

White Paper

Fishery : Handline Yellowfin Tuna (*Thunnus albacares*) in Banda Islands
Indonesia : Indonesia

1. Overview

1.1 Identification of the fishery

Indonesia is the biggest tuna-producing country in the world, contributing 15 percent of global tuna production in 2009, followed by the Philippines, China, Japan, Korea, Taiwan, and Spain. The main commercially caught tuna species in Indonesia are skipjack (62% of total tuna landings), yellowfin (29%), bigeye (7%), albacore (1%), and Southern bluefin (1%) (FAO Statistical Collection).

Total landing of yellowfin tuna in Indonesia was 176,793 tonnes in 2011. Flores Sea, Banda Sea and Indian Ocean are important fishing grounds for traditional and small-scale tuna fisheries in Indonesia. The main tuna production from these areas was yellowfin tuna, contributing to 82%, with total production reached 46,586 tonnes in 2011. Maluku had the highest production, with 22,615 tonnes (49%). Maluku landing data might originate from catches came from Banda Sea, Ceram Sea, Sulawesi Sea, Halmahera Sea and Northern Sorong areas (MMAF 2011).

Traditional tuna fisheries from the Banda Sea are caught by fisher folk who live on the remote volcanic islands of the Banda Archipelago in eastern Indonesia. These fishers live in Banda Neira, Kampung Baru, Banda Besar Island, Lalaut, Ai Island, Run Island and Hatta Island. The fishing grounds cover the outer islands of Run and Hatta, and even reach out to Ceram Islands in 50 to 60 nm – See Figure 1.

The fishers catch tuna using handlines from very small two man boats, with the capacity of the boat is less than 3 GT, and average size range from 10 to 15 meters, that are equipped with ice. The Banda handline tuna fishery consists of at least 200 small boats. Every day, they leave their villages early in the morning, and on the same day (spending between 12 to 15 hours fishing) they return to sell their catch to local traders or to the processing boat moored in a sheltered strait near their home. The tuna caught by these small boats are mostly categorized as 'Grade A' (tuna with red muscle tissue, are firm in texture, some translucency and no fat), only small portions are at 'Grade B' (lower quality - Tuna with some red and some brown muscle tissue, is firm in texture, no translucency (opaque) and no fat). One individual of tuna can reach as big as 90 kilo.

1.2 Current and historical catch/landings numbers over time

Production data collected from the local fisheries office of Banda Islands showed that the peak production in Banda was in 2005, with 2,665 tonnes. The catches declined since 2007, and in 2012 was only 240 tonnes recorded, which make Banda only contributed towards 1.1 % from the total production in Maluku in 2011.

Table 1. Landing yellowfin tuna in Banda Island (local fisheries office)

Year	2005	2006	2007	2008	2009	2010	2011
Yellowfin Tuna (tonnes)	2,665	517	738	561	557	575	240

Source: Banda Sub-district Fishery Offices, 2012



Figure 1. Banda Islands Fishing Ground



Note: red dot is the location of collecting boats that collect fresh yellowfin tuna from handline tuna fishers in surrounding areas

1.3 Current and historical stock status

Yellowfin tuna in the western and central Pacific Ocean (WCPO) are not in an overfished state ($B_{\text{current}}/B_{\text{MSY}} = 1.33$ and $SB_{\text{current}}/SB_{\text{MSY}}=1.47$) and overfishing is not occurring ($F_{\text{current}}/F_{\text{MSY}} = 0.77$) (Langley et al. 2011). However, newly released Fishery Minister Decree on Estimation of Fishery Resource Potential in Indonesia put yellowfin tuna in Banda Sea (WPP 714) as *fully exploited* (MMAF, 2011).

1.4 Description of management system and regulations

This fishery is carried out by small boats, less than 5 GT, which are required to register with local fisheries District Office in Ceram Island.

The fishing grounds of coastal handline yellowfin tuna in Banda Islands are close to Banda Sea Marine Recreational Park, covering an area of 2,500 ha. Fishers in Banda Islands are targeting large pelagics such tuna as their main catch, where the fishing grounds are 3 to 4 hours away from the Banda Islands.

“Sasi” has not anymore implemented in Banda Islands except in Hatta Island, and that is also in the process of being revived by the NGOs. “Sasi laut” apply for top shells (*Trochus spp*) and sea cucumbers. CTC collaborates with ILMMA revitalize *sasi* on trochus, and assist communities to develop LMMAs

1.5 Uses of harvested product

In Banda Islands, tuna fishers have several buyers. A Benoa-based processor stations its collecting boat in the Banda Neira to provide ice and buy the catch from hand line tuna fishers. Tuna is processed in the boat into loin. Some fishers loin the catch at sea, and sell to the buyers as loin product – Figure 2. The lower grade tuna are available in Banda fish market for local consumption.



