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SKIPPERS WORKSHOPS: ISSF Skippers Workshops bring tuna fishers together with marine scientists for participatory sessions — at key fishing ports worldwide — to share ideas and information on best practices to reduce bycatch.

Skippers workshops are an important component of ISSF's mission. Held throughout the year at major ports in the Atlantic, Pacific, and Indian Oceans, ISSF workshops have welcomed crew members from vessels fishing under more than 25 national flags. In 2018, we have embarked on our 8th round of Skipper Workshops. The information below summarizes results obtained during the noted Round 8 workshop.

INDONESIAN SKIPPERS WORKSHOPS REPORT	
Location & Date: **Bitung (Sulawesi) 7th May 2018**	
Nº Participants: 49 (Table in Appendix II)	
Presenting Scientists: ANUNG WIDODO, JEFFERSON MURUA, IGNATIUS TRI	
SKIPPERS WORKSHOPSCOMMENTS + NEW IDEAS	
COLOR CODES FOR MEASURE ACCEPTANCE LEVEL	
HIGH / **MID-HIGH** / **MID** / **MID-LOW** / **LOW**	
Presentation Sections	
1. Indonesian purse seine fleet, PVR and Skipper Training	- This was the fourth ISSF Skippers Workshop conducted at the port of Bitung since 2012. For specific details on the fleet vessel composition at this port please refer to previous reports. Participation was notable, with 40 fishers, most skippers (see Appendix I). A group of about 10 members of the Bitung Port Authorities also attended the meeting. - Most participants worked in vessels between 40-100 GT, thus their vessels exceeding >30 GT were not exempted from skipper training requirements for PVR. As many of these vessels do not operate in international waters, they do not appear in RFMO lists, but are registered in the Indonesian official fishing license registration system R-VIA.
2. Tuna catches and BET/YFT identification	- Fishers have logbook sheets they must fill out and hand in to locally based enumerators at the various ports. The sheets are not specific to PS only and has a general layout for completion by all types of tuna boats (e.g. longline, pole and line, etc.). Fields to fill in include vessel gear and characteristics, dates, locations and type of fishing activity (e.g. on FADs) and cells for tuna species (e.g. skipjack, yellowfin, bigeye, kawakawa, frigate tuna, etc). It also has extra blank cells for species not included in the form like sharks, turtles, etc. and kilograms caught (see photo Appendix II).

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	- The logbooks that fishers must fill in have separate columns for yellowfin and bigeye tuna catches. However, because many fishers do not distinguish well between juveniles of these two species, they are often mixed up or reported in a single column. Fishers refer generally to small YFT and BET as "baby tuna". Electronic copies of tuna identification posters in Bahasa Indonesian (produced by D. Itano and translated by A. Widodo) were provided to Bitung port authorities for distribution among registered tuna vessels at the port. - The West Pacific East Asia Oceanic Fisheries Management Project (WPEA) has been running for since 2010 in ports of Indonesia, Vietnam and Philippines with the main objective of improving data collection for stock assessment in ports from the Eastern Asian tuna fishery region. Indonesian scientists from CFDR have regular meetings with WCPFC program coordinators to update on progress. Ports like Bitung have strongly benefited from this program and enumerators and observers permanently hired to collect fisheries information. - No albacore is caught by the Bitung vessels.
3. Utilization	- There is full utilization of fish species, tuna or others. Only small scad may be sometime discarded by larger vessels. - There are strict regulations prohibiting the sale of endangered species like sharks and manta rays, with even jail penalties for captains, which has deterred many fishers from keeping these species onboard. - Fishers in Bitung said that non-tuna species (unlike in other ports like Java) reach very low prices. For example, theoretically "high-quality" fish species like mahi-mahi or barracuda sell only at about 0.7 USD per Kg, compared to 5-6 USD in Jakarta.
4. Non-entangling and biodegradable anchored FADs.	- None of the fishers use drifting FADs, only anchored FADs ("rumpons" in Indonesian) are utilized. Although the maximum legal number of FADs per vessel is three, small PS use 3-6 aFADs on average, while the >30 GT PS have about ten. Although regulations stipulate that aFADs must be at a minimum distance of 10 nm, in reality the average distance between aFADs is around 5 miles. The aFADs do not use netting, thus all are non-entangling. - Some of the traditional rafts are still built with biodegradable materials, namely bamboo. However, many aFADs nowadays have a pontoon or cylinder raft with a foam core encased in fiber glass or metal (see photo Appendix II). For the submerged part, some aFADs use natural fiber biodegradable ropes, but fishers say these anchoring ropes break easier than synthetic material ones. For example, aFADs with natural ropes last for about between one to two years before breaking, while nylon ropes can last five years before the aFAD is lost. Because nylon is quite expensive and aFADs use a lot of rope material (e.g. 3000-4000 m depth), many fishers use "plastic" type ropes made with raffia, which are still durable but cheaper.

