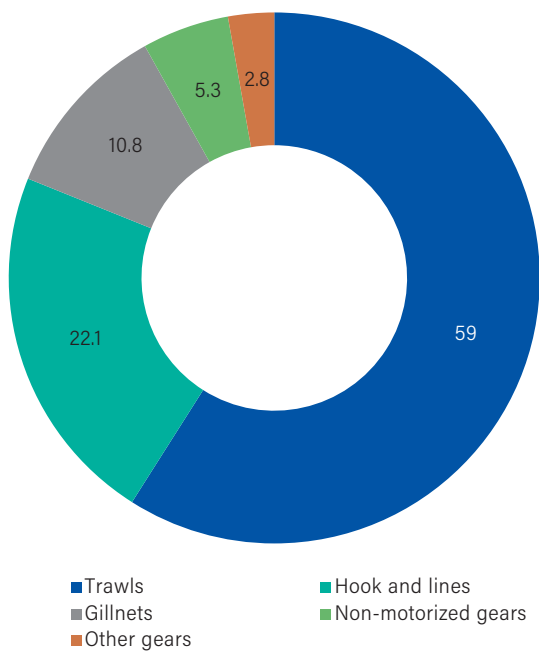


Fig. 4. Gear-wise contribution (%) to grouper landings of Andhra Pradesh (2017-2023)

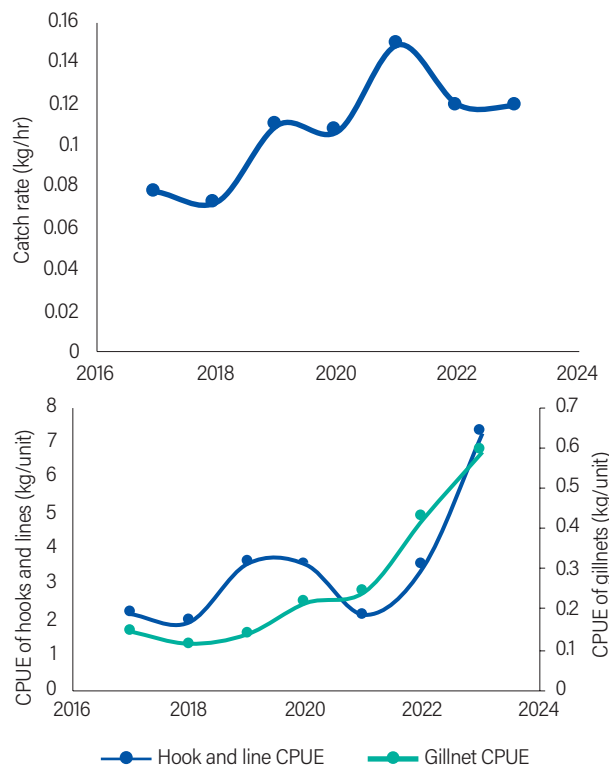


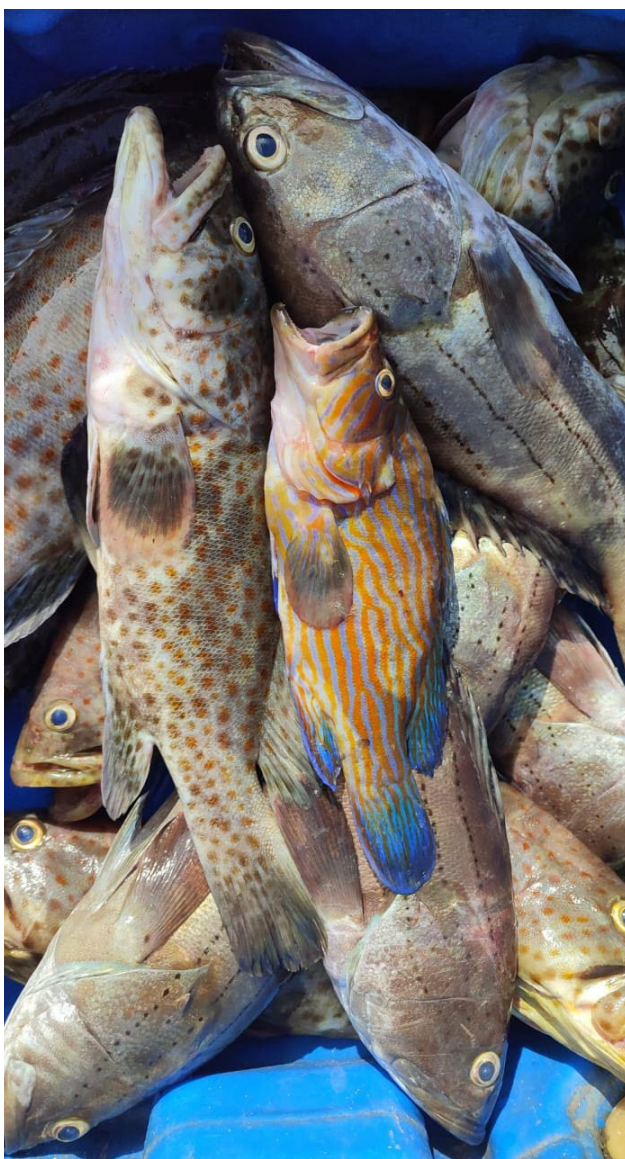
Fig.5. Catch rates in trawlers (kg/h) and Gillnet & Hooks and line (kg/unit) of Andhra Pradesh (2017 -2023)



*E. coioides* landed at Visakhapatnam Fisheries Harbour

Table 1. Size range of major grouper species landed at Visakhapatnam Fishing Harbour during 2023

Species	Total length range (mm)	Mean size (mm)
<i>Epinephelus coioides</i>	210-1030	599.6
<i>E. latifasciatus</i>	150-390	220.9
<i>E. areolatus</i>	180-320	251.7
<i>E. epistictus</i>	200-420	288.6
<i>E. radiatus</i>	220-465	296.7
<i>Cephalopholis sonnerati</i>	200-475	302.0
<i>C. formosa</i>	190-255	223.0



Groupers landed at Visakhapatnam Fisheries Harbour

of the grouper landings of the harbour. This was followed by *E. latifasciatus* (7.8%), *E. areolatus* (6.5%), *E. epistictus* (5.5%), *E. radiatus* (1.4%), *E. malabaricus* (0.1%), *Cephalopholis sonnerati* (1.6%) and *C. formosa* (0.8%). The mean sizes and size range of the grouper species landed at Visakhapatnam Fishing Harbour during 2023 is given in Table 1.

Visakhapatnam is the major grouper fishery and trade hub in north Andhra Pradesh. Though there is good demand for *E. coioides* in local markets, a substantial quantity is sent to Kolkata, Chennai, Mumbai and Kochi. The sale price at Visakhapatnam harbor for this species averages 150-300 ₹/kg which fetches upwards of 200-500 ₹/kg at the destinations. Fishes are packed whole in ice and transported to distant markets in thermocol boxes. Most of the grouper trade from Visakhapatnam relies on rail transportation with a meagre amount transported by road.

## References

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