According to the tuna processors, tuna from small-scale fisheries contribute to 50-60% of total tuna sources for their companies.

Figure 2. Mooring site of a Benoa based Collecting Boat



1.6 Market Information

1.6.1 Export market, volumes and value

The main markets for tuna exported from Indonesia are Japan (35%), the United States (20%), Thailand (12%), European Union countries (9%), and Saudi Arabia (6%) (MMAF, 2010).

Table 2. Yellowfin tuna export to US Market (2009-2013)

Year	2009	2010	2011	2012	2013
Fresh yellowfin tuna (kilo)	493,469	858,349	453,397	207,926	259,096
Frozen yellowfin tuna (kilo)	1,627,680	1,154,698	1,057,270	852,342	1,312,837
Total Value (US\$)	19,250,187	16,067,436	13,677,116	11,787,755	13,160,803

Source: NOAA Foreign Trade Database

1.6.2 Domestic use and value

Fishers will try to sell their catch to the collecting boats or local traders. The lower grade tuna are available in Banda fish market for local consumption.

1.6.3 Fishery's contribution and national economy



Tuna products are the second biggest Indonesian fishery product export, after shrimp, contributing 15% of total export value, about USD 498 million, in 2011. Indonesia tuna export shows increasing trend over time.

Table 3. Value of tuna export from Indonesia (in 1000 USD)

2006	2007	2008	2009	2010	2011
250,567	305,348	347,189	352,300	383,230	498,591

Source: MMAF 2012

Tuna is an important artisanal fishery, supporting the livelihoods of coastal communities in the Banda Sea and elsewhere in Indonesia. Yellowfin tuna contribute to about 4% of total fish landing in Maluku Province, putting this fishery in number 6 of top fisheries commodities from Maluku Province, following other fish (21%), skipjack (10%), scad (7%), eastern little tuna (7%) and mackerel (5%). The Flores and Banda Seas areas are the main source of coastal tuna fishery for export.

2. Key issues/challenges in the fishery

The coastal handline yellowfin tuna fisheries face challenges, including:

- No data on the artisanal tuna fisheries (the current available annual catch data for Indonesian tuna fisheries is collected from vessels above 5 GT)
- Existing annual catch data from Indonesian capture fisheries statistics do not show the annual catch estimate for each species for each type of fishing gear
- The unregulated use of FADs which catch juvenile tuna
- Competing with purse seine which fish in the same fishing ground
- Lack of market access, storage facilities and ice which reduce the value of tuna

3. Recommended solutions/current improvements

Develop the FIP with tuna processors based in Benoa (Intimas Surya) with major activity:

- Conduct study to better understand about the fishery, including to get more accurate information on how the fishery business contributes to local communities, etc.
- Develop Catch reporting to support the management of the tuna fishery in the region
- Improve catch data collection by enumerator
- Assist fishers to comply to regulation by registering their fisheries operation
- Promote traceability

4. Stakeholder Summary and Roles

The supply chain of handline tuna in Banda Islands is pretty straightforward. The fishers sell their catch at the same day to the collecting boats owned by PT. Intimas Surya mooring in front of Banda Neira. There are more than 200 fishers supplying to PT. Intimas Surya. The fishers are already organized and the field coordinator hired by PT. Intimas Surya is acting as Secretary of this fisher organization.

There are other fishers that sell tuna as loin products to processors or traders in Ambon, and then from Ambon it will be shipped to Bali, Surabaya or Jakarta.

Stakeholder (company or organisation)	Stakeholder type	Potential role in FIP	Level of potential influence over fishing practices, policies, and/or



			research
Fishermen – Fishers Association (there is existing fishers association consist of more than 200 fishers)	Catchers	Comply to Collector’s requirements to earning good prices	Compliance to local regulation/requirement
Collecting Boat	Collector	<ul style="list-style-type: none"> • Encourage fishers to do simple improvement (i.e. environmentally-friendly or better fishing practices) • Improve in catch data reporting 	Contribute to more reliable catch production data
PT. Intimas Surya	Processor/Exporter	<ul style="list-style-type: none"> • Lead the FIP • Push the suppliers to make some improvement and setting up certain standards (i.e. only receiving certain size) 	Contribute to better management of tuna fishery in the region, through improved catch record, support observer program.
Importers/Buyers in the US	Buyers	Encourage the processor/exporters to make some improvement	
Sustainable Fisheries Partnership	NGO	Providing technical assistance, i.e. technical support and advice, training and capacity building	
Yayasan LINI	NGO	Field survey and fishery data collection; investigating supply chain on the ground; capacity building for fishers, local government	
Fishery Office (Dinas Perikanan)	Government	Local regulation, providing more accurate fishery data within the area	

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