	- Beaching of FADs is considered low. The aFADs lack netting, the major component in drifting FADs entangling in coral reefs and other marine seafloor structures. Bamboo-made aFAD rafts will degrade, while artificial pontoon foam floats will remain on the surface without sinking. - The incidence of beaching in the region of Bitung from lost dFADs belonging to other WCPO fleets is thought to be very low. Most fishers have never seen dFADs in these waters. Only fishers who have worked in other boats in the Philippines had seen lost dFADs at times. - Observers on PS have to report to authorities if vessels discard marine debris during the trip, so fishers are careful not to throw rubbish or old/used aFAD construction materials to sea.
5. Best release practices from deck	- Fishers in Bitung estimated they encounter turtles about 3-4 times during a 3-month fishing trip (e.g. one per month). Turtles are often encountered associated with schools of small sized fish, like scad, on which they might be feeding on. Generally, turtles are released alive, although a fisher said that some may be consumed onboard. In other Indonesian regions turtles are considered sacred animals and are always released. Fishers in Bitung recognized three species they find at FADs (loggerhead, hawksbill and green turtles) and said they never come across loggerhead turtles. - Mantas are rarely found, and again are associated with small-sized fish schools. Due to strict regulations they are always released. - Some captains described releasing whale sharks by lowering the corkline with the aid of weights. These weights are simply two heavy stones tied up by a rope, which are put over the corkline to help it sink. Two or three crew jump into the water to assist with guiding the whale shark out of the net. Other fisher said that they try to sink the net manually and tie the whale shark's tail with a rope and slowly pull with the assistance of a workboat. Scientists informed this skipper that the pulling method could damage the whale shark's vertebral column, causing permanent damage to the animal, and is not recommended. - Marlins are very rarely caught by fishers. When they are encountered in the net, this species is not released but utilized.
6. Fishing technology and seining operation	- The prohibition of carrier vessels imposed in 2014 by the Indonesian Fisheries Ministry, mainly to prevent large foreign flagged vessels operating in Indonesian waters transshipping tuna abroad (primarily Philippines) had a strong impact on national PS which also operated with the help of carrier vessels that unloaded in Indonesian canneries. All foreign-flagged PS left the country and many Indonesian PS stopped fishing due to the high costs involved in having to return to port after filling up the boat, with many having a small capacity (e.g. 30-80 GT). In 2017, the Indonesian Government passed an amendment allowing one carrier vessel per four Indonesian PS to help fishing companies be a bit more efficient. To ensure that transshipment restrictions are obeyed most carrier vessels

	operating in the Indonesian EEZ have an observer onboard. In addition, about 5% of trips of PS in Bitung are covered by observers as well. - Some of the more "modern" PS in Bitung (see photo Appendix II) despite a somewhat larger hull size were built with a small storage capacity (e.g. < 80 GT) because they used to operate by directly loading onto carrier vessels. About three or four carrier vessels would follow these larger vessels around, so the catcher vessel would only return to port after several months (e.g. 6 months to 1 year). Now these PS vessels which have to share a carrier with other three PS, have to fill up their relatively small wells and quite often to port to unload. A skipper said that by law (again to prevent unreported transshipping) they have to return at least once every two months to port. - No buoy technology (e.g. radio buoys, satellite buoys) is used by the Bitung fleet. Locations of the anchored FADs are kept registered on the boat GPS. - The captains from the smaller "patcheko" seiners (5-10 GT) comment that the maximum catch in one set can go from 0,5 to 1 ton. Meanwhile, the fishers operating in larger sized vessels (80-100 GT) have nets reaching 600 m lengths and can catch in a set up to 30 tonnes.

Appendix I – ISSF Skipper Workshops Agenda

Agenda ISSF Skippers Workshop Bitung (Sulawesi), Indonesia 2018

Date: May 7, 2018

Agenda

09:00-10:30

1- Opening remarks and welcoming

2 – ISSF Bycatch project and Skippers Workshop background

3 – Discussion on:

- Small bigeye and yellowfin tuna options (echo-sounder buoys, short tail FADs)
- Best on deck bycatch release practices
- Bycatch utilization

10:30-11:00

Coffee break

11:00-13:00

4- Discussion on:

