Bali sardinella
Southern Java to Western of Timor Sea

Fishery: Indonesian Southern Java to Western of Timor Sea

IDENTIFICATION

SCIENTIFIC NAME
Sardinella lemuru

SPECIES NAMES
Bali sardinella

COMMON NAMES
lemuru (Indonesian common name for adult size), lemuru kucing or bei kocing (name for juvenile size), protolan (name for sub-adult size), sempent (name for juvenile size)

STOCK IDENTIFICATION

Bali sardinella or lemuru (Sardinella lemuru) is a coastal small pelagic, schooling, strongly migratory species that inhabits tropical waters of the Indo-Pacific region. The fish inhabits a wide area of the ocean from eastern Indian Ocean, southern coast of East Java and Bali (Indonesia), and western Australia, to western Pacific Ocean (Buchary 1998).

In Indonesia, lemuru occurs throughout the archipelago notably in Fisheries Management Area 11A (South China Sea), where lemuru contributed 0.01% of total average catches in the IMF from 2001 - 2006, IMF 12 (Java Sea, 5.7%), IMF 19 (Bali Strait and Flores Sea, 2.44%), IMF 74 (Pacific Ocean, 0.03%), IMF 76-Tismar Bay and Segar Sea, 0.02%), and IMF 52 (Indian Ocean - Southern Java to Western of Timor Sea, 0.03%). IMF 52 is the area where lemuru is mostly found and caught, particularly in the Bali Strait and vicinity (Buchary et al. 2011). Due to lemuru’s major presence in IMF 52 and the fact that Lemurus Management Plan (KIP-RI 2016) is determined for IMF 52, the management unit for Bali sardinella in this profile is determined at this level.

The Bali Strait is a 3.0-km tunnel-shaped marine environment that is located between the island of Java and Bali (Buchary et al. 2010). The Strait has an average depth of 50m in the northern part, with deeper area (~ 400m to 1,400m) in the southern part, adjacent to the Indian Ocean (Kerta et al. 2000). By mid-2000, there were 10 types of resident fishing gear that target lemuru in the Strait (Buchary et al. 2010). The main fishing gear is the manually-operated purse seine (jukung), followed by the semi-automated one-net purse seine (jukung purse). Small-scale nets (jukung, or jukung panjang) are also popular, mainly for sub-adults protolan and juveniles, operated with outboard-engine small boat. Purse seine (jukung), which mainly target finfishes, are mainly operated with outboard-engine small boats. Purse seine (jukung), which mainly target finfishes, are mainly operated with outboard-engine small boats. Purse seine (jukung), which mainly target finfishes, are mainly operated with outboard-engine small boats.

The fishery has been significantly supporting the local and national economy since mid-1970s, contributing to the creation of ample employment and income for the fishermen. The fishery is ‘single species’ in nature and is mainly caught by a single type of gear (i.e., purse seine) – less of multispecies, mixed fisheries nature. The fishery is managed by only two provinces – less bureaucracy. No related MSC fisheries.

ASSESSMENT

Strengthen

• The lemuru fishery is confined to a very small area (~1,200 km²) and is managed by only two provinces – less bureaucracy.
• The fishery is a single species in nature and is mainly caught by a single type of gear (i.e., purse seine) – less of multispecies, mixed fisheries nature.
• The fishery has been significantly supporting the local and national economy since mid-1970s, contributing to the creation of ample employment and income for the fishermen.

• Increased concern from the central government about the potential demise of the fishery resulting to the creation of a road map to rehabilitate the fishery (KIP-RI 2016).
• Recent reform and decentralization of registration system for fishing vessel > 30 GT would enable to sort out the problem of vessel size marking-down (Sukmana 2015, Indrajaya 2017).

Weaknesses

• Catch data has been seriously under-reported, discards and high-grading are not accounted for in official statistics.
• Stock assessment use basin-aggregated approach where species are aggregated at their ecologically-related group per fisheries management area of IMF (Buchary et al. 2011). Therefore, there is only one MSY value and one TAC value for all species combined within each group in the IMF per assessment.
• IMF has huge size and has lack of internal stratification (e.g., for near-shore small-scale fisheries, or for off-shore deep-water fisheries).
• Small pelagic group (where lemuru is lumped into) in IMF 52 had reached even-exploited state ($ = 1), and other studies on lemuru also showed similar results. However, managers have been issuing licenses for pair purse seine vessels, beyond the type agreed by the joint Management Committee.
• Fishers compliance to management regime is low, not only due to lack of facilities and governance efficiency, but also due to prevalent financial insecurity (Buchary et al. 2010).
• Deep challenges are faced by the Lemurus Management Committee, due to poor coordination and lack of funding.

Options

• Improve the implementation of the joint management between East Java and Bali Province to control the efforts through limiting the number of licence, fishing power, and boat size.
• Improve the statistics data collection system to obtain accurate catch data, including implementation of logbook system
• Implement monitoring, control and surveillance.
• Improve research on stock assessment and the cycle to estimate the potential of the fishery and the stock status as a basis for management and licensing.

SCORES

Management Quality: 6

Management Strategy Managers Compliance Fishers Compliance 6 6 6

Stock Health: Current Health Future Health 6 6

FIPS

No related FIPs

MSC

No related MSC fisheries