- Non-entangling and biodegradable FADs

- Shark fishing in the net
- Proactive Vessel Register

5 – Final questions and answers

Appendix II – Participant Lists ISSF Indonesian Skipper Workshops May 2018

Name	Profession	Vessel	Company
Yoel Bawotong	Skipper	Putri Vita	Stemar Jaya
Ferdy Hengkengebala	Skipper	Putri Laut 07	Yuyun Mahmud
Heski Sengsor	Skipper	Putri Laut 04	Yuyun Mahmud
Nicolas Kaunang	Skipper	KM Muliia Maju Jaya	Fifi Indriani
Yusi Praditya	Skipper	KM Perindo 2	Multipar
Muhajir	Skipper	KM Ardila	Muhajir
Yusuf Tanio	Skipper	KM Mentari 888	PT. Bintang Mandiri Bersaudara (BMB)
Navia Ariyanto	Skipper	KM Nusantara Jaya 05	PT. Bintang Mandiri Bersaudara (BMB)
Rudiyanto	Skipper	KM Mentari 8888	PT. Bintang Mandiri Bersaudara (BMB)
Carmadi	Skipper	KM Pelau Permata 5	PT. Bintang Mandiri Bersaudara (BMB)
Marsius Mikson Rompa	Skipper	Mickey 107	Multi Indofish
Rusli Manonto Izaak	Chief Engineer	Mickey 107	Multi Indofish
Jerry Kirimang	Skipper	Betania Jaya	Beni Sopotan
Maghelhais Takalamingan	NGO		MDPI
Wentrik Masala	Skipper	KM Verkat	Napsar Badoa
Charles C. Lombone	Chief Engineer	KM Viola	Once
Meykel Reydel Tunduge	Skipper	KM Jumeyfa	Meykel Tunguge
Gaspar Tamaka Kadai	Skipper	KM Sentosa	PT. Budi Sentosa Abadi
Hopni Masi Horu	Skipper	KM Bintang Terang	Angi Burungmanis
Karcos Dalekes	Skipper	KM Dalbes	Julian Dakeles
Silas Dalekes	Skipper	KM Dalbes	Julian Dakeles
Dali Hantoyo	Chief Engineer	KM Mentari	Julian Dakeles
Hari Oko Purnawan	Chief Engineer	Nusantara Jaya 05	PT. Bintang Mandiri Bersaudara (BMB)
Asoman Bumulo	Skipper	KM Jaya Bali Bersaudara 05	PT. Bintang Mandiri Bersaudara (BMB)
Maliki	Chief Engineer	KM Helsinki	PT. Bintang Mandiri Bersaudara (BMB)
Jefy Sumuruk	Skipper	KM Elshaddai	Albert Wewengkang
Petrus Masada	Skipper	KM Bhanterang	Once Buruwmanis
Arthur Manohas	Skipper	KM Sentosa	PT Budi Sentosa Abadi
Irwan Paparo	Crew	KM Imanuel 05	Jein Jumentas
ILham Patriot	Deckboss	KM Samudra Jaya Raya 03	PT Multipar Sapta Tama
Samsudin Samal	Skipper	KM Samudra Jaya Raya 03	PT Multipar Sapta Tama
Julius Tatawihiang	Skipper	KM Alous Star 01	
Stevani Nelwan	Skipper	KM Alberki	Stevani Nelwan
Abner Kantahe	Skipper	KM Alberki	Yopi Lumiykewas
Darwin Kalangit	Skipper	KM King Alit	HJ Yusniar Anwar
Herry Sonoh	Skipper	KM P Khansa	Munawar Akipol
Stender Dalisaak	Skipper	KM La Gracia	
Rinaldi Tasiam	Skipper	KM Al Ansar 02	
Yofis Lumikawang	Skipper	KM RD Alberky	
Ari Kusmoyo	Enumerator		CFR
Resti Okem	Port Officer		
Lily Sonpotan	Port Officer		
Sunarto	Port Officer		
Yulian Toni	Port Officer		
Recky Sepiamiaosyah P	Port Officer		
Mag Donal M.	Port Officer		
Yesita Pondaag	Port Officer		
Fian Tuegeh	Port Officer		
Siti Arbiana	Port Officer		

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Appendix III- Bitung Skippers Workshop photographs 2018

Fig.1 Participants at the ISSF Skippers Workshop Bitung 2018

Fig. 2. Scientists with the skipper of one of the largest (>100GT) purse seine vessels at port of Bitung.

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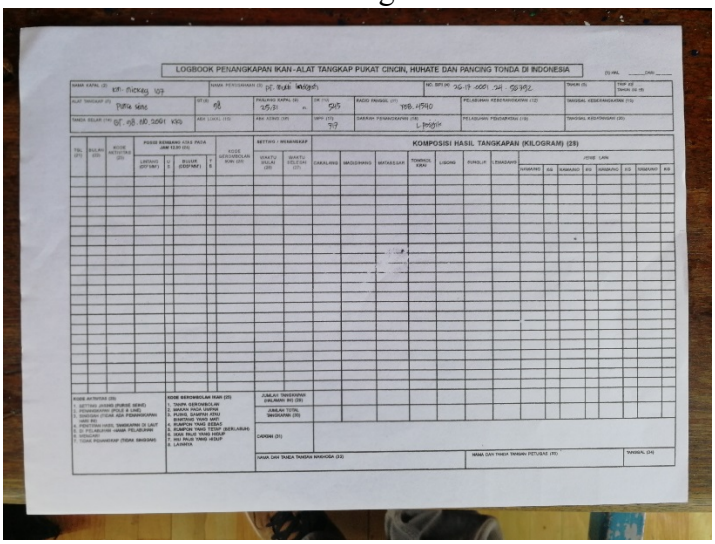
Fig.3. Small ring net “Pachekos” (5-20 GT) used to catch scads, small neritic tunas and skipjack in Bitung.



LOGBOOK PENANGKAPAN IKAN - ALAT TANGKAP PUKAT CINCIN, HUHATE DAN PANCING TONDA DI INDONESIA

KOMPOSISI HASIL TANGKAPAN (KILOGRAM) (28)

Fig.4. Tuna vessel logbook sheet collected at port of Bitung for

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